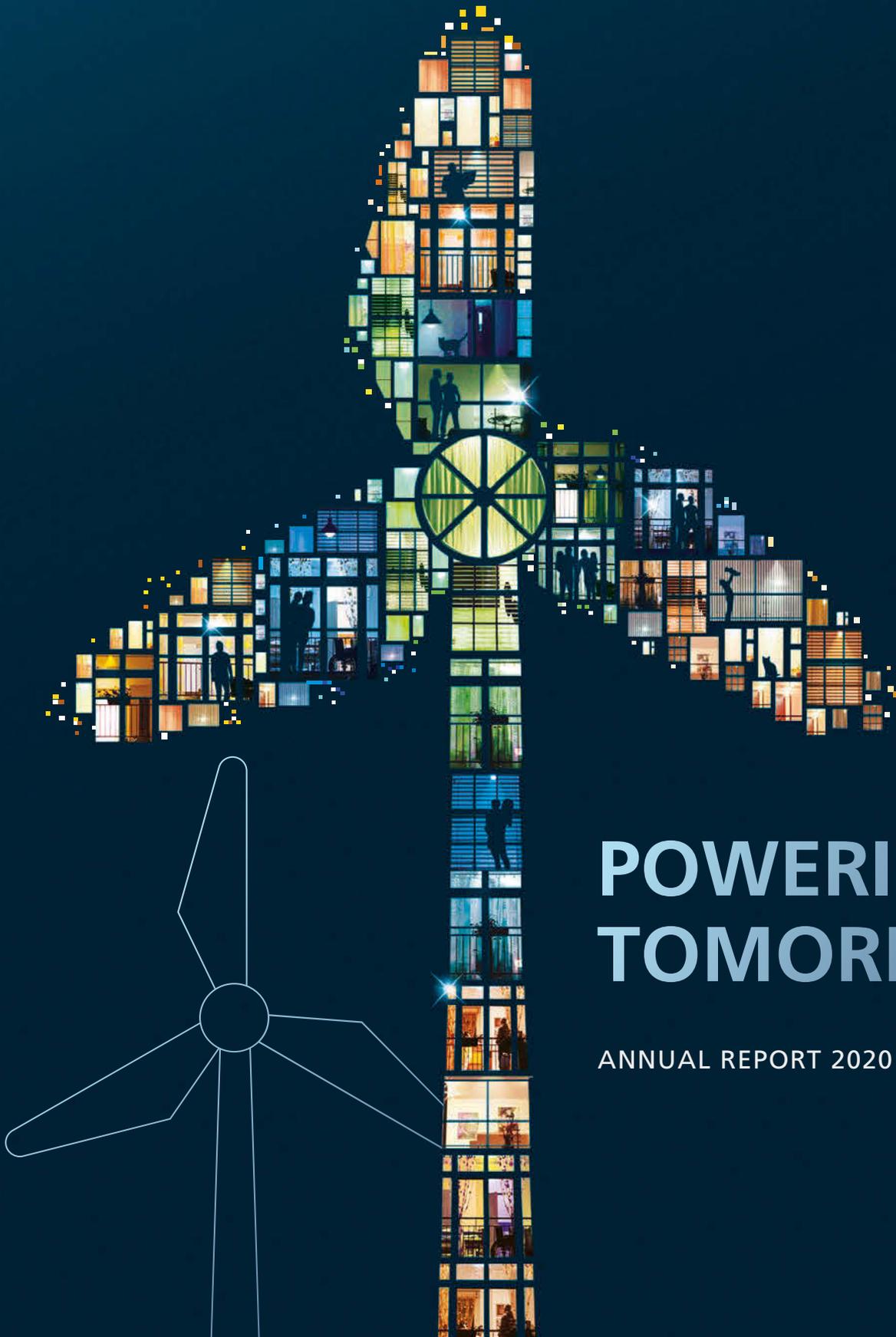




華能國際電力股份有限公司  
Huaneng Power International, Inc.

STOCK CODE : 902



# POWERING TOMORROW

ANNUAL REPORT 2020





**WE PROVIDE  
SUFFICIENT,  
RELIABLE AND  
ECO-FRIENDLY  
ENERGY**



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# COMPANY PROFILE



Huaneng Power International, Inc. (the “Company”, “Huaneng Power” or “Huaneng International”) and its subsidiaries are mainly engaged in developing, constructing, operating and managing large-scale power plants throughout China. As at 31 December 2020, the Company is one of China’s largest listed power producers with controlled installed capacity of 113,357 MW and equity-based installed capacity of 98,948 MW. 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 non-public 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 498,000,000 A shares. Currently, the total share capital of the Company amounts to approximately 15.7 billion shares.

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 large scale 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 the 660 MW high-efficiency ultra-supercritical coal-fired generating unit with the highest parameter in China. The Company completed 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 put into operation the first set of domestic distributed control system (“DCS”) of large thermal power generating unit. The Company completed the offshore wind power project with the largest generating capacity in Asia, was the first to realise mass production of wind turbine of 5 MW in China, and completed and put into operation the furthest offshore wind power project in China. The Company also invested and operated the most advanced gas turbine with the largest generation capacity and heat supplying capacity in China. The Company 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 Company was the first power company in China to get listed in New York, Hong Kong and Shanghai. 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 geographic layout of power plants, strong support from major shareholders, sound corporate governance structure, advantages in market reputation, extensive experience in the capital markets, advantages in overseas development, staff with high calibre and professional management.

**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.**

Huaneng International Power Development Corporation (“HIPDC”), the Company’s parent company and controlling shareholder, was incorporated as a Sino-foreign joint stock company in 1985.

## CHINA NETWORK

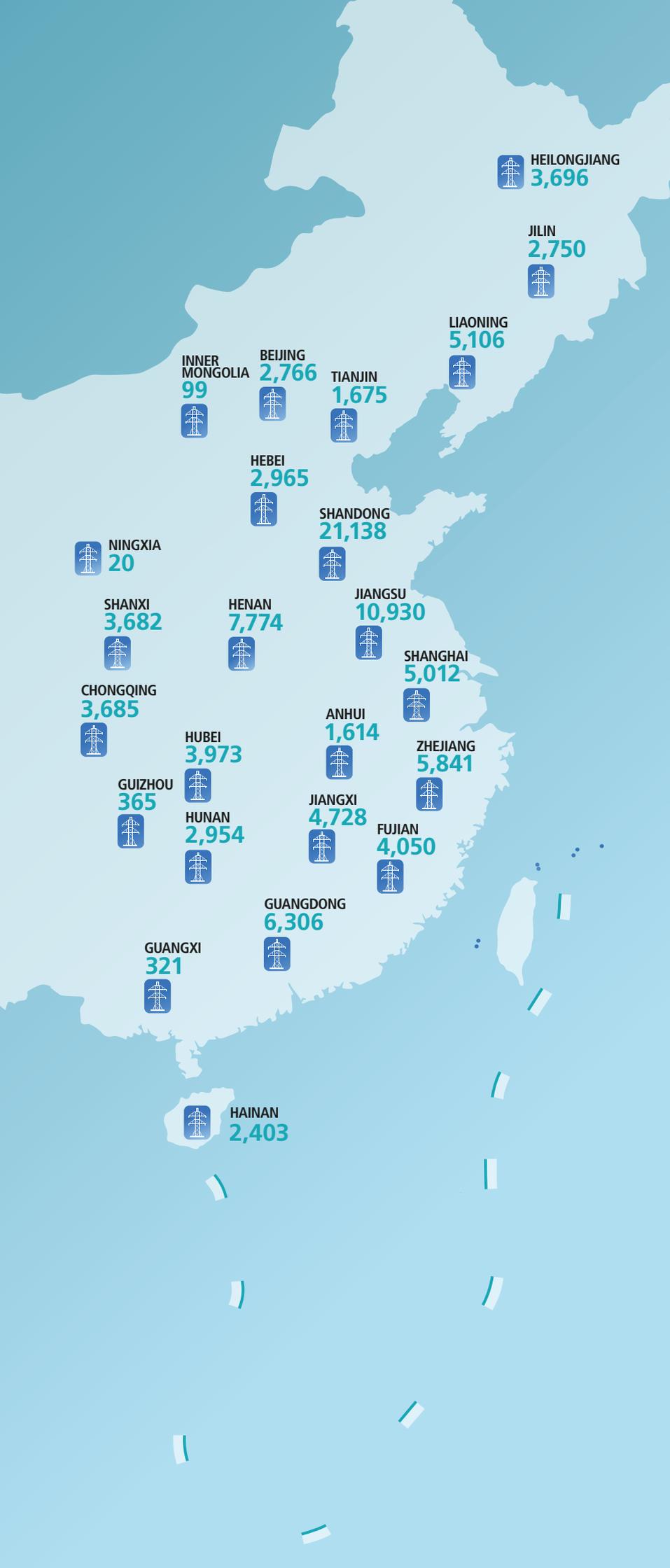


### DISTRIBUTION OF POWER PLANTS OF THE COMPANY

The controlled installed capacity of the Company as at 31 December 2020 was 113,357 MW, distributed in areas as depicted in the chart (Unit: MW)

## OVERSEAS NETWORK





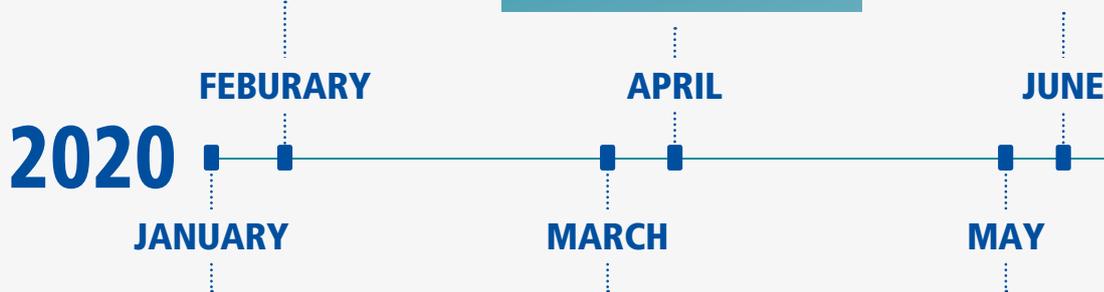
# MAJOR CORPORATE EVENTS IN 2020



- Sinosing Services Pte. Ltd., an oversea subsidiary of the Company, has successfully issued US\$0.3 billion 2.250% USD bonds due 2025 and US\$0.3 billion 2.625% USD bonds due 2030.
- The Company has finished the international rating, the Fitch Ratings granted the main credit rating of A and debt rating of A to the Company; the Moody's granted the main credit rating of A2 and debt rating of A2 to the Company and the Standard & Poor's granted the main credit rating of A- to the Company. The stable rating for the Company's outlook was granted by the three rating agencies. The rating results of the Fitch Ratings and Moody's are one sublevel lower than the Chinese sovereign credit rating, and the rating result of the Standard & Poor is two sublevel lower than the Chinese sovereign credit rating.

- The Company held global investor telephone conferences for its annual results for 2019.
- The Company announced that its total power generation within China for the first quarter of 2020 recorded a decrease of 18.45% year-on-year.
- The Company convened the 29th meeting of the Ninth Session of Board of Directors and announced its results for the first quarter of 2020. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB2,060 million, representing a year-on-year decrease of 22.42%.
- The Company held global investor telephone conferences for its results for the first quarter in 2020.
- The Company issued 3+N years perpetual corporate bonds of RMB2.5 billion to the qualified investors by public offering.
- The Company issued three years perpetual medium-term notes of RMB3 billion in the interbank market.
- The Company issued eight-year insurance debt scheme of RMB3.57 billion.
- The Company issued ten-year insurance debt scheme of RMB930 million.

- The First sludge coupling power generation project in the Southwest China was built and put into operation in Huaneng Chongqing Luohuang Power Plant. The Project is a pilot project of technical transformation at the national level in China, which can dispose almost one third of the sludge in Chongqing City.
- The Company convened the first meeting of the Tenth Session of the Board of Directors of the Company, and elected Mr. Zhao Keyu as the Chairman, and also elected the members and the chief members of the special committees.
- The Company convened the first meeting of the Tenth Session of the Supervisory Committee of the Company, and elected Mr. Li Shuqing as the Chairman of the Supervisory Committee, and elected Mr. Mu Xuan as the Vice Chairman of the Supervisory Committee.
- The Company announced the implementation of the profit distribution plan for the year of 2019 and distributed the cash dividends of RMB0.135 (including tax) for each ordinary share to all shareholders.
- The Company issued three years perpetual medium term notes of RMB3.5 billion in the interbank market.



- The Company announced that its total power generation within China for 2019 recorded a decrease of 5.91% year-on-year.



- Mr. Zhao Keyu was elected as the Chairman of the Ninth Session of Board of Directors. Mr. Shu Yinbiao was appointed as the honorary chairman of the Company.
- The Board of the Directors appointed Mr. Zhao Ping as the President of the Company.
- The Company convened the 28th meeting of the Ninth Session of Board of Directors and announced its operating results for 2019. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB1,686 million, representing an increase of 17.21% over the previous year.
- The Company issued 3+N years perpetual corporate bonds of RMB2 billion and 5+N years perpetual corporate bonds of RMB1 billion to the qualified investors by public offering.



- China Huaneng Group Treasury Management (Hong Kong) Limited, a subsidiary of China Huaneng Group Co., Ltd., increased a total of 15 million H Shares of the Company in the Hong Kong market.
- The Company borrowed the loan dedicated for resumption of work and production of RMB3 billion from China Development Bank at a rate of 2.3%.

- The Company convened the fourth meeting of the Tenth Session of the Board of Directors and announced its interim results for the year of 2020. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB5,733 million, representing an increase of 49.73% year-on-year.
- The Company held global investor telephone conferences for its interim results for the year of 2020.
- The Company issued three years perpetual medium term notes of RMB2 billion in the interbank market.
- The Company issued ten years insurance debt scheme of RMB3 billion.



- The Company announced that its total domestic power generation for the first three quarters of 2020 recorded a decrease of 2.86% year-on-year.
- The Company convened the sixth meeting of the Tenth Session of the Board of Directors and announced its results for the first three quarters of 2020. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB9,133 million, representing an year-on-year increase of 69.34%.
- The Company held global investor telephone conferences for its results for the three quarters in 2020.



- The controlled installed capacity of the Company's newly commissioned gas turbine generating units, wind turbine generating units, photovoltaic units and biomass units was 1,825.04 MW, 2,177.9 MW, 771.93 MW, and 65 MW respectively in 2020, and clean energy accounted for 20.6%.
- The Company won the China Securities Golden Bauhinia Award for "Outstanding Listed Companies in the 30th Anniversary of Capital Market".
- The Company won the China Securities Golden Bauhinia Award for the "Best Board Secretary of the Listed Company".

**AUGUST**

**OCTOBER**

**DECEMBER**

**JULY**

**SEPTEMBER**

**NOVEMBER**



- The Company announced that the domestic power generation in the first half of 2020 decreased by 8.05% year-on-year.

- The Company issued 3+N years perpetual corporate bonds of RMB3 billion to the qualified investors by public offering.
- The Company issued three years perpetual medium term notes of RMB1 billion in the interbank market.

- The first set of DCS system of the domestic 300 MW thermal power generating unit and DCS system of the GW level thermal power generating unit was successfully put into operation in Huaneng Fuzhou Power Plant and Huaneng Yuhuan Power Plant respectively.
- The scientific research project of "efficient utilization of offshore wind power and wind energy and pile foundation key technologies and applications with low redundancy and high reliability" led by the Company won the first prize of the China Power Science and Technology Progress Award.
- The Company announced that the H Shares of the Company held by China Huaneng Group Treasury Management (Hong Kong) Limited, a subsidiary of China Huaneng Group Co., Ltd., increased by a total of 131,596,000 shares in the Hong Kong market, representing 0.84% of the total issued share capital of the Company. The shareholding increase plan has expired.
- The Company received "Helmsman of Digital Economy" Award from the Securities Daily and "Social Responsibility Reporting Leader" Award from the China Social Responsibility 100 Forum.

# FINANCIAL HIGHLIGHTS

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

## CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (Note 4)

	Year ended 31 December				
	2016	2017	2018	2019	2020
OPERATING REVENUE	113,814,236	152,459,444	169,550,624	174,009,401	<b>169,446,338</b>
Profit Before Income Tax Expense	13,813,138	2,801,733	1,973,147	3,119,460	<b>4,773,736</b>
Income Tax Expense	(3,465,151)	(1,217,526)	(643,173)	(2,011,255)	<b>(2,163,173)</b>
Profit After Income Tax Expense	10,347,987	1,584,207	1,329,974	1,108,205	<b>2,610,563</b>
Attributable To:					
– Equity Holders of the Company	8,520,427	1,579,836	734,435	766,345	<b>2,377,851</b>
– Non-Controlling Interests	1,827,560	4,371	595,539	341,860	<b>232,712</b>
Basic Earnings Per Share (RMB/Share)	0.56	0.10	0.03	0.01	<b>0.04</b>
Diluted Earnings Per Share (RMB/Share)	0.56	0.10	0.03	0.01	<b>0.04</b>

## CONSOLIDATED STATEMENTS OF FINANCIAL POSITION (Note 5)

	As at 31 December				
	2016	2017	2018	2019	2020
Total assets	314,839,739	396,589,511	419,903,311	428,250,063	<b>449,904,658</b>
Total liabilities	(212,653,002)	(288,974,907)	303,781,641	297,871,017	<b>298,288,460</b>
Net assets	102,186,737	107,614,604	116,121,670	130,379,046	<b>151,616,198</b>
Equity holders of the Company	86,002,995	87,641,566	94,435,418	108,803,735	<b>129,845,923</b>
Non-controlling interests	16,183,742	19,973,038	21,686,252	21,575,311	<b>21,770,275</b>

Notes:

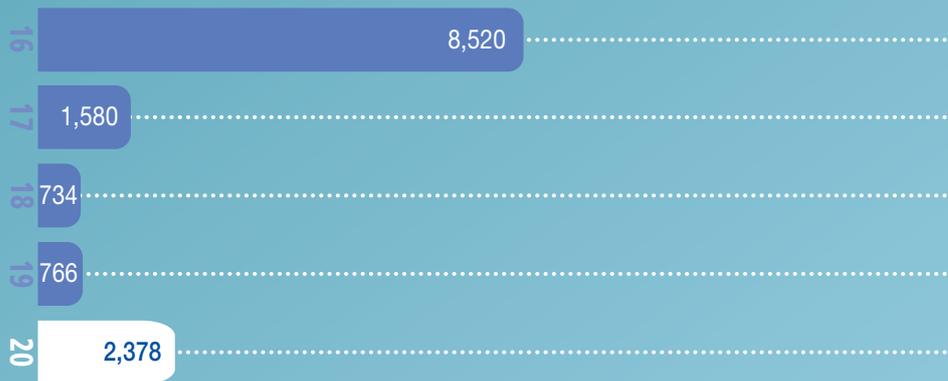
- As a result of the adoption of IFRS 15, Revenue from contracts with customers, with effect from 1 January 2018, the Company and its subsidiaries have changed its accounting policies in respect of revenue recognition. In accordance with the transitional provisions of the standard, the changes in accounting policies were adopted by way of opening balance adjustments to equity as at 1 January 2018. Figures in years earlier than 2018 are stated in accordance with the policies applicable in those years.
- The Company and its subsidiaries adopted IFRS 9, Financial instruments, from 1 January 2018. As a result, the Company and its subsidiaries have changed its accounting policies in relation to financial instruments. Differences in the carrying amounts of the financial assets resulting from the adoption of IFRS 9 were recognised in opening reserves at 1 January 2018. There was no difference in the carrying amounts of the financial liabilities. Prior to 2018, figures were stated in accordance with the policies applicable in those years.
- 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.
- The results for the years ended 31 December 2016, 2017 and 2018 are derived from the historical financial statements of the Company. The results for the years ended 31 December 2019 and 2020 are set out on pages 128 to 130. All such information is extracted from the financial statements prepared under International Financial Reporting Standards ("IFRS").
- The consolidated statements of financial position as at 31 December 2016, 2017 and 2018 are derived from the historical financial statements of the Company. The consolidated statements of financial position as at 31 December 2019 and 2020 are set out on pages 131 to 133. All such information is extracted from the financial statements prepared under IFRS.



RMB million

### PROFIT ATTRIBUTABLE TO EQUITY HOLDERS OF THE COMPANY UNDER IFRS

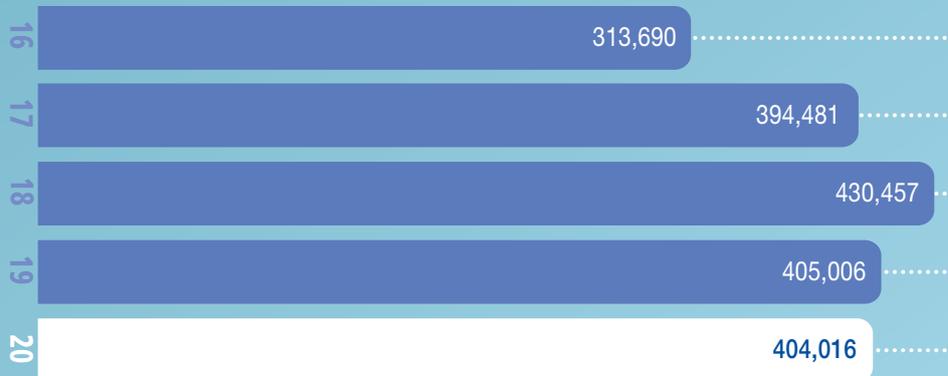
For the years ended 31 December



Thousand KWH

### DOMESTIC POWER GENERATION

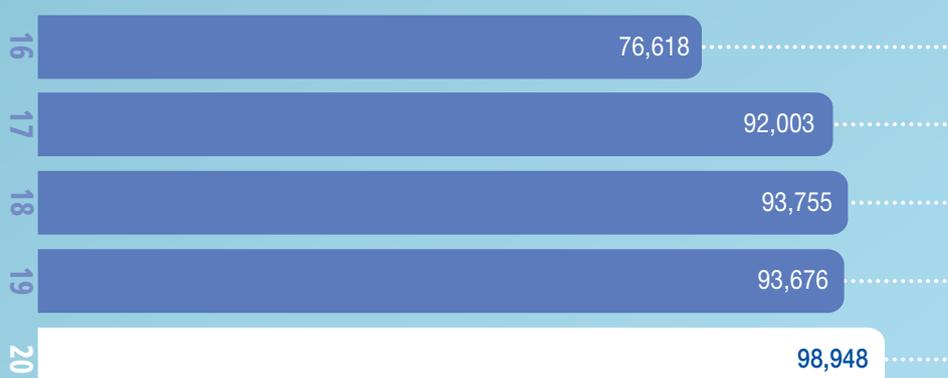
For the years ended 31 December



MW

### AN EQUITY-BASED INSTALLED CAPACITY

As at 31 December



# LETTER TO SHAREHOLDERS



## ENERGY FOR BRIGHTER TOMORROW

“ The development objectives of Huaneng International 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.

”

**Zhao Keyu**  
*Chairman*





## DEAR SHAREHOLDERS,

In 2020, facing up to the impacts and test of epidemic, the Company made all-out efforts to coordinate epidemic prevention and control, production and operation, reform and development, thus the safety production and operating results maintained stable, restructuring continued to be optimized and scientific innovation made a new progress. We completed the major objectives of the year and continued to fulfill the responsibility of providing sufficient, reliable and eco-friendly energy to the community. In 2020, the Company achieved consolidated operating revenue of RMB169.446 billion, representing a year-on-year decrease of 2.62%, and net profit attributable to the equity holders of the Company of RMB2,378 million, representing a year-on-year increase of 210.28%.

In 2020, the Company won various awards such as the China Securities Golden Bauhinia Award for “Outstanding Listed Companies in the 30th Anniversary of Capital Market” and the 2020 “Excellent Issuer of Corporate Bonds” granted by the Shanghai Stock Exchange, and was elected into the “List of Listed Companies with Generous Returns” and “List of Listed Companies with Sincere Returns” of China Association of Listed Companies.

The Company has been paying dividends to shareholders every year since 1998. The declared dividend accumulated to RMB59.862 billion. The Company’s Board of Directors has passed a resolution recommending that the profit distribution plan for 2020 be: a cash dividend of RMB0.18 (including tax) per share shall be distributed to all shareholders of the

# LETTER TO SHAREHOLDERS



Company. The distribution plan will be submitted to the 2020 Annual General Meeting of the Company for consideration.

2020 is the last year of the “13th Five-Year” plan. During the “13th Five-Year” period, the installed capacity of the Company expanded significantly, business territory continued to be extended, and the asset size further built up. The Company’s controlled installed capacity hit 113 million kw, with the business spanning 26 provinces (autonomous region and municipalities) in China and Singapore and Pakistan. The Company stayed on the road of green, low-carbon, clean and high-efficient development. The transformation and upgrading have been accelerated, the power structure continued to be improved and the proportion of low carbon, clean energy installation saw a great improvement. The Company actively participated in the electricity market reform. The establishment and improvement of marketing management system adapted to market competition was market-oriented and thus the marketing system with energy sales companies and operating and trading center as the main body was formed. The Company kept technological innovation as the primary driving force. The R&D of key core technologies attained major breakthroughs and the first domestic distributed control system (DCS) of large thermal power generation unit, and new programmable logic controller (PLC) industrial control system were successfully put into operation in the

power plants of the Company, which made the safety, reliability and intelligence level of the main auxiliary control systems of relevant enterprises step into a new phase. Over the past five years, confronted with the complex and severe external situation and intensified competitive market environment, under the strong support of all of the shareholders, the Company has upheld the new development concept, and successfully wrote the new chapter of high-quality development led by stepping up the establishment of a world-class listed power company!

Looking into the “14th Five-Year” plan, based on the new stage of development, the Company will implement new development concept, and construct new development pattern with services, vigorously implement green development, innovation development, safety development and excellent operation strategy, deepen supply side structural reform, comprehensively promote high quality development, accelerate leapfrog development of new energy, optimization and upgrading of coal



power structure to see that the carbon emission to peak early and decrease year by year during the “14th Five-Year” plan and the Company will take even bigger steps in the journey of building a world-class listed power 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.

**Zhao Keyu**  
Chairman

Beijing, the PRC  
23 March 2021

# MANAGEMENT'S DISCUSSION AND ANALYSIS





# OPERATING AND FINANCIAL REVIEWS AND PROSPECTS

## MANAGEMENT'S DISCUSSION AND ANALYSIS

*(Prepared under International Financial Reporting Standards ("IFRS"))*

### GENERAL

The principal activities of the Company are investment in, and construction, operation and management of, power plants within China.

As of 31 December 2020, the Company had a controlled installed capacity of 113,357 MW and an equity-based installed capacity of 98,948 MW, of which approximately 20.60% was from clean energy sources (gas turbine, hydro, wind, photovoltaic and biomass power generation). The Company located its power 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 (has been consolidated since 31 December 2018). The Company is among the biggest listed power companies in China.

For the year ended 31 December 2020, the operating revenue of the Company amounted to RMB169,446 million, representing a decrease of 2.62% over the same period of last year. The net profit attributable to equity holders of the Company was RMB2.378 billion, representing an increase of 210.28% over the same period of last year; the earnings per share was RMB0.04.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

## A. OPERATING RESULTS

### 1. 2020 operating results

The power generation of the Company's domestic power plants for the year ended 31 December 2020 are as listed below (in billion kWh):

Region	Power Generation		Electricity Sold	
	2020	Change	2020	Change
<b>Heilongjiang Province</b>	<b>14.126</b>	1.10%	<b>13.238</b>	1.19%
Coal-fired	12.853	1.57%	11.988	1.70%
Wind-power	1.138	-4.09%	1.117	-4.07%
PV	0.135	2.95%	0.133	2.53%
<b>Jilin Province</b>	<b>11.102</b>	6.85%	<b>10.385</b>	6.04%
Coal-fired	9.513	5.24%	8.881	4.55%
Wind-power	1.141	11.93%	1.084	9.50%
Hydro-power	0.076	80.49%	0.075	82.22%
PV	0.145	137.25%	0.143	137.18%
Biomass power	0.228	-0.45%	0.202	-2.28%
<b>Liaoning Province</b>	<b>18.771</b>	-2.05%	<b>17.455</b>	-2.17%
Coal-fired	18.191	-2.19%	16.882	-2.33%
Wind-power	0.376	-0.12%	0.373	-0.22%
Hydro-power	0.042	44.53%	0.041	46.96%
PV	0.163	1.63%	0.159	1.90%
<b>Inner Mongolia</b>	<b>0.212</b>	-3.74%	<b>0.208</b>	-4.39%
Wind-power	0.212	-3.74%	0.208	-4.39%
<b>Hebei Province</b>	<b>12.175</b>	-5.70%	<b>11.363</b>	-5.79%
Coal-fired	11.661	-7.73%	10.862	-8.05%
Wind-power	0.457	107.90%	0.446	127.39%
PV	0.056	4.16%	0.055	5.22%
<b>Gansu Province</b>	<b>13.151</b>	15.04%	<b>12.496</b>	15.27%
Coal-fired	10.793	14.93%	10.199	15.13%
Wind-power	2.358	15.54%	2.297	15.92%
<b>Ningxia</b>	<b>0.023</b>	1.63%	<b>0.023</b>	1.20%
PV	0.023	1.63%	0.023	1.20%
<b>Beijing</b>	<b>8.579</b>	1.36%	<b>8.218</b>	2.20%
Coal-fired	0.987	-32.19%	0.870	-32.57%
Combined Cycle	7.591	8.33%	7.347	8.85%
<b>Tianjin</b>	<b>6.743</b>	-2.85%	<b>6.338</b>	-2.84%
Coal-fired	5.101	-5.56%	4.741	-5.71%
Combined Cycle	1.628	5.91%	1.583	6.03%
PV	0.015	390.71%	0.015	365.47%

Region	Power Generation		Electricity Sold	
	2020	Change	2020	Change
<b>Shanxi Province</b>	<b>10.911</b>	-3.99%	<b>10.133</b>	-4.36%
Coal-fired	8.139	-10.51%	7.461	-11.04%
Combined Cycle	2.176	2.74%	2.118	2.72%
Wind-power	0.033	–	0.006	–
PV	0.563	270.47%	0.548	275.47%
<b>Shandong Province</b>	<b>81.839</b>	-4.77%	<b>76.227</b>	-8.45%
Coal-fired	80.494	-5.02%	74.963	-8.70%
Wind-power	0.829	6.34%	0.760	1.60%
PV	0.512	24.25%	0.504	23.48%
Biomass power	0.004	–	–	–
<b>Henan Province</b>	<b>21.244</b>	-3.48%	<b>19.951</b>	-3.78%
Coal-fired	19.487	-7.64%	18.287	-7.95%
Combined Cycle	0.610	43.85%	0.595	44.10%
Wind-power	1.124	142.78%	1.046	142.33%
PV	0.023	-7.04%	0.023	-5.63%
<b>Jiangsu Province</b>	<b>37.742</b>	-4.41%	<b>35.609</b>	-4.76%
Coal-fired	30.772	-7.28%	29.045	-7.08%
Combined Cycle	4.187	-7.25%	3.917	-11.49%
Wind-power	2.604	56.49%	2.478	55.87%
PV	0.179	53.03%	0.169	47.24%
<b>Shanghai</b>	<b>17.468</b>	-0.78%	<b>16.488</b>	-0.89%
Coal-fired	15.976	2.52%	15.036	2.53%
Combined Cycle	1.477	-26.95%	1.440	-26.99%
PV	0.015	–	0.012	–
<b>Chongqing</b>	<b>9.355</b>	-5.53%	<b>8.712</b>	-5.60%
Coal-fired	7.727	-6.82%	7.125	-6.97%
Combined Cycle	1.385	0.61%	1.351	0.63%
Wind-power	0.243	4.15%	0.236	3.85%
<b>Zhejiang Province</b>	<b>25.169</b>	-2.24%	<b>24.121</b>	-2.37%
Coal-fired	24.385	-2.76%	23.353	-2.91%
Combined Cycle	0.731	20.02%	0.715	19.91%
PV	0.053	-10.90%	0.053	-10.77%
<b>Hubei Province</b>	<b>15.380</b>	-23.22%	<b>14.446</b>	-23.32%
Coal-fired	14.484	-24.77%	13.571	-24.93%
Wind-power	0.552	-4.40%	0.542	-4.33%
Hydro-power	0.322	79.07%	0.312	78.92%
PV	0.022	-1.74%	0.021	-2.00%
<b>Hunan Province</b>	<b>10.280</b>	-9.47%	<b>9.593</b>	-9.81%
Coal-fired	9.328	-10.87%	8.664	-11.22%
Wind-power	0.595	12.65%	0.579	10.92%
Hydro-power	0.313	-6.61%	0.307	-6.68%
PV	0.044	63.27%	0.043	66.17%

# MANAGEMENT'S DISCUSSION AND ANALYSIS

Region	Power Generation		Electricity Sold	
	2020	Change	2020	Change
<b>Jiangxi Province</b>	<b>21.585</b>	4.00%	<b>20.666</b>	4.08%
Coal-fired	20.537	1.81%	19.648	1.88%
Wind-power	0.821	40.38%	0.806	41.17%
PV	0.228	–	0.213	–
<b>Anhui Province</b>	<b>5.692</b>	-3.88%	<b>5.423</b>	-3.86%
Coal-fired	5.130	-7.34%	4.886	-7.05%
Wind-power	0.451	49.67%	0.425	42.32%
Hydro-power	0.112	31.23%	0.111	31.71%
<b>Fujian Province</b>	<b>17.246</b>	56.10%	<b>16.382</b>	15.26%
Coal-fired	17.235	56.17%	16.371	15.28%
PV	0.012	-3.20%	0.012	-1.12%
<b>Guangdong Province</b>	<b>24.438</b>	9.20%	<b>23.136</b>	8.13%
Coal-fired	22.625	1.19%	21.642	1.25%
Combined Cycle	1.790	–	1.471	–
PV	0.023	5.68%	0.023	5.33%
<b>Guangxi Province</b>	<b>0.715</b>	84.36%	<b>0.680</b>	84.96%
Combined Cycle	0.443	62.34%	0.426	63.46%
Wind-power	0.272	136.64%	0.255	137.14%
<b>Yunnan Province</b>	<b>7.853</b>	80.19%	<b>7.253</b>	81.07%
Coal-fired	7.251	95.60%	6.668	97.69%
Wind-power	0.566	-5.89%	0.550	-5.84%
Hydro-power	0.036	-27.62%	0.035	-28.40%
<b>Guizhou Province</b>	<b>0.301</b>	38.72%	<b>0.290</b>	36.50%
Wind-power	0.221	2.46%	0.219	2.99%
PV	0.080	–	0.071	–
<b>Hainan Province</b>	<b>11.915</b>	-8.23%	<b>11.062</b>	-8.10%
Coal-fired	11.303	-9.55%	10.464	-9.48%
Combined Cycle	0.329	89.12%	0.320	89.07%
Wind-power	0.113	15.03%	0.110	15.12%
Hydro-power	0.069	-37.43%	0.068	-37.48%
PV	0.101	-3.47%	0.100	-3.53%
<b>Total</b>	<b>404.016</b>	-0.24%	<b>379.894</b>	-2.14%

The decrease in the Company's power generation was mainly attributable to the following factors: (1) the overall electricity consumption nation-wide in the first half of 2020 declined sharply due to the COVID-19 pandemic, which led to a decrease of 0.24% in annual power generation even though the Company achieved growth in both the third and the fourth quarters; (2) new energy generating units such as wind power and photovoltaic units commenced operation in 2020 on a large scale, which, together with the increased rainfall in summer and enhanced efforts on the consumption of clean energy, caused further decline in the demand of thermal power; and (3) new thermal power units commenced operation in the area where the Company operates, leading to the decrease in the average local utilization hours, which in turn led to the decrease in the occupation of the capacity of the Company's power generation

units given the number of thermal power units of the Company only increased slightly.

For the year ended 31 December 2020, the accumulated power generation of Tuas Power Ltd., the Company's wholly owned subsidiary in Singapore, accounted for a market share of 21.4%, representing an increase of 0.7 percentage point from the same period last year.

In respect of tariff, the Company's domestic average tariff (inclusive of taxes) for the year ended 31 December 2020 was RMB413.63 per MWh, decreased by 0.81% from last year (while average tariff (exclusive of taxes) for the same period decreased by 0.15% to RMB366.04 per MWh). SinoSing Power's average tariff for 2020 was RMB530.61 per MWh, representing a decrease by 16.60% from last year.

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2020	2019	Change
<b>Heilongjiang Province</b>			
Coal-fired	379.26	390.22	-2.81%
Wind-power	526.17	517.30	1.71%
PV	710.02	703.98	0.86%
<b>Jilin Province</b>			
Coal-fired	371.86	383.72	-3.09%
Wind-power	490.30	509.88	-3.84%
Hydro-power	412.18	417.48	-1.27%
PV	587.14	789.62	-25.64%
Biomass power	749.99	749.98	0.00%
<b>Liaoning Province</b>			
Coal-fired	391.23	400.36	-2.28%
Wind-power	539.05	523.50	2.97%
Hydro-power	362.04	366.41	-1.19%
PV	874.25	892.83	-2.08%
<b>Inner Mongolia</b>			
Wind-power	454.91	441.31	3.08%
<b>Hebei Province</b>			
Coal-fired	361.80	362.71	-0.25%
Wind-power	495.03	512.27	-3.36%
PV	723.65	734.80	-1.52%

# MANAGEMENT'S DISCUSSION AND ANALYSIS

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2020	2019	Change
<b>Gansu Province</b>			
Coal-fired	312.40	303.30	3.00%
Wind-power	343.69	381.33	-9.87%
<b>Ningxia</b>			
PV	800.00	801.85	-0.23%
<b>Beijing</b>			
Coal-fired	478.58	461.00	3.81%
Combined Cycle	620.27	640.10	-3.10%
<b>Tianjin</b>			
Coal-fired	365.79	371.28	-1.48%
Combined Cycle	597.85	684.92	-12.71%
PV	634.61	874.51	-27.43%
<b>Shanxi Province</b>			
Coal-fired	314.39	318.55	-1.31%
Combined Cycle	612.51	667.58	-8.25%
Wind-power	600.00	—	—
PV	628.78	860.36	-26.92%
<b>Shandong Province</b>			
Coal-fired	408.18	407.28	0.22%
Wind-power	598.67	600.76	-0.35%
PV	850.98	855.00	-0.47%
<b>Henan Province</b>			
Coal-fired	360.81	363.89	-0.85%
Combined Cycle	960.30	1,202.96	-20.17%
Wind-power	585.94	602.96	-2.82%
PV	361.70	375.77	-3.74%
<b>Jiangsu Province</b>			
Coal-fired	395.57	383.08	3.26%
Combined Cycle	632.45	619.77	2.05%
Wind-power	757.19	730.35	3.67%
PV	734.74	902.65	-18.60%
<b>Shanghai</b>			
Coal-fired	406.49	400.91	1.39%
Combined Cycle	871.34	804.57	8.30%
PV	521.50	—	—
<b>Chongqing</b>			
Coal-fired	406.68	405.74	0.23%
Combined Cycle	724.30	734.49	-1.39%
Wind-power	607.05	608.77	-0.28%

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2020	2019	Change
<b>Zhejiang Province</b>			
Coal-fired	406.53	416.57	-2.41%
Combined Cycle	828.89	951.91	-12.92%
PV	1,121.06	1,075.33	4.25%
<b>Hubei Province</b>			
Coal-fired	408.17	421.50	-3.16%
Wind-power	610.02	620.52	-1.69%
Hydro-power	375.18	376.60	-0.38%
PV	880.00	880.00	0.00%
<b>Hunan Province</b>			
Coal-fired	447.29	451.70	-0.98%
Wind-power	558.50	604.75	-7.65%
Hydro-power	332.02	353.05	-5.96%
PV	837.84	896.94	-6.59%
<b>Jiangxi Province</b>			
Coal-fired	410.66	415.37	-1.13%
Wind-power	604.41	606.28	-0.31%
PV	736.44	—	—
<b>Anhui Province</b>			
Coal-fired	361.38	370.68	-2.51%
Wind-power	602.33	610.00	-1.26%
Hydro-power	421.63	423.31	-0.40%
<b>Fujian Province</b>			
Coal-fired	395.20	403.49	-2.05%
PV	980.00	979.78	0.02%
<b>Guangdong Province</b>			
Coal-fired	408.00	428.00	-4.67%
Combined Cycle	568.04	—	—
PV	980.00	976.77	0.33%
<b>Guangxi Province</b>			
Combined Cycle	718.25	647.57	10.92%
Wind-power	591.98	607.75	-2.59%
<b>Yunnan Province</b>			
Coal-fired	350.97	462.29	-24.08%
Wind-power	472.26	475.62	-0.71%
Hydro-power	246.00	245.39	0.25%

# MANAGEMENT'S DISCUSSION AND ANALYSIS

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2020	2019	Change
<b>Guizhou Province</b>			
Wind-power	586.98	593.15	-1.04%
PV	512.54	—	—
<b>Hainan Province</b>			
Coal-fired	441.75	439.63	0.48%
Combined Cycle	580.13	680.48	-14.75%
Wind-power	604.58	606.45	-0.31%
Hydro-power	382.76	392.71	-2.53%
PV	908.98	897.12	1.32%
<b>Domestic total</b>	<b>413.63</b>	417.00	-0.81%
<b>SinoSing Power</b>	<b>530.61</b>	636.24	-16.60%

In respect of fuel costs, due to the decrease in fuel prices, the Company's fuel cost per unit of power sold by domestic power plants decreased by 6.34% to RMB209.07 per MWh from last year.

Combining the forgoing factors, for the year ended 31 December 2020, the Company recorded an operating revenue of RMB169,446 million, representing a decrease of 2.62% from RMB174,009 million of last year. The operating expenses of the Company amounted to 155,734 million, representing a decrease of 2.54% from RMB159,799 million of last year, and the pre-tax profit of the Company amounted to RMB4,774 million, representing an increase of 53.03% from RMB3,119 million 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 2020, the consolidated operating revenue of the Company and its subsidiaries amounted to RMB169,446 million, representing a decrease of 2.62% from RMB174,009 million for the year ended 31 December 2019. The operating revenue from domestic operations of the Company decreased by RMB1,525 million over the same period of last year, while the operating revenue generated from newly acquired entities and newly operated generating units was RMB3,463 million.

The operating revenue from the operations of the Company in Singapore decreased by RMB2.358 billion over the same period of last year, representing a 17.70% decrease, which was mainly attributed to the decrease in the tariff. The operating revenue from the operations of the Company in Pakistan decreased by RMB679 million, representing a decrease of 14.13% compared to the same period last year, mainly due to the decrease in power sales as a result of COVID-19.

Tax and levies on operations mainly consist of surcharges of value-added tax. According to relevant administrative regulations, these surcharges include City Construction Tax and Education Surcharges calculated at prescribed percentages on the amounts of the value-added tax paid. For the year ended 31 December 2020, the tax and levies on operations of the Company and its subsidiaries were RMB1.794 billion, representing a decrease of RMB39 million from RMB1.833 billion for the same period of last year, of which the tax and levies on operations attributable to newly acquired entities and new generating units accounted for RMB8 million.

## 2.2 Operating expenses

For the year ended 31 December 2020, the total operating expenses of the Company and its subsidiaries was RMB155.734 billion, representing a decrease of 2.54% from the same period last year. The operating expenses in domestic operations of the Company decreased by RMB0.776 billion, or 0.54%, from the same period last year, of which the newly acquired entities and the new generating units accounted for RMB2.016 billion; the costs attributable to the existing entities decreased by RMB2.792 billion, which was primarily attributable to the reduced fuel costs for domestic operations in China.

The operating expenses from the operations in Singapore decreased by RMB2.784 billion, or 20.62%, from the same period last year, which was mainly due to the decreased fuel costs. The operating expenses from the operations in Pakistan decreased by RMB0.504 billion, which was mainly due to decrease in power generation as a result of COVID-19.

### 2.2.1 Fuel costs

Fuel costs account for the majority of the operating expenses for the Company and its subsidiaries. For the year ended 31 December 2020, fuel costs of the Company and its subsidiaries decreased by 8.93% to RMB88.966 billion from RMB97.687 billion for the year ended 31 December 2019. The fuel costs from domestic operations of the Company and its subsidiaries decreased by RMB7.217 billion, which was primarily attributable to the decline of fuel price. The fuel costs of the newly acquired entities and new generating units were RMB0.795 billion and the fuel costs of the existing generating units decreased by RMB8.012 billion from same period last year. Fuel costs in Singapore decreased by RMB1.503 billion from the same period last year, mainly due to decreased natural gas costs. For the year ended 31 December 2020, the average price (inclusive of taxes) of natural fuel coal consumed of the Company and its domestic subsidiaries was RMB479.11 per ton, representing a 5.15% decrease from the RMB505.12 per ton for the year ended 31 December 2019. The fuel cost per unit of power sold by the Company's domestic power plants decreased by 6.34% to RMB209.07/MWh from RMB223.22/MWh in 2019.

### 2.2.2 Maintenance

For the year ended 31 December 2020, the maintenance expenses of the Company and its subsidiaries amounted to RMB5.002 billion, representing an increase of RMB396 million from RMB4.606 billion for the year ended 31 December 2019. The maintenance expenses of the Company's domestic operations increased by RMB370 million compared to the same period last year. The maintenance expenses of operations in Singapore increased by RMB26 million compared to the same period last year.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

## **2.2.3 Depreciation**

For the year ended 31 December 2020, depreciation expenses of the Company and its subsidiaries increased by 1.29% to RMB22.146 billion, compared to RMB21.865 billion in the year ended 31 December 2019; the increase was mainly due to entities and new generating units put into operation of last year and this year. The depreciation expenses of domestic operations increased by RMB275 million compared to the same period last year, of which the depreciation costs incurred by the newly acquired entities and new generating units was RMB684 million. The depreciation expenses of the operations in Singapore increased by RMB6 million compared to the same time last year.

## **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 2020, the labor costs of the Company and its subsidiaries amounted to RMB14.503 billion, representing an increase of RMB988 million from RMB13.515 billion for the year ended 31 December 2019. This is mainly attributable to the good operating performance of the Company which resulted in the increase of payroll as well as the welfare fees, labour union funds, employee training fees and etc. Labor costs for Singapore operations increased by RMB20 million compared to the same time last year.

## **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 losses on disposal of properties, plant and equipment. For the year ended 31 December 2020, other operating expenses of the Company and its subsidiaries was RMB25.116 billion, representing an increase of RMB2.990 billion from RMB22.126 billion for the year ended 31 December 2019. The other operating expenses from the Company's domestic operations increased by RMB4.823 billion due to the increase in asset impairments, please refer to Notes 6, 7 and 14 to the financial statements for details.

Other operating expenses of the operations in Singapore decreased by RMB1.333 billion compared to the same period last year. Other operating expenses of the operations in Pakistan decreased by RMB0.500 billion compared to the same period last year.

## 2.3 Financial expenses

Financial expenses consist of interest expense, bank charges and net exchange differences.

### 2.3.1 Interest expenses

For the year ended 31 December 2020, the interest expenses of the Company and its subsidiaries were RMB9.201 billion, representing a decrease of 14.51% from RMB10.763 billion for the year ended 31 December 2019. The interest expenses from the Company's domestic operations decreased by RMB1.233 billion. The interest expenses from the newly acquired entities and new generating units were RMB537 million and those incurred by the existing entities in China decreased by RMB1.771 billion, which is largely attributable to lower funding costs and decrease in debts.

The interest expenses of Singapore operations decreased by RMB154 million compared to the same period last year.

### 2.3.2 Net exchange differences and bank charges

For the year ended 31 December 2020, the Company and its subsidiaries recorded a net gain of RMB101 million from net exchange difference and bank charges, representing an increase of RMB311 million compared with the net loss of RMB210 million for the year ended 31 December 2019.

The operations in Singapore recorded net gain of RMB189 million in exchange changes and bank charges, representing an increase of RMB226 million from the net loss of RMB37 million for the year ended 31 December 2019, mainly due to decrease in US dollar-to-Singapore dollar exchange rates. The operations in Pakistan recorded net loss of RMB90 million in exchange losses and bank charges in 2020.

## 2.4 Share of profits less losses of associates and joint ventures

For the year ended 31 December 2020, the share of profits less losses of associates and joint ventures was RMB1.774 billion, representing an increase of RMB588 million from RMB1.186 billion of last year, mainly due to the increase in profit of Shenzhen Energy Corporation ("Shenzhen Energy"), an associate of the Company.

## 2.5 Income tax expenses

For the year ended 31 December 2020, the Company and its subsidiaries recognized income tax expenses of RMB2.163 billion, representing an increase of RMB152 million from RMB2.011 billion for the year ended 31 December 2019. The income tax expenses for the domestic operations increased by RMB54 million. The income tax expenses for the Singapore operations increased by RMB84 million.

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

For the year ended 31 December 2020, the Company and its subsidiaries achieved a net profit of RMB2.611 billion, representing an increase of RMB1.503 billion, or 135.65%, from RMB1.108 billion for the year ended 31 December 2019; the net profit attributable to equity holders of the Company was RMB2.378 billion, representing an increase of RMB1.612 billion from RMB0.766 billion for the year ended 31 December 2019.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

The profit attributable to equity holders of the Company from its domestic operations increased by RMB1,003 million, mainly because of the year-on-year decrease in domestic coal purchase prices and financial expenses. The net profit attributable to equity holders of the Company from its operations in Singapore was RMB138 million, representing an increase of RMB615 million from same period last year, mainly due to the year-on-year decrease of financial expenses, the increased profit from electricity sold and the increased government subsidies received. The profit attributable to equity holders of the Company from its operation in Pakistan in 2020 was RMB288 million, substantially remaining the same compared to the same period last year.

The Company's recorded profit from its non-controlling interests decreased to RMB233 million for the year ended 31 December 2020 from RMB342 million for the year ended 31 December 2019, mainly attributable to the decline in net profit of the Company's non-wholly owned subsidiaries.

## 2.7 Comparison of financial positions

### 2.7.1 Comparison of asset items

As of 31 December 2020, consolidated total assets of the Company and its subsidiaries were RMB449.905 billion, representing an increase of 5.06% from RMB428.250 billion as of 31 December 2019; total assets of the domestic operations increased by RMB24.823 billion to RMB409.782 billion, including a net increase of RMB18.852 billion in non-current assets, which is mainly attributable to new construction leading to an increase in assets.

As of 31 December 2020, total assets of the operations in Singapore were RMB26.866 billion, representing a decrease of RMB2.055 billion from the same period last year. Non-current assets decreased by RMB1.518 billion to RMB23.806 billion.

As of 31 December 2020, total assets of the operations in Pakistan were RMB13.257 billion, representing a decrease of RMB1.113 billion from the same period last year. Non-current assets decreased by RMB1.036 billion from last year to RMB9.053 billion.

### 2.7.2 Comparison of liability items

As of 31 December 2020, consolidated total liabilities of the Company and its subsidiaries were RMB298.288 billion, representing an increase of 0.14% from RMB297.871 billion as of 31 December 2019.

As of 31 December 2020, interest-bearing debts of the Company and its subsidiaries totaled RMB241.743 billion. The interest-bearing debts consist of long-term loans (including those maturing within a year), bonds payable (including those maturing within a year), short-term borrowings, short-term bonds payable and lease liabilities (including those maturing within a year).

As of 31 December 2020, the total liabilities of the operations in Singapore were RMB15.092 billion, representing a decrease of 10.94% from RMB16.946 billion as of 31 December 2019. As of 31 December 2020, the total liabilities of the operations in Pakistan were RMB9.732 billion, representing a decrease of 13.62% from RMB11.267 billion as of 31 December 2019.

### 2.7.3 Comparison of equity items

Excluding the impact of profit and profit appropriations, total equity attributable to the equity holders of the Company increased as of 31 December 2020, mainly because of the issuance of other equity instruments at par value of RMB25.5 billion in total with foreign currency transition differences of RMB684 million. Non-controlling interests increased by RMB195 million in 2020.

### 2.7.4 Major financial position ratios

	2020	2019
Current ratio	0.43	0.43
Quick ratio	0.39	0.37
Ratio of liability to equity holders' equity	2.30	2.74
Multiples of interest earned	1.38	1.22

Formula of the financial ratios:

Current ratio	=	$\frac{\text{balance of current assets as of the year end}}{\text{balance of current liabilities as of the year end}}$
Quick ratio	=	$\frac{(\text{balance of current assets as of the year end} - \text{net inventories as of the year end})}{\text{balance of current liabilities as of the year end}}$
Ratio of liabilities to shareholders' equity	=	$\frac{\text{balance of liabilities as of the year end}}{\text{balance of shareholders' equity} \\ \text{(excluding non-controlling interests) as of the year end}}$
Multiples of interest earned	=	$\frac{(\text{profit before tax} + \text{interest expense})}{\text{interest expenditure (inclusive of capitalized interest)}}$

The current ratio and quick ratio remained relatively unchanged as of 31 December 2020 compared to that of 31 December 2019. The ratio of liabilities to shareholders' equity as of 31 December 2020 decreased compared to that of 31 December 2019 mainly due to the increase in equity at the year end from issue of other equity instrument of face value of RMB25.5 billion. The multiples of interest earned increased mainly due to increased pre-tax profit for the year ended 31 December 2020.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

## B. LIQUIDITY AND CASH RESOURCES

### 1. Liquidity

	For the year ended 31 December		
	2020 RMB billion	2019 RMB billion	Change %
Net cash provided by operating activities	41.987	37.324	12.49
Net cash used in investing activities	-42.237	-29.034	45.47
Net cash provided by/(used in) financing activities	1.804	-11.328	115.93
Currency exchange impact	-0.739	0.063	-1,273.02
Net increase in cash and cash equivalents	0.815	-2.975	127.39
Cash and cash equivalents as at the beginning of the year	12.443	15.418	-19.30
Cash and cash equivalents as at the end of the year	13.258	12.443	6.55

For the year ended 31 December 2020, net cash provided by operating activities of the Company and its subsidiaries was RMB41.987 billion, representing an increase of 12.49% from last year, mainly attributable to the decrease of fuel cost. The net cash provided by operating activities in Singapore was RMB749 million. The net cash provided by operating activities in Pakistan was RMB1,472 million. The net cash used in investing activities was RMB42.237 billion for the year ended 31 December 2020, representing an increase of 45.47% from last year, mainly due to the increase of construction expenditures including the purchase of fixed assets, construction materials and etc. The net cash provided by financing activities was RMB1.804 billion for the year ended 31 December 2020, representing an increase of RMB13.132 billion from the net cash outflow of RMB11.328 billion in last year. This was mainly due to the increase of net financing. As of 31 December 2020, the cash and cash equivalents of the Company and its subsidiaries denominated in RMB, Singapore dollar and U.S. dollar were RMB12.201 billion, RMB777 million and RMB463 million, respectively.

As of 31 December 2020, net current liabilities of the Company and its subsidiaries were approximately RMB87.910 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 cash resources

### 2.1 Capital expenditure on infrastructure construction and renovation projects

The actual capital expenditure of the Company in 2020 was RMB45.372 billion, which was mainly used for capital construction and renovation expenditures. Regarding of capital construction, the major capital investments included RMB3.762 billion for Liaoning Clean Energy, RMB3.022 billion for Sheyang New Energy, RMB2.743 billion for Puyang Clean Energy, RMB2.727 billion for Ruijin Power, RMB2.707 billion for Shengdong Rudong Offshore, RMB2.690 billion for Zhejiang Cangnan Offshore, RMB2.629 billion for Huaneng Shandong Power Generation Co., Ltd. ("Shandong Power"), RMB2.314 billion for Shanxi Comprehensive Energy, RMB1.894 billion for Guanyun Clean Energy, RMB1.662 billion for Pinghu Offshore, RMB0.924 billion for Jiangxi Clean Energy, RMB0.906 billion for Anhui Mengcheng Wind Power, RMB0.788 billion for Jiangyin Co-generation, RMB0.764 billion for Abagaqi Clean Energy, RMB0.739 billion for

Anyang Energy, RMB0.638 billion for Diandong Energy, RMB0.609 billion for Jilin Power, RMB0.568 billion for Zhenning New Energy, RMB0.555 billion for Heilongjiang Power, RMB0.555 billion for Dalian Co-generation, RMB0.440 billion for Qingdao Co-generation, RMB0.430 billion for Luodian New Energy, RMB0.379 billion for Diandong Yuwang, and RMB3.535 billion for the rest. Besides, other expenditures including renovation expenditures were RMB7.392 billion.

The above capital expenditures are sourced mainly from internal capital, cash flows provided by 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. The Company expects to finance the above capital expenditures through internal capital, cash flows provided by operating activities, and debt and equity financing.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

The cash requirements, usage plans and cash resources of the Company are as following:

*(Unit: RMB100 million)*

<b>Capital Expenditure Project</b>	<b>Capital Expenditure Plan for 2021</b>	<b>Cash resources arrangements</b>	<b>Financing costs and note on use</b>
Thermal power projects	86.28	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Hydropower projects	0	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Wind power projects	313.82	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Coal mining projects	18.93	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Photovoltaic power projects	99.60	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Ports	0	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Technology renovation	45.44	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC

## 2.2 Cash resources and anticipated financing costs

The Company expects to finance its capital expenditure and acquisition costs primarily with internal capital, cash flow provided by operating activities, and debt and equity financing.

Good operating results and sound credit status provide the Company with strong financing capabilities. As of 31 December 2020, the undrawn banking facilities available to the Company and its subsidiaries amount to approximately RMB305.1 billion, which are granted by Bank of China, China Construction Bank and Industrial and Commercial Bank of China.

The Company completed issuances of unsecured super short-term bonds in 9 installments on February 14, February 21, April 24, May 15, October 21, November 3, November 23, December 9 and December 23 of 2020, at principal amount of RMB2 billion, 2 billion, 2 billion, 2 billion, 2 billion, 3 billion, 2 billion and 3 billion, with nominal annual interest rates of 1.7%, 1.5%, 1.2%, 1.2%, 1.3%, 1.3%, 1.4%, 1.5% and 1.4%, respectively. Each installment of the notes was denominated in RMB, issued at par value, and would successively mature in 90 days, 60 days, 60 days, 90 days, 30 days, 30 days, 30 days, 30 days, and 30 days from the value date.

The company issued perpetual bonds of RMB2 billion, RMB1 billion, RMB2.5 billion and RMB3 billion on March 23 (the first two bonds), April 23 and September 10, 2020 with coupon rate of 3.58%, 3.85%, 3.09% and 4.38%, each denominated in RMB and issued at face value with maturity of 3+N years, 5+N years, 3+N years and 3+N years from the date of issue; four tranches of unsecured medium-term notes of RMB3 billion, RMB3.5 billion, RMB2 billion and RMB1 billion on April 13, June 19, August 19 and September 16, 2020, with coupon rate of 3.18% (MTN001), 3.60% (MTN002), 3.99% (MTN003) and 4.40%, respectively, each denominated in RMB and issued at face value with maturity of 3+N years (MTN001), 3+N years (MTN002), 3+N years (MTN003), and 3+N years from the date of issue, respectively; and three tranches of insurance bonds of RMB3.57 billion, RMB0.93 billion and RMB3 billion on April 20, April 22 and August 27, 2020 with coupon rate of 4.75%, 4.75% and 4.60%, each denominated in RMB and issued at face value with maturity of 8+N years, 10+N years, and 10+N years from the date of issue.

The Company, through its subsidiary SinoSing Power, issued two tranches of secured corporate bonds of USD300 million and USD300 million on February 20, 2020 with coupon rate of 2.25% and 2.63%. The instrument was denominated in US dollars and issued at 99.653% and 99.277% of the par value with maturity of five years and ten years from the value date, respectively. The bonds are guaranteed by the Company.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

As of 31 December 2020, short-term loans of the Company and its subsidiaries were RMB66.311 billion (2019: RMB67.119 billion). Loans from banks were charged at interest rates ranging from 2.15% to 4.90% per annum (2019: 0.00% to 14.58%).

As of 31 December 2020, short-term bonds payable by the Company and its subsidiaries were RMB5.003 billion (2019: RMB9.026 billion).

As of 31 December 2020, the Company and its subsidiaries' long-term loans (including long-term loans due within one year) totaled RMB131.886 billion (2019: RMB134.023 billion), including RMB loans of RMB114.350 billion (2019: 110.947 billion), USD loans of USD1.480 billion (2019: USD1.431 billion), EUR loans of EUR11 million (2019: EUR15 million), SGD loans of SGD1.551 billion (2019: SGD2.479 billion), JPY loans of 2.266 billion yen (2019: 2.372 billion yen). Among them, US dollar loans and Singapore dollar loans are floating rate loans, and other foreign currency loans are fixed rate loans. For the fiscal year ended 31 December 2020, the annual interest rate of long-term bank borrowings is 0.75% to 6.55% (2019: 0.75% to 6.82%).

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.

Combining the current development of the power generation industry and the growth of the Company growth, the Company will make continuous efforts 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

The objective of the Company is to bring steadily growing returns to shareholders in the long run. In line with this objective, the Company follows a proactive, stable and balanced dividend policy. In accordance with the profit appropriation plan of the board of directors of the Company (subject to the approval at annual general meeting) for 2020, the Company expects to pay a cash dividend of RMB2.826 billion.

