

POWERING TOMORROW

ANNUAL REPORT 2019



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

STOCK CODE : 902





HUANENG POWER WE CREATE TOMORROW

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





WE PROVIDE
SUFFICIENT,
RELIABLE AND
ECO-FRIENDLY ENERGY

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OVERVIEW

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 2019, the Company is one of China’s largest listed power producers with controlling generation capacity of 106,924 MW and equity-based generation capacity of 93,676 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 Depositary 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 million 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 successfully applied in various environmental protection renovation and newly-constructed projects. 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 efforts in seeking expansion and operating our business in a prudent manner, 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

GANSU
3,697




DISTRIBUTION OF POWER PLANTS OF THE COMPANY

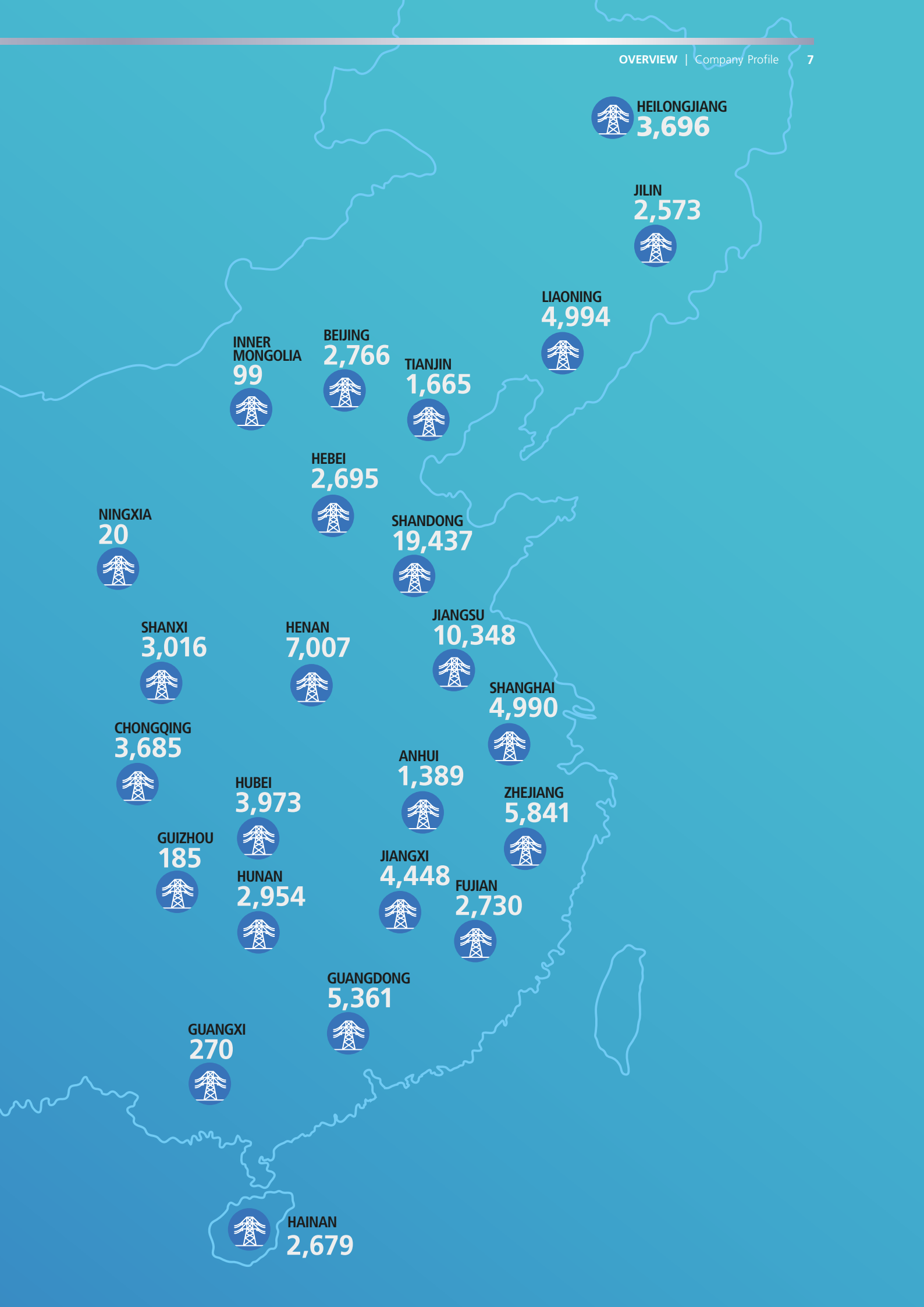
The controlled power generation capacity of the Company as at 31 December 2019 is 106,924 MW, distributed in areas as depicted in the chart (Unit: MW)

OVERSEAS NETWORK



YUNNAN
3,800





OVERVIEW

MAJOR CORPORATE EVENTS IN 2019

2019

JANUARY

- The Company announced that its total power generation within China for 2018 recorded an increase of 9.12% year-on-year.



MARCH

- The Company announced its operating results for 2018. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB1,439 million, representing a decrease of 17.42% over the previous year.
- The Company held investor conferences within and outside China for its annual results for 2018.



APRIL

- The Company announced that its total power generation within China for the first quarter of 2019 recorded a decrease of 0.45% year-on-year.
- The Company announced its results for the first quarter of 2019. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB2,656 million, representing an increase of 114.27% over the corresponding period of the previous year.
- The Company held global investor telephone conferences for its results for the first quarter in 2019.
- The Company announced and paid the interest of its 3-year bonds issued in 2018 for the period from 4 April 2018 to 3 April 2019.
- The Company publicly issued 10-year corporate bonds of RMB2.3 billion to qualified investors.

JUNE

- The Company announced and paid the interest of its 5-year corporate bonds and 10-year corporate bonds issued in 2016 for the period from 13 June 2018 to 12 June 2019.
- The Company held annual non-deal roadshows in the United States.

JULY

- The Company announced the implementation of the profit distribution plan for the year of 2018 and distributed the cash dividends of RMB0.10 (including tax) for each ordinary share to all shareholders.
- The Company announced that the domestic power generation in the first half of 2019 decreased by 6.15% year-on-year.
- The Company publicly issued 3-year corporate bonds of RMB1 billion to qualified investors.

AUGUST

- The Company announced its interim results for the year of 2019. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB3,820 million, representing an increase of 79.11% as compared to the corresponding period of the previous year.
- The Company held global investor telephone conferences for its interim results for the year of 2019.

SEPTEMBER

- The Company successfully held the 2019 Jiangsu Rudong Offshore Wind Power Investor Reverse Roadshow.
- The Company announced and paid the interest of 3+N years and 5+N years perpetual corporate bonds issued in 2017 for the period from 25 September 2018 to 24 September 2019.
- The Company announced and paid the interest of 10-year corporate bonds issued in 2018 for the period from 10 September 2018 to 9 September 2019.

OCTOBER

- The Company announced that its total domestic power generation for the first three quarters of 2019 recorded a decrease of 7.52% year-on-year.
- The Company announced its results for the first three quarters of 2019. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB5,389 million, representing an increase of 170.95% as compared to the corresponding period of the previous year.
- The Company held global investor telephone conferences for its results for the three quarters in 2019.

NOVEMBER

- The Company announced payment of interest on its 3-year corporate bonds issued in 2017 for the period from 6 November 2018 to 5 November 2019.

DECEMBER

- The Company was honored as China Securities Golden Bauhinia "Outstanding Contribution Enterprise for the 70th Anniversary of the People's Republic of China".
- Mr. HUANG Lixin, chief accountant of the Company, won China Securities Golden Bauhinia "CFO of the Year Award".
- Mr. HUANG Chaoquan, secretary to the Board of the Company, won "Most Innovative Secretary to the Board" at the 15th Golden Roundtable Forum of Chinese Board of Listed Companies Forum.