## 2.4 Maturity profile of loans and bonds

Maturity Profile	<i>(RMB100 million)</i>				
	2021	2022	2023	2024	2025
Principal amount planned for repayment	1,037.90	210.47	191.67	121.79	218.16
Interest amount planned for repayment	74.52	51.93	42.81	35.88	29.49
Total	1,112.42	262.40	234.48	157.67	247.65

Note: The amount of principle to be paid in 2021 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 concept of “innovation, coordination, green, openness, sharing,” following the requirements of constructing a clean, low-carbon, safe and efficient modern energy system, adheres to quality and efficiency as the center goal, reform and innovation as the driving force, and system and mechanism as the guarantee, take the deepening of the supply-side structural reform as the main line, coordinate energy security and green development, comprehensively promote high-quality development, and build the Company into a standardized managed, technological leading, energy saving and environment protecting, reasonable structured and excellently operated, world's leading listed power generation company with excellent corporate governance regime and outstanding market value.

The Company adheres to the new energy security strategy of “Four Revolutions, One Cooperation” as the foundation, vigorously implements the green development strategy, prioritizes quality and efficiency, adheres to both independent development and acquisition, make full use of the favorable conditions for the centralized development of renewable energy in the country's “Three-North”, coastal, southwest and part of the central China, and further build a large-scale clean energy base of “base type, clean type, complementary type, intensification, digitalization,

and standardization”, accelerates the leap-forward development of new energy, accelerates the optimization and upgrading of coal power structure, develops well-performed gas power and other clean energy power generation, and actively expand integrated energy services. The Company wishes to vigorously implement innovative development strategies, lead high-quality development with technological innovation, serve national technological strategies, adhere to the company's major needs, improve technological innovation systems and mechanisms, and promote digital transformation and focus on international development; The Company expects to vigorously implement safe development strategies, constantly lay a solid foundation for management, improve intrinsic safety, build environmental protection and safety barriers, deepen comprehensive risk management, improve risk prevention and control and emergency response mechanisms, and improve capability of risk prevention, control and resolution. The Company wishes to vigorously implement the excellent operation strategy, adheres to the orientation of promoting profitability, improving efficiency, and creating value, consolidate the foundation of operation and management, improve management efficiency, optimize the asset structure, comprehensively improve the company's modern management and control level, and vigorously promote the improvement of quality and efficiency, improve corporate governance, enhance company brand value, and earnestly fulfill social responsibilities.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

## D. TREND ANALYSIS

The Central Economic Work Conference focused on the general trend of national economic development and proposed key tasks such as strengthening the national strategic scientific and technological strength, comprehensively promoting reform and opening up, and making well efforts on carbon peak and carbon neutrality, which will help navigating the country's economic development in 2021 and a longer period of time.

In the electricity market, with comprehensive consideration of international and domestic conditions, industrial and local developments, epidemic and the uncertainty of the external environment as well as other factors, under absent of floods and other extensive, extreme climate changes, it is expected that in 2021, total electricity consumption nationwide will increase by 6% to 7%, newly installed power generation capacity for infrastructure construction will be approximately 180 million kilowatts, and utilization hours of thermal generating units will be generally consistent with or slightly lower than that in 2020.

In the coal market, the increase in electricity consumption in the whole society in 2021 may lead to increase in coal demand, while under the influence of policies such as carbon peaking and carbon neutrality, the increase in the proportion of clean energy may offset part of the increase in coal demand. As a result, the overall coal consumption level is expected to increase slightly from last year. In terms of supply, entering the "14th Five-Year Plan" period, the coal industry's capacity reduction task has been basically completed, and the continued orderly release of advanced production capacity will maintain the supply of coal at a relatively good level, and imported coal will continue to play a complementary role to domestic coal. Overall, in 2021, both ends of the supply and demand of China's coal market will see a certain growth, the fundamentals will be in a balanced state, and the price center of thermal coal will move up slightly from 2020.

In terms of the capital market, the central bank's monetary policy will maintain continuity, stability, and sustainability in 2021, and the prudent monetary policy adopted will be more flexible, accurate, reasonable and appropriate, with the objective to maintain reasonable and sufficient liquidity, and maintain the growth rate of the money supply and the scale of social financing basically matching the nominal economic growth rate. It is expected that the capital market interest rate will basically remain stable in 2021.

## E. PERFORMANCE OF SIGNIFICANT INVESTMENTS AND THEIR PROSPECTS

The Company acquired 25% equity interest in Shenzhen Energy Group for RMB2.39 billion on April 22, 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, 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 2020, Shenzhen Energy distributed RMB0.50 of cash dividend and 2 dividend shares out of every 10 shares to its shareholders, and the Company held 1,190 million shares of Shenzhen Energy by 31 December 2020. These investments brought a net profit attributable to the equity and perpetual corporate bonds holders of the Company of RMB1,009 million for the year ended 31 December 2020 under IFRS. This investment is expected to provide steady returns to the Company.

The Company held 60% direct equity interest in Sichuan Hydropower as of 31 December 2006. In January 2007, Huaneng Group increased its capital investment in Sichuan Hydropower by RMB615 million, thus reducing the Company's equity interest in Sichuan Hydropower to 49% and making Huaneng Group the controlling shareholder of Sichuan Hydropower. This investment brought a net profit attributable to the equity and perpetual corporate bonds holders of the Company of RMB143 million for the year ended 31 December 2020 under IFRS.

This investment is expected to provide steady returns to the Company.

## F. EMPLOYEE BENEFITS

As of 31 December 2020, the Company and its subsidiaries had 57,874 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.

Based on the development plans of the Company and its subsidiaries and the requirements of individual positions, together with consideration of specific characteristics of individual employees, the Company and its subsidiaries tailored various training programs for their employees on management, technology and the skills. These programs enhanced the comprehensive skills of the employees.

## G. GUARANTEE FOR LOANS AND RESTRICTED ASSETS

As of 31 December 2020, the Company provides guarantee to long-term bank loans of Tuas Power Ltd of RMB7.053 billion (2019: RMB12.418 billion).

As of 31 December 2020, pledge and mortgage loans of the Company were RMB11.105 billion.

As of 31 December 2020, short-term loans of RMB1,317 million (2019: RMB659 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 of 31 December 2020, long-term loans of RMB3.322 billion (2019: RMB3.586 billion) of the Company and its subsidiaries were secured by certain property, plant and equipment with net book value of approximately RMB3.400 billion (2019: RMB4.913 billion).

As of 31 December 2020, long-term loans of approximately RMB7.435 billion (2019: RMB7.287 billion) were secured by future electricity revenue of the Company and its subsidiaries.

As of 31 December 2020, the restricted bank deposits of the Company and its subsidiaries were RMB614 million (2019: RMB863 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 IFRS.

# MANAGEMENT'S DISCUSSION AND ANALYSIS

## I. RISK FACTORS

### 1. Risks relating to COVID-19

Although the COVID-19 epidemic has been effectively controlled, there is still the risk of localized and seasonal outbreaks, which may have a certain impact on the macro economy, electricity demand, project construction, coal production, and transportation.

The company will strictly implement normalized COVID-19 prevention and control measures, and strictly implement emergency plans to ensure that risks in relation to personnel safety, power production, project construction, material supply, and fuel supply are controllable and under control.

### 2. Risks relating to industry and market of electricity

Firstly, with the introduction of carbon peak and carbon neutral targets and related policies in China and other countries around the world, the planning and commissioning of a large number of new energy projects in the future will have a direct impact on the traditional thermal power business. Unit utilization hours may continue to decline, and we may be forced to shut down some small units as results of policy requirements and actual operation conditions. Other related policies restricting thermal power may also have a negative impact on the company's domestic and overseas thermal power business.

Secondly, the positioning of coal-fired power plants in China will gradually shift from electricity-based power sources to power-adjusted power sources. At present, the lack of a capacity recovery cost mechanism, the imperfection of the auxiliary service market, and the unilateral price reduction of the electricity market have restricted the effective channeling of power generation costs and increased the operating risks of the thermal power business.

Thirdly, in the future, some regions in China will implement a more stringent "control on the volume and intensity of energy consumption" policy, pursuant to which some high-energy-consuming users will be limited in power consumption, and the total amount of regional coal consumption will be limited, which will continue to affect thermal power generation.

Fourthly, as the reform process of China's power market is further accelerated, the scale of direct transactions continues to expand, spot market pilots are fully promoted, and new energy sources have begun to achieve parity and enter the market, UHV transmission will have an impact on the power market in developed regions, expected to cause more intense market competition. At the same time, the proportion of the company's market transaction electricity will continue to expand, and there is a downside risk in the settlement of electricity prices.

The Company will use coal-fired power as a stabilizer and ballast for power supply, while accelerating the leapfrog development of new energy and optimizing, adjusting the company's energy structure, accelerate the optimization and upgrading of coal power structure, and through elimination, replacement and transformation, push development of clean and efficient coal power, flexible peak shaving, heat, power and cooling polygeneration, sludge coupling power generation, and integrated energy services. The Company plans to actively participate in market construction and play a role in stabilizing the market.

### 3. Risks relating to fuel procurement market

The first risk relates to the domestic coal market. The safety supervision and environmental protection policies of the main coal producing areas, mine disasters, and severe weather have a great impact on coal supply. At the same time, large coal companies have merged and reorganized, with coal production capacity continuing to be concentrated in Shanxi, Shaanxi, West of Inner Mongolia and other regions, further weakening the bargaining capability of thermal power companies.

The second risk relates to the international coal market. After the initial production cut, the supplementary function of the domestic market may be passively reduced.

Thirdly, in 2021, with the recovery of the global economy, China's macro-economy continued to improve, and coal consumption will be relatively large, which had a greater impact on the supply of thermal coal. At the same time, with the rapid development of clean energy, the peak shaving role of thermal power has been further strengthened, coupled with the advancement of the power spot market, it has become more difficult to forecast the demand of power generation, and the uncertainty of fuel procurement has increased.

The Company will closely follow changes in the coal market, strengthen the interpretation and judgment of policies and market conditions, continue to improve the company's fuel intensification and lean management and control capability, build a long-term stable supplier team, tap the source of resources, reduce procurement costs, and ensure fuel stability supply.

#### **4. Risks relating to environmental protection policies**

The newly-built units of the Company's coal-fired power plants are equipped with advanced technology and powerful flue gas purification systems. Other units have also completed ultra-low emission retrofits in accordance with the requirements of the Chinese government, which made them adaptable to fluctuations in weather conditions, fuel quality, electric heating load, etc. Our units has passed the inspection of the local environmental protection department, and has been recognized by the energy regulatory agency. According to the current status and needs of ecological civilization construction,

the Chinese government is constantly improving and deepening environmental protection policies in key areas including but not limited to the Beijing-Tianjin-Hebei, Yangtze River Economic Belt, and Pearl River Delta, and proposes new, more stringent measures in water protection and dust control. The Company's departments at all levels are taking measures to carefully study and judge the trend of social public opinion, actively follow up the concerns of environmental protection departments, carefully select advanced and applicable technical solutions, and have reached achievements on the improvement of the wastewater treatment system, build closed facilities for coal yards, and improve the integration of ash and slag, with various environmental risks responded to and effectively resolved in a timely manner.

#### **5. Interest rate risks**

In terms of the capital market, the central bank's monetary policy will maintain continuity, stability, and sustainability in 2021, and the prudent monetary policy adopted will be more flexible, accurate, reasonable and appropriate, with the objective to maintain reasonable and sufficient liquidity, and maintain the growth rate of the money supply and the scale of social financing basically matching the nominal economic growth rate. It is expected that the capital market interest rate will basically remain stable in 2021. Given the Company has incurred only a relative small amount of debts denominated in foreign currencies, the fluctuation in interests applicable to foreign currencies do not have material impact on the Company as a whole.

The company will pay close attention to changes in domestic and foreign capital markets, and on the premise of ensuring capital demand, timely adjust financing strategies, rationally select financing varieties, reduce the risk of interest rate fluctuations, and strive to control financing costs.

# CORPORATE GOVERNANCE REPORT

The Company has been consistently stressing the importance of corporate governance. Through years of exploration and practice, it has gradually built up a sound and regulated corporate governance structure and an effective system of rules that caters for the development of the Company. The Company insists on adopting the principle of “maximizing the benefits of the Company and all shareholders” as the starting point and treats all shareholders fairly in order to strive for the generation of long-term, stable and growing returns for shareholders.

The Company has complied with the provisions of the Corporate Governance Code in Appendix 14 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the “Listing Rules”) during this Reporting Period. In 2020, pursuant to the requirements of the Hong Kong Stock Exchange’s Environmental, Social and Governance Reporting Guidelines, the Company attaches great importance to organizing and arranging for the preparation and disclosure of the Environmental, Social and Governance Report with good quality to be completed well on time, which further enhanced the good reputation of the Company in the capital market. The Company’s Environmental, Social and Governance Report for the year 2020 will be published on the website of the Company and the website of the Hong Kong Stock Exchange in April 2021.

## (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:

### (1) Enhancing and improving corporate governance

As a public company listed in three markets both domestically and internationally, the Company is subject to the regulations of the securities regulatory authorities of the three listing venues and the supervision of investors at large. Since its establishment, the Company has been completing and improving its modern governance system and capacity in accordance with the requirements of modern enterprise systems. We have established and improved a corporate governance structure consisting of the shareholders’ general meeting, the Board, the Supervisory Committee, and the management team and built an operating system where those granted with decision-making power, supervisory power, and management powers have clearly-defined powers and responsibilities, perform their duties, check and balance each other, and coordinate with each other, 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, and the efficiency and compliance of the operation and management power of the management team. Through years of exploration and practice, it has gradually built up a sound and regulated corporate governance structure and an effective system of rules that caters for the development of the Company.

In 2020, faced with a complex market economic situation, the Board of the Company always adhered to the mission of becoming a “three-colour company”. We continuously improved the modern governance system and enhanced our governance capabilities. We actively practiced the development philosophy of “innovation, coordination, green, openness, and sharing”, adhered to the guidelines of our strategies, persevered in reform and innovation, pro-actively researched and judged changes in power, coal, and capital markets, and consolidated risk prevention. We diligently pushed forward key tasks such as structural adjustment, transformation and upgrade, dealing with stagnant enterprises and enterprises with difficulties, enhancing quality and efficiency, market competition, and capital operations. We continued to promote high-quality development in accordance with the requirements of building a clean, low-carbon, safe and efficient modern energy system. The Company has always adhered to lawful corporate governance and compliant operations. We closely monitored new changes in regulatory laws and regulations in the place of listing to grasp the regulatory trends, understand the regulatory intent, and effectively implement the new regulatory requirements. The Company actively safeguards the interests of shareholders. We earnestly fulfilled our commitments under Shareholders Return Plan for the Next Three Years (2018 to 2020) of Huaneng Power International, Inc. by completing the payment a high percentage of dividends on time and in full. The Company continuously strengthened the restraint on controlling shareholders to protect the legitimate rights and interests of minority investors. Institutional investors are encouraged to take part in

the Investor Reception Day to participate in corporate governance. The Company’s governance continued to improve. The Company unswervingly fulfilled social responsibility. During the COVID-19 period, we made careful arrangements, took the fight calmly, raced against the clock to assist Hubei Province, fought against the epidemic and guaranteed supply and grasped epidemic control and prevention, production and operation at the same time to ensure that work and production were resumed in a safe and orderly manner and contributed to fight and win the battle against epidemic across the country.

In 2020, all directors and supervisors of the Company has demonstrated dedication and diligence in carrying out a series of tasks in a scientific and efficient manner, including the re-election and election of the Board of Directors and Supervisors, personnel changes of directors, supervisors, and senior management, assessment and issuance of overseas debt, and on-site inspections by independent Directors. During the Reporting Period, the Company held sixteen board meetings, seven meetings of the Supervisory Committee, seven meetings of the Audit Committee, one meeting of the Strategy Committee, six meetings of the Nomination Committee and one meeting of the Remuneration and Appraisal Committee to consider the Company’s major personnel appointment and removal, capital operations, debt financing, internal control, risk management, profit distribution, and provision for significant asset impairment, providing a strong organizational guarantee for the business development of the Company.

# CORPORATE GOVERNANCE REPORT

In 2020, with the strong support of all Shareholders, the Company achieved expected results for all of its tasks. With a sound decision-making philosophy and a complete corporate governance system, the Company once again won the recognition of the capital market, and won the China Securities Golden Bauhinia Award for the “Outstanding Listed Companies in the 30th Anniversary of Capital Market”; Award for 2020 “Excellent Issuer of Corporate Bonds” granted by the Shanghai Stock Exchange, and Award for “Helmsman of Digital Economy” granted by Securities Daily, Award for 2020 “Social Responsibility Reporting Leader” granted by the China Social Responsibility 100 Forum, and the China Securities Golden Bauhinia Award for the “Best Board Secretaries of the Listed Companies”, etc..

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, managers of various departments and relevant personnel, which is responsible for reviewing the Company’s regular reports. The Company has implemented the system of holding regular information disclosure meetings every Monday, chaired by the Board Secretary who will hear report on the Company’s important matters of the week, thereby warranting the Company’s performance of the relevant information disclosure obligations. The Company has successively formulated and implemented the relevant information disclosure system, and has made timely amendments thereto according to regulatory requirements. The current systems which have been implemented include the Measures on Information Disclosure Management, the Measures on Connected Transactions Management, the Management Measures of Insider Information, the Rules on Investor Relations Management, the Rules on the Work of the Information Disclosure Committee and the Rules on the Annual Report Information Disclosure Significant Errors Accountability, etc.. 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.

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 2020, 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, to strengthen accounting and accounts supervision, and to truthfully and fairly reflect the financial position, operating results and cash flow, the Company has formulated the Measures on Accounting, the Administrative Measures for Financial and Accounting Reports, the Measures On Basic Construction of Financial Management, the Provisions on Fixed Assets Management, Lists of Fixed Assets, the Provisions on Cost Management and Regulations on Management of Joint Examination of Final Accounts. 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 authenticity and completeness of the financial reports.
2. In regard to fund management, the Company has successively formulated a number of management measures including the Measures on Financial 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, the Rules on the Management of Bills of Exchange, the Measures on Implement at of Fund Raising, the Measures on the Management of Derivative Financial Product Transactions, the Rules on the Implementation of External 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.

# CORPORATE GOVERNANCE REPORT

## (IV) Risk Management and Internal Control

The Board of Directors attaches great importance to management of enterprise risk and internal control, thus the Company establishes a system of risk monitoring and internal control, and keeps 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 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 (including organization, systems procedures and methodologies, etc.) 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 2020, the Strategy Committee of the Board of Directors held meeting to consider and approve the Company's Overall Risk Management Report for the Year 2020. During the Reporting Period, the Company has complied with the Corporate Governance Code and the relevant provisions on risk management and internal control.

In 2020, 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.

The Company fully collated the potential internal and external risks and various business processes and compiled the Internal Control Handbook, and in the sixth edition of the Internal Control Handbook it 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), fully describes the policy and principles of the Company, clarifies the working procedure and responsibility of each job position in the Company and regulates the standard procedure for dealing in the businesses of the Company, thus setting out clear procedures for its system. 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. It also builds up three levels of assessments (the Company, the regional branches, the grass roots units) through the internal control management system to track the implementation of control in real time. 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 inside the Company.

# CORPORATE GOVERNANCE REPORT

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. The Company improved constantly the internal control examination system, formulated the “Regulations on the Internal Control Review and Evaluation”, and conducted the assessment on the internal control targets annually, and appraisal results are timely published to draw all levels’ attention to the quality of the internal control work so as to achieve effectively the objective of strengthening management through internal control.

Based on a comprehensive assessment, the Board of Directors consider that, as of 31 December 2020, 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 guidance) and Section 404 of the Sarbanes-Oxley Act. Besides, the Company has not found any material defect in non-financial reporting about internal control.

## (B) SECURITIES TRANSACTIONS BY DIRECTORS

As the Company is listed in three jurisdictions, the Company has strictly complied with the relevant binding provisions on securities transactions by directors imposed by the regulatory authorities of the US, Hong Kong and China and we insist on the principle of complying with the strictest provision, which is, implementing the strictest provision among three places. 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 10 to the Listing Rules as the model code for securities dealings by Directors of the Company, namely, Management Rules regarding the Company’s Securities Information and Trading. The Company has also formulated and 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.. The model codes for the trading of securities by the Company’s Directors include: trading the Company’s shares strictly in accordance with the stipulations under the Company Law and relevant regulations, prohibiting those who are in possession of securities transaction insider information using insider information in securities trading; and setting out detailed rules for those who are in possession of insider information. Following a specific enquiry on all the Directors and senior management of the Company, all the Directors and senior management currently do not hold any shares in the Company and there is no material contract in which the Directors and senior management directly or indirectly have material interests.

## (C) BOARD OF DIRECTORS

The Board of Directors of the Company should comprise of 15 members. Of the members of the Tenth Session of the Board of Directors, Mr. Zhao Keyu is the Chairman, and Mr. Zhao Keyu (prior to 5 March 2020, Mr. Shu Yinbiao) and Mr. Zhao Ping are the Executive Directors of the Company; Mr. Huang Jian, Mr. Wang Kui, Mr. Lu Fei, Mr. Teng Yu, Mr. Mi Dabin and Mr. Li Haifeng (prior to 22 December 2020, Mr. Guo Hongbo), Mr. Cheng Heng and Mr. Lin Chong are the Non-executive Directors; and there are five Independent Non-executive Directors, namely Mr. Xu Mengzhou, Mr. Liu Jizhen, Mr. Xu Haifeng, Mr. Zhang Xianzhi and Mr. Xia Qing, comprising one third of the members of the Board.

On 5 March 2020, Mr. Shu Yinbiao resigned as the Chairman and Director of the Company due to work requirements, and Mr. Zhao Keyu was elected as the Chairman of the Company by the Board. The Board appointed Mr. Shu Yinbiao as the honorary chairman of the Company.

During the Reporting Period, the Board of Directors of the Company held sixteen meetings including regular meetings and ad hoc meetings. For details, please see related announcements.

Details of the attendance of directors at the Board meetings are as follows:

Name	Number of meeting to be attended	Number of meetings attended in person	Number of meetings attended by proxy	Attendance rate (%)
<b>Executive Directors</b>				
Zhao Keyu	14	14	0	100%
Zhao Ping	9	9	0	100%
<b>Non-executive Directors</b>				
Huang Jian	16	16	0	100%
Wang Kui	9	7	2	77.78% (Attendance by proxy rate 22.22%)
Lu Fei	9	8	1	88.89% (Attendance by proxy rate 11.11%)
Teng Yu	9	8	1	88.89% (Attendance by proxy rate 11.11%)
Mi Dabin	16	15	1	93.75% (Attendance by proxy rate 6.25%)
Li Haifeng	2	2	0	100%
Cheng Heng	16	16	0	100%
Lin Chong	16	16	0	100%
<b>Independent Non-executive Directors</b>				
Xu Mengzhou	16	16	0	100%
Liu Jizhen	16	14	2	87.50% (Attendance by proxy rate 12.50%)
Xu Haifeng	16	15	1	93.75% (Attendance by proxy rate 6.25%)
Zhang Xianzhi	16	15	1	93.75% (Attendance by proxy rate 6.25%)
Xia Qing	9	9	0	100%
<b>Resigned Directors</b>				
Shu Yinbiao	2	2	0	100%
Wang Yongxiang	7	7	0	100%
Guo Hongbo	14	12	2	85.71% (Attendance by proxy rate 14.29%)
Yue Heng	7	7	0	100%

# CORPORATE GOVERNANCE REPORT

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 if 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. Minutes have been taken for all the meetings and filed at the Office of the Board of Directors of the Company.

Moreover, the Independent Non-executive Directors of the Company have submitted their annual confirmation letters of 2020 in relation to their independence according to the requirements of the Listing Rules.

The Directors of the Company complied 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 the Chairman office meetings and the President office 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.

The Directors who attended the First Extraordinary General Meeting for year 2020 of the Company held on 5 March 2020 were Huang Jian (Director), Mi Dabin (Director), Yue Heng (Independent Director, chief member of the Audit Committee of the Ninth Session of the Board of Directors), Xu Mengzhou (Independent Director), Liu Jizhen (Independent Director, chief member of the Nomination Committee of the Ninth Session of the Board of Director) and Xu Haifeng (Independent Director). The Directors who attended the Annual General Meeting for year 2019 of the Company held on 16 June 2020 were: Zhao Keyu (chairman), Huang Jian (Director), Xu Mengzhou (Independent Director, chief member of the Remuneration and Appraisal Committee of the Tenth Session of the Board of Director) and Xu Haifeng (Independent Director). The Directors who attended the Second Extraordinary General Meeting for year 2020 of the Company held on 22 December 2020 were: Zhao Keyu (chairman), Zhao Ping (Director), Huang Jian (Director), Teng Yu (Director), Guo Hongbo (Director), Xu Mengzhou (Independent Director, chief member of the Remuneration and Appraisal Committee of the Tenth Session of the Board of Director) and Xu Haifeng (Independent Director).

## (D) CHAIRMAN AND PRESIDENT

The Company shall have a Chairman and a President who shall perform their duties respectively according to the Articles of Association. On 5 March 2020, Mr. Shu Yinbiao resigned as the Chairman of the Company due to work requirements, and Mr. Zhao Keyu was elected as the Chairman of the Company by the Board.

From 2019 to 4 March 2020, Mr. Zhao Keyu served as the President of the Company. On 5 March 2020, Mr. Zhao Keyu resigned as the President of the Company due to work requirements, and Mr. Zhao Ping was elected as the President of the Company by the Board of the Company.

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

## (E) 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 (including 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 (including six years) according to the relevant provisions of the CSRC.

# CORPORATE GOVERNANCE REPORT

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

<b>Names of Non-executive Directors</b>	<b>Term of office</b>
Huang Jian	2008.8.27-2021
Wang Kui	2020.6.16-2021
Lu Fei	2020.6.16-2021
Teng Yu	2020.6.16-2021
Wang Yongxiang	2017.6.13-2020.6.16
Mi Dabin	2014.9.18-2021
Guo Hongbo	2012.2.21-2020.12.22
Li Haifeng	2020.12.22-2021
Cheng Heng	2017.6.13-2021
Lin Chong	2017.6.13-2021

## (F) 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 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 total remuneration, after examined by the Remuneration and Appraisal Committee, was then submitted to the Board of Directors. The Executive Directors have entered into the director service contracts in compliance with the requirements of the Hong Kong Stock Exchange.

Members of the Ninth session of the Remuneration and Appraisal Committee comprised six directors. Members of the Remuneration and Appraisal Committee are Mr. Zhang Xianzhi, Mr. Guo Hongbo, Mr. Cheng Heng, Mr. Yue Heng, Mr. Liu Jizhen and Mr. Xu Haifeng, of whom Mr. Zhang Xianzhi, Mr. Yue Heng, Mr. Liu Jizhen and Mr. Xu Haifeng are Independent Non-executive Directors. Mr. Zhang Xianzhi acted as the Chief Member.

Members of the Tenth session of the Remuneration and Appraisal Committee comprised seven directors. Members of the Remuneration and Appraisal Committee are Mr. Xu Mengzhou, Mr. Zhao Ping, Mr. Cheng Heng, Mr. Guo Hongbo (subsequently substituted by 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 acts as the Chief Member.

The operation of the Remuneration and Appraisal Committee under the Board of Directors properly follows the Detailed Rules on the Work of the Remuneration and Appraisal Committee. The first meeting for 2020 was convened on 30 March 2020, at which the Report of Total Wage Expenses was reviewed and the Company's arrangement for the total wage in 2020 was approved. In the new financial year, the Remuneration and Appraisal Committee will carry out its work in a timely manner pursuant to the above rules on work according to the actual situation.

During the Reporting Period, the attendance of 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
2020 First Meeting of the Remuneration and Appraisal Committee of the Ninth Session of the Board of Directors	2020.3.30	Zhang Xianzhi, Guo Hongbo, Cheng Heng, Yue Heng, Liu Jizhen, Xu Haifeng	/

## (G) 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 Committee operates normally under the Detailed Rules on the Work of the Nomination Committee 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 is reasonable and meets relevant regulation 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 was appointed by the Board and the candidates for the Vice President and management were nominated by the President. Such nominations, after examination of the relevant qualification by the nomination Committee, will be submitted to the Board of Directors.

# CORPORATE GOVERNANCE REPORT

The Nomination Committee of the Ninth session of the Board of Directors comprised 6 members: Mr. Liu Jizhen, Mr. Mi Dabin, Mr. Lin Chong, Mr. Yue Heng, Mr. Xu Mengzhou, and Mr. Zhang Xianzhi, of which Mr. Liu Jizhen, Mr. Yue Heng, Mr. Xu Mengzhou and Mr. Zhang Xianzhi are Independent Non-executive Directors. Mr. Liu Jizhen acted as the Chief Member.

The Nomination Committee of the Tenth session of the Board of Directors comprises 7 members: Mr. Liu Jizhen, Mr. Zhao Keyu, Mr. Mi Dabin, Mr. Lin Chong, Mr. Xu Mengzhou, Mr. Zhang Xianzhi and Mr. Xia Qing, of which Mr. Liu Jizhen, Mr. Xu Mengzhou, Mr. Zhang Xianzhi and Mr. Xia Qing are Independent Non-executive Directors. Mr. Liu Jizhen acts as the Chief Member.

<b>Name of meeting</b>	<b>Date of meeting</b>	<b>Members who attended the meeting in person</b>	<b>Members who attended the meeting by proxy</b>
2020 First Meeting of the Nomination Committee of the Ninth Session of the Board of Directors	2020.1.19	Liu Jizhen, Mi Dabin, Lin Chong, Yue Heng, Xu Mengzhou, Zhang Xianzhi	/
2020 Second Meeting of the Nomination Committee of the Ninth Session of the Board of Directors	2020.3.4	Liu Jizhen, Mi Dabin, Lin Chong, Yue Heng, Xu Mengzhou, Zhang Xianzhi	/
2020 Third Meeting of the Nomination Committee of the Ninth Session of the Board of Directors	2020.3.30	Liu Jizhen, Mi Dabin, Lin Chong, Yue Heng, Xu Mengzhou, Zhang Xianzhi	/
2020 Fourth Meeting of the Nomination Committee of the Ninth Session of the Board of Directors	2020.5.21	Liu Jizhen, Mi Dabin, Lin Chong, Yue Heng, Xu Mengzhou, Zhang Xianzhi	/
2020 First Meeting of the Nomination Committee of the Tenth Session of the Board of Directors	2020.8.17	Liu Jizhen, Zhao Keyu, Mi Dabin, Lin Chong, Xu Mengzhou, Zhang Xianzhi, Xia Qing	/
2020 Second Meeting of the Nomination Committee of the Tenth Session of the Board of Directors	2020.11.30	Liu Jizhen, Zhao Keyu, Mi Dabin, Lin Chong, Xu Mengzhou, Zhang Xianzhi, Xia Qing	/

## (H) AUDITORS' REPORT AND REMUNERATION

KPMG and KPMG Huazhen LLP were appointed as the overseas and domestic auditors of the Company for 2018, respectively.

For the year of 2019 and 2020, Ernst & Young was appointed as the Company's Hong Kong auditor, and Ernst & Young Hua Ming LLP was appointed as the Company's domestic auditor and U.S. 20-F annual auditor, respectively. The audit fees, audit-related fees, tax compliance services fees and other fees for the twelve months ended 31 December 2020 were RMB28.19 million, RMB1.87 million, RMB0.65 million and RMB1.02 million, respectively.

## (I) 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 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-party 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 of the Board of Directors of the Company shall comprise five independent non-executive Directors. Members of the Audit Committee of the Ninth Session of the Board of Directors comprised five independent non-executive Directors, namely Mr. Yue Heng, Mr. Xu Mengzhou, Mr. Liu Jizhen, Mr. Xu Haifeng and Mr. Zhang Xianzhi respectively. Mr. Yue Heng acted as the Chief Member.

Members of the Audit Committee of the Tenth Session of the Board of Directors comprise 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 acts as the Chief Member.

During the Reporting Period, the Audit Committee held seven meetings. As per Audit Committee's duties, 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.

# CORPORATE GOVERNANCE REPORT

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

<b>Name of meeting</b>	<b>Date of meeting</b>	<b>Members who attended the meeting in person</b>	<b>Members who attended the meeting by proxy</b>
2020 First Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2020.3.6	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2020 Second Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2020.3.30	Yue Heng, Xu Mengzhou, Xu Haifeng, Zhang Xianzhi	Liu Jizhen
2020 Third Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2020.4.20	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2020 First Meeting of the Audit Committee of the Tenth Session of the Board of Directors	2020.8.17	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/
2020 Second Meeting of the Audit Committee of the Tenth Session of the Board of Directors	2020.9.7	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/
2020 Third Meeting of the Audit Committee of the Tenth Session of the Board of Directors	2020.10.26	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/
2020 Fourth Meeting of the Audit Committee of the Tenth Session of the Board of Directors	2020.11.4	Zhang Xianzhi, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Xia Qing	/

## **(J) RESPONSIBILITY ASSUMED BY THE DIRECTORS IN RELATION TO THE FINANCIAL STATEMENTS**

The Directors of the Company confirm that they shall assume the relevant responsibility 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 also warrant 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 reports on pages 121 to 127.

## **(K) SENIOR MANAGEMENT'S INTEREST IN SHARES**

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

## **(L) 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 Directors 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 of Directors.

# CORPORATE GOVERNANCE REPORT

Members of the Strategy Committee of the Ninth Session of the Board of Directors comprised five directors, namely, Mr. Huang Jian, Mr. Wang Yongxiang, Mr. Liu Jizhen, and Mr. Xu Haifeng, of whom Mr. Liu Jizhen and Mr. Xu Haifeng are Independent Non-executive Directors. During the period from 30 January 2019 to 4 March 2020, Mr. Shu Yinbiao assumed the ad hoc role of the Chief Member of the Strategy Committee. Mr. Zhao Keyu assumes the roles of the chief Member of the Strategy Committee since 5 March 2020.

Members of the Strategy Committee of the Tenth Session of the Board of Directors comprise seven directors, namely, Mr. Zhao Keyu, Mr. Zhao Ping, Mr. Huang Jian, Mr. Wang Kui, 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 acts as the Chief Member.

On 14 August 2020, the Strategy Committee considered and approved the Comprehensive Risk Management Report of Huaneng Power International, Inc. for 2020 and submitted the report to the Audit Committee of the Board of the Company on 17 August 2020 for review.

The risk management work operates effectively to cover all kinds of risks, thus continuously strengthening and improving the internal control and risk management mechanism of the Company

During the Reporting Period, the attendance of meetings 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
2020 First Meeting of the Strategy Committee of the Tenth Session of the Board of Directors	2020.8.14	Zhao Keyu, Zhao Ping, Huang Jian, Wang Kui, Lu Fei, Liu Jizhen, Xu Haifeng	/

## (M)TRAININGS FOR DIRECTORS AND SENIOR MANAGEMENT

Each year the Company arranges for its Directors and Supervisors to attend trainings arranged by regulatory authorities. During the Reporting Period, the Directors and Supervisors of the Company attended the 2020 Training for Directors and Supervisors organized by CSRC Beijing Regulatory Bureau. The Secretary to the Board of the Company attended the Continuing Development Training for Board Secretaries and certain seminars held by the Hong Kong Institute of Chartered Secretaries.

For every six months, the Company holds a meeting where legal counsels of all three listing jurisdictions meet with the Audit Committee, make presentations to all the Independent Directors of the Audit Committee about latest updates on regulatory requirements, application of the Company's corporate systems and rules and the compliance by the Company with regulations of the listing places.

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 2020 to 31 December 2020:

Name of director/supervisor	Type of Continuing Professional Development Plan
Zhao Keyu	A, B
Zhao Ping	A, B
Huang Jian	A, B
Wang Kui	A, B
Lu Fei	A, B
Teng Yu	A, B
Mi Dabin	A, B
Li Haifeng	A, B
Cheng Heng	A, B
Lin Chong	A, B
Yue Heng	A, B
Xu Mengzhou	A, B
Liu Jizhen	A, B
Xu Haifeng	A, B
Zhang Xianzhi	A, B
Xia Qing	A, B
Wong Yongxiang	A, B
Guo Hongbo	A, B
Li Shuqing	A, B
Mu Xuan	A, B
Ye Cai	A, B
Gu Jianguo	A, B
Zhang Xiaojun	A, B
Xu Jianping	A, B
Ye Xiangdong	A, B
Zhang Mengjiao	A, B
Zhang Xiancheng	A, B

Notes:

A: attending briefings and/or seminars.

B: reading seminar materials and updates on the latest developments of the 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. Each of the Directors and Supervisors of the Company have received more than 15 hours of trainings in 2020.

The Company attaches great significance to the training and continuing professional development of its senior management personnel, and actively attends all kinds of training programs held by relevant State authorities, industry administrative authorities and associations.

## (N) TO CONVENE EXTRAORDINARY GENERAL MEETINGS

When any shareholders holding, individually or in aggregate, ten percent or more of the shares of the Company request, the Board shall convene an extraordinary general meeting within two months.

# CORPORATE GOVERNANCE REPORT

The shareholders holding, individually or in aggregate, ten percent or more of the Company's shares shall submit a written request to the Board for convening of an extraordinary general meeting, which shall specify the agenda of such meeting. Upon receipt of the said written request, the Board shall convene an extraordinary general meeting as soon as possible. If the Board does not send any notice of convening the meeting within 30 days upon receipt of the written request, the requesting shareholders may convene the meeting on their own within four months upon the Board's receipt of the request. The procedures for convening such a meeting shall be as close to the procedures adopted by the Board as possible.

## (O) TO MAKE PROPOSALS TO THE GENERAL MEETING

Any shareholder holding, individually or in aggregate, three percent or more of the total voting shares of the Company may, no later than ten days before a shareholders' meeting is held, submit provisional proposals to the Board in writing. The Board shall send out a supplementary meeting notice of details of such proposals within two days of the receipt thereof.

Any shareholder holding, individually or in aggregate, one percent or more of the total issued shares of the Company may propose candidates for independent directors for election at the shareholders' meeting.

## (P) 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.

## (Q) 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

## (R) INSURANCE FOR DIRECTORS

The Company has renewed its Directors' Liability Insurance policy of US\$10 million in 2020.

## (S) 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

## (T) MAJOR CHANGES IN THE ARTICLES OF ASSOCIATION

Nil.

# 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 2020 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 2020.

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 by 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 power plants throughout China by making use of modern technology and equipment and financial resources available domestically and internationally. In October 1994, the Company completed its initial global public offering of 1,250,000,000 overseas listed foreign shares (“Foreign Shares”), and was 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 Hong Kong Stock Exchange by way of introduction (Stock Code: 902). Later in March, the Company 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) on the Shanghai Stock Exchange (“SSE”), of which 250,000,000 domestic public shares were listed on the SSE. In December 2010, the Company completed the non-public 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 approximately 497.7 million A shares. Currently, the total share capital of the Company amounts to approximately 15.7 billion shares. As at 31 December 2020, the Company’s controlled installed capacity was 113,357 MW.

# SOCIAL RESPONSIBILITY REPORT

Since its incorporation, the Company has been committed to providing adequate, reliable and environmentally friendly power and high-quality energy services for the society, as well as to system, technology and management innovations. The Company has been 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.

## 2. Corporate Governance

As a public company listed in three stock exchanges both domestic and overseas, the Company has been subject to regulation by securities regulatory authorities of the three domestic and overseas places of listing, and supervision from its vast shareholders. The Company has highly valued the importance of corporate governance by enhancing its corporate governance system, which comprises the general meetings, the Board, the Supervisory Committee and the operation team. It has established an operating mechanism with clear terms of reference among decision authority, supervisory authority and operation authority to enable each of them to perform their respective liabilities subject to balance and coordination among the same parties, so that the right of the Board to make decision over material issues and the right of the Supervisory Committee to supervise relevant matters can be effectively exercised to ensure the operation team can deal with operational issues in an effective way. Through years of exploration and practices, the Company has gradually formulated a regulated, efficient and enhanced corporate governance structure, and also

established a sound and effective system that suits the own development needs of the Company. In 2020, the Company successfully completed the general election of the Board of Directors and the Board of Supervisors and the election of various special committees. The Company appointed an honorary chairman of the Board of Directors and added deputy general manager, chief engineer, chief economist and other senior management to further enrich the management team. It organized the annual “three meetings” and fully performed the duties of the Shareholders’ Meeting, the Board of Directors and the Supervisory Committee, which provided strong guarantee for the scientific decision-making and compliance operation of the Company.

The Company has been consistently treating all shareholders on a fair basis, and striving for generating long-term, stable and increasing returns for shareholders. The Company has been highly recognized by regulatory authorities and the capital markets by virtue of its regulated integrity, professional transparency and respect for shareholders. The Company continued to strengthen investor relations management, actively responded to SSE’s inquiries and investor concerns, made timely, accurate and complete information disclosures and completed 360 press releases and announcements both domestically and internationally throughout the year. The Company published regular reports and ESG reports of high quality and issued sustainability reports for 11 consecutive years. In 2020, the Company won the China Securities Golden Bauhinia Award for the “Outstanding Listed Company at the 30th Anniversary of the Capital Market”, “Excellent Issuer of Corporate Bonds”, “Helmsman of Digital Economy” and “Best Board Secretaries of Listed Company” Awards. The Company was also shortlisted in the “List of Listed Companies with Generous Returns” and “List of Listed Companies with Sincere Returns”.

## II. OPERATION RESPONSIBILITY OF THE COMPANY

The Company solidly promoted comprehensive budget management. The Company strengthened the study and analysis of the external environment and market situation, set budget targets scientifically and gave full play to the functions of budget management leading, procedure control and assessment guidance. Making full use of modern information technology, the Company optimized and improved the budget information system and intensified monitoring of the operation of principal businesses to further enhance the Company's operational management and control capabilities.

Despite the adverse market environment, the marketing and sales work was improved. Overcoming the downward pressure on electricity demand amid the pandemic, the Company conducted in-depth research and analysis of the electricity market, increased operational analysis and supervision and guidance, and pushed for higher electricity and stable tariffs after the pandemic. By vigorously exploring the heat supply market, the Company accomplished a supply of 263 million GJ of heat throughout the year, achieving a year-on-year growth.

The Company's control over fuel costs was effective. The Company put strict requirements on fuel procurement management and strengthened the foundation of long-term coal supply and price control, thereby effectively control the purchase cost, reducing the unit price of standard coal purchase by RMB47.9/tonne.

The Company strictly controlled financing costs. In the face of the severe situation, the Company seized market opportunities and effectively leveraged capital protection and cost reduction. The balance of interest-bearing liabilities decreased by RMB4.138 billion as compared with the beginning of the year, with average cost decreasing by 0.35 percentage point as compared with the beginning of the year. The finance fees was RMB2.185 billion lower than the annual budget. The Company successfully issued USD600 million of senior bonds, with a comparable low financing cost for the same period. The Company made good use of policies and borrowed RMB3 billion from China Development Bank for a special loan to resume work and production at an interest rate of 2.3%, the lowest in the same period.

The Company improved the management of overseas assets. The Company actively implemented the "Belt and Road" initiative, insisted on international development, and strengthened risk prevention and control and process control of overseas projects. The Company revised and improved the Regulations on Supervision and Management of Overseas Assets Operation and other systems to implement risk prevention measures for overseas operation, strengthened the supervision of the operation of Singapore Tuas Company, formulated and implemented a plan to "stabilize operation, prevent risks and promote development" and promoted the improvement of operation control from multiple angles and in all aspects. In 2020, against the backdrop of shrinking electricity demand in the Singapore market, Tuas Power achieved a 1.1% year-on-year growth in electricity generation and a profit of RMB131 million, representing a year-on-year increase of RMB700 million, turning a loss into a profit. It further strengthened the management foundation of the Sahiwal project in Pakistan, continuously improved the safety production management system, enhanced local policies and market research, tightened the focus on key aspects of operation and management and further improved the level of refined management, resulting in the best-ever profit level.

# SOCIAL RESPONSIBILITY REPORT

## III. SAFETY RESPONSIBILITY OF THE COMPANY

The Company has always prioritized safety development. We established the safety concept that “safety is credibility, safety is efficiency, safety is competitiveness, and safety responsibility is of the utmost importance”, and made every effort to ensure safe and stable power supply to the society and the power grid. The Company attaches great importance to the personal safety and occupational health of employee. We strengthened safety awareness and provided proper safety protection to effectively ensure safe production.

The Company ensured solid and effective pandemic prevention and control results. In 2020, in the face of the sudden outbreak of the COVID-19, the Company resolutely took up the major responsibility for the prevention and control of the pandemic, reacted quickly, acted promptly, insisted on “early protection, early discovery, early diagnosis and early quarantine”, implemented “three guarantees” (namely, guarantee the effective treatment of confirmed cases, guarantee no outbreak and proliferation of clustering pandemic and guarantee overall social stability”), strengthened organizational leadership, formulated and implemented prevention and control measures, plans and put the safety and health of employees as the first priority. It focused on the work safety and gave priority to power generation and heat guarantee in the pandemic areas both inside and outside the country, achieved “zero new cases” and “zero infections” among employees outside the country after the initial period of the pandemic and supported the regional power and heat supply in the fight against the pandemic. Yangluo Power Plant was awarded the honorary titles of “Advanced Group of Central Enterprises in Combating the COVID-19” and “Advanced Grassroots Party Organization of Central Enterprises”, and Comrade Luo Jiageng was awarded the title of “Advanced Individual in Combating the COVID-19 in China”. The Ruijin II project was fully affirmed by the investigation and research team of

the General Office of the CPC Central Committee and General Office of the State Council for resuming work and production. Tuas Power properly responded to the pandemic and ensured the normal production and operation of Tuas Power Plant and Tembusu Power Plant and the orderly resumption of two infrastructure projects. The headquarter of the Company upgraded its remote office system to ensure that the work has been done in a scientific, orderly and flexible manner.

The Company consolidated and strengthened safety foundation. The Company formulated a three-year plan for special rectification of safety production, the implementation plan of “100-day fight to ensure the safety in the two festivals and the Two Sessions”, continuously conducted the inspection and evaluation of the implementation of the work safety responsibility system, conducted the “100-day safety inspection” of infrastructure projects and did a good job in potential risks identification on-site and problem rectification, so that the safety management standard was continuously improved and no major accidents or above occurred throughout the year. The Company successfully completed the tasks for power demand peak in summer and winter and flood control and satisfactorily completed the guarantee of electricity, heat and air quality during important periods such as the Two Sessions and completed network security offensive and defensive drills.

The Company continued to strengthen equipment management. The Company carried out in-depth work on “control of non-planned stop” and maintained industry-leading equipment reliability indicators. The equipment availability factor increased by 1.52 percentage points year-on-year, the number of non-planned stop of thermal power units decreased by 13% year-on-year and 47 power plants such as Haimen and Laiwu had zero non-planned stop throughout the year. In the national power reliability benchmarking, seven units, including Yuhuan No. 4 and Shangan No. 2, were selected as advanced units in power reliability.

## IV. ENVIRONMENT RESPONSIBILITY OF THE COMPANY

The Company thoroughly implemented the new development concept, and with deepening the supply-side structural reform as the general direction, thoroughly implemented the new energy safety strategy of “Four Revolutions, One Cooperation” to vigorously promote quality transformation, efficiency transformation, and driver transformation. The Company focused on the national carbon peak and carbon neutral targets and paid close attention to the development of carbon emission reduction policies to achieve the goal that carbon emissions reach the peak as early as possible during the 14th Five-Year Plan period and decline year by year, so as to achieve higher quality, more efficient and more sustainable development. The Company stuck to the path of green, low-carbon, clean and efficient development, accelerated the pace of transformation and upgrading and continuously optimized the power supply structure; we launched green and clean production, and continuously optimized the operation and management of power units to ensure that the energy consumption and environmental protection indicators of thermal power generation remain industry-leading; we insisted on science and technology innovation as the first driving force, accelerated the application of innovative

achievements, increased the quantity and quality of technology patents and highlighted the effectiveness of science and technology innovation in supporting high-quality development; we strengthened the basic ability to achieve carbon neutral and carbon peak targets, improved and perfected the greenhouse gas management mechanism and enhanced professional technical standards.

The Company promoted the transformation and upgrading of coal power. The Company actively promoted the transformation of thermal power projects from coal-fired to multi-fuel, and developed gas power and other clean energy power projects on a priority basis. In 2020, the Company commissioned 1,825 MW of coal-fired projects and 65 MW of biomass projects. The Company strengthened the research and application of new energy-saving technologies such as wide-load and high-efficiency power generation, flexible transformation of cogeneration and decoupling, etc. Nine power plants, including Laiwu and Huaiyin, completed the transformation of sludge-coupled power generation and the first sludge-coupled power generation project in southwest China was put into operation at Luohuang Power Plant. The heat storage (water) project in the first batch of flexible retrofit pilot sites of the National Energy Administration was put into operation in Dandong Power Plant, realizing the decoupling of heat and power.

# SOCIAL RESPONSIBILITY REPORT

The Company continued to optimize structural adjustment. The Company accelerated the pace of new energy development, further increased the reserve and development of efficient and high-quality wind power projects, accelerated the development of solar power projects and completed 6,628.9 MW of approved new energy projects and added 3,200 MW of new energy installations throughout the year, hitting a record high. The proportion of new energy installations reached 9.4%, representing a year-on-year increase of 2.6 percentage points. Puyang (Phase I) 500 MW wind power project, the wind power project with the largest capacity of single unit in the plain, was put into production at full capacity. The offshore wind farm in Dafeng, the farthest offshore wind farm in China, was completed and put into operation, bringing the Company's offshore wind power scale to 900 MW. The first domestic offshore wind power intelligent operation and maintenance platform was constructed in Jiangsu Province. Dalian Zhuanghe Offshore Wind Power II Project started construction, becoming the first offshore wind power of Huaneng in the northeast region. The 10 million KW comprehensive energy base in respect of wind, light, coal and electricity storage in Northern Shanxi obtained the support of Shanxi and Zhejiang provinces and it was actively promoted to be included in the national and Shanxi provincial planning and extra-high voltage outgoing power supply planning.

The Company constantly enhanced clean production. The Company made every effort to fight the hard battle of pollution prevention and control and did a good job of ecological and environmental protection risk investigation and supervision of rectification, etc. The capacity of ultra-low emission units reached 98%. In 2020, the coal consumption for power production and supply of the Company's thermal power generation units was 291.08g/kWh, maintaining its leading position among major domestic power enterprises. The annual emission performance of production power supply of thermal power generation units was 8.4 mg/kWh, 67 mg/kWh and 132 mg/kWh in terms of soot, sulfur dioxide and nitrogen oxides respectively, maintaining the leading position in the industry in terms of environmental indicators. 63 generating units won the best performance in the national thermal power generation unit energy efficiency benchmark.

The Company continued to make scientific and technological innovation. The Company made progress in major science and technology projects, accelerated the progress of the national science and technology project of "700°C High-Efficiency Ultra Supercritical Power Generation Technology (700°C 高效超超臨界發電技術)" and "Key Technologies for New-Type High-alkali Coal Liquid Slagging Boiler (新型高鹼煤液態排渣鍋爐關鍵技術)". The first domestic large-scale thermal power unit distributed control system (DCS) and new programmable logic controller (PLC) industrial control system were successfully put into operation in the Company's power plants, and the safety, reliability and intellectualization of the main and auxiliary control systems of the relevant enterprises reached a new level. The number and quality of patents increased significantly, 1,843 patents were applied for in the year with 528 patent for invention, representing a year-on-year increase of 668%; 433 patents were granted in the year with 30 patent for invention, representing a year-on-year increase of 193%.

The Company actively carried out greenhouse gas management. The Company issued measures for carbon asset management, regulations for greenhouse gas emission statistics management, voluntary emission reduction project development management, quota fulfillment and trading management, which provided detailed guidance and regulations for carbon asset management, greenhouse gas statistics management, voluntary emission reduction project development and carbon asset trading. We took an active part in the construction of the national carbon market and made full preparations for the full-scale trading contracts. In 2020, the Company established the project of "CO<sub>2</sub> Capture and Utilization Key Technology Enhancement and Verification" to build a 1,000-ton/year CO<sub>2</sub> capture plant at Yangpu Gas Turbine to improve the Company's overall standard in the field of CO<sub>2</sub> capture and utilization technology and to help the realization of "carbon peak" and "carbon neutral" targets.

## 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, actively promoted the strategy of developing the enterprise by talents. Focusing on the development of the Company’s business, the Company continuously improved the selection and use, evaluation of personnel, personnel assessment system to cultivate, select, manage and make use of excellent talents with strong belief, high competence and strict work style and accelerate 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 careers in Huaneng and in line with the Company’s developmental and strategic needs, has been formed.

The Company has always insisted on a fair, just and open employment policy, seriously 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.

With priority given to the development of employees, 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, promoted the dual-channel promotion mechanism, promoted the growth of technical talents, developed new modes of online training, 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

The Company has consistently insisted on the leadership of the Party and followed the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics in the New Era, continuously strengthened the construction of the Party, consolidated the foundation of Party building, deeply promoted the construction of clean government, fully relied on the staff and public and led high-quality development with high-quality Party building.

# SOCIAL RESPONSIBILITY REPORT

Under the guidance of the “three colors” culture, the Company has always adhered to the harmonious development concept of “serving the country, benefiting society, seeking multi-win results and common growth”, fully considered and effectively responded to the aspirations of stakeholders, actively participated in the areas it serves or operates, supported construction of community infrastructure, promoted employment, and extensively carried out various public welfare activities, such as education and medical care, which contributed to the harmonious development of the community. Our overseas enterprises took an active part in a number of local public welfare projects, embodying the principle of joint discussion, joint construction and joint use, and winning wide acclaim from the community.

Since the 18th Party Congress, the Company has resolutely carried out the policy and deployment of the Party Central Committee and the State Council on winning the battle against poverty and has taken support for winning and fighting the battle against poverty as a practical action and concrete manifestation of enhancing the “four consciousnesses”, asserting the “four self-confidences”, achieving the “two safeguards” and giving full play to the “six strengths” of central enterprises. The Company has formulated and implemented the implementation plan to fight and win the battle against poverty, innovated the poverty alleviation mode and targeted poverty alleviation measures and actively carried out industrial poverty alleviation, consumption poverty alleviation, education poverty alleviation, party building poverty alleviation, infrastructure poverty alleviation and other public welfare activities in areas where it operates. In 2020, the Company invested RMB27.319 million in

targeted poverty alleviation and assigned 75 cadres to station in village to carry out poverty alleviation work. The Company also made full efforts to promote consumer poverty alleviation and purchased poverty alleviation products in targeted poverty alleviation counties to help them increase income and get rid of poverty. With the guiding principles of “making concerted efforts, going all out, being targeted and pragmatic, pioneering and innovative, overcoming difficulties and living up to the people’s expectations”, Huaneng will contribute to building a moderately prosperous society.

In early 2020, in the face of the severe situation of the spread of the COVID-19, the entire Company acted on orders and was in the forefront, actively acted and took up the heavy burden, donated RMB5 million to the Hubei Provincial Charity Federation. Regional companies such as Chongqing Branch and Hubei Branch were the first to donate funds and materials to the front line of the fight against the pandemic, providing strong economic support for the prevention and control of the pandemic in our country. Tuas Power Ltd. in Singapore and Pakistan Sahiwal Power Station have also provided assistance to the pandemic areas in China and abroad, demonstrating their corporate responsibility.

In the future, the Company will continue to work together with all stakeholders to achieve sustainable development, provide more and more stable clean energy for the development of the country, assume a stronger and more determined responsibility for the good life of the people, and make newer and greater contributions to the construction of the community with shared future for mankind.

# INVESTOR RELATIONS

## PHILOSOPHY OF INVESTOR RELATIONS

Huaneng International 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”. With its investors “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 as a whole and all shareholders

## 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 every Monday, 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 established the “Measures on Information Disclosure Management”, the “Measures on Related Transactions Management”, the “Rules on Investor Relations Management”, the “Detailed Rules on the Work of the Information Disclosure Committees”, “Measures on Insider Information Management” and the “Regulations on Accountability for Significant Errors in Annual Report Information Disclosure”, setting out in detail 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 addition, the Company has also formulated the “Internal Control System” according to the relevant requirements of the state and Sections 302 and 404 of the “Sarbanes-Oxley Act of 2002”, as well as prepared the “Internal Control Handbook”, further enhancing our corporate governance and ensuring truthful, timely, accurate and complete information disclosure.

Having established a complete and effective control system targeting at the entire process of the Company’s information disclosure, the Company has been 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.

# INVESTOR RELATIONS

## Diversified 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.

The Company made 8 overseas press releases and issued 352 announcements within and outside China in 2020.

## NOTE TO SHAREHOLDERS

### Dividend distribution

The Board proposed to declare a dividend of RMB0.18 (inclusive of tax) per share to all shareholders for 2020. Dividends will be denominated and declared in Renminbi. Dividends on domestic shares will be paid in Renminbi. Same as the dividends on foreign shares traded on the Hong Kong Stock Exchange that will be paid in Hong Kong dollars, dividends on other foreign shares will be paid in US dollars. Exchange rates for dividends paid in US dollars and Hong Kong dollars are USD1 to RMB6.4979 and HK\$1 to RMB0.83682 respectively. All the dividends payable to shareholders shall be subject to shareholders' approval at the annual general meeting of the Company.

### DIVIDEND DISTRIBUTION

The Company's Articles of Association clearly define the Company's cash dividend policy, i.e. when the Company's earnings and accumulative undistributable 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 2018, in order to allow all shareholders to better share the development results of the Company, after considering the Company's strategic planning and development targets, industry development trends and other factors, the Company decided to further increase the proportion of cash dividends to investors, and accordingly formulated the Shareholders Return Plan for the Next Three Years (2018 to 2020) of Huaneng Power International, Inc. Detailed terms and the proportion of the Company's cash dividends during the period are: when the profit and accumulated undistributed profits in the current year are positive, and on condition that the Company's cash flow is able to meet the need for its ordinary operation and sustainable development, the Company shall distribute dividends in cash and the annual cash dividend payout shall, in principle, be no less than

70% of the realised distributable profits stated in the consolidated financial statement that year and such dividend shall be no less than RMB0.1 per share.

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

### Declaration of dividends

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 every year since 1998, with an accumulated dividend of RMB59.862 billion paid.

Dividend Year	Dividend per share (RMB)	Earnings per share (RMB)	Payout Ratio
1994		0.17	
1995		0.24	
1996		0.27	
1997		0.33	
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%

# INVESTOR RELATIONS

\* 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 profit distribution plan of the Company for 2020 will be subject to shareholders' approval at the annual general meeting.

## INVESTOR RELATIONS ACTIVITIES

### Results Conferences

In 2020, under the special situation of COVID-19, the Company replaced the traditional on-site meeting with teleconference. The Company organized and convened a conference call for global investors with the theme on its 2019 annual results and the first quarterly results, interim results and the third quarterly results of 2020.

### Investment forums and investor meetings

In 2020, the Company actively participated in investment forums and investor exchange activities held by domestic and overseas institutions on line and totally engaged in more than 20 online meetings with institution investors. The Company organized and participated in Group Reception Day Activity for Listed Companies in Beijing for 2020 and answered the questions of investors in details online, which achieved good communication effects.

### Visits by and general enquiries from investors

The Company overcame epidemic difficulties and received about 10 groups of institutional investors for company visits and nearly 300 phone enquiries from investors during the year.

# REPORT OF THE BOARD OF DIRECTORS

The Directors hereby submit their annual report together with the audited financial statements for the year ended 31 December 2020.

## 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 2020.

For the twelve months ended 31 December 2020, the Company realized operating revenue of RMB169,446 million, representing a decrease of 2.62% as compared with the same period last year, and net profit attributable to equity holders of the Company amounted to RMB2,378 million, representing an increase of 210.28% as compared with the same period last year. Earnings per share amounted to RMB0.04. The Board is satisfied with the Company’s results last year.

The Board of the Company proposed to declare a cash dividend of RMB0.18 (inclusive of tax) for each ordinary share of the Company held by shareholders.

## BUSINESS REVIEW OF YEAR 2020

In 2020, facing up to the impacts and test of the Covid-19 epidemic, the Company fully coordinated the work of epidemic prevention and control, production and operation, reform and development. Through the efforts of overcoming difficulties and fighting courageously, the epidemic prevention and control made major progress, safety production and business performance maintained steady, restructuring continued to optimize, new energy construction achieved significant results, scientific innovation achieved new progress and enterprise reform was deeply promoted. We have successfully completed the major objectives of the year.

## 1. Operating Results

For the twelve months ended 31 December 2020, the Company realized operating revenue of RMB169,446 million, representing a decrease of 2.62% as compared with the same period last year. Net profit attributable to equity holders of the Company amounted to RMB2,378 million, representing an increase of 210.28% as compared with the same period last year. Earnings per share amounted to RMB0.04.

As at the end of 2020, net assets per share of the Company amounted to RMB5.19, representing a decrease of 2.69% as compared with the same period last year.

The Audit Committee of the Company convened a meeting on 22 March 2021 and reviewed the 2020 annual results of the Company.

## 2. Power Generation

In 2020, total power generated by the Company’s domestic operating power plants on consolidated statements basis amounted to 404.016 billion kWh, representing a year-on-year decrease of 0.24%. The electricity sold amounted to 379.894 billion kWh, representing a year-on-year decrease of 2.14%. The annual average utilization hours of the Company’s domestic power plants reached 3,744 hours, representing a year-on-year decrease of 171 hours. The utilization hours of coal-fired power generating units was 4,059 hours, representing a year-on-year decrease of 163 hours. In most of the areas where the Company’s coal-fired power plants are located, the utilization hours of the Company were in a leading position. Total heat supplied by the Company amounted to 263 million GJ, representing a year-on-year increase of 11.18%.

# REPORT OF THE BOARD OF DIRECTORS

## 3. Cost Control

In 2020, the Company procured an aggregate of 171 million tons of coal. By accurately judging coal market trends, optimizing procurement strategy and regional supply structure, reinforcing cooperation with major coal enterprises, targeting high-quality low-cost resources on an advanced basis, the Company lowered the unit price of standard coal purchase effectively and relatively well controlled the fuel procurement cost of the Company. The unit fuel cost of our domestic power plants throughout the year incurred for sales of power was RMB209.07/MWh, representing a year-on-year decrease of 6.34%.

## 4. Energy Saving and Environmental Protection

In 2020, the Company maintained a leading position among major domestic thermal power producers, with the average equivalent availability ratio of the domestic thermal generating units of the Company of 94.92%, coal consumption of production power supply of 291.08g/kWh and the house consumption rate of plants of 4.33%. As per the demand for resolutely fighting against pollution, the Company actively carried out the three-year action plan to defend the blue sky. With respect to air pollution emissions, the power generation companies affiliated to the Company have carried out ultra-low-emissions transformation as planned with marked results. All of them have met or outperformed the national emission standards. 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 requirements under pollution discharge permits and other ecological and environmental protection policies.

## 5. Project Development

The Company progressed smoothly in the construction of power supply projects. During the year, the controlled generation capacity of the newly commissioned thermal generating units, wind generating units, photovoltaic units and biomass units was 1,925.04 MW, 2,177.9 MW, 771.93 MW and 65 MW, respectively. As of 31 December 2020, the Company's controlled and equity-based generation capacity was 113,357 MW and 98,948 MW, respectively.

## 6. Overseas Business

Tuas Power Ltd. ("Tuas Power"), a wholly-owned subsidiary of the Company in Singapore, maintained safe and stable operation of the generation units throughout the year. The total market share of Tuas Power in the power generation market for the whole year was 21.4%, representing a year-on-year increase of 0.7 percentage point. The Singapore project (SinoSing Power and Tuas Power combined) recorded a pre-tax profit of RMB131 million, representing a turnaround of RMB700 million compared with the loss of RMB569 million at the same period of last year.

Sahiwal coal-fired power plant is the first large-scale coal-fired power plant put into operation in the China-Pakistan Economic Corridor. It greatly eased the power shortage in Pakistan. The Pakistan project was included in the consolidated statements on 31 December 2018. It recorded a pre-tax profit of RMB738 million for 2020, representing a decrease of RMB1 million as compared with the same period of last year.

In 2020, with the substantial support of all shareholders of the Company, all our work has achieved expected results. With a sound decision-making philosophy and a complete corporate governance system, the Company once again won the recognition of the capital market, and won the China Securities Golden Bauhinia Award for the “Outstanding Listed Company at the 30th Anniversary of the Capital Market”, the Award for 2020 “Excellent Issuer of Corporate Bonds” granted by the Shanghai Stock Exchange, the Award for “Helmsman of Digital Economy” granted by Securities Daily, Award for 2020 “Social Responsibility Reporting Leader” granted by the China Social Responsibility 100 Forum, and the China Securities Golden Bauhinia Award for the “Best Board Secretaries of the Listed Companies”, etc..

## PROSPECTS FOR 2021

In 2021, the Company will implement the four strategies of green development, innovative development, safety development and excellent operation, to guard against risk, make structural adjustments, ensure steady growth, strengthen technology and advance reform so as to realize the high-standard beginning and high quality promotion of the “14th Five-Year” plan.

In terms of electric power construction, adhering to the green development concept, the Company will spend much effort to develop clean energy, optimize thermal power structure and speed up transformation and upgrading to achieve high-quality development by centering efficiency by means of modern management, under the support of science and technology innovation and on the basis of safe development.

In terms of electric power generation, the Company earnestly implements the regulations and policies in the field of safety production, and constantly optimizes management to prevent safety accidents. The Company conducts appraisal for the generator sets to comprehensively improve the lean level of facility management. While operating and maintaining the clean energy power generation system, the Company attaches importance to the basic and adjusting roles of existing thermal power generating unit in the energy safety system of the society, actively conducts life extension appraisal and transformation, and maintains the health level of standby set for emergency. The Company always focuses on the economy and flexibility of the power generation assembly and meet the new market demands through technical transformation; actively develops the heat supply industry to upgrade integrated energy services; deeply studies the application prospect of biomass coupled power generation and grasps the market opportunities; and earnestly governs the environment protection well as demanded by the ecological civilization construction of various regions.

In terms of electric power marketing, the Company will continuously adhere to be led by electric power marketing and practically implement the working system of the whole team committing to marketing led by the team head. The Company will adhere to the market-oriented, customer-centered and efficiency-targeted market concept. The Company will strengthen policy and market analysis, optimize and adjust marketing strategies, conduct the volume-price planning well, and meanwhile actively deal with the electrical market-oriented reformation, speed up the construction of operating center, construct customer service system and promote the operational level of energy sales company, and actively explore new business of integrated energy service, striving to achieve an annual domestic power generation of 410 billion kWh.

# REPORT OF THE BOARD OF DIRECTORS

In terms of fuel, first, the Company further interprets, studies and judges the policies and market situation, constantly improves the study and judgment ability towards market, and actively tries to guide the market with policies; second, the Company constantly promotes the intensive and lean control level of fuel, implement the conclusion and performance of the long-term contract, and adheres to optimize the purchase of imported coal, reasonably optimize the inventory, and give a play to the storage in the low season for the use in the peak season, and meanwhile adheres to optimize and adjust the purchase structure and conduct fuel innovation well in order to reduce the purchase cost; third, the Company constantly improves the digitalized management level of fuel and promotes the intelligentization of fuel management, in order to improve management efficiency and thus to explore the potential and strengthen the effect; fourth, the Company strengthens the resource development, builds up long-term and stable supplier team, and explores the resource at the source, to develop the high calorie and low sulfur coal resources in domestic market, strengthen the supplier management, etc.

In terms of capital, the Company will keep an eye on changes in the international and domestic capital markets and give full play to its credit and management advantages. While ensuring the smooth flow of the main channels of credit financing, the Company will increase the issuance of bonds, innovate financing methods, expand financing channels, and spare no effort to reduce the cost of funds while ensuring the safety of funds.

The Company will, based on intrinsic safety, directed by clean and low carbon, centered on quality efficiency, guided by technological innovation, with deepening reform as the means and the Party building as the guarantee, focus on risk prevention and control, transformation development, operation and efficiency improvement, open development, improving competitiveness, triggering enterprise vigor, strengthening foundation and fostering spirit so as to step up the pace of building a world-class listed power company.

## SUMMARY OF FINANCIAL INFORMATION AND OPERATING RESULTS

Please refer to the Financial Highlights on page 8 for the summary of the operating results and assets and liabilities of the Company and its subsidiaries as at 31 December 2020 and for the accounting year ended 31 December 2020.

Please refer to pages 128 to 130 of the financial statements for the operating results of the Company and its subsidiaries for the accounting year ended 31 December 2020, which have been reviewed by the Company's Audit Committee.

## DISTRIBUTABLE RESERVE

The distributable reserve as at 31 December 2020 calculated in accordance with the Company's Articles of Association is set out in Note 22 to the financial statements prepared under the International Financial Reporting Standards (the "IFRS").

## DIVIDENDS

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 every year since 1998, with an accumulated dividend of RMB59.862 billion paid.

The Company's articles clearly defines the Company's cash dividend policy, i.e. when the Company's earnings and accumulative undistributable profits for the current year are positive, and on condition that the Company's cash flow can satisfy the Company's normal operation and sustainable development, the Company shall adopt a cash dividend appropriation policy on the principle that the cash dividend payout will not be less than 50% of the distributable profit realized in the then year's consolidated financial statement.

In 2018, in order to allow all shareholders to better share the development results of the Company, after considering the Company's strategic planning and development targets, industry development trends and other factors, the Company decided to further increase the proportion of cash dividends to investors in the next three years from 2018, and accordingly formulated the Shareholders Return Plan for the Next Three Years (2018 to 2020) of Huaneng Power International, Inc. according to relevant regulations. During the period, when the profit and accumulated undistributed profits in the current year are positive, and on condition that the Company's cash flow is able to meet the need for its ordinary operation and sustainable development, the Company shall distribute dividends in cash and the annual cash dividend payout shall, in principle, be no less than 70% of the realised distributable profits stated in the consolidated financial statement that year and such dividend shall be no less than RMB0.1 per share.

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

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 International Financial Reporting Standards.

With respect to the dividend distribution plan for 2020, the Company proposed to declare a cash dividend of RMB0.18 (inclusive of tax) for each share to all shareholders. All dividends payable to shareholders will be subject to shareholders' approval at the annual general meeting of the Company. Subject to the passing of the distribution plan at the annual general meeting, the Company expects to complete the final dividend payment on or before 31 August 2021.

As the Company has yet to confirm the date of the 2020 annual general meeting, the record date(s) for determining the eligibility to attend and vote at the 2020 annual general meeting and the entitlement to the final dividend and the period(s) for closure of register, the Company will upon confirmation thereof announce such details in the notice of the 2020 annual general meeting. Such notice is expected to be issued to shareholders in late April or early May 2021.

# REPORT OF THE BOARD OF DIRECTORS

In accordance with the “Enterprise Income Tax Law of the People’s Republic 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 final dividends 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 that 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.

## 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 large-scale power plants throughout China by making use of modern technology and equipment and financial resources available domestically and internationally. The power plant facilities of the Company are technically advanced, highly efficient and stable.

## SUBSIDIARIES AND ASSOCIATES AND JOINT VENTURES

Please refer to Notes 9 and 8 to the financial statements prepared under the IFRS for details of the Company’s subsidiaries and associates and joint ventures.

## THE USE AND DEPOSIT OF FUNDS RAISED

As approved under the Reply Approving the Non- public Issuance of Shares of Huaneng Power International, Inc. of China Securities Regulatory Commission (Zheng Jian Xu Ke [2018] No. 696), the Company issued 497,709,919 RMB ordinary shares (A shares) under non-public issuance to 7 target subscribers, with total proceeds of RMB3,259,999,969.45. After deducting the expenses such as underwriting and sponsor fees, the net proceeds were RMB3,245,329,969.59. As at 10 October 2018, the proceeds have all been received.

According to the A-share issuance plan and the announcement on changing the certain proceeds-funded investment projects and implementation methods, the proceeds from the non-public issuance of A-shares are used for capital expenditure of Xiegang Gas Turbine Project in Guangdong, Dafeng Offshore Wind Power Project in Jiangsu, Mianchi Phoenix Mountain Wind Power Project in Henan, and Longchi Wind Power Project in Anhui.

As at 31 December 2020, the Company has invested RMB2,345,051,732.42 of the proceeds (including to replace the self-raised funds of RMB597,000,000.00 that was previously invested in the proceeds-funded projects) on a cumulative basis, and the balance of proceeds raised is RMB997,337,959.16 (including interest).

## BONDS

During the year, the Company successfully issued bonds with a total principal amount of RMB24.218 billion in meeting its operational needs. Please refer to Note 25 and 29 to the financial statements prepared under the IFRS for details.

## BANK LOANS AND OTHER BORROWINGS

Please refer to Notes 24 and 30 to the financial statements prepared under the IFRS for details of bank loans and other borrowings of the Company and its subsidiaries as at 31 December 2020.

## CAPITALIZED INTERESTS

Please refer to Note 6 to the financial statements prepared under the IFRS for details of the capitalized interests of the Company and its subsidiaries during the year.

## PROPERTIES, PLANTS AND EQUIPMENT

Please refer to Note 7 to the financial statements prepared under the IFRS for details of properties, plants and equipment of the Company and its subsidiaries during the year.

## RESERVES

Please refer to the consolidated statement of changes in equity on pages 134 to 137 of the financial statements prepared under the IFRS for details of statutory reserves of the Company and its subsidiaries during the year.

## 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 2020 were China Huaneng Group Fuel Co., Ltd., Shanxi Yangquan Coal Industry (Group) Company Limited, Envision Energy Co., Ltd., China National Coal Group Corporation and Shaanxi Coal Selling and Transportation (Group) Corporation respectively. The total purchase from them amounted to approximately RMB59.087 billion, representing approximately 47.66% of the total purchase of the year. The largest supplier was China Huaneng Group Fuel Co., Ltd., the purchase from which amounted to RMB36.132 billion, representing approximately 29.14% 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 2020 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 of sales of power was approximately RMB66.282 billion, representing approximately 39.12% 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 RMB27.266 billion, representing approximately 16.09% of the total sales of power for the year.

# REPORT OF THE BOARD OF DIRECTORS

None of the directors, supervisors and their respective close associates (as defined in the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the “Listing Rules”)) had any interest in the five largest suppliers and customers of the Company mentioned above in 2020.

## CONTINUING CONNECTED TRANSACTIONS AND CONNECTED TRANSACTIONS

The following are the major continuing connected transactions and connected transactions of the Company in 2020 according to the requirements of the Listing Rules:

### CONTINUING CONNECTED TRANSACTIONS

#### 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 China Huaneng Group (“**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 China Hua Neng Group Hong Kong Limited, a wholly-owned subsidiary of Huaneng Group, 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 0.39% indirect equity interest in the Company through China Huaneng Finance Corporation Limited (“**Huaneng Finance**”), a controlling subsidiary of Huaneng Group and the Company holds 50% and 20% equity interests respectively in Huaneng Finance.

Huaneng Tiancheng Financial Leasing Co., Ltd. (“**Tiancheng Leasing**”) is a controlling 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 to the Company and transactions between the Company and the subsidiaries and/or associates of Huaneng Group constitute connected transactions of the Company under the 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 was set out in the announcement dated 2 November 2019 and the circular dated 2 December 2019 published by the Company, particulars of which are summarized as follows:

- (i) Huaneng Group Framework Agreement was entered into between the Company and Huaneng Group on 1 November 2019 for a term commencing on 1 January 2020 and expiring on 31 December 2020. Pursuant to the Framework Agreement, the Company would conduct the following transactions with Huaneng Group and its subsidiaries and associates on an ongoing basis:
  - Purchase of ancillary equipment and parts relevant to the production operation for the infrastructure construction work for power plants, at terms and the prices 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 independent third parties for the same or similar type of ancillary equipment and parts. In addition, the payment of the 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.

For the year ended 31 December 2020, the annual cap of the purchase of ancillary equipment and parts was RMB700 million (inclusive of value-added tax ("VAT")). The actual transaction amount for the year ended 31 December 2020 was RMB421 million (inclusive of VAT) and RMB378 million (exclusive of VAT).

- Purchase of fuel and transportation services for power generation, 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 market conditions, and in any event the coal price and the terms of the purchase of fuel transportation service 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 coal supply or transportation services. The payment of the 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.

For the year ended 31 December 2020, the annual cap of the purchase of fuel and transportation services was RMB49.9 billion (inclusive of VAT). The actual transaction amount for the year ended 31 December 2020 was RMB39.871 billion (inclusive of VAT) or RMB35.412 billion (exclusive of VAT).

- Leasing of facilities, land and office spaces (mainly power transmission and transformation assets, vessels, power plants land and office spaces, etc.) for operational needs, at terms and prices to be 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 the 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.

For the year ended 31 December 2020, the annual cap of the leasing of facilities, land and office spaces was RMB400 million. The actual transaction amount for the year ended 31 December 2020 was RMB192 million.

# REPORT OF THE BOARD OF DIRECTORS

- Purchase of technical services, engineering contracting services and other services (mainly includes the provision of maintenance services for power plants' monitoring systems, real-time consolidation of project data, trial run of generating units, supervision of manufacture of facilities for construction works in progress and insurance services by Huaneng Group and its subsidiaries and associates to the Company and its subsidiaries, and the provision of operation/production and related coastal port supportive services by the Company and its subsidiaries to Huaneng Group and its subsidiaries and associates) for the Company's operation and production needs, at terms and prices 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 independent third parties for the same or similar type of technical services and engineering contracting services. In addition, the payment of the 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.
- Entrusted sale services by the Company and its subsidiaries to Huaneng Group and its subsidiaries and associates (involving mainly the use of power generation quota of the Company and its subsidiaries by Huaneng Group and its subsidiaries and associates for substituted power generation) at the terms and prices 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 favorable than those offered to the Company and its subsidiaries by independent third parties for the same or similar type of services. The payment of the 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.

For the year ended 31 December 2020, the annual cap of entrusted sale services was RMB400 million (inclusive of VAT). The actual transaction amount for the year ended 31 December 2020 was RMB0 (inclusive of VAT) or RMB0 (exclusive of VAT).

For the year ended 31 December 2020, the annual cap of the purchase of technical services, engineering contracting services and other services was RMB1.8 billion. The actual transaction amount for the year ended 31 December 2020 was RMB1.771 billion (inclusive of VAT) or RMB1.657 billion (exclusive of VAT).

- Provision of entrusted sale services by the Company and its subsidiaries to Huaneng Group and its subsidiaries and associates mainly involved the use of power generation quota of Huaneng Group and its subsidiaries and associates by the Company and its subsidiaries for substituted power generation. Payments under such transactions will be settled in two ways: (1) upon power generation, the Company and its subsidiaries settle the payment with the power grid company before paying the difference to Huaneng Group and its subsidiaries and associates; (2) upon power generation, Huaneng Group and its subsidiaries and associates settle the payment with the power grid company before paying substituted power generation costs and other relevant expenses to the Company and its subsidiaries.

For the year ended 31 December 2020, the annual cap of the provision of entrusted sale services was RMB600 million (inclusive of VAT). The actual transaction amount for the year ended 31 December 2020 was RMB0 (inclusive of VAT) or RMB0 (exclusive of VAT).

- Sales of products (i.e. sales of coal), 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 coal price and other related products 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 coal supply or other related products. The payment of the consideration will be settled in cash in arrears, or in accordance with the payment terms agreed by the relevant parties pursuant to the agreement.

For the year ended 31 December 2020, the annual cap of the sales of products was RMB600 million. The actual transaction amount for the year ended 31 December 2020 was RMB0.

- Purchase of electricity from power plants of connected persons (including Huaneng Group and its subsidiaries and associates) or electricity sales companies and settle through the grid enterprises in accordance with the contractual agreements between the parties to the transaction, in which cases the Company and related parties (including Huaneng Group and its subsidiaries and associates) will not occur actual settlement relation and the amount of transaction will be determined according to such contractual agreements.

# REPORT OF THE BOARD OF DIRECTORS

For the year ended 31 December 2020, the annual cap of the purchase of electricity was RMB300 million. The actual transaction amount for the year ended 31 December 2020 was RMB0 (inclusive of VAT) or RMB0 (exclusive of VAT).

- Sale of electricity to customers of connected persons (including Huaneng Group and its subsidiaries and associates) or electricity sales companies, and settle through the grid enterprises in accordance with the contractual agreement between the parties to the transaction, in which cases the Company and related parties (including Huaneng Group and its subsidiaries and associates) will not occur actual settlement relation and the amount of transaction will be determined according to such contractual agreements.

For the year ended 31 December 2020, the annual cap of the sale of electricity was RMB300 million. The actual transaction amount for the year ended 31 December 2020 was RMB1 million (inclusive of VAT) or RMB1 million (exclusive of VAT).

- (ii) Huaneng Finance Framework Agreement was entered into between the Company and Huaneng Finance on 1 November 2019 for a term of three years commencing on 1 January 2020 and expiring on 31 December 2022, so as to replace the framework agreement between the Company and Huaneng Finance on 5 December 2016.

Pursuant to the Huaneng Finance Framework Agreement, the Company would from time to time place deposits with Huaneng Finance at rates which would be no less favourable than those offered by independent third parties for provision of similar services to the Company in China. As no security over the assets of the Company is granted in respect of the note discounting services and loan advancement services provided by Huaneng Finance, such transactions are exempt from reporting, announcement and independent shareholders' approval requirements under Rule 14A.90 of the Listing Rules.

For the period from 1 January 2020 to 31 December 2020, the outstanding balances of the deposits to be placed by the Company and its subsidiaries with Huaneng Finance on a daily basis would not exceed RMB14 billion (or its equivalent). For the year ended 31 December 2020, the maximum balance of deposits placed by the Company and its subsidiaries with Huaneng Finance on a daily basis was RMB13.999 billion.

- (iii) Framework Agreement was entered into between the Company and Tiancheng Leasing on 1 November 2019 for a term of three years commencing on 1 January 2020 and expiring on 31 December 2022.

Pursuant to the Tiancheng Leasing Framework Agreement, the finance lease business conducted by the Company and its subsidiaries with Tiancheng Leasing includes but is not limited to direct lease, leaseback and trusted lease. In conducting finance lease with the

Company and its subsidiaries, Tiancheng Leasing shall offer terms in respect of such transactions to the Company and its subsidiaries that are normal commercial terms which shall in any event be no less favourable than those terms can be obtained by the Company and its subsidiaries from independent third parties. Lease Interest will 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 People's Bank of China from time to time, and will be no less favourable than the terms offered to the Company by domestic independent third parties for 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, among others, 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 People's Bank of China from time to time in relation to such services and as set forth in the relevant written financial lease(s).

For the period from 1 January 2020 to 31 December 2020, the maximum daily balances of the Lease Principal between the Company and its subsidiaries and Tiancheng Leasing were RMB10 billion and the Lease Interest was set at 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 Leases category of the Tiancheng Leasing Framework Agreement between the Company and its subsidiaries and Tiancheng Leasing for the period from 2020 to 2022 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 2020 to 2022 at RMB2 billion each year.

For the year ended 31 December 2020, the maximum daily balances of the Lease Principal under the Direct Leases between the Company and its subsidiaries and Tiancheng Leasing was RMB3.092 billion, and the Lease Interest was RMB167 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 RMB567 million, and the Lease Interest was RMB28 million.

## 2. 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**").

# REPORT OF THE BOARD OF DIRECTORS

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 Listing Rules.

The Company considers that Temasek meets the criteria for a passive investor under Rule 14A.100 of the 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 Listing Rules, will be exempt from reporting, annual review, announcement and independent shareholders’ approval requirement under the 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.

## CONNECTED TRANSACTIONS

### 1. Connected Transaction in Relation to the Capital Increase in Shanghai Leading

On 31 March 2020, Huaneng Hainan Power Generation Limited Company (“**Hainan Power**”), a controlling subsidiary of the Company, entered into the Capital Increase Agreement with China Huaneng Group Fuel Co., Ltd. (“**Huaneng Group Fuel Company**”), the existing shareholder of Shanghai Leading Energy Shipping Limited (“**Shanghai Leading**”) and Shanghai Leading, pursuant to which Hainan Power and Huaneng Group Fuel Company agreed to subscribe by way of cash for the new registered capital of Shanghai Leading in accordance with their respective proportion of shareholding in Shanghai Leading. Hainan Power shall pay to Shanghai Leading an amount of not more than RMB120 million as the consideration of the Capital Increase, which sum will be funded by the Hainan Power’s internal cash resources. Following completion of the Capital Increase, the amount of the registered capital of Shanghai Leading will be increased to RMB800 million and Hainan Power’s proportion of shareholding in Shanghai Leading shall remain unchanged at 40%.

The Company holds a 91.80% equity interest in Hainan Power and each of Huaneng Group and the Company holds a 50% equity interest in Huaneng Group Fuel Company, which is a controlling shareholder of Shanghai Leading. Hainan Power and Huaneng Group Fuel Company shall subscribe for the newly increased registered capital of Shanghai Leading according to their respective shareholding proportion in the Capital Increase. Huaneng Group Fuel Company and Shanghai Leading are associates of Huaneng Group. Pursuant to the relevant stipulations of the Hong Kong Listing Rules, the Capital Increase constitutes a connected transaction of the Company, and is required to comply with the disclosure and/or independent shareholders' approval requirements under the Hong Kong Listing Rules.

For details on the connected transaction in relation to the capital increase in Shanghai Leading, please refer to the Company's announcement dated 1 April 2020.

## 2. Connected Transaction in Relation to the Acquisition of Taifeng Renewable Energy Interest

On 29 June 2020, Huaneng Shandong Power Generation Limited ("**Shandong Company**") and Huaneng Taishan Power Co., Ltd. ("**Taishan Power**") signed the Transfer Agreement, pursuant to which Shandong Company acquired the 82.23% equity interest in the registered capital of Huaneng Shandong Taifeng Renewable Energy Co., Ltd. ("**Taifeng Renewable Energy**") owned by Taishan Power at consideration of RMB228.42 million. Shandong Company will settle the consideration by way of cash with its own funds.

After the completion of the Transaction, Taifeng Renewable Energy will become a controlling subsidiary of Shandong Company

As at the date of publication of the Company's announcement on 29 June 2020, the Company holds an 80% equity interest in Shandong Company. Through its wholly owned subsidiary, Huaneng E&C, Huaneng Group indirectly holds a 56.53% equity interest in Taishan Power, and 43.47% equity interest is held by Tai'an Gotai Minan Investment Group (a third party independent of the Company and its connected persons).

For details on the transaction regarding the acquisition of Taifeng Renewable Energy Interest, please refer to the Company's announcement dated 30 June 2020.

# REPORT OF THE BOARD OF DIRECTORS

### 3. Connected Transaction in Relation to the Capital Increase in Xiapu Nuclear

On 29 July 2020, the Company entered into the Capital Increase Agreement with the existing shareholders of Huaneng Xiapu Nuclear Power Co., Ltd. (“**Xiapu Nuclear**”), being Huaneng Nuclear Power Development Company Ltd. (“**Huaneng Nuclear**”), HIPDC, China National Nuclear Power Co., Ltd. (“**China Nuclear**”), Fujian Funeng Co., Ltd. (“**Fujian Funeng**”) and Ningde City State-owned Properties Investment & Management Co., Ltd. (“**Ningde Investment**”), and Xiapu Nuclear. Pursuant to the Capital Increase Agreement, the Company, Huaneng Nuclear, HIPDC, China Nuclear, Fujian Funeng and Ningde Investment shall inject new capital by way of cash in accordance with their existing proportions of shareholding. The Company shall use its own internal fund to pay Xiapu Nuclear RMB63 million as the consideration of the Capital Increase. Upon the completion of the Capital Increase, the amount of the registered capital of Xiapu Nuclear shall be increased to RMB890 million and the Company’s shareholding in Xiapu Nuclear shall remain unchanged at 22.50%.

The Company, Huaneng Nuclear, HIPDC, China Nuclear, Fujian Funeng and Ningde Investment respectively hold 22.50%, 30%, 22.50%, 10%, 10% and 5% equity interest in Xiapu Nuclear. Huaneng Group and HIPDC are connected persons of the Company; Huaneng Nuclear and Xiapu Nuclear are its associates.

For details on the connected transaction in relation to the capital increase in Xiapu Nuclear, please refer to the Company’s announcement dated 30 July 2020.

### 4. Connected Transaction in Relation to Formation of Joint Venture

On 28 August 2020, the Company entered into the Investment Cooperation Agreement with Huaneng Group, Xi’an Thermal Power Research Institute Co., Ltd. (“**Xi’an Thermal Power Research Institute**”) and China Huaneng Group Clean Energy Technology Research Institute Co., Ltd. (“**Clean Energy Technology Research Institute**”). Pursuant to the terms and conditions of the Investment Cooperation Agreement, the Company will contribute capital to establish Environmental Technology Company jointly with Huaneng Group, Xi’an Thermal Power Research Institute and Clean Energy Technology Research Institute. The Company will contribute no more than RMB450 million, Huaneng Group will contribute RMB1.8 billion, Xi’an Thermal Power Research Institute will contribute RMB450 million, and Clean Energy Technology Research Institute will contribute RMB300 million. After the completion of the Transaction, the Company will hold 15% of the equity interest of the Environmental Technology Company, Huaneng Group will hold 60% of the equity interest of the Environmental Technology Company, Xi’an Thermal Power Research Institute will hold 15% of the equity interest of the Environmental Technology Company, and Clean Energy Technology Research Institute will hold 10% of the equity interest of the Environmental Technology Company.

Xi’an Thermal Power Research Institute and Clean Energy Technology Research Institute are both controlling subsidiaries of Huaneng Group. According to the Hong Kong Listing Rules, Huaneng Group, Xi’an Thermal Power Research Institute and Clean Energy Technology Research Institute are connected person/associates of the Company.

For details on the formation of joint venture, please refer to the Company’s announcement dated 29 August 2020.

## 5. Connected Transaction in Relation to the Capital Increase in Shengdong Offshore Wind Power

On 5 November 2020, the Company entered into the Capital Increase Agreement with China Hua Neng Group Hong Kong Limited (“**Hua Neng HK**”), CSIC Haizhuang (Beijing) Renewables Energy Investment Co., Ltd. (“**Haizhuang Renewables**”) and Huaneng Shengdong Rudong Offshore Wind Power Co., Ltd. (“**Shengdong Offshore Wind Power**”). Pursuant to the Capital Increase Agreement, the Company, Hua Neng HK and Haizhuang Renewables shall inject new capital by way of cash in accordance with their respective shareholding ratios. The Company shall use its own internal fund to pay Shengdong Offshore Wind Power not more than RMB1,077,871,181 as the consideration for the Capital Increase. Upon completion of the Capital Increase, Shengdong Offshore Wind Power’s registered capital will be increased to RMB2,364,393,900, and the Company’s shareholding ratio in Shengdong Offshore Wind Power remains unchanged at 79%.

The Company, Hua Neng HK and Haizhuang Renewables each holds 79%, 20% and 1% equity interests, respectively, in Shengdong Offshore Wind Power. Huaneng Group and HIPDC are connected persons of the Company, Hua Neng HK is its associate, and Shengdong Offshore Wind Power is a connected subsidiary of the Company.

For details on the connected transaction in relation to capital increase in Shengdong Offshore Wind Power, please refer to the Company’s announcement dated 6 November 2020.

## 6. Connected Transaction in Relation to the Capital Increase and Deemed Disposal of 25% Equity Interests in Yantai Renewable Energy

On 5 November 2020, Shandong Company, a controlling subsidiary of the Company, entered into the Capital Increase Agreement with Pro-Power Investment Limited (“**Pro-Power Investment**”). Pursuant to the Capital Increase Agreement, Huaneng Yantai Renewable Energy Limited (“**Yantai Renewable Energy**”), a wholly-owned subsidiary of Shandong Company (the Company’s controlling subsidiary), will increase its registered capital, among which, Shandong Company will contribute RMB1,247.7015 million, while Pro-Power Investment will contribute RMB415.9005 million (or its equivalent). Immediately after the Capital Increase, the registered capital of Yantai Renewable Energy will be increased from RMB1,000 million to RMB1,663.602 million, of which Shandong Company will invest RMB1,247.7015 million and hold a 75% of equity interest, and Pro-Power Investment will invest RMB415.9005 million (or its equivalent) and hold a 25% of equity interest. Yantai Renewable Energy will become a non-wholly owned subsidiary of Shandong Company.

Pro-Power Investment is an indirect wholly-owned subsidiary of Huaneng Group. Under the Hong Kong Listing Rules, Pro-Power Investment is a connected person of the Company.

For details on the transaction in relation to capital increase and Deemed Disposal of 25% Equity Interests in Yantai Renewable Energy, please refer to the Company’s announcement dated 6 November 2020.

# REPORT OF THE BOARD OF DIRECTORS

## 7. External Guarantee by Subsidiary and Connected Transaction

To ensure the smooth construction of Sahiwal Project of Huaneng Shandong Ruyi (Pakistan) Energy (Private) Limited (“**Pakistan Company**”), Huaneng Group has provided guarantee for the long-term borrowings of Pakistan Company according to the proportion of shareholding of Shandong Company in Pakistan Company. Upon the request of the syndicate of lenders, in order to rationalize the guarantee relationship, Shandong Company shall sign a Guarantee Contract with Industrial and Commercial Bank of China Limited (“**ICBC**”), the leading bank of the syndicate, to take over and assume the guarantee obligations of Huaneng Group.

According to the Guarantee Agreement, the Guarantee provided by Shandong Company is given on a joint and several liability basis. The period of guarantee is two years from the date on signing the Guarantee Contract to the expiry of performance of the secured debt. Jining Cheng Group, the other shareholder of Pakistan Company, has undertaken the guarantee obligation for the remaining 50% debt under the Guarantee Contract. The amount of the Guarantee given by Shandong Company was approximately US\$258.5 million.

The guarantee provided by Huaneng Group to a subsidiary of the Company is entered into on normal commercial terms, and does not involve any pledge of the Company’s assets. Under Rule 14A.90 of the Hong Kong Listing Rules, the guarantee provided by Huaneng Group to a subsidiary of the Company shall be exempt from reporting, announcement and independent shareholders’ approval requirements.

The Guarantee involves a subsidiary of the Company undertaking the guarantee provided by Huaneng Group for Pakistan Company. As Huaneng Group is a connected person of the Company, the Guarantee constitutes a connected transaction under the Hong Kong Listing Rules. Since the transaction scale of the Guarantee does not exceed 5% of the applicable percentage ratios as calculated in accordance with Rule 14.07 of the Hong Kong Listing Rules, the Guarantee shall only be subject to the reporting and announcement requirements under Rules 14A.71 and 14A.35 of the Hong Kong Listing Rules, but is exempt from the independent shareholders’ approval requirement.

For details on external guarantee by subsidiary and connected transaction, please refer to the Company’s announcement dated 6 November 2020.

In accordance with the requirements of Rule 14A.55 & 14A.71 of the Listing Rules of Hong Kong, the Independent 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 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. A copy of the auditor's letter has been provided by the Company to the Hong Kong Stock Exchange.

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

## **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 avoid business competition during its initial public offerings at home and abroad.

On 17 September 2010, the Company received an undertaking from 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.

# REPORT OF THE BOARD OF DIRECTORS

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 waiver 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 waiver 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 period of the undertaking was from 28 June 2014 to 31 December 2016.

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

Currently, the Company has 15 directors and only 4 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 2020.

## DIRECTORS OF THE COMPANY

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

<b>Name of Director</b>	<b>Position</b>	<b>Date of appointment</b>
Shu Yinbiao	Honorary Chairman	Appointed on 5 March 2020
Zhao Keyu	Chairman	Appointed on 5 March 2020
Zhao Ping	Director	Appointed on 16 June 2020
Huang Jian	Director	Appointed on 27 August 2008
Wang Yongxiang	Director	Appointed on 13 June 2017
Wang Kui	Director	Appointed on 16 June 2020
Lu Fei	Director	Appointed on 16 June 2020
Teng Yu	Director	Appointed on 16 June 2020
Mi Dabin	Director	Appointed on 18 September 2014
Guo Hongbo	Director	Appointed on 21 February 2012
Li Haifeng	Director	Appointed on 22 December 2020
Cheng Heng	Director	Appointed on 13 June 2017
Lin Chong	Director	Appointed on 13 June 2017
Yue Heng	Independent Director	Appointed on 18 September 2014
Xu Mengzhou	Independent Director	Appointed on 23 June 2016
Liu Jizhen	Independent Director	Appointed on 13 June 2017
Xu Haifeng	Independent Director	Appointed on 13 June 2017
Zhang Xianzhi	Independent Director	Appointed on 13 June 2017
Xia Qing	Independent Director	Appointed on 16 June 2020

# REPORT OF THE BOARD OF DIRECTORS

## MODEL CODE FOR SECURITIES TRANSACTIONS BY DIRECTORS AND SUPERVISORS

On 31 March 2009, 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 10 to the Listing Rules. Enquiries have been made with all Directors and Supervisors and all of them confirmed that they have complied with the code throughout 2020.

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

For the year ended 31 December 2020, none of the Directors, Chief Executives, Supervisors of the Company or their respective associates had any interests in the shares of the Company or any associated corporations (within the meaning of the Securities and Futures Ordinance) which are (a) required to be notified to the Company and The Stock Exchange of Hong Kong Limited ("**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 2020, 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. Xu Mengzhou, Mr. Liu Jizhen, Mr. Xu Haifeng, Mr. Zhang Xianzhi and Mr. Xia Qing, has signed a confirmation letter by independent non-executive directors for 2020 on 22 March 2021 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 IFRS.

## THE FIVE HIGHEST PAID EMPLOYEES

Details of the five highest paid employees of the Company are set out in Note 38 to the financial statements prepared under the IFRS.

## PUBLIC FLOAT

As at the date of this report, the Company has maintained the prescribed public float under the 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.

## STRUCTURE OF SHARE CAPITAL

As at 31 December 2020, 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 61,194,199 shares through its controlling subsidiary, China Huaneng Finance Corporation Limited, representing 0.39% of the total issued share capital of the Company. Other domestic shareholders held a total of 4,314,729,053 shares, representing 27.49% of the total issued share capital.

# REPORT OF THE BOARD OF DIRECTORS

## SHAREHOLDINGS OF MAJOR SHAREHOLDERS

The following table sets out the shareholdings of the top ten shareholders of the Company as at 31 December 2020:

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	4,105,225,522	26.15%
China Huaneng Group Co., Ltd	1,555,124,549	9.91%
Hebei Construction & Investment Group Co., Ltd.	527,548,946	3.36%
China Securities Finance Corporation Limited	492,186,504	3.14%
China Hua Neng Group Hong Kong Limited	472,000,000	3.01%
Jiangsu Guoxin Investment Group Limited	416,550,000	2.65%
Liaoning Energy Investment (Group) Limited Liability Company	284,204,999	1.81%
Fujian Investment & Development Group Co., Ltd.	251,814,185	1.60%
Hong Kong Securities Clearing Company Limited	167,680,317	1.07%

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

As at 31 December 2020, 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 (Hong Kong Law Cap. 571) (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 <sup>(Note 2)</sup>	Domestic shares	5,066,662,118(L)	Beneficial owner	32.28%(L)	46.07%(L)	-
China Huaneng Group Co., Ltd. <sup>(Note 3)</sup>	Domestic shares	1,616,318,748(L)	Beneficial owner	10.30%(L)	14.70%(L)	-
China Huaneng Group Co., Ltd. <sup>(Note 4)</sup>	H Shares	603,596,000(L)	Beneficial owner	3.85%(L)	-	12.84%(L)
Luo Yi <sup>(Note 5)</sup>	H Shares	722,888,000(L)	Interest of spouse	4.60%(L)	-	15.37%(L)
		30,800,000	Interest of controlled corporation	0.19%(L)	-	0.65%(L)
Qiu Guogen <sup>(Note 5)</sup>	H Shares	722,888,000(L)	Interest of controlled corporation	4.60%(L)	-	15.37%(L)
		30,800,000	Interest of spouse	0.19%(L)	-	0.65%(L)

*Note:*

- (1) The letter "L" denotes a long position. The letter "S" denotes a short position. The letter "P" denotes interest in a lending pool.
- (2) As of the Latest Practicable Date, China Huaneng Group Co., Ltd. holds 75% direct interests and 25% indirect interests in HIPDC.
- (3) Of the 1,616,318,748 domestic shares, China Huaneng Group Co., Ltd. through its controlling subsidiary, China Huaneng Finance Corporation Limited held 61,194,199 domestic shares.
- (4) China Huaneng Group Co., Ltd. held 472,000,000 H shares through its wholly-owned subsidiary, China Hua Neng Group Hong Kong Limited, and held 131,596,000 H shares through its indirect wholly-owned subsidiary, Huaneng Treasury.
- (5) Long position of 490,380,000 H shares was held by Shanghai Chongyang Strategic Investment Co., Ltd., while long position of 220,808,000 H shares was held by Shanghai Chongyang Investment Management Co., Ltd., long position of 700,000 H shares was held by Chongyang Group Investment Holding Co., Ltd. and long position of 3,000,000 H shares was held by Chongyang International Asset Management Co., Ltd. and long position of 2,000,000 H shares was held by Shanghai Chongyang Angel Investment Co. Ltd. Luo Yi is the spouse of Qiu Guogen who is the ultimate beneficial owner of each of Shanghai Chongyang Strategic Investment Co., Ltd., Shanghai Chongyang Investment Management Co., Ltd., Chongyang Group Co., Ltd. and Chongyang International Asset Management Co., Ltd..

Save as stated above, as at 31 December 2020, 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.

## INTEREST IN CONTRACTS AND SERVICE CONTRACTS

Save for the service contracts mentioned below, as at the end of 2020, the Directors and Supervisors of the Company did not have any material interests in any contracts entered into by the Company.

No Director and 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.

# REPORT OF THE BOARD OF DIRECTORS

## REMUNERATION POLICY

The Company unceasingly improves its remuneration and distribution system and, in accordance with the overall development strategy of the Company, has formulated a set of remuneration management rules. 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 19% 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 69% 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 12% 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 2020. 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.

## 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, and have implemented effectively in accordance with the plan.

## 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.

## GENERAL MEETINGS

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

1. The Company's 2019 Annual General Meeting was held on 16 June 2020. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 17 June 2020.
2. The Company's 2020 First Extraordinary General Meeting was held on 5 March 2020. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 6 March 2020.
3. The Company's 2020 Second Extraordinary General Meeting was held on 22 December 2020. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 23 December 2020.

## DISCLOSURE OF MAJOR EVENTS

### 1. Change of the Chairman of the Company and Appointment of the Honorary Chairman

The "Proposal on the Election of the Chairman of the Board of Directors and Chairman of the Strategy Committee of the Board of Directors of the Company and the Appointment of the Honorary Chairman" was considered at the meeting of the Board of Directors of the Company convened on 5 March 2020, whereby the election of Mr. Zhao Keyu as the Chairman of the ninth session of the Board of Directors and the chairman of the Strategy Committee of the Board of Directors of the Company was approved. Mr. Shu Yinbiao was appointed as the honorary chairman of the Company.

### 2. Completion of the Change in Session of the Board of Directors and the Supervisory Committee of the Company

Upon approval and consideration at the Board meeting held by the Company on 31 March 2020 and the annual general meeting held on 16 June 2020, the Company completed the election on change of session of each of the Board of Directors and the Supervisory Committee. Members of the new session of the Board of Directors of the Company are as follows: Zhao Keyu (Chairman), Zhao Ping, Huang Jian, Wang Kui, Lu Fei, Teng Yu, Mi Dabin, Cheng Heng, Guo Hongbo, Lin Chong, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi and Xia Qing. Among which, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi and Xia Qing are Independent Directors. Members of the new session of the Supervisory Committee of the

# REPORT OF THE BOARD OF DIRECTORS

Company are as follows: Li Shuqing (Chairman of the Supervisory Committee), Mu Xuan (Vice Chairman of the Supervisory Committee), Ye Cai, Gu Jianguo, Zhang Xiaojun and Xu Jianping. On 22 December 2020, upon approval and consideration at the general meeting, Mr. Li Haifeng was appointed as the Director of the Company and Mr. Guo Hongbo ceased to hold any relevant positions.

### 3. Adjustment to the management of the Company

On 5 March 2020, Mr. Zhao Ping was appointed as the president of the Company and Mr. Zhao Keyu resigned as the president of the Company due to work reason.

On 22 February 2021, Mr. Duan Rui was appointed as the secretary of the Discipline Inspection Commission of the Company.

On 20 January 2020, Mr. Huang Chaoquan was appointed as the vice president of the Company.

On 22 May 2020, Mr. Liu Wei was appointed as the chief engineer of the Company and Mr. Chen Shuping was appointed as the vice president of the Company.

On 18 August 2020, Mr. Fu Qiyang was appointed as the chief economist of the Company.

On 17 November 2020, Mr. Wu Senrong ceased to be the vice president of the Company due to work reason.

On 26 October 2020, Mr. Li Jianmin ceased to be the vice president of the Company due to work reason.

On 22 February 2021, Mr. Liu Ranxing ceased to be the vice president of the Company due to work reason.

## 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 2020" 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 2020, 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 and accordingly further improved its corporate image in capital market. The Environmental, Social and Governance Report of the Company for 2020 will be published on the websites of the Company and the Hong Kong Stock Exchange, respectively in April 2021.

## CODE OF CORPORATE GOVERNANCE PRACTICES

During the year, the Company has complied with the Corporate Governance Code as set out in Appendix 14 of the Listing Rules. The annual report of the Company will contain a corporate governance report prepared in accordance with the requirements under the Listing Rules.

## DESIGNATED DEPOSIT

As at 31 December 2020, 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.

## DONATION

During the reporting period, the payment for donation made in name of the Company within China for poverty alleviation amounted to RMB27.319 million.

## LEGAL PROCEEDINGS

As at 31 December 2020, 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 OF INFORMATION OF DIRECTORS AND SUPERVISORS DURING THE REPORTING PERIOD

### 1. Change of the Chairman of the Company and Appointment of the Honorary Chairman

The “Proposal on the Election of the Chairman of the Board of Directors and Chairman of the Strategy Committee of the Company and the Appointment of the Honorary Chairman” was considered at the meeting of the Board of Directors of the Company convened on 5 March 2020, whereby the election of Mr. Zhao Keyu as the Chairman of the ninth session of the Board of Directors and the chairman of the Strategy Committee of the Board of Directors was approved. Mr. Shu Yinbiao was appointed as the honorary chairman of the Company.

### 2. Completion of Change of Session of the Board of Directors and the Supervisory Committee of the Company

Upon approval and consideration at the Board meeting held by the Company on 31 March 2020 and the annual general meeting held on 16 June 2020, the Company completed the election on change of session of each of the Board of Directors and the Supervisory Committee. Members of the new session of the Board of Directors of the Company are as follows: Zhao Keyu (Chairman), Zhao

# REPORT OF THE BOARD OF DIRECTORS

Ping, Huang Jian, Wang Kui, Lu Fei, Teng Yu, Mi Dabin, Cheng Heng, Guo Hongbo, Lin Chong, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi and Xia Qing. Among which, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi and Xia Qing are Independent Directors of the Company. Members of the new session of the Supervisory Committee of the Company are as follows: Li Shuqing (Chairman of the Supervisory Committee), Mu Xuan (Vice Chairman of the Supervisory Committee), Ye Cai, Gu Jianguo, Zhang Xiaojun and Xu Jianping. On 22 December 2020, upon approval and consideration at the general meeting, Mr. Li Haifeng was appointed as the Director of the Company and Mr. Guo Hongbo ceased to hold any relevant positions.

## ANNUAL GENERAL MEETING AND CLOSURE OF REGISTER

As the Company has yet to confirm the date of the 2020 annual general meeting, the record date(s) for determining the eligibility to attend and vote at the 2020 annual general meeting and the entitlement to the final dividend and the period(s) for closure of register, the Company will upon confirmation thereof announce such details in the notice of the 2020 annual general meeting. Such notice is expected to be issued to shareholders in April or early May 2021.

## AUDITORS

As approved at the 2019 annual general meeting, Ernst & Young Hua Ming LLP was appointed as the Company's domestic and U.S. 20F Annual Report auditor for 2020, and Ernst & Young, registered public interest entity auditor, was appointed as the Hong Kong auditor of the Company for 2020.

By Order of the Board

**Zhao Keyu**

*Chairman*

Beijing, the PRC

23 March 2021

# REPORT OF THE SUPERVISORY COMMITTEE

## TO ALL SHAREHOLDERS,

In 2020, the Supervisory Committee of the Company fully performed the functions of supervision by effectively safeguarding the interests of the Company and shareholders' rights in strict accordance with the Company Law, the Securities Law, the Articles of Association of the Company and other relevant laws and regulations and diligently fulfill their duties and responsibilities conferred by laws and regulations in strict compliance with laws applicable to the places where the Company is listed as well as the Articles of Association of the Company.

## 1. OVERALL EVALUATION ON THE COMPANY'S OPERATION IN 2020

In 2020, faced with the impact of COVID-19 epidemic and a complex and volatile business situation, the Board of the Company adhered to the "three-colour" mission, the new development concept and the construction of modern corporate governance system so as to constantly increase the quality of a listed company. Fully analyzed the opportunities and challenges delivered to the Company by the macroeconomic situation and industry development and reform, actively addressed the implications to the Company that stemmed from changes in electricity, fuel and capital markets, deep adjustment of industrial structure and the environmental constraints, carbon peak and carbon neutral policies and strived to promote the Company's high-quality development. The Company's management grasped the epidemic prevention and control, business reform and development at the same time, reinforcing confidence, taking on responsibilities and having the courage to get things done, united and led all the staff to unite like a fortress to support each other,

stood closely together in difficult times and firmly built the great wall of steel of epidemic prevention and control. Conscientiously implemented the decisions and deployment of the board of directors, and did their utmost to carry out all important tasks such as production and operations, reform and development. And the Company has made gratifying achievements in terms of safety production, green development, technological innovation, raising the quality and efficiency and capital management and thus successfully completing the major objectives of the year.

The Supervisory Committee is of the view that during the reporting period, the Board operated in an effective and compliant manner, carefully executed resolutions of the general meetings with earnest performance, without any behavior which may harm the interests of the Company and its shareholders. The decision-making procedures of the Board are in compliance with laws and regulations applicable to the places where the Company is listed and the Articles of Association, and the subject matter involved in the resolutions is proposed for the requirements of management and development. The management of the Company has actively carried out relevant works on the prevention and control of epidemic, carefully implemented each Board resolution, strictly followed the approval procedures for "Three Major and One Significant" matters, and conducted transactions based on its various systems. There is no behavior breaking relevant provisions. The Company's corporate governance was recognized by the capital market and regulatory authorities.

# REPORT OF THE SUPERVISORY COMMITTEE

## 2. PARTICULARS OF WORK PERFORMED BY THE SUPERVISORY COMMITTEE

### (1) Completion of Change of Session of the Supervisory Committee

In 2020, the term of Company's Ninth Session of the Supervisory Committee expired and the Supervisory Committee earnestly carried out the election work on all fronts in accordance with the regulatory requirements, laws and regulations of the listing places and relevant regulations of the Articles of Association. Thanks to the joint efforts of all shareholders, we successfully completed the re-election and election proposal and timely held meetings to elect the chairman and vice president of the 10th session of the Supervisory Committee after the plan was adopted by the annual general meeting. The number and staff composition of the new session of Supervisory Committee meet the requirements of laws and regulations of the listing places and the Articles of Association. All the members are equipped with solid professional knowledge, rich management experience and good professional quality, which meet the function of supervision and examination of the Supervisory Committee. The old and new Supervisory Committee realized smooth transition and seamless connection, thereby providing an effective guarantee for improving the supervision mechanism and strengthening the audit and inspection on the Company's financial and accounting activities, and compliance performance of the directors and management.

### (2) Particulars on Convention of the Meetings of the Supervisory Committee

During the reporting period, the Company's Supervisory Committee, in accordance with applicable laws, the Articles of Association and actual needs of the Company's development, strove to overcome various difficulties of the epidemic and totally held 7 meetings of the Supervisory Committee, including 2 on-site meetings and 5 communication meetings. It carried out deliberation and vote for the Company's 21 issues, including the proposal of electing chairman and vice chairman of the Supervisory Committee, annual work report of the Supervisory Committee, financial reports, regular reports, profit distribution plan, proposal of provision for significant asset impairment, and proposal on management of raised funds. Having attended the annual general meeting and participated in ballot monitoring and ballot counting, it fully performed the due supervision and inspection responsibilities of the Supervisory Committee. These meetings were convened in strict compliance with the relevant requirements of the Company Law and the Articles of Association of the Company. Agenda and resolutions of these meetings have been disclosed and announced timely in accordance with relevant provisions regarding information disclosure.

### **(3) Training for the Members of the Supervisory Committee**

All supervisors of the Company thoroughly implemented the spirit of Three-year Action Plan for SOE Reform (2020-2022) and Opinions on Further Improving the Quality of Listed Companies, kept abreast of changes in regulations and related policies of listing places and continuously followed up the risk trend of American capital market supervision policy. Paid close attention to professional skills improvement and conscientiously studied the new requirements of laws and regulations such as the Securities Laws and Rules Governing the Listing of Shares. Actively participated in all kinds of regular trainings and special trainings held by the regulators and industry associations. In 2020, totally 9 supervisors from the Company participated in the above training, in which 7 new supervisors completed the compliance performance training. Therefore, the annual training supervision requirements were successfully completed. The capability of the Supervisors to perform their duties and improve their practice through study has been further enhanced. All Supervisors have acted with integrity, self-discipline and dedication, making positive contribution to the constant improvement of our corporate governance.

## **3. PARTICULARS OF DISCHARGING DUTIES OF THE SUPERVISION AND EXPRESSING OF OPINIONS**

### **(1) Legality of the Company's operations**

During the reporting period, through various approaches including presenting at Board meetings, attending general meetings, the Chairman office meetings and the President office meetings and keeping itself abreast of the particulars of the Company's production and operations on site and in real time, the Supervisory Committee performed effective supervision and examination on the procedures for convening general meetings and board meetings and the resolutions thereof, the implementation of resolutions of general meetings by the Board, the performance of duties by Directors and the senior management of the Company and the implementation of internal control system of the Company, and expressed its opinions and views timely according to relevant laws and regulation of the State.

# REPORT OF THE SUPERVISORY COMMITTEE

The Supervisory Committee is of the view that Company strictly complied with the Articles of Association of the Company and applicable laws of the jurisdictions in which the Company's shares are listed. The Supervisory Committee has not identified any breach of relevant laws and regulations in the performance of decision-making procedures by the Company. Directors and senior management of the Company have set good examples, performed duties dutifully, diligently and earnestly and carefully implemented resolutions of the general meeting and Directors. The Supervisory Committee has not identified any breach of laws, regulations and the Articles of Association of the Company or any issue that has caused damages to the interests of the Company in the performance of duties by the aforesaid persons.

## (2) Examining the financial information and regular reports of the Company

The Supervisory Committee has reviewed all the regular financial reports for the first quarter, half year, and third quarter in regular meetings in 2020, and carefully audited the final financial reports of the Company for 2020, the profit distribution plan of the Company for 2021, the annual report of the Company for 2020 and the auditor's reports for 2020 issued by the domestic and international auditors respectively at the annual meeting.

The Supervisory Committee is of the view that the preparation and consideration procedures of the regular reports have complied with the requirements of relevant laws and regulations including the Company Law, the Securities Law and the Articles of Association of the Company. The content of the

reports has truly, accurately and completely reflected the financial position and operating results of the Company for 2020. The sound financial system, standardised financial operation and good financial condition of the company is in place. The domestic and international auditors of the Company have issued their audit report for the Company for 2020 which is unqualified and stated that there are no false statement, misleading representation or material omission.

## (3) Examining major issues such as fund raising, asset impairment, external guarantees and related party transactions

In 2020, the Company's Supervisory Committee continuously followed up the implementation and changes of the Board of Directors' resolution on fund raising, and adopted four proposals in accordance with regulatory requirements such as Proposal on Using Part of Idle Raised Funds to Temporarily Supplement Working Capital and Special Report on the Storage and Actual Use of the Raised Funds in 2019 to ensure the legal compliance of the continued use and management process of surviving raised funds; adopted Proposal on the Company's Provision for Significant Asset Impairment and Proposal on Shandong Company Providing Guarantee for its Subsidiaries, assessed the Board of Directors' rationality and feasibility for asset impairment and resolution on external guarantee, and urged the Company to conduct information disclosure in a full, truthful and timely manner; attended meetings of Board of Directors and adopted 12 proposals including Proposal on the Continuous Connected Transactions between the Company and Huaneng Group in 2021, Proposal on Engagement with Investment and Establishment of Huaneng Changjiang Environmental Protection Technology Co., Ltd, and Proposal on Increasing Capital Contribution to Xiapu Nuclear Power and supervised the fairness, rationality and necessity of connected transactions.

The Supervisory Committee is of the view that the Company implemented a complete system and strict decision-making process to carry out work involved in the aforesaid proposals, which ensured that the Company carried out major activities such as fund raising, asset impairment, external guarantees and connected transactions in a compliant and fair manner. No violation in the approval procedures and disclosure obligation related to material operation event, significant unfair in pricing of transactions, major decision not in line with the requirement of the Company's business development or any damages to the interests of the Company and minority shareholders was identified.

#### **(4) Checking on particulars of the Company's information disclosure**

During the reporting period, the Supervisory Committee carefully examined the procedures for and the contents of information disclosure made by the Company by attending the Chairman office meetings, the President office meetings, the Information Disclosure Committee and other daily operation and management meetings. The Supervisory Committee placed great emphasis on and presented the annual meetings of the Board held and supervised the review process related to the annual reports of the Company. In addition, the Supervisory Committee convened meetings at which its members reviewed the Company's annual reports and listened to the reports on work related to information disclosure.

The Supervisory Committee is of the view that the Company's control over, and procedures on, the information disclosure was complete and effective. The procedures of information disclosure strictly complied with the "Measures on Information Disclosure Management" and the "Measures on Investor Relations Management", and met the regulatory requirements of the Company's listing places.

#### **(5) Reviewing the Board's self-assessment report on internal control**

At the annual Board meetings, the Supervisory Committee conscientiously listened to relevant reports on the Company's internal control, and convened supervisor meetings on the same day 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 according to its own situation and the requirement of laws and regulations, and the system has been effectively implemented. The internal control system is in accordance with relevant requirement of laws and regulations of the State and the actual needs of the Company, and has played a good role in risk prevention and control for the operation and management of the Company. The assessment report on internal control of the Company truly and objectively reflected the establishment and operation of the Company's internal control.

# REPORT OF THE SUPERVISORY COMMITTEE

In 2021, the Company's Supervisory Committee will remain committed to the principle of being careful in performing duties and being honest and diligent, earnestly perform the supervision duties bestowed by shareholders, give full play to the supervision efficiency, continually improve the supervision quality, urge the Company to earnestly carry out epidemic control and prevention on a regular basis, ensure coordination of energy security and green development in strict accordance with the "14th Five-Year" plan development program, further supply-side structural reform, accelerate the development of new energy and further optimization and upgrading of coal power. Strictly review various major decisions and enhance program control and process supervision. Uphold the bottom-line thinking, strengthen the compliance awareness, effectively protect and guarantee the legitimate rights and interests of shareholders and the Company, help the annual general meeting and Board of Directors continuously improve the quality of a listed company, and further improve the construction of modern governance system so as to contribute more to accelerating the pace of building a world first-class listed power company and driving the high-quality development of the Company.

*Supervisory Committee*

**Huaneng Power International, Inc.**

Beijing, the PRC

23 March 2021

# PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

## PROFILES OF DIRECTORS AND SUPERVISORS

### Directors



**ZHAO Keyu**, aged 54, is the Chairman and Party Secretary of the Company. He was 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 Party Secretary 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 senior economist.



**ZHAO Ping**, aged 58, is the Director, the President and the Deputy Party Secretary of the Company. He was the Vice President and the Deputy Party Secretary of the Company. He graduated from Tsinghua University, majoring in thermal engineering, is a postgraduate with a master's degree in science. He is a professor-level senior engineer. He is receiving special government allowance of the State Council.



**HUANG Jian**, aged 58, is a Director of the Company, a dedicated Director and Supervisor of Huaneng Group, a dedicated director of HIPDC, a dedicated director of Shandong Power Generation Co., Ltd.. He was an assistant to the President of Huaneng Group and Chairman of Huaneng Capital Services 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.



**WANG Kui**, aged 53, is the Director of the Company, the Deputy Chief Economist and the Chief of the Planning and Development Department of Huaneng Group, the Director of HIPDC and the Director of North United Power Co., Ltd.. He previously served as the Vice President and the President of Shanxi Branch of Huaneng Group and the Chief of the Planning and Development Department of Huaneng Group. He graduated from Beijing University of Economics with a major in quantitative economics. He holds an EMBA degree from Guanghua School of Management of Peking University. He is a professor-level senior engineer.

# PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

## Directors



**LU Fei**, aged 56, is the Director of the Company, the Deputy Chief Economist of Huaneng Group and Chairman of the Supervisory Board of Huaneng Renewables Corporation Limited. He previously served as the Director of Operation Coordination Department, the Director of Sales and Marketing Department and the Director of Budget and Comprehensive Planning Department of Huaneng Group. He graduated from Zhejiang University with a major in thermal power engineering, and holds an EMBA degree from School of Economics and Management of Tsinghua University. He is a professor-level senior engineer.



**TENG Yu**, aged 57, is the Director of the Company, the Deputy Chief Accountant of Huaneng Group, the Supervisor of HIPDC, the Director of North United Power Co., Ltd., the Director of China Huaneng Finance Corporation Limited and the Director of Huaneng Capital Services Co., Ltd.. He previously served as the Deputy Chief Accountant, Chief Accountant, Vice President of Huaneng Hulunbuir Energy Development Co. Ltd. and the Director of Finance Department of Huaneng Group. He graduated from the Party School of the Central Committee of Communist Party Committee with a degree majoring in economic management. He is a professor-level senior accountant.



**MI Dabin**, aged 52, is the Director of the Company, Vice Chairman, the President, Deputy Party Secretary of Hebei Construction & Investment Group Co., Ltd., and Party Secretary and Chairman of Hebei Rong Tou Holding Group Co., Ltd., the Chairman of Huihai Financing and Leasing Co., Ltd. He was the President and Chairman of Hebei Construction & Energy Investment Co., Ltd., the Chief Engineer, Vice President and President of Qinhuangdao Power Generation Co., Ltd., the President of Qinhuangdao Thermal Power Generation Co., Ltd., the 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., the President of Qinhuangdao Power Generation Co., Ltd. and the President of Qinhuangdao Thermal 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.

## Directors



**CHENG Heng**, aged 57, is a Director of the Company, the Vice President (group department president level) of the Energy Department of Jiangsu Guoxin Investment Group Limited, the Vice Chairman of Jiangsu Changshu Electric Power Generating Company Limited, the Vice Chairman of Jiangsu Ligang Electric Power Co., Ltd., and the Vice Chairman of Yangcheng International Electric Power Co., Ltd.. He previously 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 the Vice President of Jiangsu Provincial Investment Management Co., Ltd.. He is a university graduate with College education and an economist.