OVERVIEW

FINANCIAL HIGHLIGHTS

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

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (Note 4)

	Year ended 31 December				
	2015	2016	2017	2018	2019
OPERATING REVENUE	128,904,873	113,814,236	152,459,444	169,550,624	174,009,401
Profit Before Income Tax Expense	22,958,050	13,813,138	2,801,733	1,973,147	3,119,460
Income Tax Expense	(5,698,943)	(3,465,151)	(1,217,526)	(643,173)	(2,011,255)
Profit After Income Tax Expense	17,259,107	10,347,987	1,584,207	1,329,974	1,108,205
Attributable To:					
– Equity Holders of the Company	13,651,933	8,520,427	1,579,836	734,435	766,345
– Non-Controlling Interests	3,607,174	1,827,560	4,371	595,539	341,860
Basic Earnings Per Share (RMB/Share)	0.94	0.56	0.10	0.03	0.01
Diluted Earnings Per Share (RMB/Share)	0.94	0.56	0.10	0.03	0.01

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION (Note 5)

	As at 31 December				
	2015	2016	2017	2018	2019
Total assets	308,866,354	314,839,739	396,589,511	419,903,311	428,250,063
Total liabilities	(207,172,665)	(212,653,002)	(288,974,907)	303,781,641	297,871,017
Net assets	101,693,689	102,186,737	107,614,604	116,121,670	130,379,046
Equity holders of the Company	84,141,948	86,002,995	87,641,566	94,435,418	108,803,735
Non-controlling interests	17,551,741	16,183,742	19,973,038	21,686,252	21,575,311

Notes:

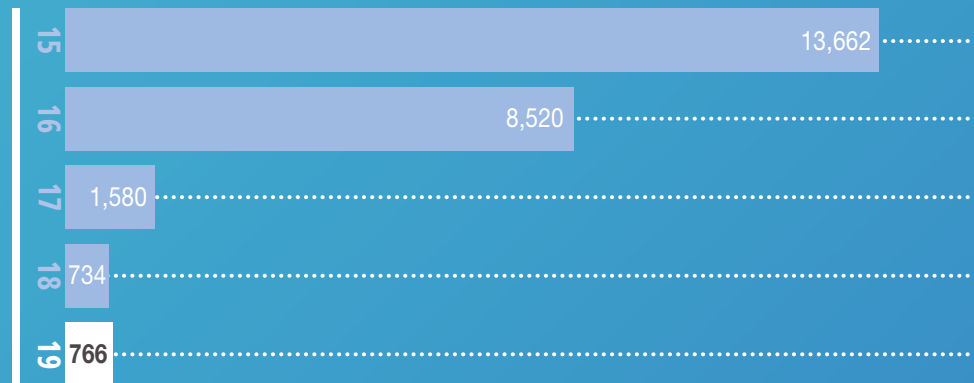
- As a result of the adoption of IFRS 15, *Revenue from contracts with customers*, with effect from 1 January 2018, the Company and its subsidiaries have changed its accounting policies in respect of revenue recognition. In accordance with the transitional provisions of the standard, the changes in accounting 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 2015, 2016 and 2017 are derived from the historical financial statements of the Company. The results for the years ended 31 December 2018 and 2019 are set out on pages 112 to 114. 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 2015, 2016 and 2017 are derived from the historical financial statements of the Company. The consolidated statements of financial position as at 31 December 2018 and 2019 are set out on pages 115 to 117. All such information is extracted from the financial statements prepared under IFRS.

PROFIT ATTRIBUTABLE TO EQUITY HOLDERS OF THE COMPANY UNDER IFRS

For the years ended 31 December



RMB million

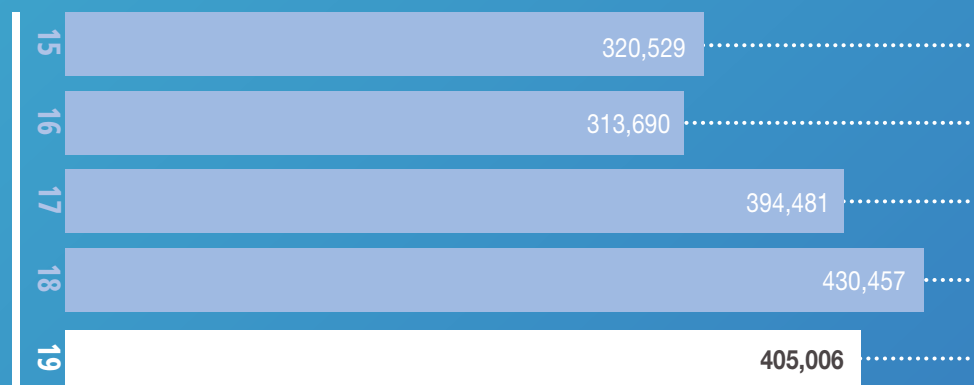


DOMESTIC POWER GENERATION

For the years ended 31 December



Thousand KWH



GENERATION CAPACITY ON AN EQUITY BASIS

As at 31 December



MW



OVERVIEW

LETTER TO SHAREHOLDERS



Zhao Keyu
Chairman

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.



Dear Shareholders,

In 2019, the Company proactively adapted to the requirements of energy transformation reform and market-oriented reform of power by implementing the green transformation strategy. Faced with a complex business environment, the Company overcame difficulties and forged ahead, robustly pushed forward various tasks, achieving annual business targets with sound results and continuing to fulfil its responsibility of providing sufficient, reliable and environmentally-friendly power. In 2019, the Company achieved consolidated operating revenue of RMB174.009 billion, representing a year-on-year increase of 2.63%, and net profit attributable to the equity holders of the Company of RMB766 million, representing a year-on-year increase of 4.34%.

In 2019, the Company's safe and clean production was stable in general. Equipment management improved, and energy efficiency of generating units increased. The Company continued to push forward the development of clean energy projects, constantly optimized the thermal power structure, and made headway in structural adjustments; strengthened power supply marketing management, striving to consolidate and increase its market share; continued to optimize coal procurement strategies, significantly reducing fuel costs; actively explored and optimized the capital structure to enhance the risk prevention and control capabilities and improve its image in the capital market.

OVERVIEW

LETTER TO SHAREHOLDERS

In 2019, the Company was honored as China Securities Golden Bauhinia “Outstanding Contribution Enterprise for the 70th Anniversary of the People’s Republic of China”. Mr. HUANG Lixin, chief accountant of the Company, won Golden Bauhinia “CFO of the Year Award”. Mr. HUANG Chaoquan, secretary to the Board of the Company, won “Most Innovative Secretary to the Board” at the 15th Golden Roundtable Forum of Boards of Chinese Listed Companies.

To allow all shareholders to better share the development results of the Company, the Company has decided to further increase the ratio of cash dividend to investors from 2018 to 2020, with in principle, the profit distributed in cash annually not less than 70% of the distributable profit in the consolidated statement realized in the current year and the dividend per share not less than RMB0.1. The Company’s Board of Directors has passed a resolution recommending that the profit distribution plan for 2019 be: a cash dividend of RMB0.135 (including tax) shall be distributed to all shareholders of the Company. The distribution plan will be submitted to the 2019 Annual General Meeting of the Company for consideration.

In 2020, the Company will continue to ride the overall trend of national economy and energy and power development in the new era, and adhere to the requirements and philosophy of high-quality development. Based on safety and environmental protection, centring on quality efficiency, and driven by reform and innovation, we will focus on preventing and controlling risks and improving quality and efficiency. We will strengthen scientific and technological innovation, pay more attention to adjusting the structure and optimizing layout, consolidate the leading advantage of clean and efficient conventional energy and optimize the development of coal-fired power to be the leader in clean and efficient coal-fired power. We will vigorously develop clean energy and become a leader in offshore wind power. We will pay more attention to improving the quality of assets, improve the profitability of existing assets, and intensify the efforts in “dealing with zombie enterprises and enterprises with difficulties” to further enhance the Company’s core competitiveness and market value, striving to build an international leading listed power generation company.