**Li Haifeng**, aged 41, is a Director of the Company, the secretary of the party committee and chairman of Liaoning Energy Investment (Group) Co., Ltd.. He previously served as the deputy secretary of the party committee, deputy chairman and president of Liaoning Energy Investment (Group) Co., Ltd.. He graduated from Tsinghua University, majoring in materials science and engineering, post-graduate qualification, and a doctorate degree in engineering. He is a professor-level senior engineer.

# PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

## Directors



**LIN Chong**, aged 57, is a Director of the Company, a Member of Party Economist and the Vice President of Fujian Investment & Development Group Co., Ltd., the Vice Chairman of Fujian Mindong Electric Power Limited Company, the Vice Chairman of Fujian Sanming Nuclear Power Co., Ltd., the Vice Chairman of Chinalco Southeast Copper Co., Ltd., the Vice Chairman of CNOOC Fujian Natural Gas Co. Ltd., the 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), the Vice Chairman of CNOOC Fujian Zhangzhou Natural Gas Company Limited, the director of Fujian Motor Industry Group Co., Ltd., the director of Fujian Fuqing Nuclear Power Co., Ltd. and the director of King Long Motor Group. Mr. Lin has formerly served as the assistant to the general manager of Fujian Investment & Development Group Co., Ltd., the Director of the Preparatory Office for Fuzhou Baiyun Pumped Storage Hydropower Station, and the Chairman of Fujian Zhongmin Energy Investment 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). Mr. Lin is a senior engineer.



**XU Mengzhou**, aged 70, is an Independent Director of the Company, an Independent Director of Shandong Hualu-Hengsheng Chemical Co., Ltd., an Independent Director of iHandy Group (non-listed company), and vice chairman of the Banking Law Research Institute of China Law Society. 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 69, is an Independent Director of the Company, an academican 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 China Electricity Council, a fellow of the Institution of Engineering and Technology (FIET) and an independent director of Datang International Power Generation Co., Ltd.. Mr. Liu was formerly the President of Wuhan University of Hydraulic and Electrical Engineering, the President of North China Electric Power University, the Vice President of the Chinese Society for Electrical Engineering and the Vice President of the Chinese Society of Power Engineering. He is a professor and a doctoral supervisor.

## Directors



**XU Haifeng**, aged 65, is an Independent Director of the Company. He successively served as the Chairman and President of China Railway Express Co., Ltd., the director and Vice President of Beijing-Shanghai High Speed Railway Co., Ltd., the Managing Commander-in-Chief of the General Headquarters for the Construction of Beijing-Shanghai High Speed Railway of the Ministry of Railways, and the Vice Chairman and President of Beijing-Shanghai High Speed Railway Co., Ltd.. He graduated from Beijing Jiaotong University where he majored 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 63, is 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. He is serving concurrently as a managerial accounting consultant to the Ministry of Finance, independent director at Yingkou Port Liability Co., Ltd. and Lingyuan Iron & Steel Co., Ltd. (凌源鋼鐵股份有限公司). Mr. Zhang 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.



**XIA Qing**, aged 63, is currently a professor in Tsinghua University, Member of the China Energy Research Council, the Expert of the National Electricity Exchange Agency Alliance, the Expert of China Southern Power Grid Corporation, the Expert of China Datang Power Generation Group, the Expert of State Grid NARI Group, the Deputy Director of the Power Market Special Committee of China Electrical Engineering Society, the Deputy Chairman of China Power Reform Forum the Deputy Chairman of the Energy Storage Committee of the China Energy Research Association, the Independent Director of Tellhow Sci-tech Co., Ltd., the Independent Director of State Grid Yingda Co., Ltd. and the Independent Director of Beijing E-techstar Co.,Ltd.. He previously served as the Independent Director of the Eighth Session of Board of Directors of the Company. He graduated from Tsinghua University with a doctoral degree in power system and automation.

# PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

## Supervisors



**LI Shuqing**, aged 57, is currently the Chairman of the Supervisory Committee of the Company, the Deputy Chief Engineer of Huaneng Group, the Chairman and the Secretary of Communist Party Committee of HIPDC. He previously served as the Vice President of the Company, the Executive Director and the President of Huaneng Hulunbuir Energy Development Co., Ltd., the Chairman and the 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 45, is the Vice Chairman of the Supervisory Committee of the Company, the Vice President and a Member of Party Committee of Dalian Construction Investment Group Co., Ltd., the Chairman and President of Dalian LNG Pipeline Co., Ltd.. He was the assistant to the President of Dalian Construction Investment Co., Ltd. and the 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.



**YE Cai**, aged 53, is currently the Supervisor of the Company, the Director, the President and the Secretary of Party Committee of Huaneng Capital Services Co., Ltd. and the Supervisor of Huaneng Shandong Power Generation Co., Ltd. and Guangdong Energy Group Co., Ltd.. He previously served as the Chief Accountant of North United Power Co., Ltd. and the Director of Finance Department of Huaneng Group. He graduated from Zhongnan University of Finance and Economics with a major in accounting and holds an EMBA degree from School of Economics and Management of Tsinghua University. He is a professor-level senior accountant.

## Supervisors



**GU Jianguo**, aged 54, is a Supervisor of the Company, the Chairman of Nantong Investment & Management Limited Company, and Vice Chairman and the President of Nantong Industries Holdings Group Limited. He was the Chief of Nantong Investment Management Centre, Director 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.



**ZHANG Xiaojun**, aged 54, is a Supervisor of the Company. She was Deputy Manager of the Administration Department and the manager of the Discipline Inspection, Supervision and Audit Department of the Company. She graduated from the Central Party School of the Communist Party of China, majoring in economic management, and holds a bachelor's degree. She is an accountant.



**XU Jianping**, aged 52, is a Supervisor, an assistant to the President and the Secretary of Party Committee of the Company. He previously served as deputy manager, manager and director of the Human Resources Department and a 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 in Finance from Zhongnan University of Economics and Law. He is a senior engineer.

# PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

## Biographies of Senior Management



**Zhao Ping**, aged 58, is the director, President and the Deputy Party Secretary of the Company. He was the Vice President and the Deputy Party Secretary of the Company. He graduated from Tsinghua University, majoring in thermal engineering, is a postgraduate with a master's degree in science. He is a professor-level senior engineer. He is receiving special government allowance of the State Council.



**HUANG Lixin**, aged 54, is currently the Chief accountant and a Member of Party Committee of the Company. He was the deputy manager and manager of the Finance Department of the Company and the director of Finance Department of Huaneng Group. He graduated from the Economic Management School of Tsinghua University with an EMBA degree. He is a professor-level senior accountant.



**Duan Rui**, aged 53, is the secretary of the Discipline & Inspection Commission and the Secretary of the Party Committee of the Company. He was leader of the Inspection Team of Huaneng Group and deputy chairman 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 of HIPDC and secretary of the Discipline Inspection Commission. 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 senior political engineer.

## Biographies of Senior Management



**HUANG Chaoquan**, aged 55, is currently the Vice President, a Member of Party Committee, the Secretary to the Board of the Company. He was the Manager of the Corporate Management Department and Manager 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.



**Liu Wei**: aged 57, is currently the chief engineer and a member of the Party Committee of the Company. He was the Party Secretary, Chairman of Xi 'an Thermal Power Research Institute Co., Ltd., Executive Director and Director of Huaneng Group Technology Innovation Center Co., Ltd.. He graduated from a Northeast Electric Power University of power plant engineering major with graduate degree, master of engineering, EMBA of the Cheung Kong Graduate School of Business. He is a researcher-level senior engineer. He is receiving a special government allowance of the State Council.



**Chen Shuping**: aged 57, is currently the Vice President and Member of Party committee of the Company. He was the Manager of Engineering Management Department of the Company, Director of Material Department, Director of Purchasing Department and Director of Capital 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 57, is currently the Chief Economist and Member of Party Committee of the Company. He was the Manager of Marketing Department of the Company, General Manager and Party Secretary of Huaneng Hunan Branch. He graduated from the Business and 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.

# PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

## Profiles of Resigned Directors, Supervisors and Senior Management



**SHU Yinbiao**, aged 62, is the Chairman and the Secretary of the Leading Party Members' Group of Huaneng Group, the honorary chairman of the Company and an academican of the Chinese Academy of Engineering. He was the Chairman of the Company during the reporting period. He was the Chairman of State Grid Corporation of China. He graduated from Wuhan University, majoring in Electric Power System and Its Automation. He holds a doctor degree in engineering. He is a professor-level senior engineer.



**WANG Yongxiang**, aged 55, was the Director of the Company. He is the security director (chief security officer) of Huaneng Group. He graduated from Tsinghua University where he majored in hydraulic engineering and holds a postgraduate degree of master in engineering. He is a professor-level senior engineer.



**GUO Hong bo**, aged 52, was the Director of the Company. He is the Secretary of the Party Committee and the Chairman of Liaoning Energy Investment (Group) Limited Liability Company and the Chairman and the Secretary of the Party Committee of Liaoning Energy Investment (Group) Limited Liability Company during the reporting period. He was the president and vice chairman of Liaoning Energy Investment (Group) Limited Liability Company, the director of Haitong Securities Co., Ltd., the director of Shenyang Jinshan Energy Limited, and the vice chairman of Liaoning Haitong New Energy Low-Carbon Industrial Equity Investment Fund Limited. Mr. Guo graduated from Jilin University with a master's degree in administrative management, and holds an MBA degree. He is a professor-level senior engineer.

## Profiles of Resigned Directors, Supervisors and Senior Management



**YUE Heng**, aged 46, was the Independent Director of the Company during the reporting period. He is an Associate Professor of Singapore Management University. He is the winner of the first session of China National Funds for Distinguished Young Scientists, the winner of New Century Excellent Talents of the Ministry of Education 2012, and the leading accounting talent of Ministry of Finance. He was the Associate Professor, Professor, Dean and Doctorate Mentor of Accounting Department of Guanghua Management School of Peking University, the Councilor of Accounting Society of China and the Deputy Editor-in-Chief of CJAS magazine of Accounting Society of China. He graduated from Tulane University in the United States with a doctor's degree in accounting.



**YE Xiangdong**, aged 53, was the Chairman of the Supervisory Committee of the Company. He is the President and Deputy Secretary of Leading Party Members' Group of Huadian Group during the reporting period. He graduated from Chongqing University, majoring in thermal energy, and holds a master's degree in Engineering. He is a senior engineer.



**ZHANG Mengjiao**, aged 56, was the Supervisor of the Company during the reporting period. She graduated from Xiamen University, majoring in accounting. She is a master's degree postgraduate in economics and is a senior accountant.

# PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

## Profiles of Resigned Directors, Supervisors and Senior Management



**ZHANG Xiancheng**, aged 56, was a Supervisor of the Company and a dedicated Director and Supervisor of Huaneng Group during the reporting period. He graduated from Northeast Agriculture University, majoring in business administration, and holds a bachelor's degree in economics. He is a senior economist.



**WU Senrong**, aged 59, was the Vice President and a Member of Party Committee of the Company during the reporting period. He graduated from the Economic Management School of Tsinghua University with an EMBA degree. He is a professor-level senior engineer.



**LI Jianmin**, aged 59, was the Vice President and a Member of Party Committee of the Company during the reporting period. He graduated from North China Electricity College, majoring in power plant and electricity system, with a bachelor's degree in science. He is a professor-level senior engineer.



**LIU Ranxing**, aged 58, was the Vice President, a Member of Party Committee and the Secretary of the Discipline Inspection commission of the Company during the reporting period. He graduated from Harbin Institute of Technology, majoring in management engineering, with a master's degree in science. He is a professor-level senior engineer.

# 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	Zhao Keyu Huang Chaoquan
Hong Kong Share Registrar	Hong Kong Registrars Limited Shops 1712-1716 17th Floor, Hopewell Centre 183 Queen's Road East Hong Kong
Depository	The Bank of New York Mellon Investor Relations P.O. Box 11258 Church Street Station New York NY 10286-1258 USA

# CORPORATE INFORMATION

## LEGAL ADVISERS TO THE COMPANY

As to Hong Kong law

Herbert Smith Freehills  
23rd Floor, Gloucester Tower  
15 Queen's Road Central  
Central  
Hong Kong

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 US law

Skadden, Arps, Slate, Meagher & Flom  
42/F, Edinburgh Tower  
The Landmark  
15 Queen's Road Central  
Central  
Hong Kong

## AUDITORS OF THE COMPANY

Domestic and U.S. 20F Annual Report Auditors

Ernst & Young Hua Ming LLP  
16/F, Ernst & Young Tower  
Oriental Plaza  
1 East Chang'an Avenue  
Dongcheng District  
Beijing  
The PRC  
Post Code: 100738

Hong Kong Auditors

Ernst & Young  
*Certified Public Accountants*  
*Registered Public Interest Entity Auditor*  
22/F, CITIC Tower  
1 Tim Mei Avenue  
Central  
Hong Kong

## LISTING INFORMATION

H Shares:	The Stock Exchange of Hong Kong Limited Stock Code: 902
ADSs:	The New York Stock Exchange, Inc. Ticker Symbol: HNP
A Shares:	Shanghai Stock Exchange Stock Code: 600011

## PUBLICATIONS

The Company's report on interim results and the annual report (A share version and H share version) was published in August 2020 and will be published in April 2021, respectively. As required by the United States securities laws, the Company will file an annual report in Form 20-F with the Securities and Exchange Commission of the U.S. before 30 April 2021. As the Company's A shares have already been issued and listed, the Company shall, in compliance of the relevant regulations of the China Securities Regulatory Commission and the Shanghai Stock Exchange, prepare quarterly reports. Copies of the interim and annual reports as well as the Form 20-F, once filed, will be 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 Website: <a href="http://www.hpi.com.cn">http://www.hpi.com.cn</a>
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:	<a href="http://www.hpi.com.cn">http://www.hpi.com.cn</a>

# GLOSSARY

Equivalent Availability Factor (EAF):	Percentage on duration of usable hours on generating units in period hour, i.e.
	$\text{EAF} = \frac{\text{Available Hours (AH)} - \text{Equivalent Unit Derated Hours (EUNDH)}}{\text{Period Hour (PH)}} \times 100\%$
Gross Capacity Factor (GCF):	
	$\text{GCF} = \frac{\text{Gross Actual Generation (GAAG)}}{\text{Period Hour (PH)} \times \text{Gross Maximum Capacity (GMC)}} \times 100\%$
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 for consumption or production sold by power producers to customers or power-producing counterparts.

*GW: Unit of power generation, = 10<sup>9</sup>W, gigawatt*  
*MW: = 10<sup>6</sup>W, megawatt*  
*kW: = 10<sup>3</sup>W, kilowatt*  
*kWh: Unit of power, kilowatt hour*

# INDEPENDENT AUDITOR'S REPORT



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## To the shareholders of Huaneng Power International, Inc.

*(Incorporated 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 128 to 357, which comprise the consolidated statement of financial position as at 31 December 2020, 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 a summary of significant accounting policies.

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 2020, 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.

## INDEPENDENT AUDITOR'S REPORT

### KEY AUDIT MATTERS (Cont'd)

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.

#### Key audit matter

#### How our audit addressed the key audit matter

##### ***Impairment of property, plant and equipment***

At 31 December 2020, the Group held property, plant and equipment ("PPE") with the amount of RMB300,171 million, contributed 78.2% of the Group's total non-current assets. As described in Notes 2 (g), 2 (l), 4 (e) 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 are allocated to. As a result of the impairment assessment, impairment losses of RMB7,847 million were recognised during the year ended 31 December 2020.

Auditing management's impairment assessment of PPE was complex due to the significant estimates and judgments 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 judgments may be significantly affected by changes in future market or economic conditions.

We obtained an understanding, evaluated the design, 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 compared the methodology used by the Group to industry practice and tested the completeness and accuracy of 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, by comparing them to external industry outlook reports and analysing the historical accuracy 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, both individually and in the aggregate.

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 2020, the Group's goodwill was RMB14,738 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 CGUs. 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 RMB685 million were recognised during the year ended 31 December 2020.

Auditing management's goodwill impairment assessment was complex because the determination of the recoverable amount of the underlying CGUs involved significant estimates and judgments, 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 judgments may be significantly affected by changes in future market or economic conditions.

We obtained an understanding, evaluated the design, 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 completeness and accuracy of 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 margin, terminal growth rate, and discount rates, by comparing them to external industry outlook reports and analysing the historical accuracy 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 a 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, both individually and in the aggregate.

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

##### *Recognition of deferred tax assets*

At 31 December 2020, the Group recognised deferred tax assets before offsetting on deductible temporary differences and tax losses carried forward of RMB3,608 million. At 31 December 2020, the Group did not recognise deferred tax assets related to deductible temporary differences of RMB14,886 million and unused tax losses of RMB10,917 million. As described in Notes 2 (w) (iii), 4 (g) and 31 to the consolidated financial statements, the Group recognised deferred 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 tax assets is complex because it requires significant estimation and judgment 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 or economic conditions.

#### How our audit addressed the key audit matter

We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls over the recognition of deferred 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 year.

Further, we evaluated management's significant assumptions in determining the future available taxable profits, for example, the future sales volumes, and fuel prices, by comparing them with the market trend forecasted by the external industry analysts and analysing the historical accuracy of management's estimates. We also tested the completeness and accuracy of 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 property, plant and equipment, and goodwill.

In addition, we involved our tax professionals to assist us in evaluating the technical merits from a tax perspective of management's analysis.

We also assessed the adequacy of the Group's disclosures regarding the deferred tax assets recognised.

## **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 Cheong Ming Yik.

### **Ernst & Young**

*Certified Public Accountants*

Hong Kong

23 March 2021

# CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

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

	Note	For the year ended 31 December	
		2020	2019
<b>Operating revenue</b>	5	<b>169,446,338</b>	174,009,401
Tax and levies on operations		<b>(1,794,004)</b>	(1,832,975)
<b>Operating expenses</b>			
Fuel		<b>(88,966,304)</b>	(97,686,799)
Maintenance		<b>(5,001,982)</b>	(4,606,171)
Depreciation	6	<b>(22,146,316)</b>	(21,864,903)
Labour	37	<b>(14,503,290)</b>	(13,514,752)
Service fees on transmission and transformer facilities of HIPDC		<b>(95,894)</b>	(95,067)
Purchase of electricity		<b>(4,720,261)</b>	(5,151,578)
Others	6	<b>(20,300,072)</b>	(16,879,425)
Total operating expenses		<b>(155,734,119)</b>	(159,798,695)
<b>Profit from operations</b>		<b>11,918,215</b>	12,377,731
Interest income		<b>292,724</b>	264,554
<b>Financial expenses, net</b>			
Interest expense	6	<b>(9,200,612)</b>	(10,762,718)
Exchange gain/(loss) and bank charges, net		<b>100,643</b>	(210,422)
Total financial expenses, net		<b>(9,099,969)</b>	(10,973,140)
Share of profits less losses of associates and joint ventures	8	<b>1,774,322</b>	1,185,622
(Loss)/gain on fair value changes of financial assets/liabilities	6	<b>(1,566)</b>	36,667
Other investment (loss)/income		<b>(109,990)</b>	228,026
<b>Profit before income tax expense</b>	6	<b>4,773,736</b>	3,119,460
Income tax expense	33	<b>(2,163,173)</b>	(2,011,255)
<b>Net profit</b>		<b>2,610,563</b>	1,108,205

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

	<b>For the year ended 31 December</b>	
	<b>2020</b>	2019
<b>Other comprehensive (loss)/income, net of tax</b>		
<i>Items that will not be reclassified to profit or loss in subsequent periods:</i>		
Fair value changes of other equity instrument investments	<b>(175,984)</b>	(61,652)
Share of other comprehensive (loss)/income of joint ventures and associates	<b>(178,501)</b>	367,528
Income tax effect	<b>43,996</b>	15,413
<i>Items that may be reclassified subsequently to profit or loss:</i>		
Share of other comprehensive (loss)/income of joint ventures and associates	<b>(4,348)</b>	1,168
Cash flow hedges:		
Effective portion of changes in fair value of hedging instruments arising during the year	<b>(166,323)</b>	264,691
Reclassification adjustments for losses/(gains) included in profit or loss	<b>414,821</b>	(119,793)
Exchange differences on translation of foreign operations	<b>(862,454)</b>	128,494
Income tax effect	<b>(42,245)</b>	(24,962)
<b>Other comprehensive (loss)/income, net of tax</b>	<b>(971,038)</b>	570,887
<b>Total comprehensive income</b>	<b>1,639,525</b>	1,679,092

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

## CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

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

	Note	For the year ended 31 December	
		2020	2019
<b>Net profit attributable to:</b>			
– Equity holders of the Company		2,377,851	766,345
– Non-controlling interests		232,712	341,860
		<u>2,610,563</u>	<u>1,108,205</u>
<b>Total comprehensive income attributable to:</b>			
– Equity holders of the Company		1,599,471	1,498,013
– Non-controlling interests		40,054	181,079
		<u>1,639,525</u>	<u>1,679,092</u>
<b>Earnings per share attributable to the shareholders of the Company (expressed in RMB per share)</b>			
– Basic and diluted	34	<u>0.04</u>	<u>0.01</u>

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

# CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Note	As at 31 December	
		2020	2019
<b>ASSETS</b>			
<b>Non-current assets</b>			
Property, plant and equipment	7	300,171,142	285,622,907
Right-of-use assets	42	18,292,074	17,168,072
Investments in associates and joint ventures	8	22,375,377	20,783,259
Investment properties		647,471	671,710
Other equity instrument investments	10	664,946	779,218
Power generation licenses	11	3,954,983	4,149,468
Mining rights	12	1,611,486	1,577,505
Deferred income tax assets	31	2,699,395	2,160,187
Derivative financial assets	13	74,554	16,376
Goodwill	14	14,738,016	15,934,955
Other non-current assets	15	18,537,583	18,605,005
<b>Total non-current assets</b>		<b>383,767,027</b>	367,468,662
<b>Current assets</b>			
Inventories	16	6,602,459	8,883,183
Other receivables and assets	17	7,308,077	6,217,763
Accounts and notes receivable	18	38,215,715	32,268,939
Contract assets	5 (c)	29,678	30,466
Derivative financial assets	13	110,179	74,911
Bank balances and cash	35	13,871,523	13,306,139
<b>Total current assets</b>		<b>66,137,631</b>	60,781,401
<b>Total assets</b>		<b>449,904,658</b>	428,250,063

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

# CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Note	As at 31 December 2020	2019
<b>EQUITY AND LIABILITIES</b>			
<b>Capital and reserves attributable to equity holders of the Company</b>			
Share capital	20	15,698,093	15,698,093
Other equity instruments	21	48,419,779	25,127,821
Capital surplus		26,162,550	26,215,137
Surplus reserves	22	8,140,030	8,140,030
Currency translation differences		(738,927)	(54,812)
Retained earnings		32,164,398	33,677,466
		<b>129,845,923</b>	108,803,735
<b>Non-controlling interests</b>	41	<b>21,770,275</b>	21,575,311
<b>Total equity</b>		<b>151,616,198</b>	130,379,046
<b>Non-current liabilities</b>			
Long-term loans	24	112,077,395	115,364,598
Long-term bonds	25	20,382,405	28,487,115
Lease liabilities	42	3,805,635	4,279,925
Deferred income tax liabilities	31	3,002,527	3,137,791
Derivative financial liabilities	13	188,139	200,408
Other non-current liabilities	26	4,784,268	4,780,770
<b>Total non-current liabilities</b>		<b>144,240,369</b>	156,250,607

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

	Note	As at 31 December	
		2020	2019
<b>EQUITY AND LIABILITIES</b> <i>(Continued)</i>			
<b>Current liabilities</b>			
Accounts payable and other liabilities	27	42,755,361	37,270,081
Contract liabilities	5 (c)	2,903,296	2,706,529
Taxes payable	28	2,044,869	2,101,617
Dividends payable		694,854	1,191,036
Derivative financial liabilities	13	106,862	250,300
Short-term bonds	29	5,002,877	9,025,535
Short-term loans	30	66,311,160	67,119,368
Current portion of long-term loans	24	19,808,313	18,658,114
Current portion of long-term bonds	25	12,678,511	2,799,808
Current portion of lease liabilities	42	1,676,711	432,745
Current portion of other non-current liabilities	26	65,277	65,277
<b>Total current liabilities</b>		<b>154,048,091</b>	141,620,410
<b>Total liabilities</b>		<b>298,288,460</b>	297,871,017
<b>Total equity and liabilities</b>		<b>449,904,658</b>	428,250,063

These financial statements were approved for issue by the Board of Directors on 23 March 2021 and were signed on its behalf.

**Zhao Keyu**  
Director

**Zhao Ping**  
Director

# CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Attributable to equity holders of the Company													
	Capital surplus													
	Fair value reserve of financial assets													
	Share capital	Other equity instruments	Share premium	Hedging reserve	at fair value through other comprehensive income		Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves	Currency translation differences	Retained earnings	Total	Non-controlling interests
comprehensive income					comprehensive income									
<b>Balance as at 31 December</b>														
<b>2019</b>	15,698,093	25,127,821	24,770,682	(298,249)	737,585	(101,562)	1,106,681	26,215,137	8,140,030	(54,812)	33,677,466	108,803,735	21,575,311	130,379,046
Profit for the year ended 31 December 2020	-	1,770,469	-	-	-	-	-	-	-	-	607,382	2,377,851	232,712	2,610,563
Other comprehensive income/(loss):														
Fair value changes of other equity investment instruments – net of tax	-	-	-	-	(131,958)	-	-	(131,958)	-	-	-	(131,958)	(30)	(131,988)
Shares of other investees – accounted for under the equity method, net of tax	-	-	-	-	(178,501)	(4,348)	-	(182,849)	-	-	-	(182,849)	-	(182,849)
Changes in fair value of effective portion and reclassification of cash flow hedges, net of tax	-	-	-	220,542	-	-	-	220,542	-	-	-	220,542	(14,289)	206,253
Currency translation differences	-	-	-	-	-	-	-	-	-	(684,115)	-	(684,115)	(178,339)	(862,454)
<b>Total comprehensive income/(loss) for the year ended 31 December 2020</b>	<b>-</b>	<b>1,770,469</b>	<b>-</b>	<b>220,542</b>	<b>(310,459)</b>	<b>(4,348)</b>	<b>-</b>	<b>(94,265)</b>	<b>-</b>	<b>(684,115)</b>	<b>607,382</b>	<b>1,599,471</b>	<b>40,054</b>	<b>1,639,525</b>

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

	Attributable to equity holders of the Company													
	Capital surplus													
	Fair value reserve of financial assets													
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value at fair value through other comprehensive income	Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves	Currency translation differences	Retained earnings	Total	Non-controlling interests	Total equity
Issue of other equity instruments (Note 21)	-	25,457,450	-	-	-	-	-	-	-	-	25,457,450	-	25,457,450	
Redemption of other equity instruments (Note 21)	-	(2,499,844)	-	-	-	-	-	-	-	(156)	(2,500,000)	-	(2,500,000)	
Dividends relating to 2019 (Note 23)	-	-	-	-	-	-	-	-	-	(2,119,243)	(2,119,243)	(1,206,329)	(3,325,572)	
Cumulative distribution of other equity instruments (Note 21)	-	(1,436,117)	-	-	-	-	-	-	-	-	(1,436,117)	-	(1,436,117)	
Net capital injection from non-controlling interests of subsidiaries	-	-	-	-	-	-	34,071	34,071	-	-	34,071	1,302,085	1,336,156	
Business combination (Note 40)	-	-	-	-	-	-	-	-	-	-	-	48,103	48,103	
Share of other capital reserve of investees accounted for under the equity method	-	-	-	-	-	-	7,607	7,607	-	-	7,607	-	7,607	
Others	-	-	-	-	-	-	-	-	-	(1,051)	(1,051)	11,051	10,000	
<b>Balance as at 31 December 2020</b>	<b>15,698,093</b>	<b>48,419,779</b>	<b>24,770,682</b>	<b>(77,707)</b>	<b>427,126</b>	<b>(105,910)</b>	<b>1,148,359</b>	<b>26,162,550</b>	<b>8,140,030</b>	<b>(738,927)</b>	<b>32,164,398</b>	<b>129,845,923</b>	<b>21,770,275</b>	<b>151,616,198</b>

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

# CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Attributable to equity holders of the Company														Non-controlling interests	Total equity
	Capital surplus												Total			
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value reserve of financial assets at fair value		Other comprehensive income	Other comprehensive income through other	Other capital reserve	Subtotal	Surplus reserves	Currency translation differences		Retained earnings		
					comprehensive income	in other										
<b>Balance as at 31 December 2018</b>	15,698,093	10,077,396	24,770,682	(430,896)	926,804	(102,730)	1,031,071	26,194,931	8,140,030	(340,337)	34,665,305	94,435,418	21,686,252	116,121,670		
Profit for the year ended 31 December 2019	-	685,922	-	-	-	-	-	-	-	-	-	80,423	766,345	341,860	1,108,205	
Other comprehensive income/ (loss):																
Fair value changes of other equity investment instruments – net of tax	-	-	-	-	(55,200)	-	-	(55,200)	-	-	-	(55,200)	8,961	(46,239)		
Shares of other comprehensive income of investees – accounted for under the equity method, net of tax	-	-	-	-	367,528	1,168	-	368,696	-	-	-	368,696	-	368,696		
Changes in fair value of effective portion and reclassification of cash flow hedges, net of tax	-	-	-	132,647	-	-	-	132,647	-	-	-	132,647	(12,711)	119,936		
Currency translation differences	-	-	-	-	-	-	-	-	-	285,525	-	285,525	(157,031)	128,494		
<b>Total comprehensive income for the year ended 31 December 2019</b>	-	685,922	-	132,647	312,328	1,168	-	446,143	-	285,525	80,423	1,498,013	181,079	1,679,092		

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

	Attributable to equity holders of the Company														
	Capital surplus													Non-controlling interests	Total equity
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value reserve of financial assets at fair value through other comprehensive income			Other capital reserve	Subtotal	Surplus reserves	Currency translation differences	Retained earnings	Total		
					Fair value reserve of financial assets at fair value through other comprehensive income	Other reserve in other comprehensive income	Other								
comprehensive income					comprehensive income	capital reserve									
Issue of other equity instruments	-	14,982,165	-	-	-	-	-	-	-	-	-	14,982,165	-	14,982,165	
Dividends relating to 2018 (Note 23)	-	-	-	-	-	-	-	-	-	-	(1,569,809)	(1,569,809)	(1,359,777)	(2,929,586)	
Cumulative distribution of other equity instruments	-	(617,662)	-	-	-	-	-	-	-	-	-	(617,662)	-	(617,662)	
Net capital injection from non-controlling interests of subsidiaries	-	-	-	-	-	-	96,036	96,036	-	-	-	96,036	1,018,048	1,114,084	
Acquisition of non-controlling interests of subsidiaries	-	-	-	-	-	-	(20,426)	(20,426)	-	-	-	(20,426)	13,624	(6,802)	
Disposal of a subsidiary	-	-	-	-	-	-	-	-	-	-	-	-	36,040	36,040	
Deregistration of a subsidiary	-	-	-	-	-	-	-	-	-	-	-	-	45	45	
Disposal of equity investments at fair value through other comprehensive income	-	-	-	-	(501,547)	-	-	(501,547)	-	-	501,547	-	-	-	
<b>Balance as at 31 December 2019</b>	<b>15,698,093</b>	<b>25,127,821</b>	<b>24,770,682</b>	<b>(298,249)</b>	<b>737,585</b>	<b>(101,562)</b>	<b>1,106,681</b>	<b>26,215,137</b>	<b>8,140,030</b>	<b>(54,812)</b>	<b>33,677,466</b>	<b>108,803,735</b>	<b>21,575,311</b>	<b>130,379,046</b>	

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

# CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

		For the year ended 31 December	
	Note	2020	2019
<b>OPERATING ACTIVITIES</b>			
Profit before income tax expense		4,773,736	3,119,460
Adjustments to reconcile profit before income tax expense to net cash provided by operating activities:			
Depreciation	6	21,360,798	21,130,076
Depreciation of right-of-use assets	6	785,518	734,827
Provision for impairment losses on property, plant and equipment	6	7,847,378	5,719,990
Provision for impairment on goodwill	6	685,036	–
Provision for impairment on other non-current assets	6	349,559	464,867
Amortisation of other non-current assets	6	128,177	101,902
Recognition of provision for loss allowance of receivables	6	172,711	74,557
Recognition of provision for inventory obsolescence	6	43,076	22,453
Loss/(gain) on fair value changes of financial assets/liabilities	6	1,566	(36,667)
Other investment (gain)/loss		(8,585)	59,996
Net loss/(gain) on disposals of non-current assets	6	626,657	(69,449)
Net gain on disposal of subsidiaries	6	–	(256,009)
Share of profits less losses of associates and joint ventures	8	(1,774,322)	(1,185,622)
Interest income		(292,724)	(264,554)
Interest expense	6	9,200,612	10,762,718
Others		(648,651)	(250,183)
Changes in working capital:			
Inventories		2,244,127	638,055
Other receivables and assets		704,927	82,840
Accounts and notes receivable		(6,885,418)	(3,442,544)
Contract assets		(5,521)	(19,408)
Restricted cash		(56,990)	(141,271)
Accounts payable and other liabilities		2,343,598	(520,570)
Contract liabilities		196,767	730,356
Taxes payable		3,177,908	1,740,068
Interest received		292,724	264,554
Income tax expense paid		(3,275,626)	(2,136,249)
Net cash provided by operating activities		<u>41,987,038</u>	<u>37,324,193</u>

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

		<b>For the year ended 31 December</b>	
	Note	<b>2020</b>	2019
<b>INVESTING ACTIVITIES</b>			
Payment for the purchase of property, plant and equipment		<b>(42,558,250)</b>	(31,382,657)
Proceeds from disposal of property, plant and equipment, land use rights and other non-current assets		<b>454,470</b>	464,542
Payment for the purchase of other non-current assets		<b>(72,699)</b>	(113,124)
Cash dividends received		<b>554,614</b>	668,906
Capital injections for investments in associates and joint ventures		<b>(586,261)</b>	(313,197)
Cash paid for acquiring other equity instrument investments	3 (b)	<b>(61,713)</b>	(7,450)
Cash paid for acquiring subsidiaries, net of cash acquired	40	<b>(206,414)</b>	(71,696)
Cash received from disposal of other equity instrument investments		–	1,250,000
Net outflow of cash and cash equivalents in respect of the disposal of subsidiaries		–	(29,350)
Others		<b>239,121</b>	500,041
Net cash used in investing activities		<b>(42,237,132)</b>	(29,033,985)

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

## CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Note	For the year ended 31 December	
		2020	2019
<b>FINANCING ACTIVITIES</b>			
Issuance of short-term bonds		20,000,000	30,000,000
Repayments of short-term bonds		(24,000,000)	(32,500,000)
Proceeds from short-term loans		116,458,227	92,890,098
Repayments of short-term loans		(117,354,380)	(87,001,921)
Proceeds from long-term loans		52,219,578	27,408,223
Repayments of long-term loans		(54,593,490)	(43,915,444)
Issuance of long-term bonds		4,217,730	5,300,000
Repayments of long-term bonds		(2,800,000)	(4,000,000)
Interest paid		(11,586,250)	(11,641,439)
Net proceeds from the issuance of other equity instruments		25,457,450	14,982,165
Redemption of other equity instruments		(2,500,000)	–
Net capital injection from non-controlling interests of subsidiaries		1,155,556	1,016,150
Dividends paid to shareholders of the Company		(2,119,243)	(1,569,809)
Dividends paid to non-controlling interests of subsidiaries		(1,702,511)	(1,436,574)
Lease payments		(1,297,746)	(488,015)
Cash paid for acquisition of non-controlling interests of a subsidiary		–	(6,802)
Others		248,895	(364,815)
Net cash provided by/(used in) financing activities		1,803,816	(11,328,183)
Effect of foreign exchange rate changes, net		(739,088)	63,551
<b>NET INCREASE/(DECREASE) IN CASH AND CASH EQUIVALENTS</b>		<b>814,634</b>	<b>(2,974,424)</b>
Cash and cash equivalents as at beginning of the year		12,443,258	15,417,682
<b>CASH AND CASH EQUIVALENTS AS AT END OF THE YEAR</b>	35	<b>13,257,892</b>	12,443,258

The notes on pages 141 to 357 are an integral part of these consolidated financial statements.

# NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2020

(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 incorporated 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, Republic of Singapore (“Singapore”) and 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 incorporated in the PRC. HIPDC does not produce financial statements available for public use.

## 2 PRINCIPAL ACCOUNTING POLICIES

The principal 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 International Financial Reporting Standards (“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.

The preparation of financial statements in conformity with IFRSs requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the Group’s accounting policies. The areas involving a higher degree of judgement or complexity, or areas where assumptions and estimates are significant to the financial statements are disclosed in Note 4.

## NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (a) Basis of preparation (Cont'd)

As at 31 December 2020, the Group had net current liabilities of approximately RMB87.91 billion, and a portion of the Group's funding requirements for capital expenditures were satisfied by short-term financing. Taking into consideration the undrawn available banking facilities of approximately RMB305.1 billion as at 31 December 2020, 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.

The IASB has issued certain new and revised IFRSs that are first effective or available for early adoption for the current accounting period of the Group. Note 2 (b) provides information on any changes in accounting policies resulting from initial application of these developments to the extent that they are relevant to the Group for the current and prior accounting periods reflected in these financial statements.

#### (b) Changes in accounting policies

The Group has adopted the *Conceptual Framework for Financial Reporting 2018* and the following revised IFRSs for the first time for the current year's consolidated financial statements.

Amendments to IFRS 3	<i>Definition of a Business</i>
Amendments to IFRS 9, IAS 39 and IFRS 7	<i>Interest Rate Benchmark Reform</i>
Amendment to IFRS 16	<i>Covid-19-Related Rent Concessions</i> (early adopted)
Amendments to IAS 1 and IAS 8	<i>Definition of Material</i>

The nature and the impact of the *Conceptual Framework for Financial Reporting 2018* and the revised IFRSs are described below:

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (i) *Conceptual Framework for Financial Reporting 2018*

*Conceptual Framework for Financial Reporting 2018* (the "Conceptual Framework") sets out a comprehensive set of concepts for financial reporting and standard setting, and provides guidance for preparers of financial statements in developing consistent accounting policies and assistance to all parties to understand and interpret the standards. The Conceptual Framework includes new chapters on measurement and reporting financial performance, new guidance on the derecognition of assets and liabilities, and updated definitions and recognition criteria for assets and liabilities. It also clarifies the roles of stewardship, prudence and measurement uncertainty in financial reporting. The Conceptual Framework is not a standard, and none of the concepts contained therein override the concepts or requirements in any standard. The Conceptual Framework did not have any significant impact on the financial position and performance of the Group.

#### (ii) *Amendments to IFRS 3 Definition of a Business*

Amendments to IFRS 3 clarify and provide additional guidance on the definition of a business. The amendments clarify that for an integrated set of activities and assets to be considered a business, it must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create output. A business can exist without including all of the inputs and processes needed to create outputs. The amendments remove the assessment of whether market participants are capable of acquiring the business and continue to produce outputs. Instead, the focus is on whether acquired inputs and acquired substantive processes together significantly contribute to the ability to create outputs. The amendments have also narrowed the definition of outputs to focus on goods or services provided to customers, investment income or other income from ordinary activities. Furthermore, the amendments provide guidance to assess whether an acquired process is substantive and introduce an optional fair value concentration test to permit a simplified assessment of whether an acquired set of activities and assets is not a business. The Group has applied the amendments prospectively to transactions or other events that occurred on or after 1 January 2020. The amendments did not have any impact on the financial position and performance of the Group.

## NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

##### (iii) Amendments to IFRS 9, IAS 39 and IFRS 7 Interest Rate Benchmark Reform

Amendments to IFRS 9, IAS 39 and IFRS 7 address issues affecting financial reporting in the period before the replacement of an existing interest rate benchmark with an alternative risk-free rate ("RFR"). The amendments provide temporary reliefs which enable hedge accounting to continue during the period of uncertainty before the introduction of the alternative RFR. In addition, the amendments require companies to provide additional information to investors about their hedging relationships which are directly affected by these uncertainties. The amendments did not have any significant impact on the financial position and performance of the Group.

##### (iv) Amendment to IFRS 16 Covid-19-Related Rent Concessions (early adopted)

Amendment to IFRS 16 provides a practical expedient for lessees to elect not to apply lease modification accounting for rent concessions arising as a direct consequence of the covid-19 pandemic. The practical expedient applies only to rent concessions occurring as a direct consequence of the pandemic and only if (i) the change in lease payments results in revised consideration for the lease that is substantially the same as, or less than, the consideration for the lease immediately preceding the change; (ii) any reduction in lease payments affects only payments originally due on or before 30 June 2021; and (iii) there is no substantive change to other terms and conditions of the lease. The amendment is effective for annual periods beginning on or after 1 June 2020 with earlier application permitted and shall be applied retrospectively. The amendment did not have any impact on the financial position and performance of the Group as there were no lease payments reduced or waived by the lessors as a result of the covid-19 pandemic during the year.

##### (v) Amendments to IAS 1 and IAS 8 Definition of Material

Amendments to IAS 1 and IAS 8 provide a new definition of material. The new definition states that information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general-purpose financial statements make on the basis of those financial statements. The amendments clarify that materiality will depend on the nature or magnitude of information, or both. The amendments did not have any significant impact on the financial position and performance of the Group.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (c) Consolidation

The consolidated financial statements include the financial statements of the Company and all of its subsidiaries.

Subsidiaries are investees over which the Group has the power to exercise control. The Group controls an entity when it is exposed, or has rights to variable returns from their involvement with the entity and has the ability to affect those returns through their power over the entity. In assessing whether the Group has power, only substantive rights (held by the Group and other parties) are considered.

When the Group has, directly or indirectly, 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.

When there is any inconsistency on the accounting policies or financial period adopted between subsidiaries and the Company, the financial statements of subsidiaries are adjusted according to the accounting policies or financial period adopted by the Company.

Subsidiaries are consolidated from the date when control is transferred to the Group. They are de-consolidated from the date when control ceases. Intra-group balances, transactions and cash flows, and any unrealised income and expenses arising from intra-group transactions, are eliminated in full in preparing the consolidated financial statements. Unrealised gains arising from transactions with equity accounted investees are eliminated against the investment to the extent of the Group's interest in the investee. Unrealised losses are eliminated in the same way as unrealised gains, but only to the extent that there is no evidence of impairment. The portion of the shareholders' equity of the subsidiaries, which is not attributable directly or indirectly to the parent company, is separately presented as non-controlling interests in the shareholders' equity in the consolidated financial statements.

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 (i) the assets (including goodwill) and liabilities of the subsidiary, (ii) the carrying amount of any non-controlling interest and (iii) the cumulative translation differences recorded in equity; and recognises (i) the fair value of the consideration received, (ii) the fair value of any investment retained and (iii) 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.

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(Amounts expressed in thousands of RMB unless otherwise stated)

### 2 PRINCIPAL 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.

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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (c) Consolidation (Cont'd)

#### (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.

When applying 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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (c) Consolidation (Cont'd)

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

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.

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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (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.

#### (ii) Transactions and balances

Foreign currency transactions are translated into the functional currency using the spot exchange rate on the transaction dates. 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 arise 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 average exchange rates approximating the rate on transaction dates. All resulting translation differences are recognised in other comprehensive income.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

##### (iii) Foreign subsidiaries (Cont'd)

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.

#### (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).

Cost of CIP comprises construction expenditures, other expenditures necessary for the purpose of preparing the CIP for its intended use, those borrowing costs incurred before the assets are ready for intended use that are eligible for capitalisation. CIP is not depreciated until such time as the relevant asset is completed and ready for its intended 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

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:

	<b>Estimated useful lives</b>
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.

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 (ab), 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. Rental income from investment properties is accounted for as described in Note 2 (z)(v).

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (i) Power generation licences

The Group acquired the power generation licence as part of the business combination with Tuas Power Ltd. ("Tuas Power"). The power generation license 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.

#### (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 utilising only recoverable coal reserves as the depletion base, 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

Goodwill is initially measured at cost, being 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 and liabilities assumed of the acquiree at the date of acquisition. If the sum of this consideration and other items is lower than the fair value of the net assets acquired, the difference is, after reassessment, recognised in profit or loss as a gain on bargain purchase.

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 during the year, any attributable amount of purchased goodwill is included in the calculation of the profit or loss on disposal.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (I) Impairment of non-financial assets

The carrying amounts of property, plant and equipment, mining rights, intangible assets with definite useful lives, right-of-use assets 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 cash-generating unit ("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.

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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (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.

##### (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 a 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 contains 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

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

##### (1) Classification of financial assets (Cont'd)

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) 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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

##### (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.

##### (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;
- 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (v) Derecognition (Cont'd)

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 expires.

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.

#### (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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

##### (vi) Credit losses (Cont'd)

###### *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.

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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (vi) Credit losses (Cont'd)

##### *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.

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).

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

##### (vi) Credit losses (Cont'd)

###### *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;
- the disappearance of an active market for that financial asset because of financial difficulties of the issuer.

###### *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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (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.

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 underlyings 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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

##### (vii) Cash flow hedge (Cont'd)

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.

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

Dividend distribution to the shareholders of the Group is recognised as a liability in the period when the dividend is approved in the shareholders' meeting.

#### (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 PRINCIPAL 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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (q) Cash and cash equivalents

Cash and cash equivalents listed in the statement of cash flows represents cash in hand, call deposits held with banks and other financial institutions, and other short-term (3 months or less), highly-liquid investments that are readily convertible to known amounts of cash and are subject to an insignificant risk of changes in value. Bank overdrafts that are repayable on demand and form an integral part of the cash management are also included as a component of cash and cash equivalents for the purpose of the consolidated statement of cash flows.

#### (r) 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.

#### (s) 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.

#### (t) 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (u) 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.

### (v) 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.

### (w) 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 16% or 13% (10% or 9% on heat) on the taxable revenue after offsetting deductible input VAT of the period.

The applicable tax rates of VAT in respect of the lease of tangible movable properties, transportation industry and other modern service industries are 16% or 13%, 10% or 9% and 6%, respectively.

#### (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

The income tax expense for the period comprises current and deferred income tax. Income tax expense is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity. In this case, the tax is also recognised in other comprehensive income or directly in equity, respectively.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (w) Taxation (Cont'd)

##### (iii) Current and deferred income tax (Cont'd)

Deferred income tax assets and liabilities are recognised based on the differences between tax bases of assets and liabilities and respective book values (temporary differences). For deductible tax losses or tax credit that can be brought forward in accordance with tax law requirements for deduction of taxable income in subsequent years, it is considered as temporary differences and related deferred income tax assets are recognised. No deferred income tax liability is recognised for temporary differences arising from initial recognition of goodwill. For those temporary differences arising from initial recognition of an asset or liability in a non-business combination transaction that affects neither accounting profit nor taxable profit (or deductible loss) at the time of the transaction, no deferred income tax asset and liability is recognised. For the temporary differences relating to investments in subsidiaries to the extent that, in the case of taxable differences, the Group controls the timing of the reversal and it is probable that the differences will not reverse in the foreseeable future, or in the case of deductible differences, unless it is probable that they will reverse in the future, no deferred income tax asset and liability is recognised.

The Group recognises deferred income tax assets to the extent that it is probable that taxable profit will be available to offset the deductible temporary difference, deductible tax loss and tax credit.

At the end of the reporting period, deferred income tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realised or liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period.

The carrying amount of a deferred tax asset is reviewed at the end of each reporting period and is reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow the related tax benefit to be utilised. Any such reduction is reversed to the extent that it becomes probable that sufficient taxable profits will be available.

Deferred income tax assets and deferred income tax liabilities are offset when all the conditions below are met:

- (1) The Group has the legally enforceable right to offset current income tax assets and current income tax liabilities;
- (2) Deferred income tax assets and deferred income tax liabilities are related to the income tax levied by the same tax authority of the Group.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (x) 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.

### (y) Government grants

Government grants are recognised when the Group fulfils the conditions attached to them and they are probable to be received. 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.

### (z) 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.

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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (z) Revenue and other income (Cont'd)

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.

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;
- The customer has accepted the asset.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (z) Revenue and other income (Cont'd)

A contract asset is the Group's right to consideration in exchange for goods or services that the Group has transferred to a customer when that right is conditional on something other than the passage of time and an impairment of a contract asset is measured using the ECL model (Note 2 (m)(vi)). The Group presents any unconditional rights to consideration separately as a receivable. 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 present 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.

#### (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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (z) Revenue and other income (Cont'd)

##### (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.

#### (aa) Contract cost

Contract costs are either the incremental costs of obtaining a contract with a customer or the costs to fulfil a contract with a customer.

Incremental costs of obtaining a contract are those costs that the Group incurs to obtain a contract with a customer that it would not have incurred if the contract had not been obtained e.g. an incremental sales commission. Incremental costs of obtaining a contract are capitalised when incurred if the costs relate to revenue which will be recognised in a future reporting period and the costs are expected to be recovered. Other costs of obtaining a contract are expensed when incurred.

If the costs incurred in fulfilling a contract with a customer are not within the scope of another Standard such as IAS 2 Inventories, the Group recognises an asset from the costs incurred to fulfil a contract only if those costs meet all of the following criteria:

- the costs relate directly to an existing contract or to a specifically identifiable anticipated contract, including direct labour, direct materials, allocations of costs, costs that are explicitly chargeable to the customer and other costs that are incurred only because the Group entered into the contract;
- the costs generate or enhance resources that will be used to provide goods or services in the future;
- the costs are expected to be recovered.

Amortisation of capitalised contract costs is charged to profit or loss when the revenue to which the asset relates is recognised. The accounting policy for revenue recognition is set out in Note 2 (z). Contract costs are recognised as an expense when incurred if the amortisation period of the asset that the Group otherwise would have recognised is one year or less.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (aa) Contract cost (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.

### (ab) 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	3 – 10 years
Electric utility plant in service	3 – 12 years
Transportation facilities	30 years
Land use rights	10 – 50 years
Others	5 – 50 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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (ab) 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 (elected on a lease by lease basis) to leases of office equipment that is considered to be of low value (i.e., below RMB30,000). Instead, the Group recognises the lease payments associated with those leases as an expense on a straight-line basis over the lease term.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (ab) Leases (Cont'd)

#### 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.

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.

### (ac) 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.

### (ad) 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.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (ad) 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.

#### (ae) 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (af) Issued but not yet effective International Financial Reporting Standards

The new and amended standards and interpretations that are issued, but not yet effective, up to the date of issuance of the Group's financial statements are disclosed below. The Group intends to adopt these new and amended standards and interpretations, if applicable, when they become effective.

Amendments to IAS 1	<i>Classification of Liabilities as Current or Non-current</i>
Amendments to IFRS 3	<i>Reference to the Conceptual Framework</i>
Amendments to IAS 16	<i>Property, Plant and Equipment: Proceeds before Intended Use</i>
Amendments to IAS 37	<i>Onerous Contracts – Cost of Fulfilling a Contract</i>
Amendments to IFRS 10 and IAS 28	<i>Sale or Contribution of Assets between an Investor and its Associate or Joint Venture</i>
Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16	<i>Interest Rate Benchmark Reform – Phase 2</i>
<i>Annual Improvements to IFRSs 2018-2020</i>	Amendments to IFRS 9 and Illustrative Examples accompanying IFRS 16

### (i) Amendments to IAS 1 *Classification of Liabilities as Current or Non-current*

In January 2020, the IASB issued amendments to paragraphs 69 to 76 of IAS 1 to specify the requirements for classifying liabilities as current or non-current. The amendments clarify:

- What is meant by a right to defer settlement
- That a right to defer must exist at the end of the reporting period
- That classification is unaffected by the likelihood that an entity will exercise its deferral right
- That only if an embedded derivative in a convertible liability is itself an equity instrument would the terms of a liability not impact its classification

The amendments are effective for annual reporting periods beginning on or after 1 January 2023 and must be applied retrospectively. The Group is currently assessing the impact that the amendments will have on current practice and whether existing loan agreements may require renegotiation.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (af) Issued but not yet effective International Financial Reporting Standards (Cont'd)

##### (ii) Amendments to IFRS 3 *Reference to the Conceptual Framework*

Amendments to IFRS 3 are intended to replace a reference to the previous Framework for the Preparation and Presentation of Financial Statements with a reference to the Conceptual Framework for Financial Reporting issued in June 2018 without significantly changing its requirements. The amendments also add to IFRS 3 an exception to its recognition principle for an entity to refer to the Conceptual Framework to determine what constitutes an asset or a liability. The exception specifies that, for liabilities and contingent liabilities that would be within the scope of IAS 37 or IFRIC-Int 21 if they were incurred separately rather than assumed in a business combination, an entity applying IFRS 3 should refer to IAS 37 or IFRIC-Int 21 respectively instead of the Conceptual Framework. Furthermore, the amendments clarify that contingent assets do not qualify for recognition at the acquisition date. The Group expects to adopt the amendments prospectively from 1 January 2022. Since the amendments apply prospectively to business combinations for which the acquisition date is on or after the date of first application, the Group will not be affected by these amendments on the date of transition.

##### (iii) Amendments to IAS 16 *Property, Plant and Equipment: Proceeds before Intended Use*

In May 2020, the IASB issued *Property, Plant and Equipment — Proceeds before Intended Use*, which prohibits entities deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced while bringing that asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Instead, an entity recognises the proceeds from selling such items, and the costs of producing those items, in profit or loss.

The amendments are effective for annual reporting periods beginning on or after 1 January 2022 and must be applied retrospectively to items of property, plant and equipment made available for use on or after the beginning of the earliest period presented when the entity first applies the amendments.

The amendments are not expected to have a material impact on the Group.

##### (iv) Amendments to IAS 37 *Onerous Contracts – Costs of Fulfilling a Contract*

In May 2020, the IASB issued amendments to IAS 37 to specify which costs an entity needs to include when assessing whether a contract is onerous or loss-making.

The amendments apply a “directly related cost approach”. The costs that relate directly to a contract to provide goods or services include both incremental costs and an allocation of costs directly related to contract activities. General and administrative costs do not relate directly to a contract and are excluded unless they are explicitly chargeable to the counterparty under the contract.

The amendments are effective for annual reporting periods beginning on or after 1 January 2022. The Group will apply these amendments to contracts for which it has not yet fulfilled all its obligations at the beginning of the annual reporting period in which it first applies the amendments. The amendment is not expected to have a material impact on the Group.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (af) Issued but not yet effective International Financial Reporting Standards (Cont'd)

#### (v) 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 when the sale or contribution of assets between an investor and its associate or joint venture 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 mandatory effective date for this amendment is not yet determined but early adoption is permitted. The amendments are not expected to have any significant impact on the Group's financial statements.

#### (vi) Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 *Interest Rate Benchmark Reform – Phase 2*

The amendments address issues not dealt with in the previous amendments which affect financial reporting when an existing interest rate benchmark is replaced with an alternative RFR. The Phase 2 amendments provide a practical expedient to allow the effective interest rate to be updated without adjusting the carrying amount when accounting for changes in the basis for determining the contractual cash flows of financial assets and liabilities, if the change is a direct consequence of the interest rate benchmark reform and the new basis for determining the contractual cash flows is economically equivalent to the previous basis immediately preceding the change. In addition, the amendments permit changes required by the interest rate benchmark reform to be made to hedge designations and hedge documentation without the hedging relationship being discontinued. Any gains or losses that could arise on transition are dealt with through the normal requirements of IFRS 9 to measure and recognise hedge ineffectiveness. The amendments also provide a temporary relief to entities from having to meet the separately identifiable requirement when an RFR is designated as a risk component. The relief allows an entity, upon designation of the hedge, to assume that the separately identifiable requirement is met, provided the entity reasonably expects the RFR risk component to become separately identifiable within the next 24 months. Furthermore, the amendments require an entity to disclose additional information to enable users of financial statements to understand the effect of interest rate benchmark reform on an entity's financial instruments and risk management strategy. The amendments are effective for annual periods beginning on or after 1 January 2021 and shall be applied retrospectively, but entities are not required to restate the comparative information.

The Group had certain interest-bearing bank borrowings denominated in foreign currencies based on the London Interbank Offered Rate ("LIBOR") as at 31 December 2020. If the interest rates of these borrowings are replaced by RFRs in a future period, the Group will apply this practical expedient upon the modification of these borrowings when the "economically equivalent" criterion is met and expects that no significant modification gain or loss will arise as a result of applying the amendments to these changes.

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### 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

#### (af) Issued but not yet effective International Financial Reporting Standards (Cont'd)

##### **(vii) Annual Improvements to IFRSs 2018-2020 Amendments to IFRS 9 and Illustrative Examples accompanying IFRS 16**

Annual Improvements to IFRSs 2018-2020 sets out amendments to IFRS 9 and Illustrative Examples accompanying IFRS 16. Details of the amendments that are expected to be applicable to the Group are as follows:

IFRS 9 Financial Instruments: clarifies the fees that an entity includes when assessing whether the terms of a new or modified financial liability are substantially different from the terms of the original financial liability. These fees include only those paid or received between the borrower and the lender, including fees paid or received by either the borrower or lender on the other's behalf. An entity applies the amendment to financial liabilities that are modified or exchanged on or after the beginning of the annual reporting period in which the entity first applies the amendment. The amendment is effective for annual periods beginning on or after 1 January 2022. Earlier application is permitted. The amendment is not expected to have a significant impact on the Group's financial statements.

IFRS 16 Leases removes the illustration of payments from the lessor relating to leasehold improvements in Illustrative Example 13 accompanying IFRS 16. This removes potential confusion regarding the treatment of lease incentives when applying IFRS 16. It is not expected to have a material impact on the Group.

### 3 FINANCIAL AND CAPITAL RISKS MANAGEMENT

#### (a) Financial risk management

Risk management, including the management on 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., the subsidiaries of Hong Kong Energy, are subject to financial risks that are different from the entities operating within the PRC. 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 and Ruyi Pakistan Energy 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.

### 3 FINANCIAL AND CAPITAL RISKS MANAGEMENT (Cont'd)

#### (a) Financial risk management (Cont'd)

##### (i) Market risk

###### (1) Foreign exchange risk

Foreign exchange risk of the entities operating within the PRC 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 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 interest and exchange market.

As at 31 December 2020, if RMB had weakened/strengthened by 5% (2019: 5%) against US\$ and 3% (2019: 3%) against EUR ("€") with all other variables constant, the Group would further recognise an exchange loss/gain amounting RMB51 million (2019: RMB77 million) and RMB3 million (2019: RMB4 million), respectively. 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 2020, if S\$ had weakened/strengthened by 10% (2019:10%) against US\$ with all other variables constant, SinoSing Power and its subsidiaries would further recognise exchange loss/gain amounting RMB418 million (2019: loss/gain RMB39 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 2020, if PKR had weakened/strengthened by 5% (2019: 5%) against US\$ with all other variables constant, Ruyi Pakistan Energy would further recognise an exchange gain/loss amounting RMB78 million (2019: RMB3 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 the PKR strengthens or weakens against US\$.

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### 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 FVTOCI 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 Note 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 2020, 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 RMB812 million (2019: RMB746 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 RMB48 million (2019: RMB57 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 RMB70 million (2019: RMB79 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 Note 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.

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 of accounts receivable have 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 2020, most of the Group's related projects have been approved for the tariff premium of renewable energy and certain projects are in the process of applying for the approval.

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### 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 projects were still in construction phase and thus 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 loss allowances recognised during the year were RMB68 million.

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 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 RMB0.09 million.

The Group measures loss allowances for accounts receivable and contract assets at an amount equal to lifetime ECLs, which is calculated using a provision matrix. Except for electricity sales, the Group's historical credit loss experience does not indicate significantly different loss patterns for different customer segments, the loss allowance based on the past due status is not further distinguished between the Group's different customer bases. 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.

### 3 FINANCIAL AND CAPITAL RISKS MANAGEMENT (Cont'd)

#### (a) Financial risk management (Cont'd)

##### (ii) Credit risk (Cont'd)

Accounts receivable and contract assets	Gross carrying amount	Loss allowance
Current (not past due)	35,854,768	–
Within 1 year past due	2,327,113	7,394
1 – 3 years past due	91,370	24,275
More than 3 years past due	128,071	124,260
	38,401,322	155,929
Other receivables	Gross carrying amount	Loss allowance
Current (not past due)	2,244,414	150,898
Within 1 year past due	–	–
1 – 3 years past due	–	–
More than 3 years past due	41,274	36,777
	2,285,688	187,675

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 its 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 and lease liabilities are disclosed in Notes 13, 24, 25 and 42, respectively.

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### 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 2020 on a recurring basis.

	Level 1	Level 2	Level 3	Total
<b>Recurring fair value measurements</b>				
<b>Assets</b>				
Accounts receivable at fair value through other comprehensive income (Note 18)	–	1,255,888	–	1,255,888
Derivatives used for hedging (Note 13)	–	184,733	–	184,733
Other equity instrument investments (Note 10)	6,662	–	658,284	664,946
<b>Total assets</b>	<b>6,662</b>	<b>1,440,621</b>	<b>658,284</b>	<b>2,105,567</b>
<b>Liabilities</b>				
Derivatives used for hedging (Note 13)	–	295,001	–	295,001
<b>Total liabilities</b>	<b>–</b>	<b>295,001</b>	<b>–</b>	<b>295,001</b>

### 3 FINANCIAL AND CAPITAL RISKS MANAGEMENT (Cont'd)

#### (b) Fair value estimation (Cont'd)

##### (i) Fair value measurements (Cont'd)

The following table presents the assets and liabilities that are measured at fair value at 31 December 2019 on a recurring basis.