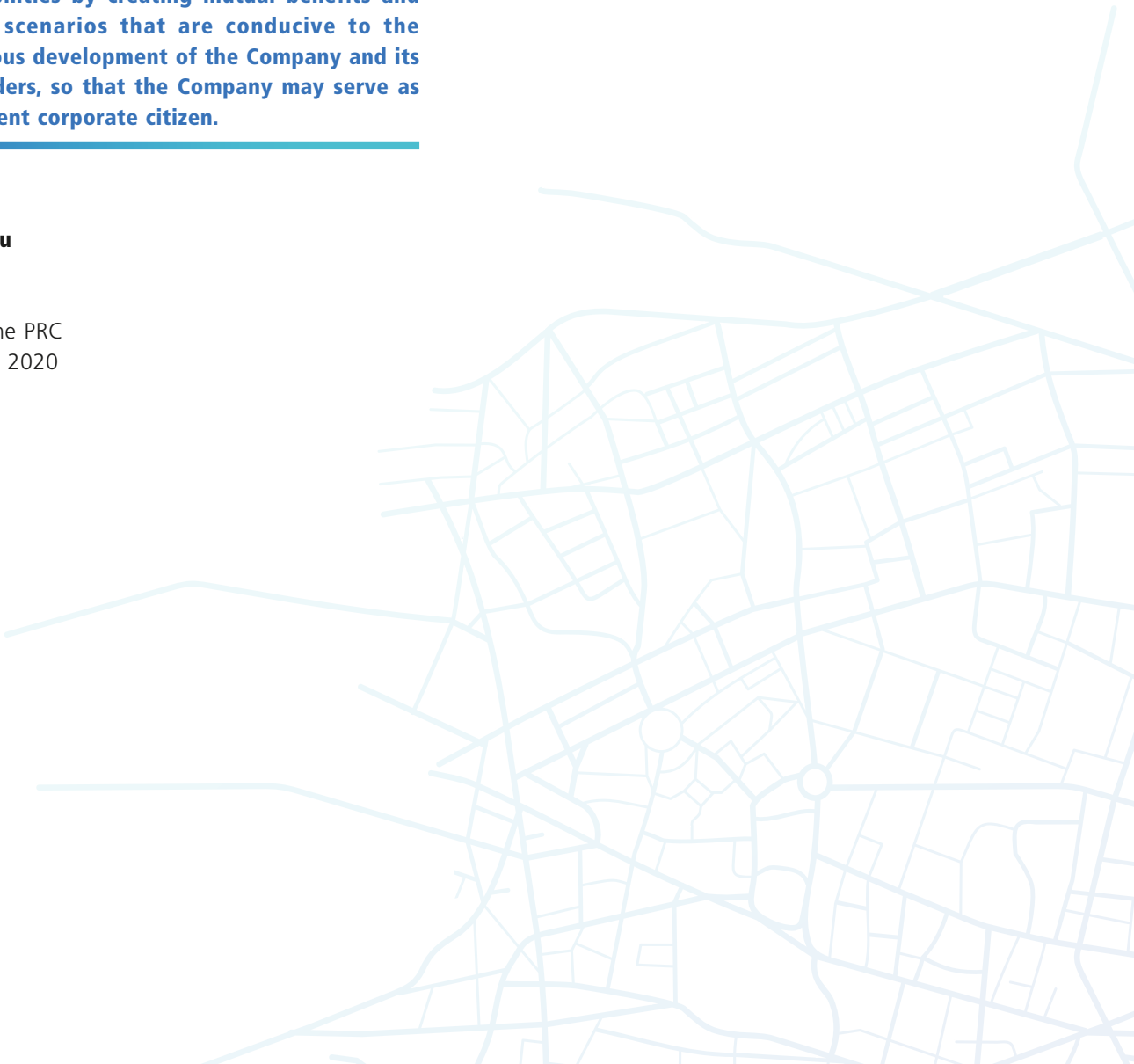
Being a responsible enterprise, the Company insists on supporting the continued enhancement of our corporate competitive edges through a responsible approach; insists on duly performing our operational responsibilities to provide our shareholders with long-term, stable and increasing returns; continues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



Zhao Keyu

Chairman

Beijing, the PRC
31 March 2020



A warm, intimate photograph of a woman and a young girl sitting together on a bed. The woman, wearing a plaid headscarf and a matching scarf, is holding a large, brown, textured gift box. She is looking down at the box with a gentle smile. The young girl, with her hair in braids and wearing a white lace-trimmed top with blue floral patterns, is resting her chin on her hands and looking up at the woman with a joyful expression. The background is softly blurred, showing a window with light streaming in, creating a cozy and heartwarming atmosphere.

**HUANENG POWER
TOWARDS A BETTER
FUTURE TO THE
CUSTOMERS WE SERVE**

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 2019, the Company had a controlled installed capacity of 106,924 MW and an equity-based installed capacity of 93,676 MW, of which more than 16.92% 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 cities within China; the Company has a wholly owned power enterprise located in Singapore, which is one of the biggest listed power company in Singapore. Huaneng Shandong (Hong Kong) Investment Co., Ltd., ("Hong Kong Investment"), a subsidiary of the Company, owns a joint venture, Huaneng Shandong Ruyi (Hong Kong) Energy Co., Ltd. ("Hong Kong Energy"), and Hong Kong Energy owns a wholly-owned operating power company in Pakistan subsidiary.

For the year ended 31 December 2019, the operating revenue of the Company amounted to RMB174,009 million, representing an increase of 2.63% over the same period of last year. The net profit attributable to equity holders of the Company was RMB766 million, representing an increase of 4.34% over the same period of last year; the earnings per share was RMB0.01.



OVERVIEW

MANAGEMENT'S DISCUSSION AND ANALYSIS

A. OPERATING RESULTS

1. 2019 operating results

The power generation of the Company's domestic power plants for the year ended 31 December 2019 are as listed below (in billion KWh):

Region	Electricity generated		Electricity sold	
	2019	Change	2019	Change
Heilongjiang Province	13.972	4.28%	13.082	4.14%
Coal-fired	12.655	3.04%	11.788	2.81%
Wind-power	1.186	14.11%	1.164	14.07%
PV	0.131	69.93%	0.130	71.40%
Jilin Province	10.390	3.36%	9.793	3.04%
Coal-fired	9.039	3.39%	8.495	3.06%
Wind-power	1.019	4.55%	0.990	4.26%
Hydro-power	0.042	-45.39%	0.041	-44.97%
PV	0.061	55.55%	0.060	57.75%
Biomass power	0.229	4.29%	0.207	3.74%
Liaoning Province	19.163	-1.97%	17.842	-1.79%
Coal-fired	18.599	-2.03%	17.285	-1.86%
Wind-power	0.376	7.42%	0.374	7.48%
Hydro-power	0.029	-51.50%	0.028	-51.65%
PV	0.160	2.95%	0.156	3.44%
Inner Mongolia	0.220	-9.28%	0.218	-9.29%
Wind-power	0.220	-9.28%	0.218	-9.29%
Hebei Province	12.911	-3.81%	12.061	-4.29%
Coal-fired	12.638	-3.71%	11.813	-4.08%
Wind-power	0.220	-8.90%	0.196	-15.35%
PV	0.054	-5.63%	0.053	-4.09%
Gansu Province	11.432	-3.29%	10.841	-3.38%
Coal-fired	9.391	-4.36%	8.859	-4.46%
Wind-power	2.041	2.04%	1.982	1.76%
Ningxia	0.023	4.81%	0.022	5.38%
PV	0.023	4.81%	0.022	5.38%
Beijing	8.464	-0.67%	8.041	-0.56%
Coal-fired	1.456	-13.96%	1.291	-13.87%
Combined Cycle	7.008	2.62%	6.750	2.47%
Tianjin	6.941	-7.50%	6.523	-7.37%
Coal-fired	5.401	-6.76%	5.028	-6.55%
Combined Cycle	1.537	-10.02%	1.493	-10.03%
PV	0.003	5.69%	0.003	1.92%
Shanxi Province	11.364	4.11%	10.594	3.91%
Coal-fired	9.095	3.27%	8.387	3.00%
Combined Cycle	2.118	4.17%	2.061	4.26%
PV	0.152	99.93%	0.146	92.63%

Region	Electricity generated		Electricity sold	
	2019	Change	2019	Change
Shandong Province	85.939	-12.04%	83.267	-9.15%
Coal-fired	84.747	-12.16%	82.111	-9.26%
Wind-power	0.780	-6.63%	0.748	-4.73%
PV	0.412	7.33%	0.408	7.88%
Henan Province	22.009	-18.71%	20.735	-18.74%
Coal-fired	21.098	-16.28%	19.866	-16.14%
Combined Cycle	0.424	-75.77%	0.413	-75.87%
Wind-power	0.463	372.13%	0.431	381.82%
PV	0.025	-1.72%	0.024	-3.17%
Jiangsu Province	39.482	-7.43%	37.387	-7.56%
Coal-fired	33.188	-4.64%	31.257	-4.59%
Combined Cycle	4.514	-24.88%	4.426	-24.88%
Wind-power	1.664	-4.76%	1.590	-6.54%
PV	0.117	25.82%	0.115	26.86%
Shanghai	17.606	-3.16%	16.636	-3.20%
Coal-fired	15.584	-4.54%	14.664	-4.61%
Combined Cycle	2.022	8.98%	1.972	8.79%
Chongqing	9.903	-0.48%	9.228	0.05%
Coal-fired	8.293	-3.10%	7.659	-2.72%
Combined Cycle	1.377	1.25%	1.342	1.17%
Wind-power	0.233	628.65%	0.227	840.19%
Zhejiang Province	25.745	-4.97%	24.707	-4.98%
Coal-fired	25.076	-4.86%	24.052	-4.86%
Combined Cycle	0.609	-9.58%	0.596	-9.68%
PV	0.060	-3.33%	0.059	-2.85%
Hubei Province	20.032	14.35%	18.840	14.98%
Coal-fired	19.253	15.04%	18.078	15.33%
Wind-power	0.577	25.90%	0.567	43.05%
Hydro-power	0.180	-40.43%	0.174	-40.73%
PV	0.022	-0.25%	0.022	-0.33%
Hunan Province	11.355	-0.48%	10.636	-0.56%
Coal-fired	10.466	-0.41%	9.759	-0.50%
Wind-power	0.528	-3.15%	0.522	-3.06%
Hydro-power	0.335	3.18%	0.329	3.23%
PV	0.027	-17.10%	0.026	-15.58%
Jiangxi Province	20.756	-1.66%	19.856	-1.65%
Coal-fired	20.171	-2.65%	19.285	-2.66%
Wind-power	0.585	52.02%	0.571	51.81%
Anhui Province	5.922	-3.72%	5.640	-3.96%
Coal-fired	5.536	-4.15%	5.257	-4.52%
Wind-power	0.301	1.12%	0.298	2.84%
Hydro-power	0.085	10.08%	0.085	10.55%

OVERVIEW

MANAGEMENT'S DISCUSSION AND ANALYSIS

Region	Electricity generated		Electricity sold	
	2019	Change	2019	Change
Fujian Province	11.048	-11.58%	14.213	20.45%
*Coal-fired	11.036	-11.59%	14.201	20.48%
PV	0.012	-1.35%	0.012	-3.95%
Guangdong Province	22.380	-12.74%	21.396	-12.81%
Coal-fired	22.358	-12.75%	21.374	-12.82%
PV	0.022	0.31%	0.022	-0.62%
Guangxi	0.388	14.53%	0.368	13.04%
Combined Cycle	0.273	-19.38%	0.261	-19.94%
Wind-power	0.115	-	0.107	-19.94%
Yunnan Province	4.358	-2.07%	4.006	-3.38%
Coal-fired	3.707	-4.59%	3.373	-6.21%
Wind-power	0.601	6.43%	0.584	6.33%
Hydro-power	0.050	-	0.049	-
Guizhou Province	0.217	9.94%	0.212	9.35%
Wind-power	0.216	9.46%	0.212	9.35%
PV	0.001	-	0	-
Hainan Province	12.983	-0.47%	12.036	-0.76%
Coal-fired	12.496	-1.10%	11.559	-1.42%
Combined Cycle	0.174	626.11%	0.169	633.43%
Wind-power	0.098	0.91%	0.096	0.64%
Hydro-power	0.110	-51.86%	0.108	-52.05%
PV	0.105	75.32%	0.104	74.74%
Total	405.006	-5.91%	388.182	-4.38%

* According to the requirements of relevant policies, as Huaneng Fujian Luoyuan Power Plant (which is owned by the Company) acts as an emergency backup power source, the scope of statistics has not included its internal coal-fired installed capacity nor its volume of power generation. Since that power plant began to generate power revenue from the first quarter of 2019, the Company's electricity sales in Fujian Province was greater than the power generation.

The decrease in the Company's power generation was mainly attributable to the following factors: (1) the growth rate of the electricity consumption nation-wide in 2019 showed a significant decline compared to that of the previous year; (2) wind-power, nuclear power and hydro-power generation had increased substantially, crowding out the space for growth in thermal power generation; and (3) the power generation experienced a large negative growth in areas like Guangdong, Henan, Shandong, Jiangsu, Zhejiang and other regions, due to factors including decline in the demand for power, limitations on coal consumptions, and the significant increase in power supply from external source.

For the year ended 31 December 2019, the accumulated power generation of Tuas Power Ltd., the Company's wholly owned subsidiary in Singapore, accounted for a market share of 20.7%, representing a decrease of 0.4 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 2019 was RMB417.00 per MWh, decreased by RMB1.48 per MWh from last year (while average tariff (exclusive of taxes) for the same period increased by RMB6.81 per MWh to RMB366.58 per MWh). SinoSing Power's average tariff for 2019 was RMB636.24 per MWh, representing a decrease by 1.93% from last year.

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 5.77% to RMB223.22 per MWh from last year.

Combining the forgoing factors, for the year ended 31 December 2019, the Company recorded an operating revenue of RMB174.009 billion, representing an increase of 2.63% from RMB169.551 billion of last year, and the net profit attributable to equity holder of the company was RMB0.766 billion, representing an increase of 4.34% from RMB0.734 billion of last year. For the year ended 31 December 2019, the net profit attributable to equity holders of the Company

from domestic operations was RMB0.949 billion, representing a decrease of RMB0.480 billion from RMB1.429 billion for the same period last year. The decrease was primarily attributable to increased operating profit due to decline in fuel prices and increase in electricity prices (exclusive of taxes), year-on-year increase in long-term asset impairment losses, and increase of actual tax rate because of unrecognized deferred tax assets under relevant rules. The net loss attributable to equity and perpetual corporate bonds holders of the Company from its operations in Singapore was RMB477 million, representing a decrease of loss of RMB218 million from RMB695 million for the same period last year, which is largely due to loss of RMB320 million by Tuas Power from disposal of fuels and provision for falling prices last year. The operations in Pakistan was included in the consolidated statement of the Company as of 31 December 2018, and its equity profit in 2019 was RMB294 million.

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 2019, the consolidated operating revenue of the Company and its subsidiaries amounted to RMB174.009 billion, representing an increase of 2.63% from RMB169.551 billion for the year ended 31 December 2018. The operating revenue from domestic operations of the Company decreased by RMB1.674 billion over the same period of last year, while the operating revenue generated from newly acquired entities and newly operated generating units was RMB3.189 billion.