	Level 1	Level 2	Level 3	Total
<b>Recurring fair value measurements</b>				
<b>Assets</b>				
Financial assets at fair value through profit or loss				
– Trading derivatives (Note 13)	–	4,601	–	4,601
– Contingent consideration (Note i)	–	–	457,727	457,727
Accounts receivable at fair value through other comprehensive income (Note 18)	–	1,364,579	–	1,364,579
Derivatives used for hedging (Note 13)	–	86,686	–	86,686
Other equity instrument investments (Note 10)	8,390	–	770,828	779,218
<b>Total assets</b>	<b>8,390</b>	<b>1,455,866</b>	<b>1,228,555</b>	<b>2,692,811</b>
<b>Liabilities</b>				
Financial liabilities at fair value through profit or loss				
– Trading derivatives (Note 13)	–	2,987	–	2,987
Derivatives used for hedging (Note 13)	–	447,721	–	447,721
<b>Total liabilities</b>	<b>–</b>	<b>450,708</b>	<b>–</b>	<b>450,708</b>

Note i: The Company acquired several subsidiaries including Huaneng Shandong Power Generation Co., Ltd. ("Shandong Power") from Huaneng Group. The acquisition was completed on 1 January 2017. According to the profit compensation agreement associated with the acquisition, Huaneng Group should compensate the Company in cash based on the shortfall of accumulated actual net profit compared with the accumulated forecast net profits of certain subsidiaries of Shandong Power during the compensation period from year 2017 to 2019. As at 31 December 2019, the fair value of the above-mentioned contingent consideration from Huaneng Group amounting to RMB458 million was recorded in other receivables and assets. As at 31 December 2020, the Company has recovered all the above compensation.

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### 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 2020, 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 fair values of accounts receivable at fair value through other comprehensive income were measured using the discounted cash flows model. 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 contingent consideration is valued using discounted cash flows. The valuation model considers the present value of the expected future receivables discounted using a risk-adjusted discounted rate. As at 31 December 2020, there were no contingent considerations of the Group. As at 31 December 2019, the expected contingent considerations were determined based on the audited financial statements of the acquired entities for the year ended 31 December 2019.

### 3 FINANCIAL AND CAPITAL RISKS MANAGEMENT (Cont'd)

#### (b) Fair value estimation (Cont'd)

##### (i) Fair value measurements (Cont'd)

Specific valuation techniques used to value financial instruments include (Cont'd):

- 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 and price earnings ratio ("P/E") for each comparable company identified.

Below is a summary of significant unobservable inputs to the valuation of financial instruments together with a quantitative sensitivity analysis as at 31 December 2020:

	Valuation technique	Significant Unobservable input	Range	Sensitivity of fair value to the input
Unlisted equity investments	Valuation multiples	Average P/B	2020: 1.06 to 1.17	10% increase/decrease in multiple would result in increase/decrease in fair value by RMB57.88 million.
		Average P/E	2020: 12.60 to 13.86	10% increase/decrease in multiple would result in increase/decrease in fair value by RMB2.44 million.
		Discount for lack of marketability	2020: 21.33% to 28.65%	10% increase/decrease in multiple would result in decrease/increase in fair value by RMB20.39 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.

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### 3 FINANCIAL AND CAPITAL RISKS MANAGEMENT (Cont'd)

#### (b) Fair value estimation (Cont'd)

##### (i) Fair value measurements (Cont'd)

During the year ended 31 December 2020 and 2019, 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:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
<hr/>		
Contingent consideration		
<b>Beginning of the year</b>	<b>457,727</b>	991,383
<b>Movements:</b>		
Gains on fair value changes	–	17,175
Profit compensation received from Huaneng Group	<b>(457,727)</b>	(550,831)
<b>End of the year</b>	<b>–</b>	457,727
Total gains for the year included in profit or loss for assets held at the end of the reporting period	<b>–</b>	17,175
	<hr/>	<hr/>
	<b>As at 31 December</b>	
	<b>2020</b>	2019
<hr/>		
Other equity instrument investments		
<b>Beginning of the year</b>	<b>770,828</b>	2,074,861
Addition	<b>61,713</b>	7,450
Disposal	–	(1,250,000)
Fair value changes	<b>(174,257)</b>	(61,483)
<b>End of the year</b>	<b>658,284</b>	770,828
Changes in fair value recognised in other comprehensive income for the year	<b>(130,692)</b>	(46,113)
	<hr/>	<hr/>

### 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 of accounts receivable, other receivables and assets, accounts payable and other liabilities, short-term bonds and short-term loans approximated 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 value of long-term loans and long-term bonds (both including current maturities) was approximately RMB131.72 billion and RMB33.12 billion as at 31 December 2020 (2019: RMB133.79 billion and RMB31.64 billion), respectively. The aggregate book value of these liabilities was approximately RMB131.89 billion and RMB33.06 billion as at 31 December 2020 (2019: RMB134.02 billion and RMB31.29 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 2020, the strategy of the Group's capital management remained unchanged from 2019. The debt ratio of the Group as at 31 December 2020 was 66.30% (2019: 69.55%).

## 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

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### 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 a power generation licence**

In accordance with the accounting policies stated in Note 2 (l), the Group performs annual tests on whether its power generation licence have suffered any impairment. The recoverable amounts of the power generation licence are determined based on value-in-use calculations. The annual impairment assessment of the power generation licence is complex because the determination of the recoverable amount involves 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. These estimates and judgements may be significantly affected by changes in future market or economic conditions.

#### **(c) Useful life of a power generation licence**

As at the year end, management of the Group assesses whether the estimated useful life of its power generation licence is indefinite. This assessment 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. Based on existing knowledge, outcomes within the next financial period that are different from assumptions could require a change to the carrying amount of the power generation licence.

#### **(d) Useful lives of property, plant and equipment**

Management of the Group determines the estimated useful lives of property, plant and equipment and respective depreciation. The accounting estimate is based on the expected wear and tear incurred during power generation. Wear and tear can be significantly different following renovation each time. When the useful lives differ from the original estimated useful lives, management will adjust the estimated useful lives accordingly. It is possible that the estimates made based on existing experience are different to the actual outcomes within the next financial period and could cause a material adjustment to the depreciation and carrying amount of property, plant and equipment.

## 4 CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS (Cont'd)

### (e) Accounting estimates on impairment of property, plant and equipment

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.

### (f) Approval of construction of new power plants

The receiving of the ultimate approvals from the National Development and Reform Commission ("NDRC") on certain power plant construction projects of the Group is a critical estimate and judgement of the directors. Such estimate and judgement are based on initial approval documents received as well as their understanding of the projects. Based on historical experience, the directors believe that the Group will receive final approvals from the NDRC on the related power plant projects. Deviation from the estimate and judgement could result in a significant adjustment to the carrying amount of non-current assets.

### (g) Deferred tax assets

The Group recognises the deferred 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 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 tax law framework and future market or economic conditions.

### (h) Leases – Estimating the incremental borrowing rate

The Group cannot readily determine the interest rate implicit in certain leases, and therefore, it uses an incremental borrowing rate ("IBR") to measure lease liabilities. The IBR is the rate of interest that the Group would have to pay to borrow over a similar term, and with a similar security, the funds necessary to obtain an asset of a similar value to the right-of-use asset in a similar economic environment. The IBR therefore reflects what the Group "would have to pay", which requires estimation when no observable rates are available (such as for subsidiaries that do not enter into financing transactions) or when it needs to be adjusted to reflect the terms and conditions of the lease. The Group estimates the IBR using observable inputs (such as market interest rates) when available and is required to make certain entity-specific estimates (such as the subsidiary's stand-alone credit rating).

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### 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 2020	PRC power segment	Overseas segment Note i	All other segments	Inter-segment revenue	Total
– Sales of power and heat	150,752,779	10,700,000	–	–	161,452,779
– Sales of coal and raw materials	1,857,484	29,780	–	–	1,887,264
– Port service	–	–	510,765	(312,625)	198,140
– Transportation service	–	–	153,679	(102,155)	51,524
– Lease income	86,136	1,544,118	–	–	1,630,254
– Others	1,392,275	2,823,775	26,161	(15,834)	4,226,377
<b>Total</b>	<b>154,088,674</b>	<b>15,097,673</b>	<b>690,605</b>	<b>(430,614)</b>	<b>169,446,338</b>
Revenue:					
– From contracts with customers within the scope of IFRS 15					167,816,084
– From other sources					1,630,254
<b>For the year ended 31 December 2019</b>	<b>PRC power segment</b>	<b>Overseas segment Note i</b>	<b>All other segments</b>	<b>Inter-segment revenue</b>	<b>Total</b>
– Sales of power and heat	152,806,163	12,129,652	–	–	164,935,815
– Sales of coal and raw materials	1,353,538	527,798	–	–	1,881,336
– Port service	–	–	505,485	(330,272)	175,213
– Transportation service	–	–	166,816	(118,297)	48,519
– Lease income	161,525	1,689,878	–	–	1,851,403
– Others	1,320,409	3,788,133	28,185	(19,612)	5,117,115
<b>Total</b>	<b>155,641,635</b>	<b>18,135,461</b>	<b>700,486</b>	<b>(468,181)</b>	<b>174,009,401</b>
Revenue:					
– From contracts with customers within the scope of IFRS 15					172,157,998
– From other sources					1,851,403

Note i: Overseas segment mainly consists of the operations in Singapore and Pakistan.

## 5 REVENUE AND SEGMENT INFORMATION (Cont'd)

### (a) Disaggregation of revenue (Cont'd)

The revenue from the sale of power and heat and sale of coal and raw materials is recognised at a 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 service. 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 statement of financial position.

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### 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 consolidated financial statements.

(Under PRC GAAP)

	PRC power segment	Overseas segment	All other segments	Total
<b>For the year ended 31 December 2020</b>				
Total revenue	154,174,151	15,005,045	690,605	169,869,801
Intersegment revenue	–	–	(430,614)	(430,614)
External revenue	154,174,151	15,005,045	259,991	169,439,187
Segment results	7,634,662	896,315	225,969	8,756,946
Interest income	144,124	145,955	2,680	292,759
Interest expense	(8,096,150)	(943,797)	(152,378)	(9,192,325)
Impairment loss	(6,114,200)	536	–	(6,113,664)
Credit loss	(49,116)	(70,900)	–	(120,016)
Depreciation and amortisation	(20,237,935)	(809,284)	(218,951)	(21,266,170)
Net (loss)/income on disposal of non-current assets	(612,263)	20	(3)	(612,246)
Share of profits less losses of associates and joint ventures	1,316,377	–	298,815	1,615,192
Income tax expense	(3,087,995)	(6,063)	(16,350)	(3,110,408)

## 5 REVENUE AND SEGMENT INFORMATION (Cont'd)

### (b) Segment information (Cont'd)

	PRC power segment	Overseas segment	All other segments	(Under PRC GAAP) Total
<b>For the year ended</b>				
<b>31 December 2019</b>				
<b>(Restated*)</b>				
Total revenue	155,739,959	17,610,861	700,486	174,051,306
Intersegment revenue	–	–	(468,181)	(468,181)
External revenue	155,739,959	17,610,861	232,305	173,583,125
Segment results	4,658,738	162,465	(204,137)	4,617,066
Interest income	163,389	100,177	1,404	264,970
Interest expense	(9,295,893)	(1,308,380)	(114,490)	(10,718,763)
Impairment loss	(5,445,635)	(6,119)	(485,325)	(5,937,079)
Credit loss	(6,570)	(67,987)	–	(74,557)
Depreciation and amortisation	(20,012,936)	(752,285)	(167,553)	(20,932,774)
Net gain/(loss) on disposal of non-current assets	132,902	4,189	(3)	137,088
Share of profits less losses of associates and joint ventures	745,980	–	240,330	986,310
Income tax expense	(2,501,871)	89,006	(22,140)	(2,435,005)

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### 5 REVENUE AND SEGMENT INFORMATION (Cont'd)

#### (b) Segment information (Cont'd)

(Under PRC GAAP)

	PRC power segment	Overseas segment	All other segments	Total
<b>31 December 2020</b>				
Segment assets	<b>382,917,976</b>	<b>39,922,997</b>	<b>9,883,826</b>	<b>432,724,799</b>
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	<b>38,156,544</b>	<b>432,151</b>	<b>186,313</b>	<b>38,775,008</b>
Investments in associates	<b>14,230,345</b>	–	<b>3,855,842</b>	<b>18,086,187</b>
Investments in joint ventures	<b>1,550,986</b>	–	<b>1,193,536</b>	<b>2,744,522</b>
Segment liabilities	<b>(265,407,038)</b>	<b>(23,933,317)</b>	<b>(4,501,554)</b>	<b>(293,841,909)</b>
	PRC power segment	Overseas segment	All other segments	Total
<b>31 December 2019 (Restated*)</b>				
Segment assets	356,050,595	43,122,947	9,857,566	409,031,108
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	40,556,999	716,642	251,957	41,525,598
Investments in associates	13,187,050	–	3,540,265	16,727,315
Investments in joint ventures	1,239,866	–	1,232,556	2,472,422
Segment liabilities	(263,469,330)	(27,397,122)	(2,552,860)	(293,419,312)

## 5 REVENUE AND SEGMENT INFORMATION (Cont'd)

### (b) Segment information (Cont'd)

A reconciliation of external revenue to operating revenue is provided as follows:

	<b>For the year ended 31 December</b>	
	<b>2020</b>	2019 (Restated*)
External revenue (PRC GAAP)	<b>169,439,187</b>	173,583,125
<i>Reconciling item:</i>		
Impact of restatement under PRC GAAP in relation to business combination under common control* (Note 40)	<b>(85,477)</b>	(98,324)
Impact of recognition of build-operate-transfer (BOT) related revenue under IFRSs	<b>92,628</b>	524,600
Operating revenue per IFRS consolidated statement of comprehensive income	<b>169,446,338</b>	174,009,401

A reconciliation of segment results to profit before income tax expense is provided as follows:

	<b>For the year ended 31 December</b>	
	<b>2020</b>	2019 (Restated*)
Segment results (PRC GAAP)	<b>8,756,946</b>	4,617,066
<i>Reconciling item:</i>		
Loss related to the headquarters	<b>(132,234)</b>	(155,395)
Share of profits of Huaneng Finance	<b>188,643</b>	200,810
Dividend income of other equity instrument investments	<b>775</b>	685
Impact of restatement under PRC GAAP in relation to business combination under common control* (Note 40)	<b>(13,995)</b>	149,645
Impact of other IFRS adjustments**	<b>(4,026,399)</b>	(1,693,351)
Profit before income tax expense per IFRS consolidated statement of comprehensive income	<b>4,773,736</b>	3,119,460

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### 5 REVENUE AND SEGMENT INFORMATION (Cont'd)

#### (b) Segment information (Cont'd)

Reportable segments' assets are reconciled to total assets as follows:

	<b>As at 31 December</b>	
	<b>2020</b>	2019 (Restated*)
Total segment assets (PRC GAAP)	<b>432,724,799</b>	409,031,108
<i>Reconciling items:</i>		
Investment in Huaneng Finance	<b>1,394,030</b>	1,416,183
Deferred income tax assets	<b>2,996,690</b>	3,271,488
Prepaid income tax	<b>133,090</b>	139,617
Other equity instrument investments	<b>664,946</b>	779,217
Corporate assets	<b>292,197</b>	361,441
Impact of restatement under PRC GAAP in relation to business combination under common control* (Note 40)	–	(1,402,511)
Impact of other IFRS adjustments**	<b>11,698,906</b>	14,653,520
Total assets per IFRS consolidated statement of financial position	<b>449,904,658</b>	428,250,063

Reportable segments' liabilities are reconciled to total liabilities as follows:

	<b>As at 31 December</b>	
	<b>2020</b>	2019 (Restated*)
Total segment liabilities (PRC GAAP)	<b>(293,841,909)</b>	(293,419,312)
<i>Reconciling items:</i>		
Current income tax liabilities	<b>(288,106)</b>	(748,957)
Deferred income tax liabilities	<b>(977,810)</b>	(996,021)
Corporate liabilities	<b>(1,622,574)</b>	(2,458,677)
Impact of restatement under PRC GAAP in relation to business combination under common control* (Note 40)	–	1,315,267
Impact of other IFRS adjustments**	<b>(1,558,061)</b>	(1,563,317)
Total liabilities per IFRS consolidated statement of financial position	<b>(298,288,460)</b>	(297,871,017)

## 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 restatement under PRC GAAP in relation to business combination under common control* (Note 40)	Impact of other IFRS adjustments**	Total
<b>For the year ended</b>						
<b>31 December 2020</b>						
Total revenue	169,439,187	-	-	(85,477)	92,628	169,446,338
Interest expense	(9,192,325)	(37,293)	-	29,006	-	(9,200,612)
Depreciation and amortisation	(21,266,170)	(36,434)	-	26,023	(997,912)	(22,274,493)
Impairment loss	(6,113,664)	-	-	-	(2,811,385)	(8,925,049)
Credit loss	(120,016)	-	-	-	(52,695)	(172,711)
Share of profits less losses of associates and joint ventures	1,615,192	-	188,643	-	(29,513)	1,774,322
Net loss on disposal of non-current assets	(612,246)	-	-	-	(14,411)	(626,657)
Income tax expense	(3,110,408)	-	-	176	947,059	(2,163,173)
<b>For the year ended</b>						
<b>31 December 2019 (Restated*)</b>						
Total revenue	173,583,125	-	-	(98,324)	524,600	174,009,401
Interest expense	(10,718,763)	(79,554)	-	35,599	-	(10,762,718)
Depreciation and amortisation	(20,932,774)	(14,147)	-	59,679	(1,079,563)	(21,966,805)
Impairment loss	(5,937,079)	-	-	125,259	(373,037)	(6,184,857)
Credit loss	(74,557)	-	-	-	-	(74,557)
Share of profits less losses of associates and joint ventures	986,310	-	200,810	-	(1,498)	1,185,622
Net gain/(loss) on disposal of non- current assets	137,088	-	-	-	(67,639)	69,449
Income tax expense	(2,435,005)	-	-	108	423,642	(2,011,255)

\* The Group completed the acquisitions of equity interests of certain companies, see Note 40 for details. As the acquisitions were business combinations under common control, the transactions were accounted for by using the pooling of interests method under the PRC GAAP. The assets and liabilities acquired in business combinations were measured at the carrying amounts of the acquirees in the consolidated financial statements of the ultimate controlling party on the acquisition date. The operating results for all periods presented were retrospectively restated as if the current structure and operations resulting from the acquisitions had been in existence from the date when the acquirees first became under the control of the same ultimate controlling party. Therefore, the relevant comparative figures in the segment information were restated under the PRC GAAP as the acquisitions were accounted for using acquisition method under IFRSs.

\*\* Other GAAP adjustments above primarily represented the classification adjustments and adjustments related to business combination and borrowing cost. Other than the classification adjustments, the differences will be gradually eliminated following subsequent depreciation and amortisation of related assets or the extinguishment of liabilities.

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### 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	
	2020	2019
PRC	154,348,665	155,873,940
Overseas	15,097,673	18,135,461
Total	169,446,338	174,009,401

The geographical location of customers is based on the location 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	
	2020	2019
PRC	346,766,179	327,410,156
Overseas	23,275,028	24,830,127
Total	370,041,207	352,240,283

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 2020, the revenue from grid companies under common control of State Grid Corporation of China within the PRC power segment in total accounted for 77% of external revenue (2019: 79%). The sales to a subsidiary of State Grid Corporation of China which accounted for 10% or more of external revenue is as follows:

	For the year ended 31 December			
	2020		2019	
	Amount	Proportion	Amount	Proportion
State Grid Shandong Electric Power Company	27,265,600	16%	29,575,604	17%

## 5 REVENUE AND SEGMENT INFORMATION (Cont'd)

### (c) Contract balances

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 RMB242 million at the beginning of the year has been recognised as revenue of heating pipeline service in 2020. The contract liabilities of RMB2,055 million at the beginning of the year has been recognised as revenue of heat sales in 2020.

### (i) The transaction prices allocated to remaining performance obligations (unsatisfied or partially unsatisfied) are as follows:

	As at 31 December	
	2020	2019
Within 1 year	268,001	220,046
Over 1 year	2,355,763	2,223,208
Total (Note 26)	2,623,764	2,443,254

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 2020 that have an original expected duration of one year or less.

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### 6 PROFIT BEFORE INCOME TAX EXPENSE

Profit before income tax expense was determined after charging/(crediting) the following:

	<b>For the year ended 31 December</b>	
	<b>2020</b>	2019
Total interest expense on borrowing	<b>10,128,467</b>	11,342,526
Less: amounts capitalised in property, plant and equipment	<b>927,855</b>	579,808
Interest expenses charged to consolidated statement of comprehensive income	<b>9,200,612</b>	10,762,718
Including: Interest expenses on lease liabilities	<b>202,264</b>	171,573
Depreciation of property, plant and equipment	<b>21,360,798</b>	21,130,076
Depreciation of right-of-use assets	<b>785,518</b>	734,827
Included in other investment loss/(income)		
– Dividends on other equity instrument investments	<b>(775)</b>	(685)
– Gains on disposal of subsidiaries	–	(256,009)
Included in loss/(gain) on fair value changes of financial assets/liabilities		
– Contingent consideration of the business combination	–	(17,175)
– Loss/(gain) on fair value changes of trading derivatives	<b>1,566</b>	(19,492)

## 6 PROFIT BEFORE INCOME TAX EXPENSE (Cont'd)

	For the year ended 31 December	
	2020	2019
Included in other operating expenses:		
– Operating expense of Ruyi Pakistan	2,581,665	3,057,427
– Service concession construction cost	103,177	518,291
– Other materials expense	1,626,385	1,748,498
– Electricity charges	973,372	898,719
– Cost of sales of raw materials	295,330	606,103
– Water charges	549,260	652,077
– Insurance expense	386,435	362,147
– Cleaning, greening and fire protection expense	430,476	398,478
– Purchase of power generation quota	392,902	423,057
– Transportation allowance	179,955	178,217
– Pollutant charge	137,579	84,468
– Water conservancy fund and disabled security fund	471,129	202,479
– Test and inspection expense	359,997	323,434
– Service charge	333,916	171,676
– Heating pipeline related cost	134,915	144,300
– Auditors' remuneration audit services	39,117	42,019
– Other consulting expense	97,559	111,468
– Office expense	223,913	198,033
– Minimum lease payments under operating leases, lease payments not included in the measurement of lease liabilities	106,031	234,139
– Amortisation of other non-current assets	128,177	101,902
– Property management expense	95,037	76,507
– Information technology maintenance expense	229,214	122,425
– Travel expense	99,106	156,683
– Business entertainment expense	28,553	32,825
– Research and development expenditure	667,592	65,022
– Net loss on disposal of materials and supplies	167,449	6,384
– Net loss/(gain) on disposal of non-current assets	626,657	(69,449)
– Recognition of loss allowance for receivables	172,711	74,557
– Recognition of provision for inventory obsolescence (Note 16)	43,076	22,453
– Impairment loss of property, plant and equipment (Note 7)	7,847,378	5,719,990
– Impairment loss of goodwill (Note 14)	685,036	–
– Impairment loss of other non-current assets	349,559	464,867
– Gain of Three Supplies and Property Management	(126,425)	(200,683)
– Government grants	(739,740)	(818,101)
– Penalties	22,279	23,614
– Donations	55,663	47,393
– Others	525,637	698,006
Total	20,300,072	16,879,425

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### 7 PROPERTY, PLANT AND EQUIPMENT

	Dams	Port facilities	Buildings	Electric utility plant in service	Transportation facilities	Others	CIP	Total
<b>As at 1 January 2019</b>								
Cost	2,308,072	3,409,830	12,566,461	472,814,967	1,219,218	7,226,391	27,112,542	526,657,481
Accumulated depreciation	(301,125)	(560,284)	(4,147,947)	(221,703,642)	(486,676)	(4,722,608)	-	(231,922,282)
Accumulated impairment losses	(402,223)	-	(120,296)	(11,099,636)	-	(38,205)	(1,013,567)	(12,673,927)
Net book value	1,604,724	2,849,546	8,298,218	240,011,689	732,542	2,465,578	26,098,975	282,061,272
<b>Year ended 31 December 2019</b>								
Beginning of the year	1,604,724	2,849,546	8,298,218	240,011,689	732,542	2,465,578	26,098,975	282,061,272
Upon adoption of IFRS 16	-	-	-	(1,387,259)	-	(229,292)	-	(1,616,551)
Beginning of the year (restated)	1,604,724	2,849,546	8,298,218	238,624,430	732,542	2,236,286	26,098,975	280,444,721
Reclassification	-	(1,104,389)	6,313	(183)	-	1,098,259	-	-
Acquisition	-	-	-	-	-	-	2,038,550	2,038,550
Additions	-	-	7,249	187,370	242	164,909	29,978,861	30,338,631
Transfer from CIP	39	1,794,267	771,582	17,261,238	190,777	158,621	(20,176,524)	-
Disposals/write-off	(2,292)	-	(470,877)	(157,316)	(4)	(4,664)	-	(635,153)
Depreciation charge	(42,965)	(88,629)	(430,155)	(20,057,767)	(69,473)	(449,818)	-	(21,138,807)
Impairment charge	-	(439,190)	(116,355)	(3,864,903)	(993)	(43,432)	(1,255,117)	(5,719,990)
Currency translation differences	-	-	-	298,193	-	(3,764)	526	294,955
End of the year	1,559,506	3,011,605	8,065,975	232,291,062	853,091	3,156,397	36,685,271	285,622,907
<b>As at 31 December 2019</b>								
Cost	2,305,554	3,975,987	12,916,746	488,256,686	1,410,233	8,429,661	38,949,263	556,244,130
Accumulated depreciation	(343,836)	(525,192)	(4,614,648)	(241,169,240)	(556,149)	(5,191,819)	-	(252,400,884)
Accumulated impairment losses	(402,212)	(439,190)	(236,123)	(14,796,384)	(993)	(81,445)	(2,263,992)	(18,220,339)
Net book value	1,559,506	3,011,605	8,065,975	232,291,062	853,091	3,156,397	36,685,271	285,622,907

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

	Dams	Port facilities	Buildings	Electric utility plant in service	Transportation facilities	Others	CIP	Total
<b>Year ended 31 December 2020</b>								
Beginning of the year	1,559,506	3,011,605	8,065,975	232,291,062	853,091	3,156,397	36,685,271	285,622,907
Reclassification	(73,290)	-	124,978	38,186	(75,100)	(14,774)	-	-
Acquisition (Note 40)	-	-	11,222	975,303	-	4,081	1,878	992,484
Additions	-	-	12,839	622,380	-	163,389	42,976,346	43,774,954
Transfer from CIP	4,773	24,938	447,047	27,265,667	7,305	259,431	(28,009,161)	-
Other additions	-	-	23,652	189,847	-	9,185	-	222,684
Reclassification to Investment property	-	-	(1,348)	-	-	-	-	(1,348)
Disposals/write-off	-	-	(10,259)	(594,632)	(24)	(9,613)	-	(614,528)
Depreciation charge	(43,218)	(126,252)	(537,815)	(20,139,034)	(59,926)	(468,716)	-	(21,374,961)
Impairment charge	(92,026)	-	(109,205)	(7,552,442)	-	(24,875)	(68,830)	(7,847,378)
Other decrease	-	-	-	(262,788)	-	-	-	(262,788)
Currency translation differences	-	-	-	(332,568)	-	(3,476)	(4,840)	(340,884)
End of the year	1,355,745	2,910,291	8,027,086	232,500,981	725,346	3,071,029	51,580,664	300,171,142
<b>As at 31 December 2020</b>								
Cost	2,218,159	4,000,925	13,496,843	511,570,031	1,334,131	8,504,371	53,909,608	595,034,068
Accumulated depreciation	(402,811)	(651,444)	(5,127,671)	(256,998,944)	(608,003)	(5,331,854)	-	(269,120,727)
Accumulated impairment losses	(459,603)	(439,190)	(342,086)	(22,070,106)	(782)	(101,488)	(2,328,944)	(25,742,199)
Net book value	1,355,745	2,910,291	8,027,086	232,500,981	725,346	3,071,029	51,580,664	300,171,142

### Interest capitalisation

Interest expense of approximately RMB928 million (2019: RMB580 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 4.12% (2019: 4.44%) per annum.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment

##### Note 1: Impairment of CGUs

For each CGU with indicator of impairment, the Group determines the recoverable amount based on the discounted future cash flow of the CGU. An impairment loss is recognised if the carrying amount of the CGU exceeds its recoverable amount. In 2020, impairment losses of property, plant and equipment amounting to RMB7,779 million were recognised, including RMB7,435 million for CGUs and RMB344 million for individual assets. The details are as follows:

Company Name	Net book value of CGUs after impairment (RMB million) 31 December 2020			Impairment recognised (RMB million) (For the year ended 31 December)		
	Buildings	Electric utility plant in service	Land use right and other assets included in CGUs	2020	2019	2018
Huaneng Yichun Thermal Power Limited Company ("Yichun Thermal Power") (a)	50	1,488	242	721	-	-
Huaneng Guilin Gas Distributed Energy Co., Ltd. ("Guilin Gas Energy") (b)	20	310	162	492	-	-
Huaneng Shandong Power Generation Co., Ltd. Baiyanghe Power Plant ("Baiyanghe Power Plant") (c)	47	1,035	90	750	-	-
Huaneng Shandong Power Generation Co., Ltd. Zhongtai Power Plant ("Zhongtai Power Plant") (c)	4	159	42	457	-	-
Huaneng Jiaxiang Power Generation Limited Company ("Jiaxiang Power") (c)	49	639	125	625	-	-
Huaneng Jining Yunhe Power Generation Co., Ltd. ("Yunhe Power") (c)	11	1,185	227	986	-	-
Huaneng Shandong Power Generation Co., Ltd. Yantai Power Plant ("Yantai Power Plant") (c)	34	331	280	661	-	-
Huaneng Liaocheng Co-generation Limited Company ("Liaocheng Co-generation") (c)	6	1,388	458	700	-	-
Huaneng Linyi Power Generation Limited Company ("Linyi Power") (c)	8	2,080	226	979	-	-
Huaneng Tongwei Wind Power Generation Limited Liability Company ("Tongwei Wind Power") (d)	5	586	12	352	-	-
Huaneng Yingkou Xianrendao Co-generation Co., Ltd. ("Xianrendao Co-generation") (e)	-	886	63	274	-	-
Huaneng Zuoquan Coal-fired Power Generation Limited Liability Company ("Zuoquan Coal-fired Power") (f)	35	2,660	57	270	-	-
Huaneng Hainan Power Generation Co., Ltd. Gezhen Hydropower Plant ("Gezhen Hydropower") (g)	3	42	270	168	-	-
<b>Total</b>	<b>272</b>	<b>12,789</b>	<b>2,254</b>	<b>7,435</b>	<b>-</b>	<b>-</b>

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (a) Yichun Thermal Power

Yichun Thermal Power operates two 350MW combined heat and power coal-fired units. No.1 and No.2 generation units were put into operation in September and December 2015 respectively.

Due to the gradual depletion of resources in the major coal cities in Heilongjiang Province and the effects from the national policy of cutting overcapacity in the coal sector, Yichun Thermal Power's performance has fallen sharply since 2019, with losses before income tax expense of RMB80 million and RMB160 million in 2019 and 2020 respectively (a profit of RMB37 million in 2018). During the impairment test in 2019, after a comprehensive analysis of both coal supply and demand sides of the province, management expected that the thermal coal price in Heilongjiang Province would gradually fall to a reasonable level in 2020, and therefore no impairment loss was recognised. In 2020, affected by the tighter coal import policies and policy rectification activities of the Inner Mongolia coal industry during the past 20 years, the supply tension of Heilongjiang Province's coal market was intensified, resulting in an increase in the coal price in Heilongjiang province as compared to the other areas of China. In 2020, the unit price of standard coal consumed by Yichun Thermal Power increased by RMB24.26/ton in comparison with 2019, higher than the FY 2020 forecasted coal price by RMB61.66/ton. In addition, as a result of the continuous growth of new energy power generation in Heilongjiang Province, the market share of thermal power was eroded. Thus, Yichun Thermal Power's operating performance will not be improved in the short term.

In 2020, Yichun Thermal Power carried out the impairment test of the above-mentioned CGU. The key assumptions used in estimating the recoverable amount include future sales volumes (power generation hours) and fuel prices. Other assumptions applied in the impairment tests include the average tariff. These assumptions are included in the following table:

Sales volume (Power generation hours)			Tariff (excluding tax)			Fuel prices (standard coal unit price excluding tax)			
Unit: hours/year		Fluctuation	Unit: RMB/MWh		Fluctuation	Unit: RMB/ton		Fluctuation	
Forecast period	Actual in 2020		Forecast period	Actual in 2020		Forecast period	Actual in 2020		
	4,140	4,217	77	360.00	341.36	18.64	782.34-738.17	798.21	15.87-60.04

Based on the regional market performance and the relevant power trading policies, Yichun Thermal Power estimates the power generation hours during the forecast period to remain consistent with the actual power generation hours in 2020. The expected fuel prices are estimated based on the coal's source structure, supply and demand, as well as relevant industrial policies. Unlike other regions, the coal market in Heilongjiang constantly reduced excessive capacity in the coal sector until the end of 2020 while other provinces have mostly completed the reduction in 2018. When the reduction of overcapacity and the policy rectification activities of the Inner Mongolia coal industry during the past 20 years come to an end, the high coal price in Heilongjiang Province will gradually decrease, and difference from the national average coal price in the next few years will narrow. During the 2020 impairment test, the unit price of standard coal during the forecast period is expected to slightly decrease and stabilize at RMB738.17/ton. This price is above the forecasted price of RMB720/ton in 2019. The tariff in the forecast period is estimated to be RMB360.00/MWh excluding tax, based on the current tariff structure and the relevant power transaction policies.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

##### (a) Yichun Thermal Power (Cont'd)

In 2020, the recoverable amount was determined based on the discounted future cash flow of the CGU using the assumptions above and RMB721 million impairment losses of PPE were recognised. Management with the assistance of an independent appraiser Zhongjing Minxin (Beijing) Assets Appraisal Co., Ltd. determined the CGU's recoverable amount.

##### (b) Guilin Gas Energy

Guilin Gas Energy operates 3 sets of 51 MW gas-steam combined cycle units, 3 sets of waste heat boilers, 2 sets of 25 MW extraction condensing turbines and 1 set of 7 MW back pressure steam turbines, with a total installed capacity of 210 MW. Guilin Gas Energy put into operation in 2017. According to the "Approval of Huaneng Guilin World Tourism Project" (Guifagai Energy [2013] No.1175) in Guangxi Zhuang Autonomous Region, the operation mode of Guilin Gas Energy is based on the "power generation by heat" principle, in which the amount of power generated is determined by the size of the heating load, and the electricity generated is a by-product of heat production.

From 2018 to 2020, as the heating load of Guilin Yangtang Industrial Park where Guilin Gas Energy is located is significantly lower than the designed value and the growth remains slow, and the electricity quantity and tariff premium failed to meet the expectation, Guilin Gas Energy continued to suffer losses, and recognised losses before income tax expense of RMB119 million, RMB113 million and RMB52 million in 2018, 2019 and 2020, respectively. In 2019, Guilin Gas Energy believed that as the unit was recently put into operation, with customers continuously moving into the industrial park, the heating load would increase steadily in the future. In addition, the electricity quantity and tariff premium would also bring incremental benefits. Therefore, management performed impairment test and no impairment loss was recognised in 2019. In 2020, a number of potential major heating customers were affected by the changes in relocation policies, the planning of the industrial park and their own operational decisions and decided not to move to the Guilin Yangtang Industrial Park. Moreover, in December 2020, the company received "Letter on 2021 tariff premium of Huaneng Guilin Gas Distributed Energy Co., Ltd." (Guifagai Price Letter [2020] No.2455) from the Guangxi Zhuang Autonomous Region Development and Reform Commission. The letter clarified that the on-grid tariff premium for natural gas distributed power plants would not be increased, rather, it is expected to be further reduced to reach parity price. Considering the influence of decreased heat sales volumes and tariff premium, Guilin Gas Energy's operating performance will not be improved in the short term.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (b) Guilin Gas Energy (Cont'd)

In 2020, Guilin Gas Energy carried out the impairment test of the above-mentioned CGU. The key assumptions used in estimating the recoverable amount include future sales volume (power generation hours and heat sales volumes). Other assumptions applied in the impairment tests include the average tariff. These assumptions are included in the following table:

Sales volume (Power generation hours)		Tariff		Sales volume (Heat sales volume)	
Unit: hours/year		Unit: RMB/MWh		(10,000 tons/year)	
Forecast period	Actual in 2020	Forecast period	Actual in 2020	Forecast period	Actual in 2020
2021: 2,321	<b>2,110</b>	From 2021 to	<b>Subsidized</b>	2021: 34	<b>14</b>
2022: 2,363		2031: the subsidized	<b>tariff: 620.70</b>	2022: 36	
2023: 2,388		tariff is 620.70,	<b>Tariff without</b>	2023: 38	
2024: 2,421		the tariff without	<b>subsidies: 356.00</b>	2024: 40	
After 2025: from		subsidies is 356.00		From 2025 to	
2,455 hours to		From 2032 to		2035 increases	
3,738 hours		2047: 420.70		by 2 per year	
				from 41 to 61;	
				From 2036 to	
				2047 increases	
				by 1 per year	
				from 62 to 73.	

Management estimated heat sales volumes in the forecast period based on the current heating structure, the impacting factors on the heating capacity and the future development of the heating market. In 2021, the heat sales volumes are estimated to increase by 200 thousand tons in comparison with 2020, and to be 965,600 GJ (equivalent to 340 thousand tons). The main reason for the increase is that the northern heating pipeline of Guilin Gas Energy was put into operation by the end of January 2021 to supply heat to a beer company, which will increase the heating sales volume of around 200,000 tons, and the corresponding power generated will increase as well. After 2022, 11 newly developed customers in the area will achieve their designed production capacity, and new industrial customers will enter the area. Additionally, Guilin Gas Energy will continue to develop residential customers around the urban areas. Management expects the heating sales will gradually grow to 730,000 tons in 2047, representing approximately 83% of the designed capacity.

Management estimated the power generation hours based on the scale of heat sales in each year during the forecast period. In 2021, as the northern heating pipeline of Guilin Gas Energy was officially put into operation, under the premise of ensuring the safe and stable operation of the power generating unit, the power generated is expected to be 487 million kWh (equivalent to 2,321 power generation hours). After 2022, with the expansion of Guilin Gas Energy's heat sales, it is reasonably expected that the power generation hours in the future will gradually increase from 2,363 hours in 2022 to 3,738 hours in the terminal period based on the "power generation by heat" principle.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

##### (b) Guilin Gas Energy (Cont'd)

Management estimates the average tariff during the forecast period based on the ratified tariff and related price policies. It is forecasted that from 2021 to 2031, the applicable price within the scope of 323 million subsidized electricity will be RMB620.7/MWh, and RMB356/MWh for non-subsidized electricity. The subsidies for internal combustion engines in the Guangxi Zhuang Autonomous Region come from raising the transmission and distribution prices in the autonomous region. In recent years, China has continued to reduce industrial and commercial tariff and transmission and distribution prices. With reference to the changes in wind power, photovoltaic and other renewable energy tariff subsidies, combined with the trend of gradually reducing the on-grid tariffs of natural gas power generation in various places, management expected that the tariff subsidies for gas turbine projects are likely to be cancelled between 2032 and 2034. The on-grid tariff estimated in the forecast period from 2032 to 2047 is RMB420.7/MWh based on the benchmark on-grid tariff of coal-fired units in the autonomous region.

In 2020, the recoverable amount was determined based on the discounted future cash flow of the CGU using the assumptions above and RMB492 million impairment losses of PPE were recognised. Management with the assistance of an independent appraiser Beijing Guorongxinghua Assets Appraisal Co., Ltd. determined the CGU's recoverable amount.

##### (c) Baiyanghe Power Plant, Zhongtai Power Plant, Jiaxiang Power, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation and Linyi Power

The Group operates 19 coal-fired power plants in Shandong province, among which 7 power plants have impairment indicators in 2020, including Baiyanghe Power Plant, Zhongtai Power Plant, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation, Linyi Power and Jiaxiang Power. As a result of the impairment assessment, PPE impairment losses of RMB5,158 million and goodwill impairment losses of RMB661 million were recognised during the year ended 31 December 2020.

The remaining 12 power plants in Shandong province are as follows:

- a) Huaneng Power International, Inc. Jining Power Plant ("Jining Power Plant") currently operates 2x135MW and 2x350MW coal-fired generating units, all located in Jinning city. All these 4 generation units were shut down for standby since November 2020 as required by Jining Municipal Government. Pursuant to Jining Municipal Government, the Company shall formally shut down the aforementioned 4 generation units, upon the completion of construction and power on-grid of another 2x600MW ultra-supercritical or high-efficiency environmental generation units. In 2020, Jining Municipal Government agreed to bear all the loss arising from the shut down for standby incurred by Jining Power Plant, and thus, management assessed no impairment necessary. In January 2021, Huaneng Shandong Power Generation Co., Ltd. ("Shandong Power") and Jining Municipal Government entered into an agreement stipulating that Shandong Power will obtain compensation for demolition and relocation from Jining Municipal Government, and the agreed compensation amount is larger than the carrying amount of the CGU.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (c) Baiyanghe Power Plant, Zhongtai Power Plant, Jiaxiang Power, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation and Linyi Power (Cont'd)

The remaining 12 power plants in Shandong province are as follows (Cont'd):

- b) Another seven power plants that operate in Shandong province have generated high profits historically and expect to maintain strong performance, including Huaneng Power International, Inc. Dezhou Power Plant ("Dezhou Power Plant"), Huaneng Weihai Power Generation Limited Liability Company ("Weihai Power"), Huaneng Jinan Huangtai Power Limited Company ("Huangtai Power"), Huaneng Laiwu Power Generation Limited Company ("Laiwu Power"), Shandong Rizhao Power Generation Limited Company ("Rizhao Power"), Huaneng Shandong Power Generation Co., Ltd. Yantai Bajiao Power Plant ("Yantai Bajiao Power Plant") and Huaneng Xindian Power Generation Co., Ltd. ("Xindian Power"), and therefore there was no impairment loss recognised after impairment assessment.
- c) Management performed impairment assessment on three power plants including Huaneng Qufu Co-generation Limited Company ("Qufu Co-generation"), Huaneng Zhanhua Co-generation Limited Company ("Zhanhua Co-generation") and Huaneng Jining Hi-Tech Zone Co-generation Limited Company ("Jining Co-generation") in 2019, and the relevant CGUs have already been fully impaired in 2019.
- d) The two 350MW co-generation units of Huaneng Qingdao Co-generation Limited Company ("Qingdao Co-generation") are still in the construction phase as at 31 December 2020 and therefore there was no impairment loss recognised after impairment assessment.

#### 1) Background of CGUs that recognised impairment during the year

Baiyanghe Power Plant operates 2x145MW and 2x300MW combined heat and power coal-fired generation units, among which, 2x145MW generation units commenced production in September 2003, 2x300MW generation units commenced production in December 2009, and the total installed capacity is 890MW.

Zhongtai Power Plant operates 2x150MW combined heat and power coal-fired generation units, No.1 and No.2 generation units commenced production in May 2007 and December 2007 respectively, and the total installed capacity is 300MW.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

#### (c) Baiyanghe Power Plant, Zhongtai Power Plant, Jiaxiang Power, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation and Linyi Power (Cont'd)

##### 1) Background of CGUs that recognised impairment during the year (Cont'd)

Jiaxiang Power operates 2x330MW subcritical coal-fired power generation units, No.1 and No.2 generation units commenced production in October 2006 and May 2007 respectively, and the total installed capacity is 660MW. In February 2019, the phase I project completed the heating equipment transformation, resulting into 6 million m<sup>2</sup> heating supply capacity. In 2020, through the expansion and reconstruction of the first heating station, the heating supply capacity reached to 12 million m<sup>2</sup>.

Yunhe Power operates 4x145MW and 2x330MW combined heat and power coal-fired generation units, with a total installed capacity of 1,240MW. The generation units commenced production in 2000 (No.1 and No.2), 2003 (No.3), 2004 (No.4) and 2006 (No.5 and No.6), respectively.

Yantai Power Plant operates 1x110MW and 3x160MW combined heat and power coal-fired generation units, with a total installed capacity of 590MW. Among which, the 110MW generation units commenced production in April 1996, 3x160MW generation units commenced production in October and December 2005 and October 2006, respectively. The four combined heat and power coal-fired generation units of Yantai Power Plant are the only heating sources of the main territory of Yantai city, which are responsible for 75% of the residential heating services in the downtown of Yantai city and the steam services to certain industrial enterprises around.

Liaocheng Co-generation operates 2x140MW and 2x330MW combined heat and power coal-fired 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 combined heat and power coal-fired generation units, with a total installed capacity of 1,260MW. The 4x140MW generation units commenced production in December 1997, April 2003, September 2003 and April 2005 respectively. The 2x350MW generation units commenced production in December 2012 and October 2013 respectively.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (c) Baiyanghe Power Plant, Zhongtai Power Plant, Jiexiang Power, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation and Linyi Power (Cont'd)

##### 2) Reasons for impairment

In July 2018, Shandong Provincial Government issued the "Notice on Alternative Work Plan of Coal Consumption Reduction in Shandong Province from 2018 to 2020" ("the Notice", Lu Zheng Fa Zi [2018] No. 123), which proposed to vigorously promotes the "transmission of power from outside to Shandong province" initiative to reduce coal consumption within Shandong province, and strengthen the construction of smart grids and elevate the role of 4 UHV transmission channels which transmit power from Ximeng to Jinan, from Yuheng to Weifang, from Shanghaimiao to Linyi, and from Jarud to Qingzhou. Pursuant to the Notice, Shandong province would strive for national support, enhance governmental cooperation with resource-rich provinces/regions such as Shanxi, Shaanxi, Inner Mongolia and Xinjiang, accelerate the development and construction of supporting facilities, explore energy supply channels outside Shandong province, and increase the proportion of renewable energy in the "transmission of power from outside to Shandong province" initiative.

Up to 2020, Shandong province is capable of utilizing 35 million kilowatts from outside sources. Meanwhile, through initiatives including strengthening the development and utilisation of clean energy, reducing fossil energy consumption, and adopting measures to develop wind power, solar power, nuclear power and biomass power conducive to local conditions, the total power generation capacity of new energy and renewable energy in Shandong province will reach around 30 million kilowatts by 2020.

In 2019, management considered the following aspects in the impairment assessment of the respective CGUs of the power plants operates in Shandong province:

- a) The power market structure, estimated impact of electricity generation hours imposed by the "transmission of power from outside to Shandong province" initiative and the increased installation capacity from new energy power plants;
- b) Fuel price estimates based on coal market trends, specifically, downward fluctuations of coal prices in 2019 and the first quarter of 2020, and relevant industrial policies, management expected the supply and demand of coal would be changed from a balanced condition in 2019 to oversupply in the future, and therefore the future fuel prices were expected to slightly decline in comparison with the actual prices in 2019.

Management performed impairment assessment on those CGUs with impairment indicators and calculated the recoverable amounts of the future discounted cash flows by considering the aforementioned key assumptions. As a result, impairment losses of RMB892 million were recognised in 2019 for Qufu Co-generation, Zhanhua Co-generation and Jining Co-generation, while no impairment loss was recognised for other power plants.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

#### (c) Baiyanghe Power Plant, Zhongtai Power Plant, Jiaxiang Power, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation and Linyi Power (Cont'd)

##### 2) Reasons for impairment (Cont'd)

In 2020, the construction of new energy generating units in Shandong province and the power generation volume through the implementation of “transmission of power from outside to Shandong province” initiative have exceeded expectations. By the end of September 2020, the generation capacity of new energy and renewable energy reached a year-on-year increase of 19.9% to be 41.06 million kilowatts, which far exceeds the target of 30 million kilowatts set in the Notice, which means the increased scale of the renewable energy is greater than expectation. Besides, the market traded electricity volume under the “transmission of power from outside to Shandong province” initiative increased by 22.997 billion kWh at an increase rate of 24.56%, from 93.603 billion kWh in 2019 to 116.6 billion kWh in 2020, which far exceeds the increase rate of 8.55% of the first quarter of 2020 that was available when the Group’s 2019 consolidated financial statements have been approved for issuance. This shows that the market traded electricity volume under the “transmission of power from outside to Shandong province” initiative is greater than expectation. In summary, the actual coal-fired power generated in Shandong province in 2020 declined more than anticipated. In 2020, Shandong province directly dispatched public coal-fired power generation volume was 236.9 billion kWh, a year-on-year decrease of 9.32%, and the power generation hours were 4,049 hours, a year-on-year decrease of 380 hours. As for Shandong Power, its directly dispatched public coal-fired power generation volume was 81.536 billion kWh, a year-on-year decrease of 9.43%, and its generation hours of directly dispatched public coal-fired power were 4,007 hours, which is 42 hours less than the provincial average.

The reduction in power generation hours was the main reason why the profit forecasts for the seven power plants of Baiyanghe Power Plant, Zhongtai Power Plant, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation, Linyi Power and Jiaxiang Power, were not met in 2020. Considering the long-term impact of the “transmission of power from outside to Shandong province” initiative and the effects of the increased power generation from new energy power plants and other aspects of market supply and demand, management estimated that the future power generation volume would not recover to the levels of 2019 and before.

Nevertheless, the supply and demand in domestic coal market has gone through changes in 2020. Although the average domestic coal prices of 2020 decreased than that of 2019, affected by the COVID-19 pandemic, the national coal prices went down and then rose up, bottomed out and rebounded in the fourth quarter of 2020. Overall, the fluctuation of coal prices is intricate and has its own periodic regulation, which means that the coal prices may rise on the basis of 2020 in the long run.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (c) Baiyanghe Power Plant, Zhongtai Power Plant, Jiaxiang Power, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation and Linyi Power (Cont'd)

##### 3) Assumptions of impairment assessment

In 2020, the key assumptions used in estimating the recoverable amount of the CGUs include future sales volume (power generation hours) and the fuel prices. Other assumptions applied in the impairment tests include the average tariff. The assumptions were shown in the following table:

Unit Name	Sales volume (Power generation hours) Unit: hours/year		Tariff (including tax) Unit: RMB/MWh		Fuel prices (standard coal unit price excluding tax) Unit: RMB/ton	
	Forecast period	Actual in 2020	Forecast period	Actual in 2020	Forecast period	Actual in 2020
Baiyanghe Power Plant	3,850	3,906	393.88	400.60	664.33	639.09
Zhongtai Power Plant	3,750 (Note 1-1)	5,607	393.86	395.22	624	576.98
Jiaxiang Power	3,900	3,952	2021:389.90 2022:388.40 After 2023:386.90	397.63	2021:677.00 After 2022:662.00	624
Yunhe Power	3,900 (Note 1-2)	3,828	2021: 396.90 2022: 395.90 After 2023:394.90	402.71	671.15	642.81
Yantai Power Plant	4,250 (Note 1-3)	4,182	410.97	410.82	695 (Note 1-4)	715.63
Liaocheng Co-generation	3,900	4,016	394.90	397.42	628.93	617.47
Linyi Power	3,900	4,126	392.91	408.55	705.66	692.23

Sales volume (Power generation hours):

Management estimated the power generation hours in the forecast period based on the market condition and the relevant power trading policies. Generally speaking, the forecasted power generation hours slightly decreased compared with the actual power generation hours in 2020, mainly due to the following reasons:

- a) The power generation levels of directly dispatched public coal-fired power units in Shandong province in 2021 is estimated to remain consistent with the actual power generation levels in 2020.

According to the "Shandong Power Grid 2020 and Fourth Quarter Electricity Market Trading Information Report" released by Shandong Power Trading Center, the total electricity consumption in Shandong province in 2020 reached to 693.985 billion kWh, representing a year-on-year growth of 1.72%. According to the "2021 Balanced Power Consumption Plan in Shandong Province (Draft)" released by the Energy Administration of Shandong Province on 1 December 2020, after taking the economic and social development as well as the COVID-19 pandemic into account, the power generation levels of directly dispatched public coal-fired power units is estimated to be 224.5 billion kWh in 2021 with a reservation of 130 billion kWh for "transmission of power from outside to Shandong province" initiative and of 72 billion kWh for renewable energy power generation. In mid-January 2021, the Energy Administration of Shandong Province estimated that the total electricity consumption in Shandong province in 2021 would grow at a rate of 4% (higher than the growth rate of 2% forecasted by the end of 2020) with a power increment of 27.759 billion kWh, which will boost the power generation of directly dispatched public coal-fired power units accordingly. Therefore, the power generation of directly dispatched public coal-fired power units is expected to reach 252.26 billion kWh, which remains at the same level as that of 256.79 billion kWh in 2020.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

#### (c) Baiyanghe Power Plant, Zhongtai Power Plant, Jiexiang Power, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation and Linyi Power (Cont'd)

##### 3) Assumptions of impairment assessment (Cont'd)

- b) The directly dispatched public coal-fired power units in Shandong province would not go through major changes in power generation hours during the 14th Five-Year Plan.

At an average annual growth rate of 4%-5%, the total electricity consumption in Shandong province in 2025 is expected to reach 790-825 billion kWh with an average annual growth of 27-35 billion kWh. Though the transmission capacity of "transmission of power from outside to Shandong province" initiative is as high as 35 million kilowatts, affecting by the construction of supporting facilities and dispatchment, the annual power transmission will only increase by around 20 billion kilowatt hours. The installation capacity of new energy units will increase at an average annual growth of around 7.5 million kilowatts and an annual power generation volume increase at around 10 billion kilowatt-hours. In terms of the coal-fired power within Shandong province, due to environmental protection policies, certain small units with high energy consumption and low capacity are to be shut down, and replaced with new coal-fired power units that have equal capacity, resulting in a general decline of the total capacity of coal-fired power. Overall, the power generation hours of directly dispatched public coal-fired power units in Shandong province will not change significantly during the 14th Five-Year Plan.

- c) Shandong province follows the principle of energy saving and consumption reduction during power unit operation arrangement. The power generation hours of small units with higher energy consumption will be further compressed, and the future power generation is expected to further decline. Thus, the relative impact on power generation hours of small generation units will be more.

Note 1-1: The power generation hours of Zhongtai Power Plant during the forecast period declined significantly compared with the actual power generation hours in 2020 mainly due to that in 2020, Zhongtai Power Plant lost a major customer, causing a reduction of power generation by around 500 million kWh. Although it has strived for other customers to bring back nearly 200 million kWh of market power, it was unlikely to recover the shortfall in the short term. In the meanwhile, the circulating fluidized bed boiler of Zhongtai Power Plant's generation units can run under low load, contributing to grid trading service and peak time adjustment, entitling it for additional power compensation of 500 million KWH in 2020. However, management does not expect that Zhongtai Power Plant will be entitled to the compensation in 2021. Therefore, the power generation hours in forecast period will fall sharply.

Note 1-2: The power generation hours of Yunhe Power during the forecast period remains constantly the same compared with the actual power generation hours in 2020 mainly due to that Yunhe Power provides heating service for residents in the west and north of Jining City. Upon the shutdown for standby of Jining Power Plant, the heat supply of Yunhe Power further increased in 2020, and a steady amount of heat supply will secure a stable increase of power generation in the future. As a result of two small generation units' inclusion to the standby power supply for emergencies (No.3 and No.4 generation units), the number of the small generation units in service decreased accordingly leading to the decrease in power generation hours. In summary, management estimates the power generation hours of Yunhe Power in the forecast period will remain consistent with the actual power generation hours in 2020.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (c) Baiyanghe Power Plant, Zhongtai Power Plant, Jiaxiang Power, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation and Linyi Power (Cont'd)

##### 3) Assumptions of impairment assessment (Cont'd)

Note 1-3: The forecasted power generation hours of Yantai Power Plant is 4,250 hours in the forecast period, showing an increase of 4,182 hours compared with the actual power generation hours in 2020 was mainly due to the increase in the planned power generation volume during the winter heating period. According to the "Priority Power Generation Plan for Directly Dispatched Public Units Issued by the Energy Administration of Shandong Province in 2020" (Lu Energy Power Zi (2020) No. 39), the priority generation capacity will be allocated to the heating units. As Yantai Power Plant is the only source of heating power in Yantai City, its heating service area will be expanded along with the increase in the density of the urban population. Management expects the heating volume of Yantai Power Plant in 2021 will increase by 180,000 GJ as compared to 2020, and the corresponding contract volume will be increased from 1.522 billion kWh in 2020 to 1.6 billion kWh (equivalent to 2,712 power generation hours) in 2021. In terms of market power, management expects it will remain at the same level as 2020 at 900 million kWh (equivalent to approximately 1,538 power generation hours).

Note 1-4: Management forecasts the average standard coal unit price of Yantai Power Plant is RMB695/ton in 2021, representing a decrease of RMB20.63/ton from that of 2020 (RMB715.63/ton) mainly based on management's plan of increasing the purchases of imported coal. In 2020, management purchased approximately 79% of the coals from its long-term contracts and the remaining 21% of the coals were purchased from the spot market. Facing the continuous growth of coal prices at the end of 2020, management expects that domestic coal prices will rise and levelled off in the future, while the imported coal prices will be relatively low and competitive. Therefore, management plans to increase the proportion of imported coal purchases from Russia, South Africa and Indonesia, so as to reduce and maintain coal prices at a historical average level.

##### Tariff:

Management estimates the average tariff in the forecast period based on the current tariff structure and the relevant power trading policies. Generally speaking, the forecasted tariff in the forecast period slightly decreased compared with the actual tariff in 2020, mainly due to the expanding scale of spot trading power and the changing structure of benchmark prices, contract prices, and long-term contract prices. The benchmark prices are usually higher than the long-term contract prices, while the latter are usually higher than the spot prices, so that the average tariff decreases accordingly. Generation units with small capacity are lack of the advantages for competition in the market, in order to achieve the target of power generation volume, the ratio of downward in the spot tariff would be further declined, and finally resulting into a reduction in the overall average tariff.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

#### (c) Baiyanghe Power Plant, Zhongtai Power Plant, Jiexiang Power, Yunhe Power, Yantai Power Plant, Liaocheng Co-generation and Linyi Power (Cont'd)

##### 3) Assumptions of impairment assessment (Cont'd)

Fuel prices (unit price of standard coal as fired)

Management estimates the fuel prices in the forecast period based on the coal's source structure, supply and demand, as well as the relevant industry policies. In 2020, the coal prices in China went down and then rose up, bottomed out and rebounded in the fourth quarter of 2020 to exceed the highest point in 2008. According to the statistics from China Coal Market Network (CCTD), the coal prices remarkably fluctuated in 2020 with notable differences from the trend in 2019.

On the supply side, the coal market supply will be relatively stable in the future. As of now, all the provinces have generally met the target of resolving excess coal capacity during the 13th Five-Year Plan period, and some regions have even exceeded the target. The coal mining technics continues to improve, and the degree of mechanization continues to deepen, the scale of single wells and the proportion of advanced production capacity continue to increase, contributing stable coal production in the future. On the other hand, China has imported 304 million tons of coal in 2020, marking a new peak since 2014, and the increase in imported coal also guarantees the domestic coal market supply.

On the demand side, the demand for coal of coal-fired generation units is expected to remain stable. At present, China's energy development is in a transition from coal to oil and gas, and from fossil energy to non-fossil energy. New energy and renewable energy play an important role in the substitution for fossil energy, which means, China's energy consumption structure will be further optimized. However, coal-fired power will still be the foundational source of power generation, and therefore the demand for coal is unlikely to drop significantly in the short term.

In summary, in the long term, the domestic coal market can achieve a balanced supply and demand in the future, and the short-term under-supply that occurred at the end of 2020 will soon be levelled. However, due to the enhanced bargaining power of upstream companies on the supply side due to their integration, and the transformation of coal enterprises to coal chemical industry under the policy of achieving carbon emission peak by 2030 and carbon-neutral by 2060, the future supply and demand of coal may fluctuate slightly. As a result, management expects the future coal prices to remain higher than the range defined in the "Notice on Printing and Distributing the Memorandum on Suppressing Abnormal Fluctuation of Coal Market Price" (Fa Gai Yun Xing [2016] No. 2808) co-issued by the National Development and Reform Commission, China National Coal Association, China Electricity Council, and China Iron & Steel Association. In addition, the fluctuation of coal prices is intricate and has its own periodic regulation. Coal prices reached a high point in 2011, so the future average coal prices can be forecasted on the basis of the coal prices in the past 10 years, taking into consideration of each of the power plans' coal quality requirements, transportation methods, and distance of transportation counted.

In 2020, the recoverable amounts were determined based on the discounted future cash flows of the 7 CGUs using the assumptions above and RMB5,158 million and RMB661 million impairment losses of PPE and goodwill were recognised. Management with the assistance of an independent appraiser Beijing Guorongxinghua Asset Appraisal Co., Ltd. determined the CGUs' recoverable amount.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (d) Tongwei Wind Power

Tongwei Wind Power Yigang Wind Farm is located in Tongwei County, Gansu province. The wind farm has a total installed capacity of 192MW, with 96 double-fed wind turbines installed at a single-unit capacity of 2MW, which commenced production in December 2015.