The operating revenue from the operations of the Company in Singapore increased by RMB1.324 billion over the same period of last year, which was mainly attributed to the aggressive competitive strategy adopted by the Company in Singapore and the increased on-grid tariff compared to the same period of last year. The operating revenue from the operations of the Company in Pakistan was RMB4.808 billion.

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Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2019	2018	Change
Heilongjiang Province			
Coal-fired	390.22	393.28	-0.78%
Wind-power	517.30	516.82	0.09%
PV	703.98	750.90	-6.25%
Jilin Province			
Coal-fired	383.72	385.18	-0.38%
Wind-power	509.88	518.74	-1.71%
Hydro-power	417.48	426.74	-2.17%
PV	789.62	834.14	-5.34%
Biomass power	749.98	754.58	-0.61%
Liaoning Province			
Coal-fired	400.36	398.85	0.38%
Wind-power	523.50	572.25	-8.52%
Hydro-power	366.41	330.00	11.03%
PV	892.83	898.76	-0.66%
Inner Mongolia			
Wind-power	441.31	461.87	-4.45%
Hebei Province			
Coal-fired	362.71	378.05	-4.06%
Wind-power	512.27	522.09	-1.88%
PV	734.80	801.90	-8.37%
Gansu Province			
Coal-fired	303.30	289.85	4.64%
Wind-power	381.33	403.12	-5.41%
Ningxia			
PV	801.85	805.11	-0.40%
Beijing			
Coal-fired	461.00	463.40	-0.52%
Combined Cycle	640.10	667.36	-4.09%
Tianjin			
Coal-fired	371.28	397.46	-6.59%
Combined Cycle	684.92	708.05	-3.27%
PV	874.51	881.64	-0.81%
Shanxi Province			
Coal-fired	318.55	326.40	-2.41%
Combined Cycle	667.58	684.65	-2.49%
PV	860.36	908.91	-5.34%
Shandong Province			
Coal-fired	407.28	404.01	0.81%
Wind-power	600.76	564.46	6.43%
PV	855.00	862.56	-0.88%

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2019	2018	Change
Henan Province			
Coal-fired	363.89	349.86	4.01%
Combined Cycle	1,202.96	640.53	87.81%
Wind-power	602.96	551.34	9.36%
PV	375.77	380.00	-1.11%
Jiangsu Province			
Coal-fired	383.08	438.53	-12.65%
Combined Cycle	619.77	590.83	4.90%
Wind-power	730.35	724.53	0.80%
PV	902.65	929.01	-2.84%
Shanghai			
Coal-fired	400.91	411.76	-2.63%
Combined Cycle	804.57	848.25	-5.15%
Chongqing			
Coal-fired	405.74	412.66	-1.68%
Combined Cycle	734.49	746.10	-1.56%
Wind-power	608.77	615.26	-1.06%
Zhejiang Province			
Coal-fired	416.57	418.61	-0.49%
Combined Cycle	951.91	867.83	9.69%
PV	1,075.33	1,054.58	1.97%
Hubei Province			
Coal-fired	421.50	422.40	-0.21%
Wind-power	620.52	630.28	-1.55%
Hydro-power	376.60	381.98	-1.41%
PV	880.00	887.76	-0.87%
Hunan Province			
Coal-fired	451.70	463.72	-2.59%
Wind-power	604.75	610.84	-1.00%
Hydro-power	353.05	376.07	-6.12%
PV	896.94	907.78	-1.19%
Jiangxi Province			
Coal-fired	415.37	420.96	-1.33%
Wind-power	606.28	612.62	-1.04%
Anhui Province			
Coal-fired	370.68	380.70	-2.63%
Wind-power	610.00	613.38	-0.55%
Hydro-power	423.31	384.40	10.12%
Fujian Province			
Coal-fired	403.49	400.15	0.83%
PV	979.78	985.72	-0.60%

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Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2019	2018	Change
Guangdong Province			
Coal-fired	428.00	415.14	3.10%
PV	976.77	986.49	-0.99%
Guangxi Province			
Coal-fired	647.57	547.20	18.34%
Wind-power	607.75	–	N/A
Yunnan Province			
Coal-fired	462.29	514.50	-10.15%
Wind-power	475.62	470.14	1.17%
Hydro-power	245.39	–	N/A
Guizhou Province			
Wind-power	593.15	608.00	-2.44%
Hainan Province			
Coal-fired	439.63	441.68	-0.46%
Combined Cycle	680.48	1,565.26	-56.53%
Wind-power	606.45	612.15	-0.93%
Hydro-power	392.71	402.62	-2.46%
PV	897.12	958.71	-6.42%
Domestic total	417.00	418.48	-0.35%
SinoSing Power	636.24	648.74	-1.93%

Note: the tariff of coal-fired plants in Shanghai, Zhejiang, Jiangsu, Chongqing, Henan and Hainan consists of on-grid settlement price and capacity subsidy income; and the considerable change of coal-fired tariff in Henan and Hainan is mainly due to corresponding change in capacity tariff.

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 2019, the tax and levies on operations of the Company and its subsidiaries were RMB1.833 billion, representing an increase of RMB44 million from RMB1.789 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 RMB17 million.

2.2 Operating expenses

For the year ended 31 December 2019, the total operating expenses of the Company and its subsidiaries was RMB159.799 billion, representing an increase of 1.36% from the same period last year. The operating expenses in domestic operations of the Company decreased by RMB2.180 billion, or 1.50%, from the same period last year, of which the newly acquired entities and the new generating units accounted for RMB2.397 billion; the costs attributable to the existing entities decreased by RMB4.577 billion, which was primarily attributable to the reduced fuel costs for domestic operations in China.

The operating expenses from the operations in Singapore increased by RMB1.126 billion, or 9.10%, from the same period last year, which was mainly due to the increase in the cost of power purchase as a result of the increase in electricity sales and the increased natural gas cost as a result of the rise of oil price globally. The operating expenses from the operations in Pakistan was RMB3.205 billion.

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 2019, fuel costs of the Company and its subsidiaries decreased by 7.61% to RMB97.687 billion from RMB105.736 billion for the year ended 31 December 2018. The fuel costs from domestic operations of the Company and its subsidiaries decreased by RMB8.463 billion, which was primarily attributable to the decline of fuel price. The fuel costs of the newly acquired entities and new generating units were RMB1.331 billion and the fuel costs of the existing generating units decreased by RMB9.794 billion from same period last year. Fuel costs in Singapore increased by RMB413 million from the same period last year, mainly due to increased fuel costs arising from increased natural gas prices. For the year ended 31 December 2019, the average price (inclusive of taxes) of natural fuel coal consumed of the Company and its domestic subsidiaries was RMB505.12 per ton, representing a 8.38% decrease from the RMB551.35 per ton for the year ended 31 December 2018. The fuel cost per unit of power sold by the Company's domestic power plants decreased by 5.77% to RMB223.22/MWh from RMB236.89/MWh in 2018.

2.2.2 Maintenance

For the year ended 31 December 2019, the maintenance expenses of the Company and its subsidiaries amounted to RMB4.606 billion, representing an increase of RMB213 million from RMB4.393 billion for the year ended 31 December 2018. The maintenance expenses of the Company's domestic operations increased by RMB227 million compared to the same period last year. The maintenance expenses of operations in Singapore decreased by RMB14 million compared to the same period last year.

2.2.3 Depreciation

For the year ended 31 December 2019, depreciation expenses of the Company and its subsidiaries increased by 6.83% to RMB21.865 billion, compared to RMB20.466 billion in the year ended 31 December 2018; the increase is mainly due to new generating units put into operation,

and amortization of land use right reclassified from other expenses to depreciation due to the adoption of IFRS16 leases. The depreciation expenses of domestic operations increased by RMB1.379 billion compared to the same period last year, of which the depreciation costs incurred by the newly acquired entities and new generating units was RMB0.652 billion. The depreciation expenses of the operations in Singapore increased by RMB12 million compared to the same time last year.

2.2.4 Labour

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 2019, the labour costs of the Company and its subsidiaries amounted to RMB13.515 billion, representing an increase of RMB1.669 billion from RMB11.845 billion for the year ended 31 December 2018. This is mainly attributable to the growth in salaries resulting from the increase in the Company's operating results, as well as the increase in social insurance, housing funds, employee welfare, and training costs, etc., which are in line with the increase in the salaries. Labor costs for Singapore operations increased by RMB32 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 2019, other operating expenses of the Company and its subsidiaries was RMB22.126 billion, representing an increase of RMB6.920 billion from RMB15.206 billion for the year ended 31 December 2018. The other operating expenses from the Company's domestic operations increased by RMB3.055 billion due to increase in provision for assets impairment. This is mainly attributable to the expected shut down

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of plants by 2020 according to certain industry policies or exchange of capacity quota for Zhanhua Thermal Power, Huaneng Yushe Power, Jining New Energy and Shidongkou I; estimated worse operating results due to the combined effects of decrease in power generation volume and increase in fuel prices for Qufu Co-generation, Hegang Power, Xinhua Power and Diandong Yuwang; as well as the expected disposals of certain assets in Diandong coal mine and some of other power plants. Other operating expenses of the newly acquired entities and new generating units were RMB0.165 billion. Other operating expenses of the operations in Singapore increased by RMB682 million compared to the same period last year. Other operating expenses of the operations in Pakistan was RMB3.183 billion.

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 2019, the interest expenses of the Company and its subsidiaries were RMB10.763 billion, representing an increase of 2.63% from RMB10.486 billion for the year ended 31 December 2018. The interest expenses from the Company's domestic operations decreased by RMB0.567 billion. The interest expenses from the newly acquired entities and new generating units were RMB0.492 billion and those incurred by the existing entities in China decreased by RMB1.059 billion, which is largely attributable to decrease of funding costs of the Company generally. The interest expenses of Singapore operations increased by RMB32 million compared to the same period last year. The interest expenses of Pakistan operation increased by RMB811 million.

2.3.2 Net exchange differences and bank charges

For the year ended 31 December 2019, the Company and its subsidiaries recorded a net loss of RMB210 million from net exchange difference and bank charges, representing an increase of RMB49 million compared with the net loss of RMB161 million for the year ended 31 December 2018.

The operations in Singapore recorded net loss of RMB37 million in exchange losses and bank charges, representing an increase of RMB12 million from the net loss of RMB25 million for the year ended 31 December 2018, mainly due to the strengthened exchange rate of U.S. dollar against Singapore dollar. The operations in Pakistan recorded net loss of RMB62 million in exchange losses and bank charges in 2019.

2.4 Share of profits less losses of associates and joint ventures

For the year ended 31 December 2019, the share of profits less losses of associates and joint ventures was RMB1.186 billion, representing a decrease of RMB637 million from RMB1.823 billion of last year, mainly due to inclusion of operations in Pakistan in the consolidated statements since 31 December 2018, and increased profit of associates and joint ventures.

2.5 Income tax expenses

For the year ended 31 December 2019, the Company and its subsidiaries recognized income tax expenses of RMB2.011 billion, representing an increase of RMB1.368 billion from RMB0.643 billion for the year ended 31 December 2018. The income tax expenses for the domestic operations increased by RMB1.319 billion primarily attributable to increase in assets impairment loss and unrecognized deferred income tax assets under relevant rules. The income tax expenses of the operations in Singapore increased by RMB46 million.

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

For the year ended 31 December 2019, the Company and its subsidiaries achieved a net profit of RMB1.108 billion, representing a decrease of RMB0.222 billion, or 16.69%, from RMB1.330 billion for the year ended 31 December 2018; the net profit attributable to equity holders of the Company was RMB0.766 billion, representing an increase of RMB0.032 billion from RMB0.734 billion for the year ended 31 December 2018.

The profit attributable to equity holders of the Company from its domestic operations decreased by RMB480 million, mainly because of increased operating profit from domestic operations due to decline in fuel prices and the increase in electricity tariffs (exclusive taxes), coupled with increase in long-term asset impairment losses and rise of actual tax rate due to unrecognized deferred tax assets under relevant rules. The net loss attributable to equity holders of the Company from its operations in Singapore was RMB477 million, representing a decrease of RMB218 million from same period last year. This was mainly due to disposal of fuel oil and loss of RMB320 million from provision of price reduction by Tuas Power last year. The operations in Pakistan were included in the consolidated statement since 31 December 2018, and its profit attributable to equity holders of the Company in 2019 was RMB294 million.

The Company's recorded profit from its non-controlling interests decreased to RMB342 million for the year ended 31 December 2019 from RMB596 million for the year ended 31 December 2018, mainly attributable to reduced profitability 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 2019, consolidated total assets of the Company and its subsidiaries were RMB428.250 billion, representing an increase of 1.99% from RMB419.903 billion as of 31

December 2018; total assets of the domestic operations increased by RMB6.059 billion to RMB384.959 billion, including a net increase of RMB8.250 billion in non-current assets, which is mainly attributable to capital expenditure on construction projects.

As of 31 December 2019, total assets of the operations in Singapore were RMB28.921 billion, representing an increase of RMB1.663 billion from the same period last year. Non-current assets increased by RMB1.511 million to RMB25.324 billion. Total assets of the operations in Pakistan were RMB14.370 billion, representing an increase of RMB0.583 billion from the same period last year. Non-current assets decreased by RMB396 million from last year to RMB10.089 billion.

2.7.2 Comparison of liability items

As of 31 December 2019, consolidated total liabilities of the Company and its subsidiaries were RMB297.871 billion, representing a decrease of 1.95% from RMB303.782 billion as of 31 December 2018.

As of 31 December 2019, interest-bearing debts of the Company and its subsidiaries totaled RMB244.884 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). The interest-bearing debts denominated in foreign currencies amounted to RMB1.812 billion.

As of 31 December 2019, the total liabilities of the operations in Singapore were RMB16.946 billion, representing an increase of 10.69% from RMB15.309 billion as of 31 December 2018. As of 31 December 2019, the total liabilities of the operations in Pakistan were RMB11.267 billion, representing an increase of 0.98% from RMB11.158 billion as of 31 December 2018.

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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 2019, including increase of impact from issuances of China Life Financing Plan, PICC Financing Plan and unsecured medium-term notes with an aggregate face value of RMB15 billion during 2019 (recognized as other equity instrument), a decrease of post-tax impact of RMB55 million arising from fair value changes of

other equity investments held by the Company and its subsidiaries, an increase of post-tax impact of RMB369 million arising from changes in other comprehensive income of the Company's investees accounted for under equity method, an increase of post-tax impact of RMB133 million arising from fair value changes of cash flow hedge instruments, an increase of RMB286 million from translation difference of the financial statements of foreign operations. Non-controlling interests decreased by RMB111 million in 2019.

2.7.4 Major financial position ratios

	2019	2018
Current ratio	0.43	0.45
Quick ratio	0.37	0.38
Ratio of liability to shareholders' equity	2.74	3.22
Multiples of interest earned	1.22	1.13

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	=	$\frac{\text{balance of liabilities as of the year end}}{\text{balance of shareholders' equity} \\ (\text{excluding non-controlling interests}) \text{ as of the year end}}$
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 2019 compared to that of 31 December 2018. The ratio of liabilities to shareholders' equity as of 31 December 2019 decreased compared to that of 31 December 2018 mainly due to the increase in equity at the year end from issue of other equity instrument of face value of RMB15 billion. The multiples of interest earned increased mainly due to increased pre-tax profit for the year ended 31 December 2019.