Tongwei Wind Power experienced a loss before income tax expense of RMB12 million in 2019 (2018: a profit of RMB5 million) mainly due to that the power generation hours did not meet expectations and the average tariff decreased. The sales volume (power generation hours) and the average tariff from 2017 to 2019 are as follows:

Items	2017	2018	2019
Sales volume (Power generation hours)			
Unit: hours/year	1,324	1,681	1,509
Average tariff (including tax, RMB/MWh)	511.58	465.86	438.51

Compared with the overall year-on-year decline in wind power generation in Gansu province in 2019, the performance of Tongwei Wind Power was still in a better position than the regional average. As located in the third-class wind resource area, management estimated the operating performance of Tongwei Wind Power Yigang Wind Farm might improve in the coming years, and therefore no impairment loss was recognised for the year ended 31 December 2019.

In 2020, the average tariff further decreased due to the intensified competition in Gansu's new energy market. In 2019, the inter-provincial transaction price was around RMB200/MWh, while it dropped to about RMB110/MWh in 2020. In addition, the average annual wind speed in 2020 was 4.80m/s, lower than the average of 5.20m/s during 2017-2019 and the average wind speed of 5.85m/s as stipulated in the feasibility study report of Tongwei Wind Power, leading to 1,496 actual power generation hours of Tongwei Wind Power in 2020 and was lower than the average of previous years. Due to the limitation of the power generation increase and the intensified competition in Gansu's new energy market, management expects that its future power generation volume and tariff will not be recovered to the level as designed in the feasibility study report and before 2019. Therefore, Tongwei Wind Power's operating performance will not be improved in the short term.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

##### (d) Tongwei Wind Power (Cont'd)

In 2020, the key assumptions used in calculating the recoverable amount of Tongwei Wind Power during the impairment assessment include future sales volume (power generation hours). Other assumptions applied in the impairment tests include the average tariff. These assumptions were shown in the following table:

Sales volume (Power generation hours) Unit: hours/year			Tariff Unit: RMB/MWh		
Forecast period	Actual in 2020	Fluctuation	Forecast period	Actual in 2020	Fluctuation
1,620	1,496	124	385.38	336.60	48.78

Management forecasts the power generation hours in the forecast period based on the market and the relevant power trading policies. The forecasted power generation hours are 1,620 hours in the forecast period, slightly increase compared with the actual volume of 1,496 hours in 2020. The increase is mainly due to the following reasons:

- 1) The average annual wind speed was 4.80m/s in 2020, which was significantly lower than the average of 5.20m/s during 2017-2019;
- 2) According to the "14th Five-Year Plan" and the suggestion on the long-term vision of 2035 of Gansu province, the power generation volume may increase through the market measures in resource allocation to solve the problem of new energy's oversupply;
- 3) Management has been in active cooperation with the scientific research and technical teams in universities to develop wind turbine blade anti-ice coating technologies. The power generation hours may slightly increase in the forecast period as compared with 2020 but will be still lower than the annual average power generation hours of 1,951 hours as stipulated in the feasibility study report.

Management estimates the average tariff excluding tax in the forecast period based on the current tariff structure and the relevant tariff policies. The forecasted average tariff excluding tax is RMB385.38/MWh during the forecast period, slightly higher than the actual average tariff of RMB336.60/MWh in 2020. The increase is mainly due to the sharp decline of the average tariff in 2020 affected by the negative impact from the assessment of two rules of Gansu Power Grid Corporation, resulting from the misunderstanding of the market traded electricity regime and the assessment policy of two rules of Gansu Power Grid Corporation. If not considering such impact, the estimated average tariff during the forecast period is RMB385.38/MWh, calculated based on an electricity structure including basic electricity, direct power trading within the province, power dispatched outside the province and monthly supplementary trading power during the forecast period.

In 2020, the recoverable amount was determined based on the discounted future cash flow of the CGU using the assumptions above and RMB352 million impairment losses of PPE were recognised. Management with the assistance of an independent appraiser Zhongjing Minxin (Beijing) Assets Appraisal Co., Ltd. determined the CGU's recoverable amount.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (e) Xianrendao Co-generation

Xianrendao Co-generation is located in the Xianrendao Energy and Chemical Park in Yingkou City. Its first phase project includes two 50MW back-pressure heating units, with three 350-ton high-pressure and ultra-high temperature coal-fired boilers, and the supporting heat network. It commenced production in March 2017 and sells heat and steam to the energy and chemical companies within the industrial park.

Xianrendao Co-generation's heating units are back-pressure heat supply units, operates based on the "power generation by heat" principle. Due to the slow growth of the winter heating demand in the Xianrendao Energy and Chemical Park, Xianrendao Co-generation was in loss position from 2018 to 2020, amounting to RMB167 million, RMB134 million and RMB123 million respectively. In 2018 and 2019, based on the status of establishment and constructions of the heat and steam customers in the industrial park, management estimated that the slow growth situation of the winter heating demand in the industrial park was a short term phenomenon and the demand would gradually climb up and reach a reasonable level to gain profits, and therefore, no impairment losses were recognised after the impairment assessment for the year ended 31 December 2018 and 2019. In 2020, certain important customers terminated or further postponed their entry into the industrial park due to some policy and operational reasons, imposing adverse impact on the future operation of Xianrendao Co-generation. Management estimates that the operating performance would not be improved in the short term.

In 2020, the key assumptions used in estimating the recoverable amount of Xianrendao Co-generation during the impairment assessment include future sales volume (heat supply and power generation hours) and fuel prices, as follows:

Sales volume (Heat supply) (10,000 GJ)			Sales volume (Power generation hours) Unit: hours/year			Fuel prices (standard coal price, excluding tax) unit: RMB/ton		
Forecast period	Actual in 2020	Fluctuation	Forecast period	Actual in 2020	Fluctuation	Forecast period	Actual in 2020	Fluctuation
2021: 454.67	376.28	78-670	2021: 2,093	1,705	388-2,442	694.97	633.75	61.22
2022: 526.06			2022: 2,084					
2023: 632.49			2023: 2,506					
2024: 781.49			2024: 3,097					
2025: 937.93			2025: 3,717					
After			After					
2026: 1,046.40			2026: 4,147					

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

##### (e) Xianrendao Co-generation (Cont'd)

##### *Sales volume (Heat supply)*

Due to some policy and operational reasons, certain important customers were not in place or commenced production as scheduled, therefore the periodic growth of the winter heating demand may remain slow in a long term. A petroleum cracking DCC project with an annual output of 7 million tons was suspended in 2020. Through site visit, management was aware of that the project would not be implemented soon, and therefore the target steam consumption could not be achieved during the forecast period. The first and second phases of a chemical project started construction in 2019 which was assessed to commenced production as scheduled, was finally suspended in 2020. Trough the site visit, management was aware of that the project was delayed because of funding issues and the commencement date of production was expected to be postponed to 2023. Management also understood from site visit that the second phase construction of the expansion and integration project of an automobile company was hardly to be settled down within the area as a result of the limitations to its hydrogen production and logistics costs as well as some more favorable investment policies provided by the local government of its headquarter.

Taking into account of the actual steam supply (551,600 tons) of Xianrendao Co-generation in 2020, the potential customers in the industrial park and the "14th Five-Year Plan" of the industrial park, management estimates the steam supplies to be 706 thousand tons in 2021, 918 thousand tons in 2022, 1,284 thousand tons in 2023, 1,798 thousand tons in 2024, 2,338 thousand tons in 2025, and 2,712 thousand tons in 2026 and thereafter.

In addition, Xianrendao Co-generation is also responsible for the winter heating service for partial residents in south Bayuquan District of Yingkou city. In 2020, the heat supply was 2.21 million GJ. Along with the heating area expansion in the future, management forecasts the heat supply to be 2.5 million GJ in 2021 and 2.6 million GJ in 2022 and thereafter, reaching to its designed heating supply capacity and then staying stable.

##### *Sales volume (Power generation hours)*

Xianrendao Co-generation's heating units are back-pressure heat supply units, operates based on the "power generation by heat" principle, therefore, its power generated is determined based on the heating supplies.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (e) Xianrendao Co-generation (Cont'd)

##### Fuel prices

In 2020, all the coal consumed by Xianrendao Co-generation were imported, at a unit price of RMB633.75/ton. However, due to the design requirements of the power plant unit and the production situation in 2020, the management assesses that the use of imported coal alone at a lower price will affect the operation of the unit and therefore management plans to increase the purchase of domestic coal to reach a ratio at 4:1 between the imported coal and domestic coal in future. By reference to the last ten years' unit price of coal of Huaneng Power International, Inc. Yingkou Power Plant ("Yingkou Power Plant") (coal structure: imported coal, domestic coal and small amount of coal from Inner Mongolia) and Huaneng Yingkou Co-generation Limited Liability Company ("Yingkou Co-generation") (coal structure: coal from Inner Mongolia), both the power plants located in Yingkou city together with Xianrendao Co-generation, as well as taking in to consideration the different transportation distance of the two units, management estimates the average unit coal price during the forecast period to be RMB694.97/ton, an increase of RMB61.22/ton compared with that of 2020.

In 2020, the recoverable amount was determined based on the discounted future cash flow of the CGU using the assumptions above and RMB274 million impairment losses of PPE were recognised. Management with the assistance of an independent appraiser Zhongjing Minxin (Beijing) Assets Appraisal Co., Ltd. determined the CGU's recoverable amount.

#### (f) Zuoquan Coal-fired Power

Zuoquan Coal-fired Power operates two 600,000-kilowatt coal-fired generation units, of which No.1 and No.2 generation units commenced operation in December 2011 and January 2012 respectively. From 2018 and 2020, Zuoquan Coal-fired Power realised (loss)/profit before income tax expense of (RMB50 million), RMB83 million and RMB50 million respectively.

In June 2020, Shanxi province deployed a strategy to transform its advantages in coal and electricity resources to realize the benefits in the form of reduced tariffs. In October 2020, with the official launch of electricity trading for strategic emerging industries in Shanxi province, the tariff reform advanced into comprehensive implementation stage. The total electricity volume of the first transaction was 5.333 billion kWh, and the terminal tariff of the end users was RMB300/MWh (tax included). Moreover, according to the "Notice of Printing and Distributing the 2021 Provincial Electricity Market Trading Organization Plan" (Jin Power Electrical Energy Fa [2020] No.591) issued by the Energy Administration of Shanxi Province in December 2020, the Shanxi province power market temporarily suspended the annual and bilateral trading mechanism, and adopted the unilateral monthly public bidding mechanism, which is highly dependent on spot transaction quotes and time sequence. The competition in Shanxi province's power market has been intensified, so the power generation enterprises are bidding with lower quotations in the market. Management expects that the on-grid tariff will further be decreased, which would be a significant adverse impact on Zuoquan Coal-fired Power's operation in the long term.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

##### (f) Zuoquan Coal-fired Power (Cont'd)

In 2020, the key assumptions used in estimating the recoverable amount of Zuoquan Coal-fired Power during the impairment assessment include future sales volume (power generation hours) and fuel prices. Other assumptions applied in the impairment tests include the average tariff. These assumptions were shown as follows:

Sales volume (Power generation hours) Unit: hours/year			Tariff Unit: RMB/MWh			Fuel prices (standard coal price, excluding tax) unit: RMB/ton		
Forecast period	Actual in 2020	Fluctuation	Forecast period	Actual in 2020	Fluctuation	Forecast period	Actual in 2020	Fluctuation
4,664	4,421	243	249.56	278.28	28.72	460	444.90	15.1

#### Sales volume (Power generation hours)

Management estimates the power generation hours in the forecast period based on the provincial economic development, the change of the installation capacity of generation units, the electricity consumption outside the province and the direct trading of power, etc. The forecasted power generation hours are 4,664 hours during the forecast period, slightly increase than the actual power generation hours of 4,421 hours in 2020. Affected by the COVID-19 pandemic in 2020, the increase rate of electricity consumption in Shanxi province was negative until September 2020. From 2021 and thereafter, along with the control of the COVID-19 pandemic and the revival and growth of economy, the electricity consumption will gradually recover.

#### Tariff

Management estimates the average tariff would decline in the forecast period, the forecasted average tariff excluding tax is RMB249.56/MWh during the forecast period, decreased by RMB28.72/MWh compared with the actual average unit price excluding tax of RMB278.28/MWh in 2020. The price is estimated by reference to the current medium-long term trading mode and spot prices. In 2020, after launching the electricity trading for strategic emerging industries in Shanxi province, the final tariff was confirmed to be RMB300/MWh. After deduction of the transmission and distribution tariff and governmental funds, the on-grid tariff on the power generation units' side was only approximately RMB150/MWh. Moreover, according to the "Notice of Printing and Distributing the 2021 Provincial Electricity Market Trading Organization Plan" (Jin Power Electrical Energy Fa [2020] No.591) issued by the Energy Administration of Shanxi Province in December 2020, after abolishing all coal based power since 2020, only the plans to ensure flexible innovation, steam service, heating service, and summer peaks service are retained in 2021. In addition, the transaction scale of the provincial market in 2021 will be 135 billion kWh, among which 20 billion kWh are reserved for long term contracts, which requires both counterparties in the transaction to mutually hold more than 20% equity interests of each other. As such, Zuoquan Coal-fired Power is not qualified for the long term contracts power generation volume and since the tariff of long-term contract is normally higher than that of spot market, thus imposing a negative impact on the comprehensive tariff during the forecast period. In the later stage, with the integration of coal and electric power enterprises in Shanxi province, the scale of the long-term contracts trading volume will be further expanded, encroaching the power market and intensifying the competition among power generation enterprises.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (f) Zuoquan Coal-fired Power (Cont'd)

##### *Fuel prices (unit price of standard coal as fired)*

All the coal consumed by Zuoquan Coal-fired Power are purchased from Shanxi province and the purchase price is mainly affected by the supply and demand of the domestic market. Management's analysis showed that the coal prices in 2021 and in the forecast period may rise and then maintain at a stable level. As previously analysed, although the domestic coal market can achieve a balanced supply and demand in the future and the short-term under-supply that occurred at the end of 2020 will soon be levelled, with the integration of coal and electric power enterprises in Shanxi province and the enhanced bargaining power of upstream companies on the supply side, it is expected that during the "14th Five-Year Plan", a balanced coal production in Shanxi province would co-exist with the problem of supply intensity in different regions, coal categories and periods. Coal prices would be on the rise and gradually stay at a reasonable level. Management estimates the long-term average unit price of coal to be RMB460/ton during the forecast period, representing an increase of RMB15.1/ton compared with the actual unit price of coal of RMB444.90/ton in 2020.

In 2020, the recoverable amount was determined based on the discounted future cash flow of the CGU using the assumptions above and RMB270 million impairment losses of PPE were recognised. Management with the assistance of an independent appraiser Zhongjing Minxin (Beijing) Assets Appraisal Co., Ltd. determined the CGU's recoverable amount.

#### (g) Gezhen Hydropower

As the water distribution hub of the phase II (irrigation area) project of the Daguangba water conservancy and hydropower project in Hainan, Huaneng Gezhen water conservancy project mainly focuses on irrigation and water supply as well as power generation, and is responsible for the irrigation in the Daguangba irrigation area and water distribution for industrial users. The installed capacity of Gezhen Hydropower is 2 sets of 40MW and 2 sets of 1MW units, with a total installed capacity of 82MW. The project was completed and put into operation by the end of 2009. In 2020, Gezhen Hydropower generated revenue from water supply business for the first time, whereas in the prior years its revenue generation was concentrated on hydropower generation. In 2014, management performed impairment assessment and provided impairment losses of RMB92 million for PPE for the year ended 31 December 2014. From 2015 to 2016, the operating performance of Gezhen Hydropower was still insufficient. Then in 2016, management performed impairment assessment and provided further impairment losses of RMB148 million for PPE and intangible assets for the year ended 31 December 2016. The total amount of impairment losses provided in prior years were RMB240 million in aggregate.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

##### (g) Gezhen Hydropower (Cont'd)

In 2020, Hainan Provincial Development and Reform Commission approved the water supply price of Gezhen Hydropower in the "Reply Letter on the Price of Non-agricultural Water Supply for Gezhen Hydraulic Hub Project" (Qiong Fa Gai Bian Letter [2020] No.708), stating that the price of non-agricultural water supply is RMB0.2/m<sup>3</sup> and the price of industrial water is RMB0.24/m<sup>3</sup>. There is a substantial reduction in the price, compared with the price of RMB0.867/m<sup>3</sup> agreed between Hainan Provincial Government and Huaneng Group in 2006 through the signed energy cooperation agreement. Since the water supply of Dongfang city is still utilising the free water intake point of Yuxiong downstream, and thus currently the average daily water supply of Gezhen Hydropower is approximately 11,000 m<sup>3</sup>/day. Upon the completion of the construction of the water supply pipeline project from Gezhen to Basuo, invested by the Dongfang Municipal Government, management estimates the daily water supply of Gezhen Hydropower will reach to 50,000 m<sup>3</sup>/day in 2023. However, the shortage in water supply is still enormous, compared with the designed target of 100,000 m<sup>3</sup>/day as stipulated in the phase I feasibility study report of Gezhen Hydropower.

Management considers the share of power generation in Gezhen Hydropower is far below expectation on the premise of fulfilling social responsibility and ensuring water irrigation. As for the water supply business operation, the water supply volume could not reach the designed targeted volume. Despite of the active communication with the local government, the unit price of water supply has been significantly reduced. Taking into account the reduction in water supply prices and the shortage of water supply demand, management estimates that it is unlikely for Gezhen Hydropower to achieve higher operating profit in future.

In 2020, the key assumptions used in estimating the recoverable amount of Gezhen Hydropower during the impairment assessment include future sales volume (power generation hours and water supply). Other assumption applied in the impairment tests includes the water prices. These assumptions were shown as follows:

Sales volume (Power generation hours) Unit: hours/year			Sales volume (Water supply) Unit:10 thousand m <sup>3</sup> /day			Water price Unit: RMB/m <sup>3</sup>		
Forecast period	Actual in 2020	Fluctuation	Forecast period	Actual in 2020	Fluctuation	Forecast period	Actual in 2020	Fluctuation
1,765	839	926	2021:1.18 2022:3.09 After 2023:5	1.1	0.08 to 3.9	0.22	Non- agricultural water supply: 0.2 Industrial water supply: 0.24	-

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### (g) Gezhen Hydropower (Cont'd)

##### *Sales volume (Power generation hours)*

Management estimates the power generation hours to be 1,765 hours during the forecast period, showing an increase compared with the actual power generation hours of 839 hours in 2020. The estimation is based on the actual average power generation hours for the past five years. The increase in the forecasted power generation hours is mainly due to the following reasons: 1) the hydroelectric power generation is mainly affected by the local climate and whether there is sufficient rainfall; 2) due to the partial decline of incoming water in 2020 and the unsatisfactory storage of reservoirs before, the output of hydropower units were insufficient in Hainan province, and therefore the hydropower generating capacity has decreased significantly compared with the same period in overall.

##### *Sales volume (water supply) and water prices*

In 2020, Gezhen Hydropower realised revenue from water supply business with an average daily water supply of approximately 11,000 m<sup>3</sup>/day and an annual water supply of 4.33 million m<sup>3</sup>. Upon the completion of the construction of the water supply pipeline project from Gezhen to Basuo, invested by the Dongfang Municipal Government, management estimates the daily water supply of Gezhen Hydropower will reach to 11,800 m<sup>3</sup>/day in 2021, 30,900 m<sup>3</sup>/day in 2022, and 500,000 m<sup>3</sup>/day in 2023 and afterwards gradually.

In 2020, Hainan Provincial Development and Reform Commission approved the water supply price of Gezhen Hydropower in the "Reply Letter on the Price of Non-agricultural Water Supply for Gezhen Hydraulic Hub Project" (Qiong Fa Gai Bian Letter [2020] No.708), stating that the price of non-agricultural water supply is RMB0.2/m<sup>3</sup> and the price of industrial water is RMB0.24/m<sup>3</sup>. Management estimates the average unit price of water supply during the forecast period to be RMB0.22/m<sup>3</sup> (tax included).

In 2020, the recoverable amount was determined based on the discounted future cash flow of the CGU using the assumptions above and RMB168 million impairment losses of PPE were recognised. Management with the assistance of an independent appraiser Beijing Guorongxinghua Assets Appraisal Co., Ltd. determined the CGU's recoverable amount.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

##### Note 2: Discount rate

The Group determines the after-tax discount rate based on the weighted average cost of capital (WACC). The calculated after-tax discount rate is 7% and the pre-tax discount rate is ranging from 7.21% to 9.41%.

The calculating formula of the WACC is:  $WACC = K_e \times (E/(D+E)) + K_d \times (1-T) \times (D/(D+E))$ . D is the value of value of debt and E is the value of equity. Among which, 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:  $K_e = R_f + \beta \times ERP + \varepsilon$ . The values of each parameter are shown in the table below:

	Parameters	Amount	Notes
Rf	Risk-free rate	3.95%	Use WIND to select China treasury bonds with a remaining maturity over 10 years from the base date of assets evaluation. Calculate their yield to maturity and take the average value as the risk-free rate.
beta	Beta Coefficient	0.6903	Calculate the beta coefficient based on the average value of the beta coefficient of comparable companies without financial leverage and the target capital structure; adjust the estimated beta coefficient using historical data by using the Blume Adjustment method.
ERP	Equity Risk Premiums	7.07%	Use CSI 300 index to estimate the rate of return on investment of the Chinese stock market; set 10-year period as the time span for calculating the rate of return on investment; use the geometric average rate of return on investment which can better reflect its growth.
$\varepsilon$	Specific Risk Premium Rate	4.00%	Use the comprehensive analysis method to determine the specific risk return rate $\varepsilon$ , which means to consider all these factors of the assessed CGUs such as its asset scale, development stage, market competition status, internal governance structure and capital structure, etc.
Kd	Cost of Debt	3.85%	Take the one-year loan prime rate (LPR) as the cost of debt
T	Enterprise Income Tax Rate	25%/15%, 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 Group adopts a pre-tax discount rate ranging from 7.21% to 9.41%.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### Note 3: Impairment losses for individual asset

Every year, the Group performs assessment of the decommissioned PPE in a timely manner based on the industry policies of shut down of power plants, and technical transformation and equipment dismantling arrangements for the year. The details for impairment losses recognised for such kind of PPE are as follows:

	Impairment recognised in 2020
Huaneng Hainan Power Generation Company Limited Haikou Power Plant ("Haikou Power Plant") (i)	127,262
Huaneng Power International, Inc. Nantong Power Plant ("Nantong Power Plant") (ii)	85,938
Huaneng Beijing Co-generation Limited Liability Company ("Beijing Co-generation") (iii)	84,060
Other 4 items	46,730
Total	<u>343,990</u>

- (i) No. 4 and No. 5 generation units of Haikou Power Plant were officially shut down in October 2020. Based on the impairment assessment carried out by Tianjian Xingye Assets Appraisal Co., Ltd., impairment losses of RMB127 million were recognised for scraped assets after considering their recoverable amount. The above assets were in normal use before the generation units were shut down.
- (ii) No. 1 and No. 2 generation units of Nantong Power Plant started the demolition of its generator rotors and chimneys in July 2020, and those two generation units were officially shut down in October 2020. Based on the impairment assessment carried out by Beijing Guorongxinghua Asset Appraisal Co. Ltd., impairment losses of RMB86 million were recognised after considering the recoverable amount, including the estimated dismantling costs. The above assets were in normal use before the generation units were shut down.
- (iii) In September 2020, Beijing Water Authority was required by the China's Central Environmental Protection Inspection Team to revoke the water permit of Xiangyang project of Beijing Co-generation. The relevant project and facilities will be out of use upon the expiry of the existing permit in September 2021. Management expects that the plant-wide water treatment system to be built in the future could not utilise any existing facilities and related assets of Xiangyang project. Based on the impairment assessment carried out by Beijing Guorongxinghua Asset Appraisal Co. Ltd., impairment losses of RMB84 million were recognised. The above assets were in normal use in the past 3 years.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

##### Note 4: Impairment losses of pre-construction costs

In 2020, RMB68 million and RMB350 million of impairment losses of CIPs and other non-current assets for pre-construction cost were recognised respectively. The details are shown in the following table:

	Time to cease construction	Designed investment (RMB million)	Amount invested (RMB million)	Impairment recognised in 2020 (RMB million)
Huaneng Huaiyin Power Generation Co., Ltd. ("Huaiyin Power") Guanyun Large Unit Project (i)	2017	7,900	260	260
Huaneng Chaohu Power Generation Co., Ltd. ("Chaohu Power") Phase II Expansion Project (ii)	2017	4,128	196	56
Huaneng Luoyuan Power Generation Co., Ltd. ("Luoyuan Power") Phase II New Project (iii)	2016	5,306	48	48
Other 41 items			54	54
Total			558	418

Pre-construction costs represent necessary costs incurred to bring the newly developed coal-fired and new energy power generation projects to be ready for their intended use, and are capitalised during the progress and then transferred to PPE together with other CIPs when the assets are ready for the intended use. The Group regularly reviews the status, progress, possibility and plans of all suspended or postponed projects. For those projects with developmental value, the Group makes continuous investment in order to make it profitable in the future. For those projects that are less likely to be developed which are usually impossible to generate cash flows and difficult to sell in the market, impairment losses are recognised accordingly.

##### (i) Huaiyin Power Guanyun Large Unit Project

On 24 April 2015, "Reply on Approval of Yanwei Coal-fired Project (referred to as "Guanyun Large Unit Project") (Huaneng Gui Letter [2015] No.182) required to list the Guanyun Large Unit Project in the Group's 2015 thermal power projects construction plan. In August 2015, management purchased coal capacity and quota capacity in aggregated of RMB235 million due to the need and completed certain research work relating to the access system, water resources report, soil and water conservation, environmental impact assessment, cultural relics assessment, etc. During the period of 13th Five-Year Plan, since Guanyun Large Unit Project ranked high in the selection of thermal power projects organized by the Jiangsu Provincial Energy Administration, management continuously coordinated with other counterparties to promote this project.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Impairment (Cont'd)

#### Note 4: Impairment losses of pre-construction costs (Cont'd)

##### (i) Huaiyin Power Guanyun Large Unit Project (Cont'd)

In April 2020, Huaiyin Power filed an application to Guanyun County Government for inclusion of the Huaneng Yanwei Port 2x1,000MW large-capacity, high-efficiency and ultra-low-emission coal-fired generating unit project (referred to as the "Guanyun Large Unit Project") into its "14th Five-Year Plan". The Group did not receive any response from local government so far. As Jiangsu province belongs to the first-class red line area of thermal power projects, management assessed that Guanyun Large Unit Project would not be included in the "14th Five-Year Plan" of Jiangsu province, and therefore the future of the project is not optimistic. As of the end of 2020, the total amount of the pre-construction costs of Guanyun Large Unit Project was RMB260 million. Taking into account the current states of progress of the project, impairment losses of RMB260 million were recognised for the year ended 31 December 2020.

##### (ii) Chaohu Power Phase II Expansion Project ("Chaohu Phase II Project")

The 2x660MW high-efficiency ultra-supercritical plant phase II expansion project of Chaohu Power was approved by National Energy Administration to carry out preliminary work of the project in 2013 and was approved by Anhui Provincial Development and Reform Commission in April 2015 (Wan Fa Gai Energy [2015] No.129). The total investment of this project is RMB3,959 million. From 2014 to 2017, management carried out the feasibility study, bidding for major equipment, preparation for commencement of construction, etc. according to the approved investment plan with an aggregated amount of RMB290 million. In April 2020, the construction capacity quota of Chaohu Phase II Project was officially cancelled by Anhui Provincial Development and Reform Commission. The project was less likely to be carried out in the short term. Management reviewed the expenditures incurred and provided full impairment for the remaining costs of RMB56 million, excluding any recoverable amount.

##### (iii) Luoyuan Power Phase II New Project ("Luoyuan Phase II Project")

In December 2015, the preliminary design of the Luoyuan Phase II Project was reviewed and approved by the General Electric Power Planning and Design Institute. The total investment of this project is RMB5,306.17 million. According to the "13th Five-Year" Plan for Energy Development in Fujian Province (2016-2020)" ("Plan"), Fujian province should vigorously develop efficient and clean energy, optimize the energy structure, and increase the proportion of new energy and renewable energy, so that except for the coal power units of Luoyuan Phase I (2x660mw) project that have already been approved, Fujian province shall not approve the construction of any other new coal power projects within the province. Luoyuan Phase II Project has been ceased for construction since 2016. However, since the pre-construction work were initially carried out before the time when the aforementioned Plan was issued in 2016, management has communicated with the Fujian Provincial Development and Reform Commission many times striving for the project approval.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Impairment (Cont'd)

##### Note 4: Impairment losses of pre-construction costs (Cont'd)

##### *(iii) Luoyuan Power Phase II New Project ("Luoyuan Phase II Project") (Cont'd)*

In 2020, according to the "14th Five-Year" Investment Plan for Coal-fired Units of the Group in Fujian province, the Luoyuan Phase II Project was not included in the former investment plan. In accordance with the requirements stated in "Notice of the People's Government of Fujian Province on Implementing the "Three Lines and One Order" Ecological Environment Zoning Management and Control" (Min Zheng [2020] No.12), except for large-scale coal power plants listed in the national plan, project of equivalent capacity power plant replacement and cogeneration projects that focus on heating services, no new coal-fired power projects would be constructed in Fujian province. Management expected the project would not be proceeded. Considering that the project has been suspended for more than 3 years and the pre-construction costs were unable to be disposed, management provided full impairment for the pre-construction costs.

#### Impairment in 2019

In 2019, impairment losses for property, plant and equipment of certain power projects in PRC segment amounting to approximately RMB5,720 million have been recognised. The recoverable amount of these aforesaid CGUs in aggregate is RMB8,879 million as at 31 December 2019. Factors leading to the impairment include lower than expected operating results of subsidiaries in 2019 due to oversupply and fierce competition within the electricity market and future decommission plan of thermal power generation units. Value-in-use calculations use pre-tax cash flow projections based on the 2020 financial budgets approved by management and are extrapolated using the same cash flow projections of the remaining years with changes being made to reflect the estimated changes in future market or economic conditions. Other key assumptions applied in the impairment testing include the future sales volumes and fuel prices. Management determined these key assumptions based on past performance and their expectations on market development. Further, the Group adopts a pre-tax and non-inflation rate of ranging from 7.00% to 12.77% that reflects specific risks related to the CGUs as discount rate. The assumptions above are used in analysing the recoverable amounts of the CGUs within operating segments. These estimates and judgments may be significantly affected by unexpected changes in the future market or economic conditions.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Disposal

#### Note 1: Disposal of non-current assets

	Net losses on disposal of non-current assets in 2020
Beijing Co-generation (i)	106,080
Huaneng Chongqing Luohuang Energy Sales Limited Liability Company ("Luohuang Energy Sales") (ii)	80,683
Yingkou Power Plant (iii)	74,851
Huaneng Qidong Wind Power Generation Co., Ltd. ("Qidong Wind Power") (iv)	44,292
Huaneng Qinbei Power Generation Co., Ltd. ("Qinbei Power") (v)	26,999
Laiwu Power (vi)	24,944
Huaneng (Suzhou Industrial Park) Power Generation Co., Ltd. ("Suzhou Industrial Park Power") (vii)	24,514
Yunhe Power (viii)	23,978
Huaneng Power International, Inc. Yuhuan Power Plant ("Yuhuan Power Plant") (ix)	20,378
Other 55 items	199,938
Total	<u>626,657</u>

- (i) In 2020, certain production equipment such as the spray layer of the desulfurization and denitrification absorption tower, the in-situ control cabinet of the burner and the SCR reactor were scrapped according to technician appraisal result of Production technology department, as these equipment with severe wear and tear and corrosion were not able to meet the technical standards or not cost effective due to high repair and maintenance expenditures. The dismantled and scrapped equipment has original cost of RMB525 million and net book value of RMB106 million.
- (ii) In 2020, certain production equipment, tools, and vehicles were scrapped according to technician appraisal result of Production technology department because these items failed to meet the technical standards or lead to high repair and maintenance expenditures. The dismantled and scrapped equipment has original cost of RMB283 million and net book value of RMB81 million.
- (iii) In 2020, a group of customized spare parts for 2\*320MW Russian manufactured power generation units of Yingkou Power Plant Phase I with net book value of RMB9 million were scrapped were scrapped according to appraisal result of disposal and appraisal team, as these spare parts failed to meet the technical standards after a technical improvement project on corresponding power plants. Due to a series of upgrade project, such as ultra-low emission transformation, ultra-clean emission transformation and thermal system energy-saving optimization transformation in 2020, 266 equipment parts dismantled and disposed with original cost of RMB270 million and net book value of RMB66 million have lost their use and sale value and scrapped according to the technical appraisal result provided by disposal and appraisal team.

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### 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

#### Disposal (Cont'd)

##### Note 1: Disposal of non-current assets (Cont'd)

- (iv) In 2020, 60 sets of wind turbine blades from Qidong Phase I Wind Power Plant were dismantled and replaced due to severe cracks and wrinkles. According to the technical appraisal result, all these turbine blades with original cost of RMB111 million and the net book value of RMB49 million have lost their use and sale value and scrapped with the formal approval in 2020, resulting in a net loss of RMB44 million.
- (v) In 2020, certain production equipment, tools, and instruments, sprinklers installed at coal field and other equipment were scrapped according to appraisal result provided by technicians of the Production technology department, as these equipment with severe wear and tear and corrosion were not able to meet the technical standards or not cost effective due to high repair and maintenance expenditures. The dismantled and scrapped equipment has original cost of RMB100 million and net book value of RMB27 million.
- (vi) As the improvement of national environmental protection emission standards, the SNCR denitrification system of 4# and 5# power units retired and became a backup system in May 2014. According to the appraisal result provided by technician of Production technology department, the SNCR denitrification system with severe corrosion due to a long-time operation suspension will cause safety issue, therefore this item with original cost of RMB44 million and net book value of RMB25 million was scrapped.
- (vii) In 2020, two batches of coal storage yard windbreak, dust suppression walls, rotary heat exchangers, and 8 absorption tower circulating pumps was dismantled due to a technical upgrade and improvement project. According to the technical appraisal result provided by technicians of productions technology department, these equipment were scrapped with original cost of RMB67 million and the net book value of RMB25 million.
- (viii) In 2020, 2# condenser and other equipment failed to meet technical standards due to a system upgrade and improvement. According to the appraisal result provided by technician of production and technology department, 96 dismantled items with original cost of RMB130 million and the net book value of RMB26 million were scrapped, resulting in a net loss of RMB24 million.
- (ix) In 2020, the DCS equipment of the unit 1#, certain production equipment, tools and instruments failed to meet technical standards due to a system upgrade and improvement. According to the appraisal result provided by technician of the Production technology department, 130 dismantled items with original cost of RMB145 million and the net book value of RMB RMB23 million were scrapped, resulting in a net loss of RMB20 million.

## 7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

### Security

As at 31 December 2020 and 2019, certain property, plant and equipment were pledged to banks as collateral for short-term (Note 30) and long-term loans (Note 24).

### Buildings without ownership certificate

At 31 December 2020, the Group was in the process of applying for the ownership certificate for certain buildings (buildings for power generation were included in electric utility plant in service) with an aggregate net book value of RMB6,209 million (2019: RMB7,779 million). Management are 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.

## 8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES

	2020	2019
Beginning of the year	20,783,259	19,553,964
Capital injections in associates and joint ventures	596,877	313,197
Share of net profit less loss	1,774,322	1,185,622
Share of other comprehensive (loss)/income	(182,849)	368,696
Share of other capital reserve of equity-method investees	7,607	–
Dividends	(603,839)	(638,220)
End of the year	<u>22,375,377</u>	<u>20,783,259</u>

As at 31 December 2020, 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 <sup>1</sup>
<b>Associates:</b>					
Huaneng Sichuan Hydropower Co., Ltd. (“Sichuan Hydropower”)	PRC	RMB1,469,800,000	Development, investment, construction, operation and management of hydropower	49%	–
SECL*	PRC	RMB3,964,491,597	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%	–

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### 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 <sup>1</sup>
Huaneng Finance	PRC	RMB5,000,000,000	Provision for 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") **	PRC	RMB3,000,000,000	Wholesale of coal, import and export of coal	50%	–
Hainan Nuclear Power Limited Liability Company ("Hainan Nuclear")	PRC	RMB5,134,560,000	Construction and operation of nuclear power plants; production and sales of electricity and related products	30%	–
<b>Joint ventures:</b>					
Shanghai Time Shipping Co., Ltd. ("Shanghai Time Shipping")	PRC	RMB1,200,000,000	International and domestic sea transportation	50%	–
Jiangsu Nantong Power Generation Co., Ltd. ("Jiangsu Nantong Power")	PRC	RMB1,596,000,000	Operation and Management of power generation plants and transportation related projects	–	35%

<sup>1</sup> The indirect percentage of equity interest held represents the effective ownership interest of the Group.

\* As at 31 December 2020, the fair value of the Group's shares in SECL was RMB7,248 million (2019: RMB6,159 million).

\*\* In accordance with the articles of association of the investee, the Group could only exercise significant influence on the investee and therefore has 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.

## 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 Hydropower		SECL		Huaneng Finance		Hanfeng Power		Huaneng Group Fuel Company		Hainan Nuclear	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
<b>Gross amounts of the associates'</b>												
Current assets	825,632	873,821	21,111,690	20,887,020	27,426,242	23,099,357	964,515	849,386	5,263,174	6,010,002	1,894,806	3,085,059
Non-current assets	14,836,413	14,305,871	92,332,480	76,623,640	20,003,370	20,746,004	1,279,233	1,661,565	3,641,641	3,781,166	19,826,469	20,749,672
Current liabilities	(3,731,524)	(2,772,221)	(22,565,250)	(25,533,260)	(40,458,908)	(36,733,579)	(328,093)	(442,628)	(3,066,531)	(3,827,415)	(4,025,596)	(3,338,370)
Non-current liabilities	(7,171,879)	(7,788,402)	(48,951,200)	(38,446,550)	(553)	(30,867)	(36,218)	(166,718)	(1,780,436)	(2,121,112)	(13,041,682)	(15,930,100)
Equity	4,758,642	4,619,069	41,927,720	33,530,850	6,970,151	7,080,915	1,879,437	1,901,605	4,057,848	3,842,641	4,653,997	4,566,261
– Equity attributable to shareholders	3,588,982	3,464,302	27,346,169	24,103,107	6,970,151	7,080,915	1,879,437	1,901,605	3,688,698	3,590,096	4,653,997	4,566,261
– Non-controlling interests	1,189,660	1,154,767	14,581,551	9,427,743	–	–	–	–	369,150	252,545	–	–
Revenue	2,396,218	2,252,535	20,597,600	20,851,430	1,600,537	1,574,856	1,873,548	2,081,865	29,928,618	27,832,662	3,367,222	3,453,022
Gross profit/(loss)	701,606	575,401	5,952,100	6,472,550	1,014,653	1,064,181	22,637	(46,899)	284,754	173,371	147,629	142,906
Net profit/(loss)	555,009	509,034	4,248,550	1,749,600	943,215	1,004,048	6,426	(54,444)	222,488	150,460	77,037	307,135
Profit/(loss) from continuing operations attributable to shareholders	348,660	327,042	3,929,390	1,598,540	943,215	1,004,048	6,426	(54,444)	207,297	144,500	77,037	307,135
Other comprehensive (loss)/income attributable to shareholders	–	–	(578,559)	1,589,390	(153,979)	(150,286)	–	–	(8,695)	2,164	–	–
Total comprehensive income/(loss) attributable to shareholders	348,660	327,042	3,350,831	3,187,930	789,236	853,762	6,426	(54,444)	198,602	146,664	77,037	307,135
Dividend received from the associates	98,449	116,505	49,587	49,587	180,000	146,000	–	43,132	50,000	20,000	–	–

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### 8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES (Cont'd)

	Sichuan Hydropower		SECL		Huaneng Finance		Hantfeng Power		Huaneng Group Fuel Company		Hainan Nuclear	
	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019	2020	2019
<b>Reconciled to the interests in the associates</b>												
Gross amounts of net assets attributable to shareholders of the associates	3,568,982	3,464,302	27,346,169	24,103,107	6,970,151	7,080,915	1,879,437	1,901,605	3,688,698	3,590,096	4,653,997	4,566,261
The Group's effective interest	49%	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	1,748,801	1,697,508	6,842,011	6,030,597	1,394,030	1,416,183	751,775	760,642	1,844,349	1,795,048	1,396,199	1,369,878
Impact of adjustments	207,586	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	1,956,387	1,905,094	8,003,821	7,192,407	1,394,030	1,416,183	1,044,857	1,053,724	1,860,870	1,811,569	1,410,275	1,383,954

## 8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES (Cont'd)

Summarised financial information of material joint ventures adjusted for any differences in accounting policies and acquisition adjustment, and reconciliation to the carrying amount in the consolidated financial statements, are disclosed below:

	Shanghai Time Shipping		Jiangsu Nantong Power	
	2020	2019	2020	2019
<b>Gross amounts of joint ventures'</b>				
Current assets	318,387	280,687	742,195	396,850
Non-current assets	3,910,739	4,083,160	4,740,502	5,294,584
Current liabilities	(2,375,821)	(2,367,244)	(2,046,053)	(2,660,119)
Non-current liabilities	–	(54,623)	(1,318,905)	(901,583)
Equity	1,853,305	1,941,980	2,117,739	2,129,732
Revenue	1,143,885	1,613,813	3,118,059	2,959,197
Gross profit	169,040	135,846	541,305	490,578
Net profit	11,325	121,284	240,436	211,589
Total comprehensive income	11,325	121,284	240,436	211,589
Dividend received in cash from the joint ventures	50,000	–	126,215	145,143
<b>Reconciled to the interests in the joint ventures:</b>				
Gross amounts of net assets	1,853,305	1,941,980	2,117,739	2,129,732
The Group's effective interest rates	50%	50%	50%	50%
The Group's share of net assets	926,653	970,990	1,058,870	1,064,866
Impact of adjustments	18,324	18,324	–	–
Carrying amount in the consolidated financial statements	944,977	989,314	1,058,870	1,064,866

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### 8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES (Cont'd)

Aggregate information of associates and joint ventures that are not individually material:

	2020	2019
Aggregate carrying amount of individually immaterial associates and joint ventures in the consolidated financial statements	<b>4,701,290</b>	3,966,148
Aggregate amounts of the Company and its subsidiaries' share of those associates and joint ventures		
Profit from continuing operations	<b>190,029</b>	123,869
Total comprehensive income	<b>190,029</b>	123,954

As at 31 December 2020, the Group's share of losses of associates and a joint venture exceeded its interests in associates and a joint venture and the unrecognised further losses amounted to RMB552 million (2019: RMB538 million).

As at 31 December 2020, there were no proportionate interests in the associates' and joint ventures' capital commitments (31 December 2019: 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.

## 9 INVESTMENTS IN SUBSIDIARIES

As at 31 December 2020, 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%
Yingkou Co-generation	PRC	Held directly	RMB875,675,300	Production and sale of electricity and heat 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%
Zuoquan Coal-fired Power	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 ("Jiuquan Wind Power")	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, management of wind power generation projects	90%	90%
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%

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### 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 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%
Xindian Power	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%
Qingdao Co-generation	PRC	Held directly	RMB498,729,045	Construction, operation and management of co-generation power plants and related projects	100%	100%
Huaneng Tongxiang Combined Cycle Co-generation Co., Ltd.	PRC	Held directly	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%
Huaneng Chongqing Liangjiang Power Generation Limited Liability Company ("Liangjiang Power")	PRC	Held directly	RMB726,600,000	Construction, operation and management of natural gas power plants and related projects	90%	90%
Huaneng Yunnan Fuyuan Wind Power Generation Co., Ltd.	PRC	Held directly	RMB326,290,000	Wind power project investment, management and sales	100%	100%

## 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 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	RMB1,384,502,000	Power generation and supply development, management and construction of clean energy resource	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. ("Tongshan Wind Power")	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%
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%

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### 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 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%
Luoyuan Power	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%
Xianrendao Co-generation	PRC	Held directly	RMB352,020,000	Power generation and supply development and utilisation of clean energy resources	100%	100%
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 ("Changxing Photovoltaic Power")	PRC	Held indirectly	RMB26,000,000	Construction and operation of distributed photovoltaic power generation plants and related projects	100%	100%

## 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 Rudong Baxianjiao Offshore Wind Power Generation Co., Ltd.	PRC	Held indirectly	RMB1,629,338,700	Infrastructure construction of wind power plants	70%	70%
Guilin Gas Energy	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	RMB799,851,769	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%
Huaneng Guanyun Co-generation Co., Ltd	PRC	Held indirectly	RMB224,774,000	Construction, operation and management of co-generation power plants, heating network and expansion engineering	100%	100%
Huaneng International Power Hong Kong Limited Company	Hong Kong	Held directly	100,000 Shares	Development, construction management and operation of power supply, coal projects; related investment and financing businesses	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. ("TPU")	Singapore	Held indirectly	S\$255,500,001	Provision of energy, power supply, thermal supply, management of industrial water and waste	100%	100%
TP-STM Water Resources Pte. Ltd.	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%

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### 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 Taihang Power Generation Limited Liability Company	PRC	Held directly	RMB1,086,440,000	Pre-services related to coal-fired generation	60%	60%
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%
Tongwei Wind Power	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	RMB1,721,000,000	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 Energy Sales Limited Liability Company	PRC	Held indirectly	RMB200,000,000	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%

## 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 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 Longyan Wind Power Generation Limited Liability Company	PRC	Held indirectly	RMB35,000,000	Construction, operation and management of wind power plants and related projects	100%	100%
Huaneng Dandong Photovoltaic Power Generation Limited Liability Company	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	RMB658,940,000	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%

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### 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%
Luohuang Energy Sales	PRC	Held indirectly	RMB210,000,000	Sale and supply of electricity, sale of thermal products	90%	90%
Huaneng Chongqing Tongliang Energy Sales Limited Liability Company	PRC	Held indirectly	RMB210,000,000	Operation of natural gas, sale of electricity supply, sale of thermal products	51%	51%
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	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%
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%

## 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 Fujian Energy Sales Limited Liability Company	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 (Sanming) Clean Energy Limited Liability Company	PRC	Held indirectly	RMB500,000	Construction, operation and management of wind power, photovoltaic power station and related projects	100%	100%
Huaneng Yueyang Xingang Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB16,000,000	Construction, operation and management of electricity projects, development and utilisation of clean energy	60%	60%
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	RMB1,221,246,000	Sale of electricity	100%	100%
Huaneng Jianchang Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB94,870,000	Production and supply of electricity, and development and utilisation of clean energy resources	100%	100%

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### 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	RMB30,090,000	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	66.60%	66.60%
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 ("Shanxi Comprehensive Energy")	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%
Daqing Huaneng Shuangyu Solar Power Generation Limited Company	PRC	Held indirectly	RMB80,796,000	Solar energy generation	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%

## 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 Jiashan Photovoltaic Power Generation Limited Liability Company	PRC	Held indirectly	RMB10,000,000	Production and supply of electricity	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 Shantou Photovoltaic Power Generation Limited Liability Company	PRC	Held indirectly	RMB100,000	Production and supply of electricity	100%	100%
Huaneng Guigang Clean Energy Limited Liability Company	PRC	Held directly	RMB173,810,000	Production and supply of electricity, and investment, construction and operation of electricity projects	100%	100%
Huaneng Changxing Jiapu Photovoltaic Power Generation Limited Liability Company	PRC	Held indirectly	RMB10,000,000	Production and supply of electricity, and investment, construction and operation of electricity projects	100%	100%
Huaneng Hainan Energy Sales Limited Liability Company	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%	91.80%
Huaneng Yangpu Co-generation Limited Company	PRC	Held indirectly	RMB802,222,000	Investment, construction, operation and management of electricity projects and heat pipe networks	82.62%	82.62%

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### 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 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 ("Liaoning Clean Energy")	PRC	Held directly	RMB1,726,573,590	Technology development technical advice services for clean energy	100%	100%
Jiangsu Huaneng Zhongyang New Energy Power Generation Co., Ltd.	PRC	Held indirectly	RMB28,000,000	Production and supply of electricity, investment, construction and operation of electricity projects	75%	75%
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%
Jiyuan Huaneng Energy Sales Co., Ltd.	PRC	Held indirectly	RMB20,000,000	Sale of electricity, heat and gas	51%	51%
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%

## 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 Shengdong Rudong Offshore Wind Power Co., Ltd. ("Huaneng Shengdong Rudong")	PRC	Held indirectly	RMB1,575,960,000	Production and sale of electric power; investment in wind power generation	79%	79%
Huaneng Zhejiang Cangnan Offshore Wind Power Co., Ltd.	PRC	Held directly	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. ("Shanghai Photovoltaic Power")	PRC	Held directly	RMB50,000,000	Technical service of wind power generation	100%	100%
Sinosing Services PTE.Ltd. ("SSSPL")	Singapore	Held indirectly	USD1	Investment service	100%	100%
Huaneng Yangqu Wind Power Co., Ltd. ("Yangqu Wind Power")	PRC	Held indirectly	RMB47,000,000	Construction, operation and management of wind power projects	100%	100%
Huaneng Ruicheng Comprehensive Energy Co., Ltd. ("Ruicheng Comprehensive Energy")	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. ("Xiayi Wind Power")	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. ("Anhui Shitai Wind Power")	PRC	Held directly	RMB63,600,000	Production and sale of electric power, clean energy development and utilisation and investment in electricity projects	100%	100%

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### 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 (Tianjin) Energy Sales Co., Ltd. ("Tianjin Energy Sales")	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. ("Qingneng Tongyu Power")	PRC	Held indirectly	RMB180,000,000	Development and operation of new energy power projects	100%	100%
Huaneng Guanling New Energy Power Generation Co., Ltd. ("Guanling New Energy")	PRC	Held directly	RMB100,000,000	Production and sale of electricity and heat	100%	100%
Huaneng Luobei Wind Power Co., Ltd. ("Luobei Wind Power")	PRC	Held indirectly	RMB364,000,000	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. ("Sihong New Energy")	PRC	Held indirectly	RMB150,000,000	Development and management of new energy technology	100%	100%
Huaneng Taiqian Wind Power Co., Ltd. ("Taiqian Wind Power")	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. ("Zhenping Clean Energy")	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. ("Heze Dongming New Energy")	PRC	Held directly	RMB188,980,000	Photovoltaic power generation, wind power generation and biomass power generation	100%	100%
Huaneng Jiangkou Wind Power Co., Ltd. ("Jiangkou Wind Power")	PRC	Held directly	RMB20,000,000	Production and sale of wind power, and development and utilisation of clean energy	100%	100%

## 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
Chongqing Huaqing Energy Co., Ltd. ("Huaqing Energy") (i)	PRC	Held indirectly	RMB44,420,000	Providing thermal energy and cold energy services; supplying electricity	54%	60%
Shengdong Rudong Offshore Wind Power Co., Ltd. ("Shengdong Rudong Offshore Wind Power")(i)	PRC	Held indirectly	RMB1,418,409,282	Ancillary projects, construction of wind farm and wind farm maintenance	79%	100%
Huaneng Zhanhua Photovoltaic Power Generation Limited Company ("Zhanhua Photovoltaic Company") (i)	PRC	Held indirectly	RMB145,790,000	Photovoltaic power generation	46.40%	58%
Huaneng Dezhou New Energy Limited Company (i)	PRC	Held indirectly	RMB350,530,000	Photovoltaic power generation wind power generation, and biomass power generation	80%	100%
Huaneng Jiyang Biomass Thermal Power Co., Ltd. ("Jiyang Biomass Thermal Power")(i)	PRC	Held indirectly	RMB72,190,000	Production and sale of new energy power	80%	100%
Huaneng (Liaocheng Gaotang) New Energy Co., Ltd.* ("Liaocheng Gaotang") (i)	PRC	Held indirectly	RMB261,670,000	Development and operation of new energy power projects	80%	100%
Huaneng Yantai New Energy Co., Ltd.* ("Yantai New Energy") (i)	PRC	Held indirectly	RMB1,663,602,000	Biomass power generation, sale of electricity and heat, and energy-saving technology promotion	60%	75%
Huaneng Shanghai Shidongkou Power Generation Limited Liability Company ("Shidongkou Power") (ii)	PRC	Held directly	RMB1,179,000,000	Power generation	50%	100%

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### 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 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%	93.90%
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%
Huaneng Ruzhou Clean Energy Limited Liability Company ("Ruzhou Clean Energy") (xi)	PRC	Held directly	RMB217,010,000	Production and supply of electricity projects, investment, construction and operation of electricity projects	95%	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	34%	70%
Huaneng (Jinxiang) New Energy Co., Ltd.* ("Jinxiang New Energy")	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%	80%

## 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 Taigu New Energy Power Co., Ltd.* ("Taigu New Energy")	PRC	Held indirectly	RMB41,700,000	Production and sale of electricity	100%	100%
Huaneng Zuoquan Yangjiao Wind Power Co., Ltd.* ("Zuoquan Yangjiao")	PRC	Held indirectly	RMB500,000	Production and sale of electricity	100%	100%
Huaneng (Zhuanghe) Wind Power Co., Ltd.* ("Zhuanghe Wind Power")	PRC	Held indirectly	RMB2,700,000,000	Production and sale of electricity and heat	94.07%	94.07%
Huaneng (Zhuanghe) Clean Energy Co., Ltd.* ("Zhuanghe Clean Energy")	PRC	Held indirectly	RMB1,500,000,000	Investment, construction and management of wind power projects	97.96%	97.96%
Huaneng Zaoyang New Energy Co., Ltd.* ("Zaoyang New Energy")	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	RMB210,470,000	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%

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### 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 Daqing Clean Energy Co., Ltd.*	PRC	Held indirectly	RMB1,000,000,000	Production and sale of electricity, construction, operation and management of clean energy projects	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%
Huaneng Siping Wind Power Co., Ltd.*	PRC	Held indirectly	RMB407,810,000	Development and operation of new energy power projects	100%	100%
Huaneng Tongyu Tuanjie Wind Power Co., Ltd.*	PRC	Held indirectly	RMB212,680,000	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	RMB100,000,000	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	RMB100,000,000	Electricity, heat, and new energy development.	100%	100%
Huaneng (Guangdong) Energy Development Co., Ltd.* ("Guangdong Energy Development")	PRC	Held directly	RMB100,000,000	Production and sale of heat, sewage treatment and recycling, and new energy technology development	100%	100%

## 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 (Zhejiang) Energy Development Co., Ltd.* ("Zhejiang Energy Development")	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%
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%

\* These companies were newly established in 2020.

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### 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
Suzhou Industrial Park Power	PRC	Held indirectly	RMB632,840,000	Power generation	75%	75%
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	60%	60%
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%
Qidong Wind Power	PRC	Held indirectly	RMB391,738,500	Development of wind power projects, and production and sale of electricity	65%	65%
Tianjin Huaneng Yangliuqing Co-generation Limited Liability Company ("Yangliuqing Co-generation")	PRC	Held directly	RMB1,537,130,909	Power generation, heat supply, facilities installation, maintenance and related services	55%	55%
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%

## 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 Anyuan Power Generation Co., Ltd. ("Anyuan Power")	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. ("Hualiangting Hydropower")	PRC	Held directly	RMB50,000,000	Generation and transfer of power supply, and water supply (irrigation)	100%	100%
Huaneng Jingmen Thermal Power Co., Ltd. ("Jingmen Thermal Power")	PRC	Held directly	RMB780,000,000	Thermal power, power development and other service	100%	100%
Enshi Qingjiang Dalongtan Hydropower Development Co., Ltd. ("Dalongtan Hydropower")	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 ("Hainan Power")	PRC	Held directly	RMB1,326,419,587	Investment, construction, operation of various power plants, and regular energy and new energy development	91.80%	91.80%
Huaneng Yingcheng Thermal Power Co., Ltd. ("Yingcheng Thermal Power")	PRC	Held directly	RMB665,982,700	Construction and operation of power plants and production, sale of power and heat	100%	100%
Huaneng Heilongjiang Power Generation Limited Company ("Heilongjiang Power")	PRC	Held directly	RMB1,342,550,000	Development, investment construction, production and management of power (thermal) projects	100%	100%
Huaneng Hegang Power Generation Limited Company ("Hegang Power")	PRC	Held indirectly	RMB1,092,550,000	Electricity power construction, energy conservation, development projects, and heat production and supply	64%	64%

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### 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 Xinhua Power Generation Limited Liability Company ("Xinhua Power")	PRC	Held indirectly	RMB284,880,000	Power generation, power equipment repair, and coal sale	70%	70%
Huaneng Tongjiang Wind Power Generation Limited Company ("Tongjiang Wind Power")	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 ("Daqing Thermal Power")	PRC	Held indirectly	RMB630,000,000	Power generation, and thermal production and supply	100%	100%
Daqing Lvyuan Wind Power Generation Limited Company ("Lvyuan Wind Power")	PRC	Held indirectly	RMB497,000,000	Wind power generation	100%	100%
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 ("Zhaodong Thermal Power")	PRC	Held indirectly	RMB10,000,000	Heat production and supply	100%	100%
Huaneng Jilin Power Generation Limited Company ("Jilin Power")	PRC	Held directly	RMB4,719,757,200	Power (thermal) projects, development of new energy projects and investment, construction, production, operation and sale	100%	100%

## 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 ("Jubao Hydropower")	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 ("Jilin Energy Sales")	PRC	Held indirectly	RMB210,000,000	Thermal (cold) production and supply, and power supply	100%	100%
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. ("Zhongyuan Gas")	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 Zibo Boshan Photovoltaic Power Limited Company ("Zibo Photovoltaic") (i)	PRC	Held indirectly	RMB22,000,000	Solar power generation, and sale	80%	100%
Huaneng Jining New Energy Limited Company ("Jining New Energy") (i)	PRC	Held indirectly	RMB38,000,000	Investment, construction and management of photovoltaic and wind power projects	80%	100%
Huaneng Rizhao Thermal Power Limited Company ("Rizhao Thermal Power") (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 ("Laiwu New Energy") (i)	PRC	Held indirectly	RMB68,000,000	Photovoltaic power and wind power generation	80%	100%

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### 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 Sishui New Energy Limited Company ("Sishui New Energy") (i)	PRC	Held indirectly	RMB143,090,000	Solar energy grid connected generation	80%	100%
Huaneng Shandong Electric and Thermal Power Marketing Limited Company ("Shandong Power Marketing") (i)	PRC	Held indirectly	RMB200,000,000	Sales and service of power and heating products, investment in power industry	80%	100%
Huaneng Shandong Information Technology Limited Company ("Shandong Power Information Company") (i)	PRC	Held indirectly	RMB80,000,000	Information technology and management consulting services	80%	100%
Huaneng Zhanhua New Energy Limited Company ("Zhanhua New Energy") (i)	PRC	Held indirectly	RMB235,298,200	Wind power, photovoltaic power generation	80%	100%
Huaneng Weihai Port Photovoltaic Power Generation Limited Company ("Port Photovoltaic") (i)	PRC	Held indirectly	RMB32,380,000	Photovoltaic power generation projects development and construction, electricity sales	80%	100%
Huangtai Power (i)	PRC	Held indirectly	RMB1,391,878,400	Electricity power production, heat management	72%	90%
Huaneng Dezhou Thermal Power Limited Company ("Dezhou Thermal Power") (i)	PRC	Held indirectly	RMB40,000,000	Urban heat construction, maintenance and operation, design and construction of heat engineering	68%	85%

## 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 Dongying New Energy Limited Company ("Dongying New Energy") (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	10,000 shares	Investment	80%	100%
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%
Yunhe Power (i)	PRC	Held indirectly	RMB696,355,300	Electrical (thermal) production and on-grid sale, technology consulting and services	78.68%	98.35%
Linyi Power (i)	PRC	Held indirectly	RMB1,093,313,400	Power generation	60%	75%
Liaocheng Changrun National Electric Heating Limited Company ("Liaocheng Changrun") (i)	PRC	Held indirectly	RMB130,000,000	Heat supply	60%	75%
Linyi Lantian Thermal Power Limited Company ("Lantian Thermal Power") (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 ("Yantai 500") (i)	PRC	Held indirectly	RMB20,500,000	Central heat services, plumbing and pipe installation services	64%	80%

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### 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 Taifeng Renewable Energy Co., Ltd.** ("Taifeng Renewable Energy") (i)	PRC	Held indirectly	RMB200,000,000	Investment, development, construction and management of photovoltaic power generation projects	65.78%	82.23%
Laiwu Power (iv)	PRC	Held indirectly	RMB2,340,000,000	Power production	74.32%	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 Rongcheng New Energy Co., Ltd. ("Rongcheng New Energy") (iv)	PRC	Held indirectly	RMB36,540,000	Wind power generation	48%	100%
Liaocheng Co-generation (iv)	PRC	Held indirectly	RMB1,038,407,950	Power, and heat production and sale	60%	100%
Jiaxiang Power (iv)	PRC	Held indirectly	RMB646,680,000	Power generation, electrical equipment maintenance	40%	100%
Qufu Co-generation (iv)	PRC	Held indirectly	RMB300,932,990	Sale and production of electric power, and thermal power	40%	100%
Jining Co-generation (iv)	PRC	Held indirectly	RMB118,699,761	Heat supply and power generation	40%	100%
Huaneng Shandong Electric Power Fuel Limited Company ("Shandong Fuel Company") (iv)	PRC	Held indirectly	RMB100,000,000	Wholesale operation of coal	76.55%	100%

## 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 Power Generation Maintenance Technology Limited Company ("Shandong Maintenance Company") (iv)	PRC	Held indirectly	RMB50,000,000	Power engineering design, construction	76.55%	100%
Rizhao Power (iv)	PRC	Held indirectly	RMB1,245,587,900	Heat; engaged in power business	88.80%	100%
Beijing Co-generation (vi)	PRC	Held directly	RMB3,702,090,000	Construction and operation of power plants and related construction projects	41%	66%
Chaohu Power (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 Ruijin Power Generation Co., Ltd. ("Ruijin Power Generation") (x)	PRC	Held directly	RMB1,719,846,598	Construction, operation, management of electricity projects, and development and utilisation of clean energy	50%	100%
Tianjin Longye New Energy Co., Ltd.** ("Tianjin Longye")	PRC	Held directly	RMB9,300,000	Design, construction and maintenance of solar power projects, and sale of photovoltaic modules	100%	100%

\*\* These companies were newly acquired in 2020.