B. LIQUIDITY AND CASH RESOURCES

1. Liquidity

	For the year ended December 31,		
	2019 <i>RMB billion</i>	2018 <i>RMB billion</i>	Change %
Net cash provided by operating activities	37.324	28.728	29.92
Net cash used in investing activities	-29.034	-20.376	42.49
Net cash provided by/(used in) financing activities	-11.328	-2.243	405.02
Currency exchange impact	0.063	0.026	139.85
Net increase in cash and cash equivalents	-2.975	6.135	-148.48
Cash and cash equivalents as at the beginning of the year	15.418	9.282	66.11
Cash and cash equivalents as at the end of the year	12.443	15.418	-19.30

For the year ended 31 December 2019, net cash provided by operating activities of the Company and its subsidiaries was RMB37.324 billion, representing an increase of 29.92% from last year, mainly attributable to reduced fuel costs, increased electricity tariff and inclusion of operations in Pakistan in the consolidated statements. The net cash provided by operating activities in Singapore was RMB790 million. The net cash provided by operating activities in Pakistan was RMB1,736 million. The net cash used in investing activities was RMB29.034 billion, representing an increase of 42.49% from last year, mainly due to increased expenditure in renewable energy infrastructure in 2019. The net cash used by financing activities was RMB11.328 billion, representing an increase of RMB9.085 billion from the net cash outflow of RMB2.243 billion in last year. This was mainly due to the increase of repayments of loans and bonds issued by the Company and its subsidiaries in 2019 compared to the same period last year. As of 31 December 2019, the cash and cash equivalents of the Company and its subsidiaries denominated in RMB, Singapore dollar and U.S. dollar were RMB11.053 billion, RMB1,243 million and RMB99 million, respectively.

As of 31 December 2019, net current liabilities of the Company and its subsidiaries were approximately RMB80.839 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.

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2. Capital expenditure and cash resources

2.1 Capital expenditure on infrastructure construction and renovation projects

The actual capital expenditure of the Company in 2019 was RMB33.702 billion, which was mainly used for capital construction and renovation expenditures, including RMB3.091 billion for Yancheng Dafeng Renewable Energy, RMB2.521 billion for Shengdong Rudong Offshore Wind Power, RMB2.433 billion for Shandong Power Generation, RMB2.215 billion for Puyang Clean Energy, RMB2.174 billion for Shanxi Comprehensive Energy, RMB1.364 billion for Jiangxi Clean Energy, RMB1.476 billion for Guanyun Clean Energy, RMB1.227 billion for Sheyang New Energy, RMB1.093 billion for Pinghu Offshore Wind Power, RMB1.049 billion for Ruijin Power, RMB955 million for Heilongjiang Power, RMB775 million for Dalian Thermal Power, RMB752 million for Jiangyin Turbine Thermal Power, RMB721 million for Mengcheng Wind Power, RMB564 million for Dongguan Turbine Thermal Power, RMB563 million for Jilin Power, RMB476 million for Abaga Banner Clean Energy, RMB455 million for Dezhou Power Plant, RMB412 million for Anyang Energy, RMB405 million for Shangnan Power Plant, RMB393 million for Lianping Wind Power, RMB330 million for Guigang Clean Energy, RMB325 million for Diandong Yuwang, RMB312 million for Qingdao Thermal Power, RMB301 million for Guanling New energy, RMB284 million for Zhumadian Wind Power, RMB279 million for Luoyuan Power Generation, RMB259 million for Jiuquan Wind Power, RMB256 million for Taiqian Wind Power, RMB230 million for Chaohu Power, RMB186 million for Hainan Power, RMB198 million for Qinbei Power, RMB190 million for Fujian Harbour, RMB181 million for Xiayi Wind

Power, RMB175 million for Yangliuqing, RMB168 million for Mianchi Clean Energy, RMB166 million for Shidongkou I, RMB162 million for Ruzhou Clean Energy, RMB159 million for Heze Dongming New Energy, RMB158 million for Changxing Power plant, RMB148 million for Yueyang Power, RMB139 million for Diandong Energy, RMB136 million for Taicang I, RMB135 million for Yuhuan Power Plant, RMB130 million for Dalian Power Plant, RMB127 million for Wuhan Power, RMB123 million for Yingkou Thermal Power, RMB122 million for Beijing Thermal Power, RMB120 million for Dandong Power Plant, RMB116 million for Shantou Offshore Wind Power, RMB113 million for Yingkou Power Plant, RMB109 million for Huaiyin II, RMB106 million for Jinling Power, RMB106 million for Shidongkou II, RMB106 million for Anyuan Power, and RMB101 million for Nantong Power Plant. Capital expenditure for operations in Singapore was RMB179 million, and capital expenditure for other businesses was RMB2.153 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, while consolidating its leading position as a clean energy producer and efficient producer of conventional energies, 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.

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

(Unit: RMB100 million)

Capital Expenditure Project	Capital Expenditure Plan for 2020	Cash resources arrangements	Financing costs and note on use
Thermal power projects	67.40	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Hydropower projects	0.00	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Wind power projects	315.77	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Coal mining projects	10.28	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Photovoltaic power projects	21.05	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Ports	0.30	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Tuas Power Project	4.46	Including internal cash resources and bank loans	Market interest of Singapore
Technology renovation	55.71	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 2019, the undrawn banking facilities available to the Company and its subsidiaries amount to approximately RMB295.7 billion, which are granted by Bank of China, China Construction Bank and Industrial and Commercial Bank of China.

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The Company completed issuances of unsecured super short-term bonds in 11 installments on March 15, May 10, May 24, June 11, June 14, August 16, September 6, September 20, November 1, November 8 and December 20 of 2019, at principal amount of RMB2 billion, 5 billion, 2 billion, 2 billion, 2 billion, 4 billion, 2 billion, 5 billion, 2 billion and 2 billion, with nominal annual interest rates of 2.4%, 2.3%, 2.3%, 2.4%, 2.4%, 2.2%, 2.2%, 2.15%, 2.09%, 2.0% and 1.8%, respectively. Each installment of the notes was denominated in RMB, issued at par value, and would successively mature in 90 days, 180 days, 90 days, 90 days, 90 days, 60 days, 90 days, 180 days, 90 days, and 60 days from the value date.

The Company issued four tranches of unsecured medium-term notes of RMB2 billion, RMB2 billion, RMB2 billion and RMB4 billion on July 19, October 18, October 25 and November 5, 2019 with coupon rate of 3.55% (MTN01 Tranche I), 3.85% (MTN01 Tranche II), 4.08%, 4.05%, 4.15% (MTN04 Tranche I) and 4.53% (MTN04 Tranche II), respectively. The bonds were denominated in RMB and issued at face value with maturity of three years (MTN01 Tranche I), five years (MTN01 Tranche II), three + N years, three + N years, three + N years (MTN04 Tranche I), and five + N years (MTN04 Tranche II) from the date of issue, respectively.

The Company issued two tranches of unsecured corporate bonds of RMB2.3 billion and RMB1.0 billion on April 23 and July 9, 2019 with coupon rate of 4.7% and 3.55%. The instrument was denominated in RMB and issued at par value with maturity of ten years and three years from the value date, respectively.

As of 31 December 2019, short-term loans of the Company and its subsidiaries were RMB67.119 billion (2018: RMB61.039 billion). Loans from banks were charged at interest rates ranging from 0.00% to 14.58% per annum (2018: 3.30% to 11.51%).

As of 31 December 2019, short-term bonds payable by the Company and its subsidiaries were RMB9.026 billion (2018: RMB11.541 billion).

As of 31 December 2019, the Company and its subsidiaries' long-term loans (including long-term loans due within one year) totaled RMB134.023 billion (2018: RMB150.169 billion), including RMB loans of RMB110.947 billion (2018: 126.844 billion), USD loans of USD1.431 billion (2018: USD1.548 billion), EUR loans of EUR15 million (2018: EUR22 million), SGD loans of SGD2.479 billion (2018: SGD2.472 billion), YEN loans of 2.372 billion yen (2018: 2.482 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 2019, the annual interest rate of long-term bank borrowings is 0.75% to 6.82% (2018: 0.75% to 7.29%).