The subsidiaries above and the Group are all controlled by Huaneng Group before and after the acquisitions.

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### 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
Weihai Power	PRC	Held directly	RMB1,822,176,621	Power generation	60%	60%
Huaiyin Power	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%
Zhanhua Co-generation	PRC	Held directly	RMB190,000,000	Production and sale of electricity and thermal energy	100%	100%
Shandong Hualu Sea Transportation Limited Company	PRC	Held directly	RMB100,000,000	Cargo transportation along domestic coastal areas, and goods storage	53%	53%
Huaneng Qingdao Port Limited Company	PRC	Held directly	RMB219,845,009	Loading and conveying warehousing, conveying, water carriage materials supply	51%	51%
Huaneng Yunnan Diandong Energy Limited Liability Company ("Diandong Energy")	PRC	Held directly	RMB9,648,142,100	Electricity project investment, power generation and sale, and coal exploitation and investment	100%	100%
Yunnan Diandong Yuwang Energy Limited Company ("Diandong Yuwang")	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%
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%

## 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
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%
Ruzhou Xuji Wind Power Generation Co., Ltd.(i)	PRC	Held indirectly	RMB4,000,000	Wind power and photovoltaic power generation	95%	100%
Hong Kong Energy (iv)	Hong Kong	Held indirectly	US\$360,000,000	Investment	40%	100%
Shandong Huatai Electric Power Operation & Maintenance (Private) Co., Ltd. ("Huatai Power") (iv)	Pakistan	Held indirectly	PKR1,000,000	Power generation operation and maintenance	40%	100%
Ruyi Pakistan Energy (iv)	Pakistan	Held indirectly	US\$360,000,000	Electric power production and sale	40%	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%

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### 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 ("Hongyuan Power")	PRC	Held indirectly	RMB397,800,000	Construction, operation and management of photovoltaic power projects	100%	100%
Poyang Luohong Power Co., Ltd. ("Luohong Power")	PRC	Held indirectly	RMB780,000,000	Investment, construction, operation and management of photovoltaic power projects	51%	51%
Shuozhou Taizhong Wind Power Limited Company ("Shuozhou Wind Power")	PRC	Held indirectly	RMB362,703,300	Investment, construction, operation and management of wind power projects	51%	51%
Wuzhai Taizhong New Energy Wind Power Limited Company ("Wuzhai Wind Power")	PRC	Held indirectly	RMB518,147,600	Investment, construction, operation and management of wind power projects	51%	51%
Xian Xvheng New Energy Limited Company ("Xvheng New Energy")	PRC	Held indirectly	RMB549,530,000	Construction, operation and management of photovoltaic power projects	100%	100%
Licheng Yingheng Clean Energy Limited Company ("Yingheng Clean Energy")	PRC	Held indirectly	RMB1,100,000,000	Construction, operation and management of photovoltaic power projects	100%	100%
Ruicheng Yaosheng Power Development Co., Ltd.*** ("Yaosheng Power")	PRC	Held indirectly	RMB405,880,000	Development, construction, management and operation of solar power projects	51%	51%
Ruicheng Ningsheng New Energy Co., Ltd. ("Ningsheng New Energy")***	PRC	Held indirectly	RMB207,699,000	Development, construction, management and operation of solar power projects	51%	51%
Fanshi Nengyu Wind Power Co., Ltd. ("Nengyu Wind Power")***	PRC	Held indirectly	RMB512,123,000	Development, construction, management and operation of wind power projects, and wind power generation	51%	51%

## 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
Zuoquan Nengyu New Energy Co., Ltd. ("Nengyu New Energy")***	PRC	Held indirectly	RMB494,047,000	Wind power generation, new energy technology promotion service	51%	51%
Dalian Chuanbo Haizhuang New Energy Co., Ltd. ("Dalian Chuanbo")***	PRC	Held indirectly	RMB957,700,000	Development, construction, management and operation of wind power projects, wind power generation	97.96%	97.96%
Henan Juhe New Energy Technology Co., Ltd. ("Juhe New Energy")***	PRC	Held directly	RMB111,900,000	Technology promotion and application service industry	100%	100%
Xincai Juhe Wind Power Co., Ltd. ("Xincai Juhe")***	PRC	Held indirectly	RMB111,600,000	Development, construction, management and operation of wind power projects, and wind power generation	100%	100%
Nanchang Tongshang New Energy Co., Ltd.***	PRC	Held indirectly	RMB110,000,000	New energy and energy-saving technology promotion, construction of solar and wind power projects, electronic product and mechanical equipment installation	100%	100%
Dalian Jingangwan Energy Development Co., Ltd.***	PRC	Held indirectly	RMB10,000,000	Development, construction, management and operation of wind power projects, and wind power generation and sale	94.07%	94.07%
Dalian Beihuanghai Lingang Energy Development Co., Ltd.***	PRC	Held indirectly	RMB10,000,000	Development, construction, management and operation of wind power projects, and wind power generation and sale	94.07%	94.07%
Dalian Rongqiang New Energy Co., Ltd.***	PRC	Held indirectly	RMB10,000,000	Development, construction, management and operation of wind power projects, and wind power generation and sale	94.07%	94.07%

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### 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
Dalian Qianyang New Energy Co., Ltd. ***	PRC	Held indirectly	RMB10,000,000	Development, construction, management and operation of wind power projects, and wind power generation and sale	94.07%	94.07%

\*\*\* These companies were newly acquired in 2020.

Notes:

- (i) These companies are subsidiaries of the non-wholly owned subsidiaries controlled by the Company, so the voting rights percentage 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 profit distribution decisions made by the Company. According to the voting in concert agreement entered into between the Group and another shareholder with 9.13% 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 Group under the circumstances that their legitimate entitlements are guaranteed. As a result, 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 other equity holders of Laiwu Power, Ruyi Coal Power, Rongcheng New Energy, Liaocheng Co-generation, the other equity holders agreed to vote the same in respect of significant financial and operating decisions made by Shandong Power. As a result, the Company has control over these companies.

Jiaxiang Power, Qufu Co-generation, Jining Co-generation, Weishan New Energy and Helan New Energy are wholly-owned subsidiaries of Ruyi Coal Power, a 50% owned subsidiary of Shandong Power. Therefore, the Group indirectly holds 40% interests in the above-mentioned five subsidiaries.

Shandong Power directly holds 72% interests in Shandong Fuel Company and Shandong Maintenance Company; meanwhile, Shandong Power indirectly holds a total of 23.68% equity interests and 28% voting rights in Shandong Fuel Company and Shandong Maintenance Company respectively through its own subsidiaries. Thus, the Company indirectly holds 76.55% interests and 100% voting rights in Shandong Maintenance Company and Shandong Fuel Company respectively.

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 in Rizhao Power and its subsidiary Wulian New Energy.

## 9 INVESTMENTS IN SUBSIDIARIES (Cont'd)

### (iv) Subsidiaries acquired from asset acquisitions (Cont'd)

Notes: (Cont'd)

According to the voting in concert agreement entered into between Hong Kong Investment, a 80% owned subsidiary of Shandong Power, and the other shareholder of Hong Kong Energy in December 2018, the other shareholder agreed to vote the same in respect of significant financial and operating decisions made by Hong Kong Investment. As a result, 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 waives all management rights within a certain operating period. Therefore, the Group has control over Zhenlai Photovoltaic Power.
- (vi) Pursuant to an agreement entered into between the Company and another shareholder, 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 one shareholder with 10% equity interests in Chaohu Power, the shareholder 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 Chaohu Power.
- (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 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. As a result, the Group has had control over Shanxi Xiaoyi Energy since February 2017.
- (x) In 2019, the Company's equity interest in 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. As a result, the Company still has control over Ruijin Power Generation.
- (xi) According to the investment cooperation agreement between the Group and another shareholder, the one and only executive director of Ruzhou Clean Energy was appointed by the Company. Therefore, the Group has control over Ruzhou Clean Energy.
- (xii) According to the articles of association signed by Jiangsu Eney 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.

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### 10 OTHER EQUITY INSTRUMENT INVESTMENTS

	For the year ended 31 December	
	2020	2019
<b>Equity securities designated at FVOCI (non-recycling)</b>		
Listed equity investments at fair value	6,662	8,390
Unlisted equity investments at fair value		
7.89% of Ganlong Double-track Railway Co., Ltd.	504,309	678,565
Others	153,975	92,263
Subtotal	658,284	770,828
Total	664,946	779,218

The above equity investments were irrevocably designated at fair value through other comprehensive income as the Group considers these investments to be strategic in nature.

### 11 POWER GENERATION LICENCES

The movements in the carrying amount of power generation licence during the years are as follows:

	2020	2019
<b>Beginning of the year</b>	4,149,468	4,014,972
<b>Movement:</b>		
Currency translation differences	(194,485)	134,496
<b>End of the year</b>	3,954,983	4,149,468

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 2020 to be indefinite and therefore the licence is not amortised.

#### Impairment test of a power generation licence

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 2020 (2019: 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:

	2020	2019
<b>Beginning of the year</b>		
Cost	2,472,886	2,406,567
Accumulated impairment losses	(895,381)	(895,381)
<b>Net book value</b>	1,577,505	1,511,186
<b>Movements:</b>		
Addition	33,981	66,319
Impairment charge for the year	–	–
<b>End of the year</b>	1,611,486	1,577,505
Cost	2,506,867	2,472,886
Accumulated impairment losses	(895,381)	(895,381)
<b>Net book value</b>	1,611,486	1,577,505

In 2020, no impairment losses for mining rights (2019: Nil) have been recognised.

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### 13 DERIVATIVE FINANCIAL INSTRUMENTS

Details of derivative financial instruments are as follows:

	As at 31 December	
	2020	2019
Derivative financial assets		
– Hedging instruments for cash flow hedge (fuel swap contracts)	184,458	82,367
– Hedging instruments for cash flow hedge (exchange forward contracts)	275	4,319
– Financial instruments at fair value through profit or loss (fuel swap contracts)	–	4,601
Total	184,733	91,287
Less: non-current portion		
– Hedging instruments for cash flow hedge (fuel swap contracts)	74,551	15,101
– Hedging instruments for cash flow hedge (exchange forward contracts)	3	1,275
Total non-current portion	74,554	16,376
Current portion	110,179	74,911
Derivative financial liabilities		
– Hedging instruments for cash flow hedge (fuel swap contracts)	45,111	243,045
– Hedging instruments for cash flow hedge (exchange forward contracts)	68,853	42,082
– Hedging instruments for cash flow hedge (interest rate swap contracts)	181,037	162,594
– Financial instruments at fair value through profit or loss (fuel swap contracts)	–	2,987
Total	295,001	450,708
Less: non-current portion		
– Hedging instruments for cash flow hedge (fuel swap contracts)	10,358	39,684
– Hedging instruments for cash flow hedge (exchange forward contracts)	17,551	13,641
– Hedging instruments for cash flow hedge (interest rate swap contracts)	160,230	145,590
– Financial instruments at fair value through profit or loss (fuel swap contracts)	–	1,493
Total non-current portion	188,139	200,408
Total current portion	106,862	250,300

## 13 DERIVATIVE FINANCIAL INSTRUMENTS *(Cont'd)*

For the years ended 31 December 2020 and 2019, 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.

TPG uses various interest rate swap contracts to hedge floating semi-annual interest payments on borrowings with maturity dates up to 2020. TPSTMWR also 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 2020 was S\$142 million (RMB equivalents of RMB700 million) (2019: S\$929 million (RMB equivalents of RMB4,086 million)). Through these arrangements, TPG swapped original floating interest (6-month SOR) to annual fixed interest determined by individual swap contracts. Such swap contracts were settled semi-annually from September 2011 to March 2020. TPSTMWR swapped original floating interest (3-month SOR) to annual fixed interest determined by individual swap contracts. Such swap contracts are settled quarterly from September 2019 to June 2044. As at 31 December 2020, the remaining interest rate swap contracts were carried on the consolidated statement of financial position as financial liabilities of RMB181 million (2019: financial liabilities of RMB163 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). The Group has established a hedge ratio of 1:1 for the hedging relationships as the underlying risk of the exchange forward, fuel swaps and interest rate swaps are identical to the hedged risk components. To test the hedge effectiveness, the Group uses the hypothetical derivative method and 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.

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### 13 DERIVATIVE FINANCIAL INSTRUMENTS (Cont'd)

The analysis of contractual cash inflows/(outflows) of major derivative financial instruments is as follows:

	Carrying amounts	Maturity			
		Contractual cash flows	Within 1 year	Between 1 and 5 years	After 5 years
<b>As at 31 December 2020</b>					
<b>Derivative financial assets</b>					
Fuel derivatives used for hedging (net settlement)	184,458	184,458	109,907	74,551	-
Forward exchange contracts used for hedging					
– inflows		304,090	302,424	1,666	-
– outflows		(303,780)	(302,120)	(1,660)	-
	275	310	304	6	-
Fuel derivatives that do not qualify as hedges (net settlement)	-	-	-	-	-
<b>Derivative financial liabilities</b>					
Fuel derivatives used for hedging (net settlement)	45,111	(45,111)	(34,753)	(10,358)	-
Forward exchange contracts used for hedging					
– inflows		1,918,752	1,498,700	420,052	-
– outflows		(1,986,755)	(1,549,515)	(437,240)	-
	68,853	(68,003)	(50,815)	(17,188)	-
Net-settled interest rate swaps used for hedging					
– net cash inflows/(outflows)	181,037	(230,534)	(37,564)	(69,890)	(123,080)
Fuel derivatives that do not qualify as hedges (net settlement)	-	-	-	-	-

## 13 DERIVATIVE FINANCIAL INSTRUMENTS (Cont'd)

	Carrying amounts	Maturity			
		Contractual cash flows	Within 1 year	Between 1 and 5 years	
<b>As at 31 December 2019</b>					
<b>Derivative financial assets</b>					
Fuel derivatives used for hedging (net settlement)	82,367	82,367	67,266	15,101	–
Forward exchange contracts used for hedging					
– inflows		697,057	585,340	111,717	–
– outflows		(691,081)	(581,248)	(109,833)	–
	4,319	5,976	4,092	1,884	–
Fuel derivatives that do not qualify as hedges (net settlement)	4,601	4,601	4,601	–	–
<b>Derivative financial liabilities</b>					
Fuel derivatives used for hedging (net settlement)	243,045	(243,045)	(203,361)	(39,684)	–
Forward exchange contracts used for hedging					
– inflows		2,702,992	2,042,062	660,930	–
– outflows		(2,738,635)	(2,067,617)	(671,018)	–
	42,082	(35,643)	(25,555)	(10,088)	–
Net-settled interest rate swaps used for hedging					
– net cash inflows/(outflows)	162,594	(188,162)	(33,497)	(48,412)	(106,253)
Fuel derivatives that do not qualify as hedges (net settlement)	2,987	(2,987)	(1,493)	(1,494)	–

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### 14 GOODWILL

The movements of goodwill during the years are as follows:

	2020	2019
<b>Beginning of the year</b>		
Cost	19,292,497	18,941,078
Accumulated impairment losses	(3,357,542)	(3,368,851)
<b>Net book value</b>	<b>15,934,955</b>	15,572,227
<b>Movements:</b>		
Business combination (Note 40)	12,615	–
Impairment charge for the year	(685,036)	–
Disposal of a subsidiary – cost	–	(21,723)
Disposal of a subsidiary – impairment	–	21,723
Currency translation differences – cost	(539,577)	373,142
Currency translation differences – impairment	15,059	(10,414)
<b>End of the year</b>	<b>14,738,016</b>	15,934,955
Cost	18,765,535	19,292,497
Accumulated impairment losses	(4,027,519)	(3,357,542)
<b>Net book value</b>	<b>14,738,016</b>	15,934,955

### Impairment tests for goodwill

In the impairment assessment of the Group, goodwill is allocated to groups of cash-generating units (CGUs) that are 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 major goodwill and goodwill impaired in 2020 allocated to individual CGUs are as follows:

	2020	2019
PRC power segment:		
Yunhe Power	295,001	700,346
Linyi Power	382,500	541,307
Wuhan Power	518,484	518,484
Liaocheng Co-generation	429,750	495,448
Yantai Power Plant	31,706	62,837
Yichun Thermal Power	24,397	48,453
Overseas segment:		
Tuas Power	10,666,426	11,190,944

## 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 Singapore 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").

Pre-tax discount rates used for value-in-use calculations:

	2020	2019
Yunhe Power	8.98%	9.22%
Linyi Power	9.00%	9.23%
Wuhan Power	8.94%	9.21%
Liaocheng Co-generation	8.90%	9.18%
Yantai Power Plant	7.85%	9.19%
Yichun Thermal Power	8.35%	9.30%
Singapore Tuas Power	8.40%	7.33%

### Key assumptions used for value-in-use calculations:

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 rate. 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, Yunhe Power, Linyi Power, Liaocheng Co-generation, Yantai Power Plant and Yichun Thermal Power recognised RMB405 million (2019: Nil), RMB159 million (2019: Nil), RMB66 million (2019: Nil), RMB31 million (2019: Nil) and RMB24 million (2019: Nil), impairment losses of goodwill respectively in 2020. Please refer to Note 7 for details.

For the goodwill allocated to Singapore Tuas Power, the key assumptions applied in the impairment model include the expected future sales volumes, gross margin, terminal growth rate and discount rate.

The EMA released its Electricity Market Prospects Report ("EMA 2020 report") on 30 December 2020, stating that the electricity demand is expected to grow between 2.50% and 3.1% over the next 10 years, taking into account demographic, climate and economic impacts. According to the EMA 2020 report, the compound annual growth rate of the electricity market from 2009 to 2019 was about 2.6%. The market share of Singapore Tuas Power in Singapore has remained stable, with the market share ratios being 21.1%, 20.7% and 19.3% in 2018, 2019 and 2020, respectively. The sales volumes of Singapore Tuas Power from 2021 to 2025 are forecasted based on its past performance, and a terminal growth rate of 2% (2019: 2%) is utilised in the forecast.

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### 14 GOODWILL (Cont'd)

#### Key assumptions used for value-in-use calculations (Cont'd):

In June 2020, EMA announced an exposure draft about the forward capacity market (FCM), which is planned to be initially implemented in 2021 to meet Singapore's forecasted power demand, maintain the power safety requirement and at the same time achieve the goal of attracting power incremental investment. With the implementation of the FCM regime, the future forecasted average gross margin of electricity sales will also improve. Singapore Tuas Power adjusted the average gross margin of electricity sales during the forecast period and the terminal period accordingly.

Gross margin of electricity sales: \$\$/MWh	Impairment test model in 2020	Impairment test model in 2019
2021	13.5	15.8
2022	15.4	28.5
2023	15.4	33.3
2024	30.1	38.5
2025	54.3	38.5
Terminal period	42.4	38.5

Management used the after-tax discount rate for power generation industry for 2021 and 2022 published by EMA in November 2020 to calculate the pre-tax discount rate used for value-in-use calculations of Tuas Power, which is 8.40% for the year ended 31 December 2020 (2019: 7.33%).

According to the impairment assessment, there was no impairment provided for the goodwill of Tuas Power for the year ended 31 December 2020 (2019: Nil). In 2020 and 2019, the fluctuation of goodwill in respect of Tuas Power was due to currency translation differences.

For the goodwill allocated to the CGU in Singapore, 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 2019: 0.5%) would result in approximately RMB1,691 million (31 December 2019: RMB1,706 million) decrease in the recoverable amount of the CGU.

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 further recognise impairment against goodwill by approximately RMB279 million and RMB1,723 million (31 December 2019: RMB322 million and RMB2,930 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 further recognise impairment against goodwill by approximately RMB488 million and RMB2,588 million (31 December 2019: RMB170 million and RMB1,829 million), respectively.

## 15 OTHER NON-CURRENT ASSETS

Details of other non-current assets are as follows:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Finance lease receivables (i)	<b>9,431,733</b>	10,519,845
VAT recoverable	<b>5,526,256</b>	4,172,871
Prepayments for pre-construction cost (ii)	<b>438,167</b>	788,081
Intangible assets (iii)	<b>643,486</b>	784,594
Prepaid connection fees	<b>33,041</b>	37,484
Contract assets	<b>736,568</b>	642,557
Others	<b>1,728,332</b>	1,659,573
Total	<b>18,537,583</b>	18,605,005

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) Please refer to Note 7 for details of impairment losses of prepayment for pre-construction cost.
- (iii) The intangible assets primarily consist of software, patented technologies etc. In 2020, there was no impairment provided for the intangible assets (2019: Nil).

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### 16 INVENTORIES

Inventories comprised:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Fuel (coal and oil) for power generation	<b>5,327,750</b>	7,304,783
Material and supplies	<b>1,473,355</b>	1,765,827
	<b>6,801,105</b>	9,070,610
Less: provision for inventory obsolescence	<b>198,646</b>	187,427
Total	<b>6,602,459</b>	8,883,183

Movements of provision for inventory obsolescence during the years are analysed as follows:

	<b>2020</b>	2019
Beginning of the year	<b>(187,427)</b>	(430,707)
Provision	<b>(43,993)</b>	(23,507)
Reversal	<b>917</b>	1,054
Write-off	<b>25,378</b>	272,659
Currency translation differences	<b>6,479</b>	(6,926)
End of the year	<b>(198,646)</b>	(187,427)

Note: the amount of losses on scrapped materials and supplies was RMB167,449 thousand (Note 6), with the details as follows:

	<b>For the year ended 31 December 2020</b>
Huaneng Power International, Inc. Shang'an Power Plant ("Shang'an Power Plant") (i)	<b>46,598</b>
Huaneng Power International, Inc. Shanghai Shidongkou II Power Plant ("Shidongkou II") (ii)	<b>29,494</b>
Other 22 items	<b>91,357</b>
Total	<b>167,449</b>

- (i) In June and July 2020, the Material supply department, Maintenance department, Fuel department, Engineering department, and Finance department of Shang'an Power Plant respectively carried out an assessment and concluded that due to technical improvement, expiration, deformation and deterioration, 4,665 items with book value of RMB40,112 thousand in total deemed loss need to be fully scrapped, which was formally approved in 2020.
- (ii) In 2020, the Production department of Shidongkou II carried out 2 batches of quality inspections on material and spare parts with over ten-year age and concluded that due to safety concerns, 4,685 items with a book value of RMB29,494 thousand in total deemed loss needed to be fully scrapped, which was formally approved in 2020.

## 17 OTHER RECEIVABLES AND ASSETS

Other receivables and assets comprised the following:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Prepayments for inventories	<b>1,222,785</b>	758,834
Prepaid income tax	<b>133,090</b>	139,617
Others	<b>335,189</b>	266,252
Subtotal of prepayments	<b>1,691,064</b>	1,164,703
Less: Loss allowance	<b>2,638</b>	2,638
Total prepayments, net	<b>1,688,426</b>	1,162,065
Dividends receivable	<b>50,000</b>	–
Receivables from sales of fuel	<b>249,852</b>	99,649
Others (Note i)	<b>2,222,593</b>	2,077,156
Subtotal of other receivables	<b>2,522,445</b>	2,176,805
Less: Loss allowance	<b>187,675</b>	52,531
Total other receivables, net	<b>2,334,770</b>	2,124,274
Profit compensation from Huaneng Group	–	457,727
VAT recoverable	<b>2,428,315</b>	1,773,396
Finance lease receivables (Note 42)	<b>478,666</b>	483,691
Designated loan to joint ventures	<b>304,306</b>	80,000
Others	<b>138,209</b>	136,610
Subtotal other assets	<b>3,349,496</b>	2,931,424
Less: Loss allowance	<b>64,615</b>	–
Total other assets, net	<b>3,284,881</b>	2,931,424
Gross total	<b>7,563,005</b>	6,272,932
Net total	<b>7,308,077</b>	6,217,763

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.

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### 17 OTHER RECEIVABLES AND ASSETS (Cont'd)

The gross amounts of other receivables are denominated in the following currencies:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
RMB	<b>1,945,945</b>	1,943,568
S\$ (RMB equivalent)	<b>102,484</b>	86,422
US\$ (RMB equivalent)	<b>16,585</b>	11,898
PKR (RMB equivalent)	<b>457,431</b>	134,917
Total	<b>2,522,445</b>	2,176,805

Movements of loss allowance during the years are analysed as follows:

	<b>2020</b>	2019
Beginning of the year	<b>(55,169)</b>	(43,169)
Provision	<b>(148,976)</b>	(25,578)
Reversal	<b>18</b>	2,300
Write-off	<b>3,559</b>	11,278
Others	<b>(62,772)</b>	–
Currency translation differences	<b>8,412</b>	–
End of the year	<b>(254,928)</b>	(55,169)

Note i: Included in others, there were advances amounting to RMB222 million as at 31 December 2020 (31 December 2019: RMB232 million) which were due from Huangtai #8 Power Plant with indefinite repayment terms. For the year ended 31 December 2020, Huangtai Power, a subsidiary of the Company, received total repayments amounting to RMB10 million (for the year ended 31 December 2019: RMB41 million).

According to the property right transfer agreement signed in December 2008 between Shandong Power and Shandong Luneng Development Group (“Shandong Luneng”) and the corresponding approval from the State-owned Assets Supervision and Administration Commission of the State Council in February 2009 (“State-owned Assets Right [2009] No.70”), Shandong Power acquired 30% of property right of Huangtai #8 Power Plant from Shandong Luneng at a cash consideration of RMB110 million. Huangtai #8 Power Plant is not a legal entity under PRC Company Law, though it has separate accounting books, and therefore the Group recognised the 30% property right as other non-current assets. Huangtai Power is in charge of daily operations of Huangtai #8 Power Plant on behalf of two property owners.

## 18 ACCOUNTS AND NOTES RECEIVABLE

Accounts and notes receivable comprised the following:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Accounts receivable	<b>30,045,678</b>	26,911,837
Notes receivable	<b>8,325,966</b>	5,552,422
	<b>38,371,644</b>	32,464,259
Less: Loss allowance	<b>155,929</b>	195,320
Total	<b>38,215,715</b>	32,268,939
Analysed into:		
Accounts receivable		
– At amortised cost	<b>28,789,790</b>	25,547,258
– At fair value through other comprehensive income	<b>1,255,888</b>	1,364,579
Notes receivable		
– At amortised cost	<b>8,325,966</b>	5,552,422

In 2020, the Group entered into an accounts receivable factoring arrangement (the “Factoring Arrangement”) and transferred certain accounts receivable, with the carrying amount of RMB200 million, to the banks. Under the Factoring Arrangement, the Group is not exposed to default risks of the accounts receivable after the transfer. Subsequent to the transfer, the Group did not retain any rights on the use of the accounts receivable, including the sale, transfer or pledge of the accounts receivable to any other third parties. The original carrying value in aggregate of the accounts receivable transferred and derecognised under the arrangement that have not been settled as at 31 December 2020 was RMB200 million (2019: RMB150 million).

In December 2019 and November 2020, the Group’s subsidiary, Shandong Power, entered into agreements of a single assets management plans (the “Assets Management Plans”) with Yingda Securities Co., Ltd. Under the Assets Management Plans, the Group is not exposed to default risks of the accounts receivable after the transfer. Subsequent to the transfer, the Group did not retain any rights on the use of the accounts receivable, including the sale, transfer or pledge of the accounts receivable to any other third parties. The original carrying value in aggregate of the accounts receivable transferred and derecognised under the arrangement that have not been settled as at 31 December 2020 was RMB1,220 million (2019: RMB1,000 million). The December 2019 Assets Management Plan expired in December 2020.

During the year ended 31 December 2020, the Group recognised RMB41,482 thousand loss on the date of transfer of the accounts receivable (2019: RMB10,528 thousand).

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### 18 ACCOUNTS AND NOTES RECEIVABLE (Cont'd)

The gross amounts of accounts receivable and notes receivable are denominated in the following currencies:

	As at 31 December	
	2020	2019
RMB	35,113,954	29,382,384
S\$ (RMB equivalent)	996,686	1,077,008
US\$ (RMB equivalent)	21,640	39,146
PKR (RMB equivalent)	2,239,364	1,965,721
Total	38,371,644	32,464,259

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 billings. 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 entered into an agreement with CPPA-G with a one-month credit period.

As at 31 December 2020, no accounts receivable was pledged to banks as collateral for loans (2019: Nil).

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 notes receivable, please refer to Note 27 for details.

Movements of loss allowance during the years are analysed as follows:

	2020	2019
Beginning of the year	(195,320)	(146,913)
Provision	(24,105)	(64,838)
Reversal	441	16,596
Write-off	20	-
Others	62,772	-
Currency translation differences	263	(165)
End of the year	(155,929)	(195,320)

## 18 ACCOUNTS AND NOTES RECEIVABLE *(Cont'd)*

Ageing analysis of accounts receivable and notes receivable based on the invoice date was as follows:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Within 1 year	<b>37,966,985</b>	31,566,008
Between 1 to 2 years	<b>174,604</b>	696,401
Between 2 to 3 years	<b>86,388</b>	57,667
Over 3 years	<b>143,667</b>	144,183
Total	<b>38,371,644</b>	32,464,259

As at 31 December 2020, the maturity period of the notes receivable ranged from 1 to 12 months (2019: from 1 to 12 months).

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## 19 COMPANY'S STATEMENT OF CHANGES IN EQUITY

	Capital surplus										Total equity	
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value reserve (non-recycling)	Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves	Retained earnings		Total equity
<b>Balance as at 31 December 2019</b>	15,698,093	25,127,821	24,987,019	-	(158,668)	-	1,095,892	25,922,243	8,140,030	36,829,957	111,718,144	
Profit/(Loss) for the year ended 31 December 2020	-	1,770,469	-	-	-	-	-	-	-	(2,622,045)	(851,576)	
Other comprehensive loss:												
Fair value changes of other equity investment instruments – net of tax	-	-	-	-	(130,692)	-	-	(130,692)	-	-	(130,692)	
Total comprehensive income/(loss) for the year ended 31 December 2020	-	1,770,469	-	-	(130,692)	-	-	(130,692)	-	(2,622,045)	(982,268)	
Issue of other equity instruments (Note 21)	-	25,457,450	-	-	-	-	-	-	-	-	25,457,450	
Redemption of other equity instruments (Note 21)	-	(2,499,844)	-	-	-	-	-	-	-	(156)	(2,500,000)	
Cumulative distribution of other equity instruments (Note 21)	-	(1,436,117)	-	-	-	-	-	-	-	-	(1,436,117)	
Dividends relating to 2019 (Note 23)	-	-	-	-	-	-	-	-	-	(2,119,243)	(2,119,243)	
<b>Balance as at 31 December 2020</b>	<b>15,698,093</b>	<b>48,419,779</b>	<b>24,987,019</b>	<b>-</b>	<b>(289,360)</b>	<b>-</b>	<b>1,095,892</b>	<b>25,791,551</b>	<b>8,140,030</b>	<b>32,088,513</b>	<b>130,137,966</b>	

## 19 COMPANY'S STATEMENT OF CHANGES IN EQUITY (Cont'd)

	Capital surplus								Total equity		
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value reserve (non-recycling)	Other reserve in other comprehensive income	Other capital reserve	Subtotal		Surplus reserves	Retained earnings
<b>Balance as at 31 December 2018</b>	15,698,093	10,077,396	24,987,019	(3,086)	403,887	-	1,093,892	26,481,712	8,140,030	33,719,245	94,116,476
Profit for the year ended 31 December 2019	-	685,922	-	-	-	-	-	-	-	4,178,974	4,864,896
Other comprehensive income/(loss):											
Fair value changes of other equity investment instruments – net of tax	-	-	-	-	(61,008)	-	-	(61,008)	-	-	(61,008)
Effective portion of cash flow hedges, net of tax	-	-	-	3,086	-	-	-	3,086	-	-	3,086
Total comprehensive income/(loss) for the year ended 31 December 2019	-	685,922	-	3,086	(61,008)	-	-	(57,922)	-	4,178,974	4,806,974
Issue of other equity instruments	-	14,982,165	-	-	-	-	-	-	-	-	14,982,165
Cumulative distribution of other equity instruments	-	(617,662)	-	-	-	-	-	-	-	(1,569,809)	(617,662)
Dividends relating to 2018 (Note 23)	-	-	-	-	-	-	-	-	-	(1,569,809)	(1,569,809)
Disposal of other equity instruments	-	-	-	-	(501,547)	-	-	(501,547)	-	501,547	-
<b>Balance as at 31 December 2019</b>	15,698,093	25,127,821	24,987,019	-	(158,668)	-	1,093,892	25,922,243	8,140,030	36,829,957	111,718,144

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### 20 SHARE CAPITAL

	2020		2019	
	Number of shares	Share capital RMB'000	Number of shares	Share capital RMB'000
As at 1 January				
A shares	<b>10,997,709,919</b>	<b>10,997,710</b>	10,997,709,919	10,997,710
Overseas listed foreign shares	<b>4,700,383,440</b>	<b>4,700,383</b>	4,700,383,440	4,700,383
Subtotal	<b>15,698,093,359</b>	<b>15,698,093</b>	15,698,093,359	15,698,093
Issuance of new shares	—	—	—	—
As at 31 December				
A shares	<b>10,997,709,919</b>	<b>10,997,710</b>	10,997,709,919	10,997,710
Overseas listed foreign shares	<b>4,700,383,440</b>	<b>4,700,383</b>	4,700,383,440	4,700,383
Total	<b>15,698,093,359</b>	<b>15,698,093</b>	15,698,093,359	15,698,093

## 21 OTHER EQUITY INSTRUMENTS

### (a) Other equity instruments as at 31 December 2020

Type of Instruments	Issuance Date	Category	Initial Distribution		Issue Price RMB'000	Number	Par Value RMB'000	Initial Period	Conversion Condition	Conversion Result
			Rate	Rate						
Bond B	September 2017	Equity Instrument	5.17%		0.1	25,000,000	2,500,000	5 years	None	None
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
2019 medium-term notes (2nd)	October 2019	Equity Instrument	4.08%		0.1	20,000,000	2,000,000	3 years	None	None
2019 medium-term notes (3rd)	October 2019	Equity Instrument	4.05%		0.1	20,000,000	2,000,000	3 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	4.15%		0.1	25,000,000	2,500,000	3 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 C	March 2020	Equity Instrument	3.58%		0.1	20,000,000	2,000,000	3 years	None	None
Bond D	March 2020	Equity Instrument	3.85%		0.1	10,000,000	1,000,000	5 years	None	None
2020 medium-term notes (1st)	April 2020	Equity Instrument	3.18%		0.1	30,000,000	3,000,000	3 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
Bond E	April 2020	Equity Instrument	3.09%		0.1	25,000,000	2,500,000	3 years	None	None
2020 medium-term notes (2nd)	June 2020	Equity Instrument	3.60%		0.1	35,000,000	3,500,000	3 years	None	None
2020 medium-term notes (3rd)	August 2020	Equity Instrument	3.99%		0.1	20,000,000	2,000,000	3 years	None	None
PICC Financing Plan (4th)	August 2020	Equity Instrument	4.60%		-	-	3,000,000	10 years	None	None
Bond F	September 2020	Equity Instrument	4.38%		0.1	30,000,000	3,000,000	3 years	None	None
2020 medium-term notes (4th)	September 2020	Equity Instrument	4.40%		0.1	10,000,000	1,000,000	3 years	None	None
Total							48,000,000			

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### 21 OTHER EQUITY INSTRUMENTS (Cont'd)

#### (b) Major provisions

In 2017, the Company issued two tranches of perpetual corporate bonds with the net proceeds of approximately RMB2,500 million and RMB2,500 million, respectively. The perpetual corporate bonds are issued at par value with an initial distribution rate of 5.05% and 5.17%. The interests of the perpetual corporate bonds are 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 interests and all deferred interests. The perpetual corporate bonds have no fixed maturity date and are callable at the Company's discretion in whole in August 2020 and 2022 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 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. On the first call date of bond A in September 2020, the Company decided to exercise the callable option. The bond was redeemed in whole on 25 September 2020.

In 2018, the Company issued three tranches of Yingda Insurance Financing Plan (the "Yingda plan") with the aggregate proceeds of RMB5,000 million. The Yingda plan has no fixed period with initial distribution rate of 5.79%. The interests of the financing plan are 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 interests and all deferred interests. The Yingda plan has no fixed maturity date and are 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 aforementioned. The applicable distribution rate will be reset during the period from the 9th to the 11th year after the issuance, the period from the 11th to the 13th year 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.

## 21 OTHER EQUITY INSTRUMENTS (Cont'd)

### (b) Major provisions (Cont'd)

In 2019, the Company issued two tranches of China Life Financing Plan (the "China Life plan") with the 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 interests and all deferred interests. The China Life plan has no fixed maturity date and are 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 aforementioned. 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.

In 2019, the Company issued two tranches of PICC Financing Plan ("the PICC plan") with the aggregate proceeds of RMB2,670 million. The PICC plan has no fixed period with an initial distribution rate of 5.10%. The interests of the PICC 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 interests and all deferred interests. The PICC plan has no fixed maturity date and are callable at the Company's discretion in whole at each distribution date after 10th year of issuance, or the payment of the principal may be deferred at each distribution date aforementioned. 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 October 2019, the Company issued two tranches of medium-term notes with the net proceeds of approximate RMB2,000 million and RMB2,000 million, respectively. The medium-term notes are issued at par value with initial distribution rate of 4.08% and 4.05%. The interests of the medium-term notes are 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 interests and all deferred interests. 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.

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### 21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

#### **(b) Major provisions *(Cont'd)***

In November 2019, the Company issued two tranches of medium-term notes with the 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 interests of the medium-term notes are 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) occurred. The company has the right to defer current interests and all deferred interests. 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.

In March 2020, the Company issued two tranches of perpetual corporate bonds with the net proceeds of approximately RMB2,000 million and RMB1,000 million, respectively. The perpetual corporate bonds are issued at par value with an initial distribution rate of 3.58% and 3.85%. The interests of the perpetual corporate bonds are 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 interests and all deferred interests. 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.

In April 2020, the Company issued medium-term notes with the 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 interests of the medium-term notes are 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 interests and all deferred interests. 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.

## 21 OTHER EQUITY INSTRUMENTS (Cont'd)

### (b) Major provisions (Cont'd)

In April 2020, the Company issued China Life Financing Plan ("the China Life plan") with the proceeds of RMB3,570 million. The China Life plan has no fixed period with an initial distribution rate of 4.75%. 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 interests and all deferred interests. The China Life plan has no fixed maturity date and are 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 aforementioned. 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 the proceeds of RMB930 million. The PICC plan has no fixed period with an initial distribution rate of 4.75%. The interests of the PICC 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 interests and all deferred interests. The PICC plan has no fixed maturity date and are 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 aforementioned. 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.

In April 2020, the Company issued a perpetual corporate bond with the net proceeds of approximately RMB2,500 million. The perpetual corporate bond is issued at par value with an initial distribution rate of 3.09%. The interests of the perpetual corporate bond are 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 interests and all deferred interests. 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.

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### 21 OTHER EQUITY INSTRUMENTS (Cont'd)

#### (b) Major provisions (Cont'd)

In June 2020, the Company issued medium-term notes with the 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 interests of the medium-term notes are 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 interests and all deferred interests. 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.

In August 2020 and September 2020, the Company issued two tranches of medium-term notes with the 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 interests of the medium-term notes are 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) occurred. The company has the right to defer current interests and all deferred interests. 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.

In August 2020, the Company issued the fourth tranche of the PICC plan with the proceeds of RMB3,000 million. The PICC plan has no fixed period with an initial distribution rate of 4.60%. The interests of the PICC 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 interests and all deferred interests. The PICC plan has no fixed maturity date and are 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 aforementioned. 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.

## 21 OTHER EQUITY INSTRUMENTS *(Cont'd)*

### **(b) Major provisions** *(Cont'd)*

In September 2020, the Company issued a perpetual corporate bond with the net proceeds of approximately RMB3,000 million. The perpetual corporate bond is issued at par value with an initial distribution rate of 4.38%. The interests of the perpetual corporate bond are 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 interests and all deferred interests. 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.

The perpetual corporate bonds, financing plans and medium-term notes were recorded as equity in the consolidated financial statements. During the year ended 31 December 2020, the profit attributable to holders of other equity instruments, based on the applicable distribution rate, was RMB1,770 million (2019: RMB686 million).

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Type of Instruments	As at 1 January 2020			Issuance			Cumulative distributions			As at 31 December 2020		
	Number	Amount RMB'000		Number	Amount RMB'000		Distribution payment RMB'000	Redemption value RMB'000	Redemption difference RMB'000	Number	Amount RMB'000	
Bond A	25,000,000	2,533,780	-	-	(131)	92,445	(126,250)	(2,500,000)	156	-	-	-
Bond B	25,000,000	2,534,583	-	-	-	129,345	(129,250)	-	-	25,000,000	2,534,678	-
Yingda Insurance Financing Plan (1st)	-	3,288,808	-	-	-	193,254	(193,254)	-	-	-	3,288,808	-
Yingda Insurance Financing Plan (2nd)	-	828,463	-	-	-	48,681	(48,681)	-	-	-	828,463	-
Yingda Insurance Financing Plan (3rd)	-	891,575	-	-	-	52,390	(52,390)	-	-	-	891,575	-
China Life Financing Plan (1st)	-	2,073,484	-	-	-	106,277	(106,277)	-	-	-	2,073,484	-
PICC Financing Plan (1st)	-	930,922	-	-	-	48,221	(48,221)	-	-	-	930,922	-
2019 medium-term notes (2nd)	20,000,000	2,011,533	-	-	-	81,646	(81,600)	-	-	20,000,000	2,011,579	-
2019 medium-term notes (3rd)	20,000,000	2,011,271	-	-	-	81,041	(81,000)	-	-	20,000,000	2,011,312	-
China Life Financing Plan (2nd)	-	2,263,804	-	-	-	116,032	(116,032)	-	-	-	2,263,804	-
PICC Financing Plan (2nd)	-	1,741,726	-	-	-	90,219	(90,219)	-	-	-	1,741,726	-
2019 medium-term notes (4th)	25,000,000	2,511,441	-	-	-	103,794	(103,750)	-	-	25,000,000	2,511,485	-
2019 medium-term notes (4th)	15,000,000	1,506,431	-	-	-	67,979	(67,950)	-	-	15,000,000	1,506,460	-
Bond C	-	-	20,000,000	1,999,980	55,711	-	-	-	-	20,000,000	2,055,691	-
Bond D	-	-	10,000,000	999,990	29,956	-	-	-	-	10,000,000	1,029,946	-
2020 medium-term notes (1st)	-	-	30,000,000	2,981,135	68,741	-	-	-	-	30,000,000	3,049,876	-
China Life Financing Plan (3rd)	-	-	-	3,570,000	120,587	(114,934)	-	-	-	-	3,575,653	-
PICC Financing Plan (3rd)	-	-	-	930,000	31,168	(30,309)	-	-	-	-	930,859	-
Bond E	-	-	25,000,000	2,499,975	53,546	-	-	-	-	25,000,000	2,553,521	-
2020 medium-term notes (2nd)	-	-	35,000,000	3,484,124	67,660	-	-	-	-	35,000,000	3,551,784	-
2020 medium-term notes (3rd)	-	-	20,000,000	1,995,313	29,515	-	-	-	-	20,000,000	2,024,828	-
PICC Financing Plan (4th)	-	-	-	3,000,000	48,683	(46,000)	-	-	-	-	3,002,683	-
Bond F	-	-	30,000,000	2,999,970	40,680	-	-	-	-	30,000,000	3,040,650	-
2020 medium-term notes (4th)	-	-	10,000,000	997,094	12,898	-	-	-	-	10,000,000	1,009,992	-
Total		25,127,821		25,457,450	1,770,469		(1,436,117)	(2,500,000)	156		48,419,779	

## 22 SURPLUS RESERVES

	As at 1 January 2020 and 31 December 2020
Surplus reserves	<u>8,140,030</u>

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 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 reaches 50% of the registered share capital in 2020, 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 2020 and 2019, 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 amounts determined in accordance with PRC GAAP and IFRSs shall be adopted. As at 31 December 2020, in accordance with PRC GAAP and IFRSs, the balance of retained earnings for the Group amounted to approximately RMB31.248 billion and RMB32.164 billion, respectively; and the balance of retained earnings for the Company amounted RMB35.911 billion and RMB32.089 billion, respectively.

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### 23 DIVIDENDS OF ORDINARY SHARES AND CUMULATIVE DISTRIBUTION OF OTHER EQUITY INSTRUMENTS

#### (a) Dividends of ordinary shares

On 16 June 2020, upon the approval from the annual general meeting of the shareholders, the Company declared 2019 final dividend of RMB0.135 (2018: RMB0.1) per ordinary share, totalling approximately RMB2,119 million (2018: RMB1,570 million).

On 23 March 2021, the Board of Directors proposed a cash dividend of RMB0.18 per share, totalling approximately RMB2,826 million. 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 2020, net profit attributable to holders of other equity instruments, based on the applicable rate, was RMB1,770 million, and the cumulative distribution paid-in 2020 was RMB1,436 million.

### 24 LONG-TERM LOANS

Long-term loans comprised the following:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Loans from Huaneng Group and its subsidiaries (a)	<b>7,031,664</b>	5,403,574
Bank loans and other loans (b)	<b>124,854,044</b>	128,619,138
	<b>131,885,708</b>	134,022,712
Less: Current portion of long-term loans	<b>19,808,313</b>	18,658,114
Total	<b>112,077,395</b>	115,364,598

## 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 2020				Annual interest rate
	Original currency '000	RMB equivalent	Less: Current portion	Non-current portion	
<b>Loans from Huaneng Group</b>					
<i>Unsecured</i>					
RMB					
– Variable rate	666,190	666,190	24,530	641,660	4.75%
<b>Loans from Huaneng Finance</b>					
<i>Unsecured</i>					
RMB					
– Variable rate	4,281,432	4,281,432	468,800	3,812,632	3.67%-4.80%
– Fixed rate	317,515	317,515	26,200	291,315	4.02%-4.75%
<b>Loans from Huaneng Tiancheng Financial Leasing Co., Ltd. ("Tiancheng Financial Leasing")</b>					
<i>Secured</i>					
RMB					
– Variable rate	633,258	633,258	100,040	533,218	4.42%-5.20%
– Fixed rate	89,060	89,060	–	89,060	5.10%
<b>Loans from Hong Kong Asset Management Co., Ltd. ("Hong Kong Asset Management")</b>					
<i>Unsecured</i>					
US\$					
– Variable rate	160,035	1,044,209	–	1,044,209	2.30%
Total		7,031,664	619,570	6,412,094	

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### 24 LONG-TERM LOANS (Cont'd)

#### (a) Loans from Huaneng Group and its subsidiaries (Cont'd)

	As at 31 December 2019				
	Original currency '000	RMB equivalent	Less: Current portion	Non- current portion	Annual interest rate
<b>Loans from Huaneng Group</b>					
<i>Unsecured</i>					
RMB					
– Variable rate	665,225	665,225	–	665,225	4.75%
<b>Loans from Huaneng Finance</b>					
<i>Unsecured</i>					
RMB					
– Variable rate	3,808,800	3,808,800	413,200	3,395,600	4.28%-4.75%
– Fixed rate	28,000	28,000	–	28,000	4.51%-4.61%
<b>Loans from Tiancheng Financial Leasing</b>					
<i>Secured</i>					
RMB					
– Variable rate	580,891	580,891	246,549	334,342	4.42%-5.20%
– Fixed rate	320,658	320,658	150,000	170,658	5.10%-6.60%
Total		5,403,574	809,749	4,593,825	

## 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 2020				
	Original currency '000	RMB equivalent	Less: Current portion	Non- current portion	Annual interest rate
<i>Secured</i>					
RMB					
– Fixed rate	302,677	302,677	–	302,677	4.66%
– Variable rate	9,136,041	9,136,041	1,242,992	7,893,049	4.10%-4.98%
S\$					
– Variable rate	120,999	596,693	14,119	582,574	1.42%
<i>Unsecured</i>					
RMB					
– Fixed rate	2,805,767	2,805,767	316,715	2,489,052	4.02%-5.39%
– Variable rate	96,118,275	96,118,275	16,355,517	79,762,758	1.80%-6.55%
US\$					
– Variable rate	1,319,503	8,609,627	1,217,769	7,391,858	1.42%-4.73%
S\$					
– Variable rate	1,430,286	7,053,310	–	7,053,310	1.85%
€					
– Fixed rate	11,004	88,322	34,654	53,668	2.00%-2.15%
JPY					
– Fixed rate	2,266,468	143,332	6,977	136,355	0.75%
Total		<u>124,854,044</u>	<u>19,188,743</u>	<u>105,665,301</u>	

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### 24 LONG-TERM LOANS (Cont'd)

#### (b) Bank loans and other loans (Cont'd)

	As at 31 December 2019				
	Original currency '000	RMB equivalent	Less: Current portion	Non- current portion	Annual interest rate
<i>Secured</i>					
RMB					
– Fixed rate	5,032,030	5,032,030	1,262,520	3,769,510	4.41%-4.90%
– Variable rate	4,528,406	4,528,406	521,689	4,006,717	4.28%-4.90%
S\$					
– Variable rate	79,371	410,658	–	410,658	2.93%
<i>Unsecured</i>					
RMB					
– Fixed rate	7,477,712	7,477,712	1,803,335	5,674,377	2.65%-5.39%
– Variable rate	88,504,897	88,504,897	12,691,426	75,813,471	1.80%-6.55%
US\$					
– Variable rate	1,430,672	9,974,968	1,095,931	8,879,037	2.90%-6.82%
S\$					
– Variable rate	2,400,063	12,417,684	431,622	11,986,062	3.33%
€					
– Fixed rate	15,451	120,760	34,772	85,988	2.00%-2.15%
JPY					
– Fixed rate	2,372,009	152,023	7,070	144,953	0.75%
Total		<u>128,619,138</u>	<u>17,848,365</u>	<u>110,770,773</u>	

As at 31 December 2020, long-term loans of approximately RMB7,435 million were secured by future electricity revenue (31 December 2019: RMB7,287 million).

As at 31 December 2020, long-term loans of RMB3,322 million (31 December 2019: RMB3,586 million) were secured by certain property, plant and equipment with a net book value amounting to approximately RMB3,400 million (31 December 2019: RMB4,913 million).

## 24 LONG-TERM LOANS (Cont'd)

### (b) Bank loans and other 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 2020, the equipment mentioned above had total carrying amounts of RMB1,036 million and RMB2,364 million (31 December 2019: RMB1,955 million and RMB2,958 million) respectively, which were recognised in property, plant and equipment while the long-term borrowings were RMB722 million and RMB2,600 million (31 December 2019: RMB902 million and RMB2,684 million) from Tiancheng Financial Leasing and other financial leasing companies, respectively.

As at 31 December 2019, long-term loans of approximately RMB15 million were guaranteed by HIPDC. As at 31 December 2020, the aforementioned loans were fully repaid.

As at 31 December 2020, long-term loans of approximately RMB81 million (31 December 2019: RMB110 million) were guaranteed by Huaneng Group.

As at 31 December 2020, the Company provided guarantees for long-term loans of approximately RMB7,053 million (31 December 2019: RMB12,418 million) of the Company's overseas subsidiaries.

As at 31 December 2020, long-term loans of approximately RMB1,731 million (31 December 2019: RMB1,972 million) were guaranteed by other subsidiaries of the Company and Yangguang Jiedi Investment Co., Ltd, of which the loans guaranteed by Yangguang Jiedi Investment Co., Ltd were RMB67 million (31 December 2019: RMB75 million).

As at 31 December 2020, long-term loans of approximately RMB50 million (31 December 2019: RMB100 million) were guaranteed by Shandong Lineng Group Co., Ltd.

As at 31 December 2020, long-term loans of approximately RMB143 million (31 December 2019: RMB152 million) were guaranteed by Enshi Finance Bureau of Hubei Province.

As at 31 December 2020, long-term loans of approximately RMB7,581 million (31 December 2019: RMB8,435 million) were guaranteed by Huaneng Group, China Export & Credit Insurance Corporation and Shandong Ruyi Technology Group at the liability ratios of 17.5%, 65.0% and 17.5% respectively.

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### 24 LONG-TERM LOANS (Cont'd)

As at 31 December 2020, long-term loans of approximately RMB1,044 million (31 December 2019: Nil) were guaranteed by Shandong Power and Shandong Ruyi Technology Group at the liability ratios of 50% and 50% respectively.

The maturity of long-term loans is as follows:

	Huaneng Group and its subsidiaries		Loans from Bank loans and other loans	
	As at 31 December 2020	2019	As at 31 December 2020	2019
1 year or less	619,570	809,749	19,188,743	17,848,365
More than 1 year but no more than 2 years	826,059	1,320,611	13,718,115	28,426,578
More than 2 years but no more than 5 years	2,799,377	1,583,453	45,708,377	48,138,639
More than 5 years	2,786,658	1,689,761	46,238,809	34,205,556
	<b>7,031,664</b>	5,403,574	<b>124,854,044</b>	128,619,138
Less: amount due within 1 year included under current liabilities	619,570	809,749	19,188,743	17,848,365
Total	<b>6,412,094</b>	4,593,825	<b>105,665,301</b>	110,770,773

## 25 LONG-TERM BONDS

Outstanding corporate bonds, medium-term notes and debt financing instrument of the Group as at 31 December 2020 are summarised as follows:

Type of Instruments	Face Value RMB'000	Issuance Date	Initial Period	Initial Distribution Rate	Effective Rate	Issue Price RMB'000	Balance as at 31 December		Issued Amount RMB'000	Amortisation RMB'000	Interest RMB'000	Repayment RMB'000	Foreign Currency Transition		Balance as at 31 December RMB'000
							2019 RMB'000	2020 RMB'000					Exchange Gain RMB'000	Differences RMB'000	
2016 corporate bonds (5 years)	3,000,000	June 2016	5 years	3.48%	3.48%	3,000,000	3,000,072	-	62	104,400	-	-	-	57,778	3,057,912
2016 corporate bonds (10 years)	1,200,000	June 2016	10 years	3.98%	3.98%	1,200,000	1,199,985	-	12	47,760	-	-	-	26,432	1,226,429
2017 medium-term notes (5 years)	5,000,000	July 2017	5 years	4.69%	4.90%	5,000,000	5,001,878	-	965	234,500	-	-	-	111,146	5,113,989
2017 debt financing instrument (3 years)	500,000	July 2017	3 years	4.75%	4.81%	500,000	499,846	-	154	23,750	(500,000)	-	-	-	-
2017 corporate bonds (3 years)	2,300,000	November 2017	3 years	4.99%	4.99%	2,300,000	2,299,962	-	38	114,770	(2,300,000)	-	-	-	-
2018 corporate bonds (3 years)	1,500,000	April 2018	3 years	4.90%	4.90%	1,500,000	1,500,040	-	30	73,500	-	-	-	54,773	1,554,843
2018 medium-term notes (3 years)	3,000,000	May 2018	3 years	4.80%	4.91%	3,000,000	2,996,069	-	2,953	144,000	-	-	-	96,263	3,095,285
2018 medium-term notes (3 years)	2,000,000	July 2018	3 years	4.41%	4.56%	2,000,000	2,001,342	-	9	88,200	-	-	-	42,046	2,043,397
2018 debt financing instrument (3 years)	2,500,000	July 2018	3 years	4.68%	4.81%	2,500,000	2,495,547	-	2,929	117,000	-	-	-	50,967	2,549,443
2018 corporate bonds (10 years)	5,000,000	September 2018	10 years	5.05%	5.05%	5,000,000	4,999,993	-	30	252,500	-	-	-	78,171	5,078,194
2019 corporate bonds (10 years)	2,300,000	April 2019	10 years	4.70%	4.70%	2,300,000	2,299,990	-	14	108,100	-	-	-	74,950	2,374,934
2019 corporate bonds (3 years)	1,000,000	July 2019	3 years	3.55%	3.55%	1,000,000	1,000,007	-	17	35,500	-	-	-	17,118	1,017,142
2019 medium-term notes (3 years)	500,000	July 2019	3 years	3.55%	3.65%	500,000	498,759	-	488	17,750	-	-	-	8,073	507,320
2019 medium-term notes (5 years)	1,500,000	July 2019	5 years	3.85%	3.96%	1,500,000	1,493,433	-	1,445	57,750	-	-	-	26,264	1,521,142
2020 corporate bonds (5 years)	2,108,865	February 2020	5 years	2.25%	2.32%	2,108,865	-	2,108,865	(9,456)	40,838	-	-	(23,160)	16,383	1,963,164
2020 corporate bonds (10 years)	2,108,865	February 2020	10 years	2.63%	2.72%	2,108,865	-	2,108,865	(17,629)	47,644	-	-	(23,160)	19,114	1,957,722
Total						35,517,730	31,286,923	4,217,730	(17,939)	1,507,962	(2,800,000)	(46,320)	(258,936)	679,458	33,060,916

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### 25 LONG-TERM BONDS (Cont'd)

Outstanding corporate bonds, medium-term notes and debt financing instrument of the Group as at 31 December 2019 are summarised as follows:

Type of Instruments	Face Value RMB'000	Issuance Date	Initial Period	Initial Distribution Rate	Effective Rate	Issue Price RMB'000	Balance as at		Interest RMB'000	Amortisation RMB'000	Repayment RMB'000	Balance as at 31 December 2019 RMB'000
							31 December 2018 RMB'000	Issued Amount RMB'000				
2014 medium-term notes (5 years)	4,000,000	July 2014	5 years	5.30%	5.37%	4,000,000	3,993,479	-	112,679	6,521	(4,000,000)	-
2016 corporate bonds (5 years)	3,000,000	June 2016	5 years	3.48%	3.48%	3,000,000	3,000,010	-	104,400	62	-	3,000,072
2016 corporate bonds (10 years)	1,200,000	June 2016	10 years	3.98%	3.98%	1,200,000	1,199,973	-	47,760	12	-	1,199,985
2017 medium-term notes (5 years)	5,000,000	July 2017	5 years	4.69%	4.90%	5,000,000	5,000,939	-	234,500	939	-	5,001,878
2017 debt financing instrument (3 years)	500,000	July 2017	3 years	4.75%	4.81%	500,000	499,563	-	23,750	283	-	499,846
2017 corporate bonds (3 years)	2,300,000	November 2017	3 years	4.99%	4.99%	2,300,000	2,299,916	-	114,770	46	-	2,299,962
2018 corporate bonds (3 years)	1,500,000	April 2018	3 years	4.90%	4.90%	1,500,000	1,500,010	-	73,500	30	-	1,500,040
2018 medium-term notes (3 years)	3,000,000	May 2018	3 years	4.80%	4.91%	3,000,000	2,993,135	-	144,000	2,934	-	2,996,069
2018 medium-term notes (3 years)	2,000,000	July 2018	3 years	4.41%	4.56%	2,000,000	1,998,518	-	88,200	2,824	-	2,001,342
2018 debt financing instrument (3 years)	2,500,000	July 2018	3 years	4.68%	4.81%	2,500,000	2,492,636	-	117,000	2,911	-	2,495,547
2018 corporate bonds (10 years)	5,000,000	September 2018	10 years	5.05%	5.05%	5,000,000	4,999,963	-	232,500	30	-	4,999,993
2019 corporate bonds (10 years)	2,300,000	April 2019	10 years	4.70%	4.70%	2,300,000	-	2,300,000	74,725	(10)	-	2,299,990
2019 corporate bonds (3 years)	1,000,000	July 2019	3 years	3.55%	3.55%	1,000,000	-	1,000,000	17,071	7	-	1,000,007
2019 medium-term notes (3 years)	500,000	July 2019	3 years	3.55%	3.65%	500,000	-	500,000	8,051	(1,241)	-	498,759
2019 medium-term notes (5 years)	1,500,000	July 2019	5 years	3.85%	3.96%	1,500,000	-	1,500,000	26,193	(6,567)	-	1,493,433
<b>Total</b>						<b>35,300,000</b>	<b>29,978,142</b>	<b>5,300,000</b>	<b>1,439,099</b>	<b>8,781</b>	<b>(4,000,000)</b>	<b>31,286,923</b>

As at 31 December 2020, the Company provided guarantees for long-term bonds of approximately RMB3,921 million (31 December 2019: nil) of the Company's overseas subsidiary.

## 26 OTHER NON-CURRENT LIABILITIES

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Government grants		
– Environmental subsidies (a)	<b>1,102,074</b>	1,155,147
– Other government grants	<b>324,325</b>	306,077
Contract liabilities	<b>2,623,764</b>	2,443,254
Other deferred income	<b>41,324</b>	52,760
Others	<b>758,058</b>	888,809
Subtotal	<b>4,849,545</b>	4,846,047
Current portion of other non-current liabilities	<b>(65,277)</b>	(65,277)
Subtotal	<b>(65,277)</b>	(65,277)
Total	<b>4,784,268</b>	4,780,770

(a) This primarily represented subsidies for the construction of desulphurisation equipment and other environmental protection projects.

## 27 ACCOUNTS PAYABLE AND OTHER LIABILITIES

Accounts payable and other liabilities comprised:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Accounts and notes payable	<b>15,777,784</b>	15,850,958
Payables to contractors for construction	<b>18,734,201</b>	12,695,720
Retention payables to contractors	<b>1,530,764</b>	1,537,024
Consideration payables for business acquisition (Note 40)	<b>22,842</b>	–
Others	<b>6,689,770</b>	7,186,379
Total	<b>42,755,361</b>	37,270,081

Please refer to Note 36 (a)(iv) for details of accounts payable and other liabilities due to the related parties.

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### 27 ACCOUNTS PAYABLE AND OTHER LIABILITIES (Cont'd)

As at 31 December 2020, there were notes payable amounting to RMB245 million (31 December 2019:RMB89 million) secured by notes receivable.

As at 31 December 2020 and 31 December 2019, the accounts and notes payables and other liabilities are non-interest-bearing.

The carrying amounts of accounts payable and other liabilities are denominated in the following currencies:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
RMB	<b>40,610,454</b>	34,996,912
S\$ (RMB equivalent)	<b>948,817</b>	1,024,453
US\$ (RMB equivalent)	<b>799,989</b>	940,749
JPY (RMB equivalent)	<b>12,293</b>	12,564
EUR (RMB equivalent)	<b>224</b>	1,194
PKR (RMB equivalent)	<b>383,584</b>	294,209
Total	<b>42,755,361</b>	37,270,081

The ageing analysis of accounts and notes payable was as follows:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Within 1 year	<b>15,514,112</b>	15,435,470
Between 1 to 2 years	<b>166,088</b>	311,880
Over 2 years	<b>97,584</b>	103,608
Total	<b>15,777,784</b>	15,850,958

### 28 TAXES PAYABLE

Taxes payable comprise:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
VAT payable	<b>1,159,562</b>	908,491
Income tax payable	<b>288,106</b>	748,957
Others	<b>597,201</b>	444,169
Total	<b>2,044,869</b>	2,101,617

## 29 SHORT-TERM BONDS

Outstanding short-term bonds as at 31 December 2020 are summarised as follows:

	Face Value RMB'000	Issuance Date	Maturity	Issue Price RMB'000	Coupon Rate	Balance as at		Interest RMB'000	Amortisation RMB'000	Repayment RMB'000	Balance as at 31 December 2020 RMB'000
						31 December 2019 RMB'000	Issued Amount RMB'000				
Super short-term bond (2019 9th)	5,000,000	October 2019	180 days	5,000,000	2.09%	5,018,170	-	33,977	(754)	(5,051,393)	-
Super short-term bond (2019 10th)	2,000,000	November 2019	90 days	2,000,000	2.00%	2,006,098	-	3,934	(196)	(2,009,836)	-
Super short-term bond (2019 11th)	2,000,000	December 2019	60 days	2,000,000	1.80%	2,001,267	-	4,722	(87)	(2,005,902)	-
Super short-term bond (2020 1st)	2,000,000	February 2020	90 days	2,000,000	1.70%	-	2,000,000	8,361	-	(2,008,361)	-
Super short-term bond (2020 2nd)	2,000,000	February 2020	60 days	2,000,000	1.50%	-	2,000,000	4,918	-	(2,004,918)	-
Super short-term bond (2020 3rd)	2,000,000	April 2020	60 days	2,000,000	1.20%	-	2,000,000	3,945	-	(2,003,945)	-
Super short-term bond (2020 4th)	2,000,000	May 2020	90 days	2,000,000	1.20%	-	2,000,000	5,918	-	(2,005,918)	-
Super short-term bond (2020 5th)	2,000,000	October 2020	30 days	2,000,000	1.30%	-	2,000,000	2,137	-	(2,002,137)	-
Super short-term bond (2020 6th)	2,000,000	November 2020	30 days	2,000,000	1.30%	-	2,000,000	2,137	-	(2,002,137)	-
Super short-term bond (2020 7th)	3,000,000	November 2020	30 days	3,000,000	1.40%	-	3,000,000	3,452	-	(3,003,452)	-
Super short-term bond (2020 8th)	2,000,000	December 2020	30 days	2,000,000	1.50%	-	2,000,000	1,891	60	-	2,001,951
Super short-term bond (2020 9th)	3,000,000	December 2020	30 days	3,000,000	1.40%	-	3,000,000	1,036	(110)	-	3,000,926
Total				29,000,000		9,025,535	20,000,000	76,428	(1,087)	(24,097,999)	5,002,877

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### 29 SHORT-TERM BONDS (Cont'd)

Outstanding short-term bonds as at 31 December 2019 are summarised as follows:

	Face Value RMB'000	Issuance Date	Maturity	Issue Price RMB'000	Coupon Rate	Balance as at 31 December 2018 RMB'000	Issued Amount RMB'000	Interest RMB'000	Amortisation RMB'000	Repayment RMB'000	Balance as at 31 December 2019 RMB'000
Super short-term bond (2018 11th)	2,500,000	October 2018	180 days	2,500,000	3.20%	2,515,816	-	23,233	403	(2,539,452)	-
Super short-term bond (2018 12th)	2,000,000	November 2018	90 days	2,000,000	2.78%	2,006,575	-	6,703	432	(2,013,710)	-
Super short-term bond (2018 13th)	2,000,000	November 2018	180 days	2,000,000	3.10%	2,006,841	-	23,781	(47)	(2,030,575)	-
Super short-term bond (2018 14th)	2,000,000	November 2018	180 days	2,000,000	3.05%	2,005,323	-	23,564	1,195	(2,030,082)	-
Super short-term bond (2018 15th)	2,000,000	November 2018	90 days	2,000,000	2.78%	2,004,557	-	8,531	622	(2,013,710)	-
Super short-term bond (2018 16th)	1,000,000	December 2018	270 days	1,000,000	3.30%	1,002,342	-	22,060	9	(1,024,411)	-
Super short-term bond (2019 1st)	2,000,000	March 2019	90 days	2,000,000	2.40%	-	2,000,000	11,803	-	(2,011,803)	-
Super short-term bond (2019 2nd)	5,000,000	May 2019	180 days	5,000,000	2.30%	-	5,000,000	56,557	-	(5,056,557)	-
Super short-term bond (2019 3rd)	2,000,000	May 2019	90 days	2,000,000	2.30%	-	2,000,000	11,311	-	(2,011,311)	-
Super short-term bond (2019 4th)	2,000,000	June 2019	90 days	2,000,000	2.40%	-	2,000,000	11,803	-	(2,011,803)	-
Super short-term bond (2019 5th)	2,000,000	June 2019	90 days	2,000,000	2.40%	-	2,000,000	11,803	-	(2,011,803)	-
Super short-term bond (2019 6th)	2,000,000	August 2019	90 days	2,000,000	2.20%	-	2,000,000	10,820	-	(2,010,820)	-
Super short-term bond (2019 7th)	4,000,000	September 2019	60 days	4,000,000	2.20%	-	4,000,000	14,426	-	(4,014,426)	-
Super short-term bond (2019 8th)	2,000,000	September 2019	90 days	2,000,000	2.15%	-	2,000,000	10,574	-	(2,010,574)	-
Super short-term bond (2019 9th)	5,000,000	October 2019	180 days	5,000,000	2.09%	-	5,000,000	17,416	754	-	5,018,170
Super short-term bond (2019 10th)	2,000,000	November 2019	90 days	2,000,000	2.00%	-	2,000,000	5,902	196	-	2,006,098
Super short-term bond (2019 11th)	2,000,000	December 2019	60 days	2,000,000	1.80%	-	2,000,000	1,180	87	-	2,001,267
Total				41,500,000		11,541,454	30,000,000	271,467	3,651	(32,791,037)	9,025,535

## 30 SHORT-TERM LOANS

Short-term loans are as follows:

	As at 31 December 2020			As at 31 December 2019		
	Original currency '000	RMB equivalent	Annual interest rate	Original currency '000	RMB equivalent	Annual interest rate
<i>Secured</i>						
RMB						
– Fixed rate	1,614,700	1,614,700	2.85%-4.77%	667,979	667,979	0.00%-4.20%
– Variable rate	49,455	49,455	3.15%-3.96%	–	–	–
<i>Unsecured</i>						
RMB						
– Fixed rate	13,093,783	13,093,783	2.15%-4.75%	13,935,660	13,935,660	3.15%-4.35%
– Variable rate	51,441,800	51,441,800	2.30%-4.37%	50,948,412	50,948,412	3.60%-4.79%
US\$						
– Fixed rate	17,076	111,422	4.90%	200,000	1,394,304	3.32%
PKR						
– Variable rate	–	–	–	3,857,000	173,013	14.58%
Total		<u>66,311,160</u>			<u>67,119,368</u>	

As at 31 December 2020, short-term loans of RMB1,317 million (31 December 2019: RMB659 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 2020, short-term loans of RMB347 million were secured by certain equipment with a net book value amounting to approximately RMB347 million.

As at 31 December 2019, short-term loans borrowed from China Minsheng Banking Corp., Ltd. (“China Minsheng Bank”) amounting to RMB9 million were secured by a deposit of RMB1.49 million. As at 31 December 2020, the aforementioned loans were fully repaid.

As at 31 December 2019, short-term loans of RMB1,567 million represented the guaranteed loan borrowed by Ruyi Pakistan Energy, of which US\$0.2 billion (equivalent to RMB1,394 million) was guaranteed by Shandong Power and Ruyi Technology Group (the other shareholder of Ruyi Pakistan Energy) on the proportion of the shareholding basis and PKR3.86 billion (equivalent to RMB173 million) was guaranteed by Shandong Luyi Power International Limited Company (“Luyi Power”), a joint venture of Shandong Power. As at 31 December 2020, the aforementioned loans were fully repaid.

As at 31 December 2020, short-term loans borrowed from Huaneng Finance amounted to RMB10,059 million (31 December 2019: RMB8,583 million) with annual interest rates ranging from 3.62% to 4.75% (31 December 2019: from 3.91% to 4.35%). Short-term loans borrowed from Tiancheng Financial Leasing amounted to RMB347 million (31 December 2019: RMB166 million) with annual interest rates ranging from 4.15% to 4.77% (31 December 2019: 4.35%). Short-term loans borrowed from Hong Kong Asset Management amounted to RMB111 million (31 December 2019: Nil) with an annual interest rate of 4.90%.

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### 31 DEFERRED INCOME TAX ASSETS AND LIABILITIES

The deferred income tax assets and liabilities are as follows:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Deferred income tax assets before offsetting	<b>3,607,935</b>	3,844,143
Offset amount	<b>(908,540)</b>	(1,683,956)
Deferred income tax assets after offsetting	<b>2,699,395</b>	2,160,187
Deferred income tax liabilities before offsetting	<b>(3,911,067)</b>	(4,821,747)
Offset amount	<b>908,540</b>	1,683,956
Deferred income tax liabilities after offsetting	<b>(3,002,527)</b>	(3,137,791)
	<b>(303,132)</b>	(977,604)

The gross movement on the deferred income tax accounts is as follows:

	<b>2020</b>	2019
Beginning of the year	<b>(977,604)</b>	(1,583,574)
Business combination	<b>(16,000)</b>	–
Disposal of other equity instrument investments	–	167,182
Credited to profit or loss (Note 33)	<b>658,128</b>	470,330
Credited/(charged) to other comprehensive income	<b>1,751</b>	(9,550)
Currency translation differences	<b>30,593</b>	(21,992)
End of the year	<b>(303,132)</b>	(977,604)

### 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	Others	Total
<b>As at 1 January 2019</b>	84,114	-	12,929	638,589	926,557	56,017	154,143	774,677	-	1,256,305	3,903,331
(Charged)/credited to profit or loss	-	-	(493)	179,661	(86,022)	19,970	(25,433)	(224,918)	965	18,298	(117,972)
(Charged)/credited to other comprehensive income	(24,966)	80,359	-	-	-	-	-	-	-	-	55,393
Currency translation differences	2,228	-	-	690	-	-	-	-	-	473	3,391
<b>As at 31 December 2019</b>	61,376	80,359	12,436	818,940	840,535	75,987	128,710	549,759	965	1,275,076	3,844,143
(Charged)/credited to profit or loss	-	-	(493)	(84,470)	107,634	(2,439)	(25,424)	(146,025)	1,845	(81,907)	(231,279)
(Charged)/credited to other comprehensive income	(42,245)	43,564	-	-	-	-	-	-	-	-	1,319
Currency translation differences	(2,121)	-	-	(423)	-	-	-	-	-	(3,704)	(6,248)
<b>As at 31 December 2020</b>	17,010	123,923	11,943	734,047	948,169	73,548	103,286	403,734	2,810	1,189,465	3,607,935

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### 31 DEFERRED INCOME TAX ASSETS AND LIABILITIES (Cont'd)

Deferred income tax liabilities:

	Fair value gains	Amortisation of land use rights	Depreciation	Power generation licence	Mining rights	Territorial water use right	Right-of-use assets	Others	Total
<b>As at 1 January 2019</b>	(108,970)	(982,445)	(3,407,818)	(682,543)	(129,383)	(2,409)	-	(173,337)	(5,486,905)
Disposal of other equity instrument investments	167,182	-	-	-	-	-	-	-	167,182
Credited/(charged) to profit or loss	-	36,507	412,408	-	-	-	(120)	139,507	588,302
Charged to other comprehensive income	(64,943)	-	-	-	-	-	-	-	(64,943)
Currency translation differences	-	(738)	(1,781)	(22,864)	-	-	-	-	(25,383)
<b>As at 31 December 2019</b>	(6,731)	(946,676)	(2,997,191)	(705,407)	(129,383)	(2,409)	(120)	(33,830)	(4,821,747)
Business combination	-	-	(16,000)	-	-	-	-	-	(16,000)
Credited to profit or loss	-	40,728	833,864	-	-	-	(4,659)	19,474	889,407
Charged to other comprehensive income	432	-	-	-	-	-	-	-	432
Currency translation differences	-	(702)	4,483	33,060	-	-	-	-	36,841
<b>As at 31 December 2020</b>	(6,299)	(906,650)	(2,174,844)	(672,347)	(129,383)	(2,409)	(4,779)	(14,356)	(3,911,067)

## 31 DEFERRED INCOME TAX ASSETS AND LIABILITIES (Cont'd)

As at 31 December 2020 and 2019, taxable temporary differences relating to interest in equity method investees amounted to RMB5.04 billion and RMB4.04 billion, respectively. No deferred tax liabilities were recognised as at 31 December 2020 and 2019 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 2020 and 2019, taxable temporary differences relating to the interest of foreign subsidiaries amounted to RMB2.12 billion and RMB2.22 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 2020 and 2019 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 (w), 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:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Deductible temporary differences	<b>14,885,723</b>	9,832,527
Unused tax losses	<b>10,917,409</b>	10,504,590
Total	<b>25,803,132</b>	20,337,117

The expiry dates of the tax losses of the Group for which no deferred income tax assets were recognised are summarised as follows:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Year of expiry		
2020	–	1,452,554
2021	<b>1,400,289</b>	1,420,522
2022	<b>2,124,756</b>	2,208,635
2023	<b>2,421,087</b>	2,472,090
2024	<b>2,966,842</b>	2,950,789
2025	<b>2,004,435</b>	–
Total	<b>10,917,409</b>	10,504,590

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### 32 ADDITIONAL FINANCIAL INFORMATION TO THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

As at 31 December 2020, the net current liabilities of the Group amounted to approximately RMB87,910 million (2019: RMB80,839 million). On the same date, total assets less current liabilities were approximately RMB295,857 million (2019: RMB286,630 million).

### 33 INCOME TAX EXPENSE

	For the year ended 31 December	
	2020	2019
Current income tax expense	2,821,301	2,481,585
Deferred income tax (Note 31)	(658,128)	(470,330)
Total	2,163,173	2,011,255

No Hong Kong profits tax has been provided as there were no estimated assessable profits in Hong Kong for the year (2019: 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 2020 and 2019.

The income tax rate applicable to Singapore subsidiaries is 17% (2019: 17%). The Company's overseas subsidiary in Pakistan engaged in the power generation business is entitled to an income tax exemption according to Income Tax Ordinance 2001. Another subsidiary located in Pakistan engaged in the provision of maintenance services. Before 1 July 2019, the subsidiary's tax liability would be calculated at the highest of (i) normal tax at the rate of 29% of taxable income; (ii) Alternative Corporate Tax (ACT) at the rate of 17% of accounting profit; and (iii) minimum tax deductible at 8% of the revenue. If the income tax calculated is above normal tax at the rate of 29%, it would be carried forward to subsequent years for settlement against the liabilities of following years. The carry forward time period is 5 years in case of minimum tax and 10 years in case of ACT. However, from 1 July 2019, if the minimum tax liability is above the normal tax calculated, it cannot be carried forward to subsequent years.

### 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	
	2020	2019
PRC statutory enterprise income tax rate	25.00%	25.00%
Effect of different tax rates of certain subsidiaries	(13.88%)	(7.33%)
Utilisation of previously unrecognised tax losses and deductible temporary differences	(5.50%)	(6.00%)
Unrecognised tax losses for the year	12.99%	27.76%
Unrecognised deductible temporary differences	26.17%	34.68%
Effect of non-taxable income	(9.34%)	(10.44%)
Effect of non-deductible expenses	8.70%	3.18%
Others	1.17%	(2.38%)
Effective tax rate	45.31%	64.47%

### 34 EARNINGS PER SHARE

The basic earnings per share is calculated by dividing the consolidated net profit attributable to the equity holders of the Company excluding cumulative 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	
	2020	2019
Consolidated net profit attributable to equity holders of the Company	2,377,851	766,345
Less: cumulative distribution of other equity instruments	1,770,469	685,922
Consolidated net profit attributable to ordinary shareholders of the Company	607,382	80,423
Weighted average number of the Company's outstanding ordinary shares ('000) *	15,698,093	15,698,093
Basic and diluted earnings per share (RMB)	0.04	0.01

\* Weighted average number of ordinary shares:

	2020	2019
	'000	'000
Issued ordinary shares at 1 January	15,698,093	15,698,093
Effect of share issue	—	—
Weighted average number of ordinary shares at 31 December	15,698,093	15,698,093

There was no dilutive effect on earnings per share since the Company had no dilutive potential ordinary shares for the years ended 31 December 2020 and 2019.

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### 35 NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS

Bank balances and cash comprise the following:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Total bank balances and cash	<b>13,871,523</b>	13,306,139
Less: Restricted cash	<b>613,631</b>	862,881
Cash and cash equivalents as at year end	<b>13,257,892</b>	12,443,258

The bank balances and cash of the Group are denominated in the following currencies:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
RMB	<b>12,200,948</b>	10,649,660
S\$ (RMB equivalent)	<b>776,703</b>	1,243,481
US\$ (RMB equivalent)	<b>462,560</b>	716,233
Others	<b>431,312</b>	696,765
Total	<b>13,871,523</b>	13,306,139

During the year, the Group had non-cash additions to right-of-use assets and lease liabilities of RMB2,053 million and RMB2,053 million, respectively, in respect of lease arrangements (2019: RMB2,234 million and RMB2,234 million).

## 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)	Accrued interests	Cumulative distribution of other equity instruments (Note 21)	Lease liabilities (Note 42)	Dividends payable
<b>As at 1 January 2020</b>	201,142,080	40,312,458	1,276,703	77,106	4,712,670	1,191,036
<b>(a) Business combination</b>	878,997	-	-	-	91,595	-
<b>(b) Changes from financing cash flows:</b>						
Proceeds from loans	168,677,805	-	-	-	-	-
Repayment of loans	(171,947,870)	-	-	-	-	-
Proceeds from new bonds	-	24,217,730	-	-	-	-
Repayment of bonds	-	(26,800,000)	-	-	-	-
Payment of lease liabilities	-	-	-	-	(1,297,746)	-
Interest paid	(7,976,843)	(896,587)	(1,276,703)	(1,436,117)	-	-
Dividends paid to shareholders of the Company	-	-	-	-	-	(2,119,243)
Dividends paid to non-controlling interests of the subsidiaries	-	-	-	-	-	(1,702,511)
Others	-	(35,283)	-	-	-	-
<b>(c) Exchange adjustments</b>	(847,434)	(305,256)	-	-	(66,099)	-
<b>(d) Other changes:</b>						
New leases	-	-	-	-	2,201,755	-
Interest expenses	7,415,824	1,582,524	-	-	202,264	-
Accrued cumulative distribution of other equity instrument investments	-	-	-	1,770,469	-	-
Capitalised borrowing costs	854,309	-	-	-	73,546	-
Dividends relating to 2019	-	-	-	-	-	3,325,572
Early termination of lease	-	-	-	-	(348,242)	-
Other	-	(11,793)	-	-	(87,397)	-
<b>As at 31 December 2020</b>	<b>198,196,868</b>	<b>38,063,793</b>	<b>-</b>	<b>411,458</b>	<b>5,482,346</b>	<b>694,854</b>

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### 35 NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS (Cont'd)

Items	Loans (Notes 24, 30)	Loans in disposal group held for sale	Bonds (Notes 25, 29)	Accrued interests	Cumulative distribution of other equity instruments	Finance lease payables/Lease liabilities (Note 42)	Dividends payable
<b>As at 31 December 2018</b>	211,207,782	297,400	41,519,596	1,152,767	8,846	1,442,174	1,267,833
<b>Effect of adoption of IFRS 16</b>	-	-	-	-	-	774,618	-
<b>As at 1 January 2019 (restated)</b>	211,207,782	297,400	41,519,596	1,152,767	8,846	2,216,792	1,267,833
<b>(a) Asset acquisitions</b>	9,418	-	-	-	-	602,257	-
<b>(b) Changes from financing cash flows:</b>							
Proceeds from loans	119,800,321	498,000	-	-	-	-	-
Repayment of loans	(130,703,965)	(213,400)	-	-	-	-	-
Proceeds from new bonds	-	-	35,300,000	-	-	-	-
Repayment of bonds	-	-	(36,500,000)	-	-	-	-
Payment of lease liabilities	-	-	-	-	-	(488,015)	-
Interest paid	-	-	(291,040)	(10,732,737)	(617,662)	-	-
Dividends paid to shareholders of the Company	-	-	-	-	-	-	(1,569,809)
Dividends paid to non-controlling interests of the subsidiaries	-	-	-	-	-	-	(1,436,574)
Others	-	-	(29,075)	-	-	-	-
<b>(c) Exchange adjustments</b>	811,524	-	-	-	-	(23,673)	-
<b>(d) Other changes:</b>							
New leases	-	-	-	-	-	2,233,736	-
Interest expenses	-	-	314,280	10,276,865	-	171,573	-
Accrued cumulative distribution of other equity instrument investments	-	-	-	-	685,922	-	-
Capitalised borrowing costs	-	-	-	579,808	-	-	-
Dividends relating to 2018	-	-	-	-	-	-	2,929,586
Disposal group held for sale	-	(582,000)	-	-	-	-	-
Others	17,000	-	(1,303)	-	-	-	-
<b>As at 31 December 2019</b>	<b>201,142,080</b>	<b>-</b>	<b>40,312,458</b>	<b>1,276,703</b>	<b>77,106</b>	<b>4,712,670</b>	<b>1,191,036</b>

## 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	
	2020	2019
Within financing activities*	1,297,746	488,015
Total	1,297,746	488,015

\* During the year, the principal portion of lease liabilities paid was RMB1,022 million (2019: RMB316 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 (Tianjin) Coal Gasification Power Generation 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
Huaneng Supply Chain Platform Technology Co., Ltd. and its subsidiaries	Associates of the Company and also subsidiaries of Huaneng Group
Shanghai Leading Energy Shipping 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
Huaneng Xiapu Nuclear Power Co., Ltd.	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng Group Fuel Company and its subsidiaries	Associates of the Company and also subsidiaries of Huaneng Group
Huaneng Finance	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

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### 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
Yangquan Coal Industry Group Huaneng Coal Power Investment Co., Ltd.	An associate of the Company
Chongqing Huaneng Lime Company Limited	An associate of the Company
Jilin Zhanyu Wind Power Asset Management Co., Ltd.	An associate of the Company
Suzhou Sugao Renewables Service Co. Ltd.	An associate of the Company
Jiangyin Chengdongnan Thermal Power Co., Ltd.	An associate of the Company
Hainan Nuclear	An associate of the Company
Shandong Electric Power Trading Center	An associate of the Company
Shandong Lu Xin Energy Investment Management Co., Ltd.	An associate of the Company
Huaneng Yingkou Port Limited Liability Company	A joint venture of the Company
Huaneng Anyang Thermal Power Co., Ltd.	A joint venture of the Company
Luyi Power	A joint venture of the Company
Shanghai Time Shipping	A joint venture of the Company
Jiangsu Nantong Power	A joint venture of the Company
Jining Huayuan Thermal Power Co., Ltd.	A joint venture of the Company
Huaneng (Zhangzhou, Fujian) Energy Co., Ltd.	A joint venture of the Company
Yantai Gangneng Bulk Cargo Terminal Co., Ltd.	A joint venture of the Company
North United Power Corporation and its subsidiaries	Subsidiaries of Huaneng Group
Beijing Changping Huaneng Training Center	A subsidiary of Huaneng Group
Huaneng Hulunbuir Energy Development Company Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Tendering Co., Ltd.	A subsidiary of Huaneng Group
Huaneng Ningxia Energy Company Ltd.	A subsidiary of Huaneng Group
Huaneng Renewables Corporation Limited and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Songyuan Power Co., Ltd.	A subsidiary of Huaneng Group
Huaneng Nuclear Power Development Company Ltd.	A subsidiary of Huaneng Group
Huaneng Lancangjiang Hydropower Co., Inc. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Coal Business Sector Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Gansu Energy Development Company Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Baishan Coal Gangue Power Generation Co., Ltd.	A subsidiary of Huaneng Group
Huaneng Carbon Assets Management Company Limited	A subsidiary of Huaneng Group
Huaneng Qinghai Power Generation Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Property Co., Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Energy & Communications Holdings Co., 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

## 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
Huaneng Xinjiang Energy Development Company Ltd. and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Capital Services and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Shaanxi Power Generation Limited and its subsidiaries	Subsidiaries of Huaneng Group
Huaneng Group Technology Innovation Center	A subsidiary of Huaneng Group
Alltrust Insurance Co., Ltd.	A subsidiary of Huaneng Group
Xi'an Thermal and its subsidiaries	Subsidiaries of Huaneng Group
Great Wall Securities Co., Ltd. (Great Wall Securities)	A subsidiary of Huaneng Group
Huaneng Group Clean Energy Technology Research Institute Co., Ltd.	A subsidiary of Huaneng Group
China Hua Neng Group Hong Kong Limited	A subsidiary of Huaneng Group
Huaneng Hainan Industry Co., Ltd.	A subsidiary of Huaneng Group
Huaneng Integrated Industries Management Co., Ltd.	A subsidiary of Huaneng Group
Huangtai #8 Power Plant	An investee with significant influence
Other government-related enterprises**	Related parties of the Company

\* Transactions with subsidiaries of Huaneng Group which also are associates of the Group are presented as transactions with subsidiaries of Huaneng Group for Note 36 (a) and 36 (b).

\*\* 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, which the PRC government has control, joint control or significant influence over, 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.

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### 36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

#### (a) Related party balances

##### (i) Cash deposits in related parties

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Deposits in Huaneng Finance		
– Savings deposits	<b>8,067,854</b>	9,529,586

For the year ended 31 December 2020, the annual interest rates for these savings deposits ranged from 0.35% to 1.49% (2019: from 0.35% to 1.35%).

(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 2020 and 2019, 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:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Due from Huaneng Group	<b>36,683</b>	464,087
Due from joint ventures	<b>390,324</b>	106,251
Due from subsidiaries of Huaneng Group	<b>156,422</b>	125,288
Due from Huangtai #8 Power Plant	<b>775,109</b>	792,136
Total	<b>1,358,538</b>	1,487,762

## 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	
	2020	2019
Due to Huaneng Group	382,571	285,725
Due to HIPDC	13,788	13,430
Due to joint ventures	150,357	120,153
Due to subsidiaries of Huaneng Group	9,730,905	5,762,265
Total	10,277,621	6,181,573

(v) As at 31 December 2020, included in long-term loans (including current portion) and short-term loans are loans payable to other government-related enterprises amounting to RMB196.9billion (2019: RMB186.8 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 service 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.

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### 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	
	2020	2019
<b>Huaneng Group</b>		
Other purchases	415	570
<b>Subsidiaries of Huaneng Group</b>		
Purchase of coal and transportation services	35,412,425	32,623,831
Technical services and engineering contracting services	1,445,088	1,776,442
Purchase of equipment	378,382	52,802
Purchase of heat	45,520	61,080
Other purchases	51,240	46,627
<b>Joint ventures of the Group</b>		
Purchase of coal and transportation services	522,570	835,462
Entrusting other parties for power generation	23,611	–
<b>Associates of the Group</b>		
Purchase of equipment	27,241	38,387
Purchase of coal and transportation services	204,419	181,479
Other purchases	–	529

## 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	
	2020	2019
<b>Huaneng Group</b>		
Services provided	77,462	31,756
<b>HIPDC</b>		
Services provided	370	124
<b>Subsidiaries of Huaneng Group</b>		
Service provided	134,111	68,052
Other sales	48,574	2,922
<b>Joint ventures of the Group</b>		
Service provided	82,229	52,602
Other sales	8,404	25,102

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### 36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

#### (b) Related party transactions *(Cont'd)*

##### (iii) Other related party transactions

	For the year ended 31 December	
	2020	2019
<b>(1) Rental charge paid</b>		
HIPDC	104,696	104,929
Subsidiaries of Huaneng Group	218,463	93,203
Huaneng Group	57	–
<b>(2) Rental income received</b>		
A joint venture of the Group	8,659	7,448
Subsidiaries of Huaneng Group	1,978	2,400
Huangtai #8 Power Plant	19,689	21,253
<b>(3) Net loans received from/(repaid to)</b>		
Subsidiaries of Huaneng Group	2,789,776	(11,369)
A joint venture of the Group	–	150,000
<b>(4) Interest expense on loans</b>		
Huaneng Group	30,306	30,224
A joint venture of the Group	6,591	4,374
Subsidiaries of Huaneng Group	552,565	515,532
<b>(5) Interest income on loans</b>		
Joint ventures of the Group	4,339	3,747
<b>(6) Provide entrusted loans*</b>		
A joint venture of the Group	224,000	–
<b>(7) Capital injection from a subsidiary of Huaneng Group</b>		
A subsidiary of Huaneng Group	278,073	227,569
<b>(8) Capital injection to</b>		
Subsidiaries of Huaneng Group	94,500	94,770
Associates of the Group	185,261	43,427
Joint ventures of the Group	317,116	175,000

## 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	
	2020	2019
<b>(9) Entrusted management fee</b>		
Huaneng Group	14,370	12,340
<b>(10) Trusteeship management income</b>		
Huaneng Group	4,822	4,821
Huangtai #8 Power Plant	3,240	–
<b>(11) Net proceeds received from an investee with significant influence</b>		
Huangtai #8 Power Plant	9,822	41,328
<b>(12) Profit compensation received</b>		
Huaneng Group	457,727	550,832
<b>(13) Acquisition consideration (Note 40)</b>		
Subsidiaries of Huaneng Group	237,228	–
<b>(14) Disposal consideration</b>		
Subsidiaries of Huaneng Group	–	1,050

\* The entrusted loans were fully repaid in February 2021.

#### Transactions with government-related enterprises

For the years ended 31 December 2020 and 2019, apart from 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 2020 and 2019, 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.

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### 36 RELATED PARTY BALANCES AND TRANSACTIONS (Cont'd)

#### (c) Guarantees

	As at 31 December	
	2020	2019
(i) Long-term loans guaranteed by		
– Huaneng Group	1,407,338	2,335,611
– HIPDC	–	2,014,800
(ii) Short-term loans guaranteed by		
– Huaneng Group	–	687,470

#### (d) Pre-tax benefits and social insurance of key management personnel

	For the year ended 31 December	
	2020	2019
Salaries	9,373	6,881
Pension	1,329	1,262
Total	10,702	8,143

#### (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	
	2020	2019
Subsidiaries of Huaneng Group	1,947,988	714,129

## 36 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

### (e) Related party commitments *(Cont'd)*

#### (ii) Investment commitment (Note 39)

	As at 31 December	
	2020	2019
A joint venture of the Group	—	31,116

#### (iii) Fuel purchase and transportation commitments

	As at 31 December	
	2020	2019
Subsidiaries of Huaneng Group	1,519,364	2,174,241
A joint venture of the Group	131,810	143,614

### (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 provided in the section "Connected transactions" of the Directors' Report of the Group for the year ended 31 December 2020.

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### 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 retirements. 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 20% (2019: 14% to 22%) of the basic salary of the PRC employees. Affected by the Covid-19 pandemic, the government has temporarily reduced the employee social benefit expenditures of entities in the PRC for a certain period time based on the severity of the pandemic in different regions. The retirement plan contributions paid by the Group for the year ended 31 December 2020 were approximately RMB507 million (2019: RMB1,198 million), including approximately RMB481 million (2019: RMB1,155 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 2020, the contributions to the supplementary defined contribution retirement scheme paid by the Group amounted to approximately RMB698 million (2019: RMB601 million), including approximately RMB662 million (2019: RMB581 million) charged to profit or loss.

SinoSing Power and its subsidiaries in Singapore appropriate what at a specified rate, currently set at 7.5% to 17% (2019: 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 2020 amounted to approximately RMB23.07 million (2019: RMB20.73 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 housing funds and social insurance contributions paid by the Group and its subsidiaries amounted to approximately RMB1,024 million (2019: RMB898 million) and RMB1,034 million (2019: RMB1,034 million) for the year ended 31 December 2020 including approximately RMB954 million (2019: RMB859 million) and RMB976 million (2019: RMB994 million) charged to profit or loss, respectively.

## 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 2020 is set out below:

	Fees	Basic salaries	Performance bonuses	Pension	Total
<b>Name of director</b>					
Mr. Zhao Keyu <sup>1,8</sup>	–	215	836	135	1,186
Mr. Zhaoping <sup>2,8</sup>	–	212	789	123	1,124
Mr. Huang Jian	–	–	–	–	–
Mr. Wang Kui <sup>2</sup>	–	–	–	–	–
Mr. Lu Fei <sup>2</sup>	–	–	–	–	–
Mr. Teng Yu <sup>2</sup>	–	–	–	–	–
Mr. Mi Dabin	–	–	–	–	–
Mr. Cheng Heng	–	–	–	–	–
Mr. Li Haifeng <sup>3</sup>	–	–	–	–	–
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 <sup>2</sup>	150	–	–	–	150
Mr. Shu Yinbiao <sup>4</sup>	–	–	–	–	–
Mr. Wang Yongxiang <sup>5</sup>	–	–	–	–	–
Mr. Guo Hongbo <sup>6</sup>	–	–	–	–	–
Mr. Yue Heng <sup>5</sup>	150	–	–	–	150
Sub-total	1,500	427	1,625	258	3,810
<b>Name of supervisor</b>					
Mr. Li Shuqing <sup>2</sup>	–	–	–	–	–
Mr. Mu Xuan	–	–	–	–	–
Mr. Ye Cai <sup>2</sup>	–	–	–	–	–
Mr. Gu Jianguo	–	–	–	–	–
Ms. Zhang Xiaojun	–	150	761	122	1,033
Mr. Xu Jianping <sup>2</sup>	–	79	357	77	513
Mr. Ye Xiangdong <sup>5</sup>	–	–	–	–	–
Ms. Zhang Mengjiao <sup>5</sup>	–	–	–	–	–
Mr. Zhang Xiancheng <sup>5</sup>	–	75	408	55	538
Sub-total	–	304	1,526	254	2,084
Total	1,500	731	3,151	512	5,894

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### 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 2019 is set out below:

	Fees	Basic salaries	Performance bonuses	Pension	Total
<b>Name of director</b>					
Mr. Zhao Keyu <sup>1</sup>	–	–	–	–	–
Mr. Shu Yinbiao <sup>4</sup>	–	–	–	–	–
Mr. Cao Peixi <sup>7</sup>	–	–	–	–	–
Mr. Huang Jian	–	–	–	–	–
Mr. Wang Yongxiang	–	–	–	–	–
Mr. Mi Dabin	–	–	–	–	–
Mr. Guo Hongbo	–	–	–	–	–
Mr. Cheng Heng	–	–	–	–	–
Mr. Lin Chong	–	–	–	–	–
Mr. Yue Heng	300	–	–	–	300
Mr. Xu Mengzhou	300	–	–	–	300
Mr. Liu Jizhen	300	–	–	–	300
Mr. Xu Haifeng	300	–	–	–	300
Mr. Zhang Xianzhi	300	–	–	–	300
Sub-total	1,500	–	–	–	1,500
<b>Name of supervisor</b>					
Mr. Ye Xiangdong	–	–	–	–	–
Mr. Mu Xuan	–	–	–	–	–
Ms. Zhang Mengjiao	–	–	–	–	–
Mr. Gu Jianguo	–	–	–	–	–
Ms. Zhang Xiaojun	–	150	529	131	810
Mr. Zhang Xiancheng	–	154	529	131	814
Sub-total	–	304	1,058	262	1,624
Total	1,500	304	1,058	262	3,124

1 Appointed on 5 March 2020

2 Appointed on 16 June 2020

3 Appointed on 22 December 2020

4 Appointed on 30 January 2019 and resigned on 5 March 2020

5 Resigned on 16 June 2020

6 Resigned on 22 December 2020

7 Resigned on 30 January 2019

8 Remuneration for the whole year ended 31 December 2020

## 38 DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S EMOLUMENTS (Cont'd)

### (a) Pre-tax benefits and social insurance of directors and supervisors (Cont'd)

During the year, no option was granted to the directors or the supervisors (2019: 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 (2019: nil).

No director or supervisor had waived or agreed to waive any emoluments during the years 2020 and 2019.

### (b) Five highest paid individuals

The five individuals whose emoluments were the highest in the Group for the year included two directors (2019: no director). Directors emoluments are reflected in the analysis presented above. The emoluments payable to all the three (2019: five) individuals during the year (within the range of nil to RMB1.033 million) are as follows:

	For the year ended 31 December	
	2020	2019
Basic salaries	552	1,578
Performance bonuses	2,167	2,329
Pension	376	695
	<u>3,095</u>	<u>4,602</u>

## 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	
	2020	2019
Contracted, but not provided	<u>35,652,079</u>	<u>42,634,992</u>

As at 31 December 2020, the commitments to make capital contributions to a Group's joint venture are as follows:

	As at 31 December	
	2020	2019
A joint venture	<u>–</u>	<u>31,116</u>

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### 39 COMMITMENTS (Cont'd)

#### (b) Fuel purchase commitments

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 2020	
	Periods	Purchase quantities	Estimated unit costs (RMB)
A government-related enterprise	2021-2039	2.8 million m <sup>3</sup> /day*	2.37/m <sup>3</sup>
A government-related enterprise	2021-2023	991 million m <sup>3</sup> /year*	2.18/m <sup>3</sup>
	2021-2023	541 million m <sup>3</sup> /year*	2.52/m <sup>3</sup>
	2021-2023	450 million m <sup>3</sup> /year*	2.11/m <sup>3</sup>
A government-related enterprise	2021-2026	222 million m <sup>3</sup> /year*	2.22/m <sup>3</sup>
	2021	40 million m <sup>3</sup> /year*	1.86/m <sup>3</sup>
Other suppliers	2021	201.5-251.5 BBtu**/day	approximately 48,000/BBtu
	2022	205.5-255.5 BBtu**/day	approximately 47,000/BBtu
	2023	81.5-247.5 BBtu**/day	approximately 42,000/BBtu
	2024-2028	42.4-81.5 BBtu**/day	approximately 38,000/BBtu
	2029	42.4 BBtu**/day	approximately 28,000/BBtu

## 39 COMMITMENTS (Cont'd)

### (b) Fuel purchase commitments (Cont'd)

		As at 31 December 2019	
	Periods	Purchase quantities	Estimated unit costs (RMB)
A government-related enterprise	2020-2039	2.8 million m <sup>3</sup> /day*	2.88/m <sup>3</sup>
A government-related enterprise	2020-2023	991 million m <sup>3</sup> /year*	2.31/m <sup>3</sup>
	2020-2023	541 million m <sup>3</sup> /year*	2.19/m <sup>3</sup>
	2020-2023	450 million m <sup>3</sup> /year*	2.25/m <sup>3</sup>
A government-related enterprise	2020-2026	200 million m <sup>3</sup> /year*	2.60/m <sup>3</sup>
Other suppliers	2020-2021	201.5-251.5BBtu**/day	approximately 47,000/BBtu
	2022	205.5-255.5BBtu**/day	approximately 45,000/BBtu
	2023	81.5-247.5 BBtu**/day	approximately 41,000/BBtu
	2024-2028	42.4-81.5 BBtu**/day	approximately 37,000/BBtu
	2029	42.4 BBtu**/day	approximately 31,000/BBtu

\* The quantities represent the maximum volume, while others represent the minimum or forecasted volume if not specified.

\*\* BBtu: Billion British Thermal Unit

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### 40 BUSINESS COMBINATION

#### (a) Acquisition of Taifeng Renewable Energy

On 30 June 2020, the Group's subsidiary, Shandong Power, acquired an 82.23% interest in Taifeng Renewable Energy from Huaneng Taishan Power Co., Ltd. ("Taishan Power"), a subsidiary of the Huaneng Group. Taifeng Renewable Energy is mainly engaged in power generation and sales business. The acquisition was made as part of the Group's strategy to increase the Group's generation capacity in renewable energy. The total cash consideration for the acquisition was RMB228 million, with RMB205 million paid at the acquisition date and the remaining RMB23 million unpaid as at 31 December 2020.

The fair values of the identifiable assets and liabilities of Taifeng Renewable Energy as at the date of acquisition were as follows:

	Notes	Fair value recognised on acquisition
<b>Assets</b>		
Property, plant and equipment		722,076
Right-of-use assets		91,229
Other non-current assets		1,401
Other receivables and assets		60,038
Accounts receivable		153,644
Bank balances and cash		6,315
		<u>1,034,703</u>
<b>Liabilities</b>		
Long-term loans		(589,000)
Lease liabilities		(90,370)
Deferred income tax liabilities	31	(9,213)
Accounts payable and other liabilities		(42,980)
Taxes payable		(20)
Current portion of long-term loans		(31,200)
Current portion of lease liabilities		(1,225)
		<u>(764,008)</u>
Total identifiable net assets at fair value		<u>270,695</u>
Non-controlling interests		<u>(48,103)</u>
Goodwill on acquisition	14	5,828
Satisfied by cash		<u>228,420</u>

## 40 BUSINESS COMBINATION (Cont'd)

### (a) Acquisition of Taifeng Renewable Energy (Cont'd)

Goodwill arising from the acquisition is attributable to the synergies expected to arise after the acquisition of the equity interests in the subsidiary stated above. None of the goodwill recognised is expected to be deductible for income tax purposes.

The Group measured the acquired lease liabilities using the present value of the remaining lease payments at the date of acquisition. The right-of-use assets were measured at an amount equal to the lease liabilities and adjusted to reflect the favourable terms of the leases relative to market terms.

An analysis of the cash flows in respect of the acquisition of a subsidiary is as follows:

	<b>Acquisition date</b>
Cash consideration	(228,420)
Consideration to be paid (Note 27)	22,842
Cash and bank balances acquired	<u>6,315</u>
Net outflow of cash and cash equivalents included in cash flows from investing activities	<u>(199,263)</u>
Transaction costs of the acquisition included in cash flows from operating activities	<u>–</u>
	<u>(199,263)</u>

Since the acquisition, Taifeng Renewable Energy contributed RMB42,509 thousand to the Group's revenue and RMB1,244 thousand to the consolidated profit for the year ended 31 December 2020.

Had the combination taken place at the beginning of the year, the revenue from continuing operations of the Group and the profit of the Group for the year would have been RMB169,494 million and RMB2,618 million, respectively.

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### 40 BUSINESS COMBINATION (Cont'd)

#### (b) Acquisition of Tianjin Longye

On 8 April 2020, the Company entered into an equity transfer agreement with Tianjin Yuan Rong Investment Management Co., Ltd., a subsidiary of the Huaneng Group, to acquire a 100% interest in Tianjin Longye. Tianjin Longye is mainly engaged in power generation and sales business. The acquisition was made as part of the Group's strategy to increase the Group's generation capacity in renewable energy. The acquisition was completed on 31 August 2020 (the acquisition date), when the Company obtained the control over Tianjin Longye. The total cash consideration for the acquisition was RMB8.55 million and was fully paid at the acquisition date.

The fair values of the identifiable assets and liabilities of Tianjin Longye as at the date of acquisition were as follows:

	<b>Fair value recognised on acquisition</b>
<b>Assets</b>	
Property, plant and equipment	39,130
Other receivables and assets	3,403
Accounts receivable	1,494
Bank balances and cash	1,657
	<u>45,684</u>
<b>Liabilities</b>	
Accounts payable and other liabilities	<u>(36,390)</u>
	(36,390)
Total identifiable net assets at fair value	<u>9,294</u>
Gain on bargain purchase recognised in others in the consolidated statement of comprehensive income	(741)
Satisfied by cash	<u>8,553</u>

## 40 BUSINESS COMBINATION (Cont'd)

### (b) Acquisition of Tianjin Longye (Cont'd)

An analysis of the cash flows in respect of the acquisition of a subsidiary is as follows:

	<b>Acquisition date</b>
Cash consideration	(8,553)
Cash and bank balances acquired	1,657
Net outflow of cash and cash equivalents included in cash flows from investing activities	(6,896)
Transaction costs of the acquisition included in cash flows from operating activities	–
	<u>(6,896)</u>

Since the acquisition, Tianjin Longye contributed RMB1,652 thousand to the Group's revenue and RMB173 thousand to the consolidated profit for the year ended 31 December 2020.

Had the combination taken place at the beginning of the year, the revenue from continuing operations of the Group and the profit of the Group for the year would have been RMB169,450 million and RMB2,611 million, respectively.

### (c) Acquisition of a set of activities and assets of Huaneng Laizhou Wind Power Co., Ltd. ("Laizhou Wind Power")

On 19 November 2020, Shandong Power entered into an acquisition agreement with Laizhou Wind Power to acquire a set of its activities and assets. Laizhou Wind Power is mainly engaged in power generation and sales business. The acquisition was made as part of the Group's strategy to increase the Group's generation capacity in renewable energy. The acquisition was completed on 30 November 2020 (the acquisition date), when Shandong Power obtained the control over the assets and personnel. The total cash consideration for the acquisition was RMB255 thousand and was fully paid at the acquisition date.

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### 40 BUSINESS COMBINATION (Cont'd)

#### (c) Acquisition of a set of activities and assets of Huaneng Laizhou Wind Power Co., Ltd. (Laizhou Wind Power) (Cont'd)

The fair values of the identifiable assets and liabilities of the business as at the date of acquisition were as follows:

	Note	Fair value recognised on acquisition
<b>Assets</b>		
Property, plant and equipment		231,278
Right-of-use assets		31,643
Other non-current assets		241
Other receivables and assets		205
Accounts receivable		44,812
		<u>308,179</u>
<b>Liabilities</b>		
Long-term loans		(258,000)
Deferred income tax liabilities		(6,787)
Accounts payable and other liabilities		(49,924)
		<u>(314,711)</u>
Total identifiable net assets at fair value		<u>(6,532)</u>
Goodwill on acquisition	14	6,787
Satisfied by cash		<u>255</u>

## 40 BUSINESS COMBINATION (Cont'd)

### (c) Acquisition of a set of activities and assets of Huaneng Laizhou Wind Power Co., Ltd. (Laizhou Wind Power) (Cont'd)

Goodwill arising from the acquisition is attributable to the synergies expected to arise after the acquisition of the business stated above. None of the goodwill recognised is expected to be deductible for income tax purposes.

An analysis of the cash flows in respect of the acquisition of the business is as follows:

	<b>Acquisition date</b>
Cash consideration	(255)
Cash and bank balances acquired	–
Net outflow of cash and cash equivalents included in cash flows from investing activities	<u>(255)</u>
Transaction costs of the acquisition included in cash flows from operating activities	–
	<u>(255)</u>

Since the acquisition, the acquired business contributed RMB9,325 thousand to the Group's revenue and RMB3,547 thousand to the consolidated profit for the year ended 31 December 2020.

Had the combination taken place at the beginning of the year, the revenue from continuing operations of the Group and the profit of the Group for the year would have been RMB169,480 million and RMB2,617 million, respectively.



## 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)

	Qimbei Power	Beijing Co-generation	Luohuang Power	Weihai Power	Jinling Power	Yueyang Power	Shidongkou Power	Yangliuqing Co-generation	Shandong Power	Other individually immaterial subsidiaries	Total
NCI percentage	40%	59%	40%	40%	40%	45%	50%	45%	20%		
31 December 2019											
Non-current assets	9,086,939	6,264,852	3,649,432	3,981,753	4,432,195	4,320,232	3,255,810	2,421,307	57,881,917		
Current assets	1,317,076	852,059	1,134,889	629,370	459,849	1,426,960	465,772	721,617	11,225,955		
Non-current liabilities	(2,249,675)	(53,494)	(205,085)	(34,495)	(1,136,398)	(701,135)	(488,350)	(378,478)	(29,027,404)		
Current liabilities	(4,905,399)	(1,257,150)	(2,061,440)	(1,894,952)	(1,489,022)	(2,368,204)	(1,563,894)	(778,235)	(23,441,038)		
Net assets	3,248,941	5,806,267	2,517,796	2,681,676	2,266,624	2,677,853	1,669,338	1,986,211	16,639,430		
Carrying amount of NCI	1,313,492	3,425,774	986,100	1,072,670	906,671	1,220,746	834,669	892,899	5,591,178	5,331,112	21,575,311
Revenue	4,787,221	5,579,382	2,833,807	3,045,352	3,099,014	4,005,328	2,055,168	1,945,841	28,274,364		
Net profit/(loss)	30,270	705,311	64,093	193,754	265,457	453,869	216,595	59,733	(430,222)		
Total comprehensive income/(loss)	30,270	705,311	64,093	193,754	265,457	453,869	216,595	59,733	(675,666)		
Profit/(loss) allocated to NCI	12,108	416,133	25,637	77,502	106,183	204,241	108,298	26,880	(86,044)	(549,078)	341,860
Other comprehensive loss allocated to NCI	-	-	-	-	-	-	-	-	(49,089)	(111,692)	(160,781)
Cash flows from operating activities	667,432	1,623,975	360,226	273,607	821,975	689,723	655,910	171,531	7,066,137		
Cash flows from investment activities	(205,703)	(273,374)	(101,279)	(95,699)	(128,541)	(163,584)	(86,427)	(16,465)	(2,787,419)		
Cash flows from financing activities	(613,468)	(1,329,614)	(247,546)	(260,953)	(792,266)	(503,852)	(582,452)	(167,846)	(2,673,351)		
Net (decrease)/increase in cash and cash equivalents	(166,994)	20,987	11,401	(94,821)	(98,832)	22,287	(12,969)	(12,780)	(414,221)		
Dividends paid to NCI	-	625,886	-	124,000	130,566	45,000	65,000	48,585	84,156		

## NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2020

(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					Total
	Buildings	Electric utility plant in service	Transportation facilities	Land use rights*	Others	
<b>As at 1 January 2020</b>	143,314	3,800,493	206,421	12,553,477	464,367	17,168,072
Additions	255,030	1,453,919	–	621,787	69,903	2,400,639
Business Combination (Note 40)	–	–	–	122,872	–	122,872
Depreciation charge	(97,483)	(228,539)	(7,021)	(431,476)	(48,705)	(813,224)
Disposals/write-off	–	(7,589)	–	(4,241)	–	(11,830)
Early termination	(8,570)	(497,815)	–	–	(216)	(506,601)
Reclassification	–	(26,698)	–	28,606	(1,908)	–
Currency translation differences	(1,396)	(3,302)	(18,683)	(44,473)	–	(67,854)
<b>As at 31 December 2020</b>	<b>290,895</b>	<b>4,490,469</b>	<b>180,717</b>	<b>12,846,552</b>	<b>483,441</b>	<b>18,292,074</b>
<b>As at 1 January 2019</b>	320,591	1,387,258	826	11,810,054	339,501	13,858,230
Additions	109,321	2,643,363	–	1,270,033	477,353	4,500,070
Depreciation charge	(21,983)	(233,218)	(16,967)	(496,464)	(12,986)	(781,618)
Disposals/write-off	–	–	–	(431,813)	–	(431,813)
Reclassification	(265,167)	–	229,292	375,376	(339,501)	–
Currency translation differences	552	3,090	(6,730)	26,291	–	23,203
<b>As at 31 December 2019</b>	<b>143,314</b>	<b>3,800,493</b>	<b>206,421</b>	<b>12,553,477</b>	<b>464,367</b>	<b>17,168,072</b>

\* Land use rights without ownership certificates

As at 31 December 2020, the Group were in the process of applying for the ownership certificates for certain land use rights with an aggregate net book value of RMB161 million (2019: RMB350 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.

## 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:

	As at 31 December	
	2020	2019
Carrying amount at 1 January	4,712,670	2,216,792
New leases	2,201,755	2,835,993
Business Combination (Note 40)	91,595	–
Accretion of interest recognised during the year	275,810	171,573
Currency translation differences	(66,099)	(23,673)
Payments	(1,385,143)	(488,015)
Early termination	(348,242)	–
Carrying amount at 31 December	5,482,346	4,712,670
Analysed into:		
Current portion	1,676,711	432,745
Non-current portion	3,805,635	4,279,925

The maturity analysis of lease liabilities is as follows:

	As at 31 December	
	2020	2019
Within 1 year	1,676,711	432,745
After 1 year but within 2 years	464,403	1,323,826
After 2 years but within 3 years	269,060	332,986
After 3 years	3,072,172	2,623,113
Total	5,482,346	4,712,670

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### 42 LEASES (Cont'd)

#### The Group as a lessee (Cont'd)

**(c) The amounts recognised in profit or loss in relation to leases are as follows:**

	As at 31 December	
	2020	2019
Interest on lease liabilities	202,264	171,573
Depreciation charge of right-of-use assets	785,518	734,827
Expense relating to short-term leases	103,817	231,651
Expense relating to leases of low-value assets	2,214	2,488
Total amount recognised in profit	<u>1,093,813</u>	<u>1,140,539</u>

#### **(d) 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 of 31 December 2020, there were neither any extension options that the Group does not expect to exercise nor any significant termination options that the Group expects to exercise.

#### **(e) 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.

**(f) 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 relating to Ruyi Pakistan, SinoSing Power and Shandong Maintenance Company.

Ruyi Pakistan Energy entered into the 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's subsidiary, Tuas Group, entered into two build-to-suit agreements with third parties, which involve sale and leaseback arrangements and the provision of operation maintenance services.

Shandong Maintenance Company entered into the Energy Management Contract with Huangtai #8 Power Plant to provide energy saving equipment construction service. Pursuant to the agreement, all the risk and rewards in relation to the energy saving equipment were in substance transferred to Huangtai#8 Power Plant as the benefit could be reliably estimated during the contract period.

Total finance lease income recognised by the Group for the year ended 31 December 2020 was RMB1,544 million (2019: RMB1,711 million).

As at 31 December 2020, the maturity analysis of the Group's finance lease receivables is as follows:

	<b>As at 31 December</b>	
	<b>2020</b>	2019
Within 1 year	<b>1,924,763</b>	2,172,707
After 1 year but within 2 years	<b>1,925,641</b>	2,156,047
After 2 years but within 3 years	<b>1,928,125</b>	2,146,481
After 3 years but within 4 years	<b>1,939,174</b>	2,132,394
After 4 years but within 5 years	<b>1,969,470</b>	2,163,914
After 5 years	<b>17,921,037</b>	21,184,829
Total undiscounted finance lease payments	<b>27,608,210</b>	31,956,372
Unearned finance income	<b>(17,694,886)</b>	(20,949,750)
Allowance for ECL	<b>(2,925)</b>	(3,086)
Total finance lease receivables as at 31 December	<b>9,910,399</b>	11,003,536

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(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)

##### (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 2020 was RMB86 million (2019: RMB140 million).

As at 31 December 2019 and 2020, 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	
	2020	2019
Within 1 year	11,652	28,143
After 1 year but within 2 years	3,701	27,867
After 2 years but within 3 years	2,161	27,695
After 3 years but within 4 years	1,021	27,617
After 4 years but within 5 years	525	27,645
After 5 years	3,020	16,974
Total	22,080	155,941

## 43 STATEMENT OF FINANCIAL POSITION OF THE COMPANY

	As at 31 December	
	2020	2019
<b>ASSETS</b>		
<b>Non-current assets</b>		
Property, plant and equipment	23,992,866	48,334,645
Right-of-use assets	1,331,982	1,930,127
Investments in associates and joint ventures	14,219,665	14,773,712
Investments in subsidiaries	115,909,726	84,943,492
Loans to subsidiaries	14,152,513	22,950,170
Investment property	143,114	148,025
Other equity investment	589,208	726,893
Deferred income tax assets	638,287	748,446
Goodwill	106,854	106,854
Other non-current assets	2,341,202	2,296,621
<b>Total non-current assets</b>	<b>173,425,417</b>	176,958,985
<b>Current assets</b>		
Inventories	780,089	2,548,500
Other receivables and assets	12,787,986	4,461,558
Accounts receivable	4,385,701	6,220,050
Loans to subsidiaries	4,025,810	8,173,710
Bank balances and cash	968,344	1,248,842
<b>Total current assets</b>	<b>22,947,930</b>	22,652,660
<b>Total assets</b>	<b>196,373,347</b>	199,611,645

## NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2020

(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	
	2020	2019
<b>EQUITY AND LIABILITIES</b>		
<b>Capital and reserves attributable to equity holders of the Company</b>		
Share capital	15,698,093	15,698,093
Capital surplus	25,791,551	25,922,243
Other equity instruments	48,419,779	25,127,821
Surplus reserves	8,140,030	8,140,030
Retained earnings	32,088,513	36,829,957
<b>Total equity</b>	<b>130,137,966</b>	111,718,144
<b>Non-current liabilities</b>		
Long-term loans	2,917,306	8,628,240
Long-term bonds	16,497,017	28,487,115
Lease liabilities	238,812	267,156
Other non-current liabilities	572,103	823,916
<b>Total non-current liabilities</b>	<b>20,225,238</b>	38,206,427
<b>Current liabilities</b>		
Accounts payable and other liabilities	3,863,321	6,537,408
Contract liabilities	357,428	299,477
Taxes payable	73,207	465,138
Short-term bonds	5,002,877	9,025,535
Short-term loans	23,238,498	28,967,990
Current portion of long-term loans	682,520	1,521,420
Current portion of long-term bonds	12,643,014	2,799,808
Current portion of lease liabilities	149,278	70,298
<b>Total current liabilities</b>	<b>46,010,143</b>	49,687,074
<b>Total liabilities</b>	<b>66,235,381</b>	87,893,501
<b>Total equity and liabilities</b>	<b>196,373,347</b>	199,611,645

## 44 SUBSEQUENT EVENTS

### Issuance of green medium-term notes

In February 2021, the Company completed an issuance of the first tranche of the green medium-term notes (carbon neutral bonds) with a par value of RMB100 and a total face value of RMB1 billion bearing an annual interest rate of 3.45% which will mature in 2024.

### Major Event

On 12 March 2021, No.2 generation unit of Nanjing Power Plant, a branch of the Company, broke down and caught fire, igniting flammable materials. After clean-up work and due enquiries with personnel at the scene on that day, it was confirmed that there were no casualties. The Group are organizing rescue, clean-up work and dealing with the aftermath.

These financial statements were approved for issue by the Board of Directors on 23 March 2021 and were signed on its behalf.

**Zhao Keyu**  
*Director*

**Zhao Ping**  
*Director*

# FINANCIAL STATEMENTS RECONCILIATION BETWEEN PRC GAAP AND IFRS

FOR THE YEAR ENDED 31 DECEMBER 2020

(Prepared in accordance with International Financial Reporting Standards)

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

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. 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 attributable to equity holders of the Company		Total equity attributable to equity holders of the Company	
	For the year ended 2020	2019 (Restated)	As at 31 December 2020	2019 (Restated)
<b>Consolidated net profit/equity attributable to equity holders of the Company under PRC GAAP</b>	<b>4,564,990</b>	1,565,964	<b>121,698,538</b>	98,597,172
<b>Impact of IFRS adjustments:</b>				
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)	<b>(3,949,423)</b>	(1,461,404)	<b>7,856,592</b>	11,655,948
Difference on depreciation related to borrowing costs capitalised in previous years (b)	<b>(27,016)</b>	(27,016)	<b>101,422</b>	128,438
Others	<b>(63,777)</b>	(55,179)	<b>(396,563)</b>	(413,762)
Applicable deferred income tax impact on the GAAP differences above (c)	<b>947,059</b>	423,642	<b>2,579,393</b>	1,632,334
Profit/equity attributable to non- controlling interests on the adjustments above	<b>906,018</b>	320,338	<b>(1,993,459)</b>	(2,796,395)
<b>Consolidated net profit/equity attributable to equity holders of the Company under IFRSs</b>	<b>2,377,851</b>	766,345	<b>129,845,923</b>	108,803,735

### **(a) Differences in the 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 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 of such investments. Such differences will be gradually eliminated following subsequent depreciation, amortisation and disposal of the related assets.

## FINANCIAL STATEMENTS RECONCILIATION BETWEEN PRC GAAP AND IFRS

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### **(b) Effect of depreciation on the capitalisation of borrowing costs in previous years**

In previous years, under 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) GAAP differences impact on deferred income tax**

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.