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 2019, the Company expects to pay a cash dividend of RMB2,119,242,603.47.

2.4 Maturity profile of loans and bonds

Maturity Profile	<i>(RMB100 million)</i>				
	2020	2021	2022	2023	2024
Principal amount planned for repayment	822.90	366.43	225.83	84.42	170.28
Interest amount planned for repayment	77.00	60.90	45.05	35.57	31.34
Total	899.90	427.33	270.88	119.99	201.62

Note: The amount of principle to be paid in 2020 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 is committed to implementing new development initiatives for innovation, coordination, greenness, openness and sharing. The Company will focus on quality and efficient development in accordance with the requirements for clean, low-carbon, safe and efficient energy system. Driven by reform and innovation, safeguarded by institutionalized mechanism and oriented towards supply-side structural reform, the Company strive to grown into an internationally leading public power producer with standardized management, advanced technologies, energy saving and environment-friendly, reasonable operating structure, outstanding operations, sound corporate governance and superior market value.

The Company will implement green conversion strategy in line with requirements of energy transformation and reform, focus on development and acquisition to speed up investment in integrated large-scale clean energy base including wind, solar, coal, power, transmission and offshore wind power base, consider and

implement development with reduced coal-fired power generation, steadily eliminate backward coal-fired power generation, promote orderly improvement and upgrade of coal-fired sector, and increase technological innovation in clean and efficient use of coal to actively build an integrated heating producer. The Company will adapt to the requirements of market-oriented power reforms by implementing business transformation strategy, actively extend its main business from power generation to integrated industrial chain of power and heat generation, peak adjustment, distribution, energy storage, energy conservation and environmental protection, promote integration of the industrial chain, supply chain and value chain, and strive to transform into an integrated energy service provider. The Company will meet the requirements of the intelligent era by implementing digital operation strategies, make steady efforts for construction of smart power plants, industrial Internet, and online operation system, and improve overall market competitiveness. To meet the requirements of development oriented by innovation, the Company will implement talent strategy to lay down solid foundation for its transformation and upgrading towards high-quality development.

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MANAGEMENT'S DISCUSSION AND ANALYSIS

D. TREND ANALYSIS

In 2020 the Chinese government will further its efforts to maintain stability of employment, financial market, foreign trade, foreign and domestic investments, and expectations; continue to improve macro-control measures to be more foresighted, pertinent and effective; focus on continued economic reform to ensure consistent economic growth; and make continued efforts of supply-side reform for quantitative growth as well as steady quality improvement qualitatively with view to promoting high-quality development.

In the electricity market, with comprehensive consideration of international and domestic conditions, industrial and local developments as well as other factors, absent of floods and other extensive, extreme climate changes, it is expected that in 2020, total electricity consumption nationwide will increase by 4% to 5%, newly installed power generation capacity for infrastructure construction will be approximately 120 million kilowatts, and utilization hours of thermal generating units will be 4280 hours, which is generally consistent with those in 2019.

In the coal market, coal supply is expected to steadily increase with approval by competent Chinese authorities of operation of new and existing major coal producers with expected capacity of 100 million tons of coal in 2020. The improved environmental protection and safe production of coal mines and lessened impact of inspections on the normal production of coal mines will also contribute to sufficient coal supply. In 2020, the coal market will generally see its balanced supply and demand move towards a relatively over supply situation, and the thermal coal prices are expected to move further down.

In capital market, the Chinese government will continue to implement proactive fiscal policies and prudent monetary policies in 2020. The prudent monetary policy is expected to be implemented flexibly and appropriately, maintain reasonable and adequate liquidity, and increase monetary credit and social financing in line with economic

development while reduce social financing costs. Accordingly, 2020 is expected to see reasonably sufficient capital supply throughout the year with reduced funding costs.

E. PERFORMANCE OF SIGNIFICANT INVESTMENTS AND THEIR PROSPECTS

The Company acquired 25% equity interest in Shenzhen Energy Group for RMB2.39 billion on 22 April 2003. In 2011, Shenzhen Energy Group divided into a remainder company of the same name and a new company Shenzhen Energy Management Company ("SE Management"), and the Company holds 25% equity interests in each of the two successors. The Company acquired 200 million shares from Shenzhen Energy Corporation ("Shenzhen Energy"), a subsidiary of Shenzhen Energy Group in December 2007. Shenzhen Energy allotted shares with its capital surplus in 2011. In February 2013, Shenzhen Energy merged SE Management through the combination of directional seasoned offering and cash payment to shareholders of SE management, Shenzhen State-owned Assets Administration Commission and the Company. After the merger, the Company held 661 million shares of Shenzhen Energy, representing 25.02% of its equity interests. In 2019, Shenzhen Energy distributed RMB0.5 of cash dividend out of every 10 shares to its shareholders, and the Company held 992 million shares of Shenzhen Energy by 31 December 2019. These investments brought a net profit attributable to the equity and perpetual corporate bonds holders of the Company of RMB400 million for the year ended 31 December 2019 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 RMB144 million for the year ended 31 December 2019 under IFRS. This investment is expected to provide steady returns to the Company.

F. EMPLOYEE BENEFITS

As of 31 December 2019, the Company and its subsidiaries had 58,263 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 2019, the Company provided external guarantees of approximately RMB15.012 billion, of which RMB12.418 billion borrowed by Tuas Power Ltd; RMB1.696 billion borrowed by Huaneng Daqing Thermal Power Limited Company, Daqing Lvyuan Wind Power Generation Limited Company and Huaneng Tongjiang Wind Power Generation Limited Company is guaranteed by Huaneng Heilongjiang Power Generation Limited Company; RMB0.201 billion borrowed by Huaneng Yichun Thermal Power Limited Company is guaranteed by Huaneng Daqing Thermal Power Limited Company; RMB0.697 billion borrowed by Huaneng Shandong Ruyi (Pakistan) Energy (Private) Co., Ltd. is guaranteed by Huaneng Shandong Power Generation Limited Company.

As of 31 December 2019, the details of secured loans of the Company and its subsidiaries were as follows:

- (1) As of 31 December 2019, short-term loans of RMB659 million (2018: RMB461 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.
- (2) As of 31 December 2019, long-term loans of RMB3.586 billion (2018: RMB0.986 billion) of the Company and its subsidiaries were secured by certain property, plant and equipment with net book value of approximately RMB4.913 billion (2018: RMB1.756 billion).
- (3) As of 31 December 2019, long-term loans of approximately RMB7.287 billion (2018: RMB8.938 billion) were secured by future electricity revenue of the Company and its subsidiaries.

As of 31 December 2019, the restricted bank deposits of the Company and its subsidiaries were RMB863 million (2018: RMB430 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.

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MANAGEMENT'S DISCUSSION AND ANALYSIS

I. RISK FACTORS

1. Risks relating to electricity market

The first risk comes from slowdown of electricity growth nationwide. Considering economic conditions at home and abroad as well as implications of new coronavirus outbreak, 2020 is expected to see 4-5% growth of power consumption and 120 million kilowatts new installed capacity nationwide. It is estimated based on the utilization hours in 2019 that the potential of power consumption growth will be fully offset by the power generation capacities of newly installed generating units, making insignificant improvement of the existing oversupply condition in China's power market. The second risk would be the impact of coal consumption restrictions required by certain local governments. In 2020, the total coal consumption in Hebei, Zhejiang, Shanghai, Jiangsu, Shandong and other regions will be continually under constraint, which will have impact on local thermal power generators as before. The third risk would be the gradual decrease of electricity price due to intensified market competition. Market competition will become more intense in 2020 with liberalization of operational electricity market, implementation of the policy to reform on-grid tariffs of coal-fired generating units, and the accelerated formation of the spot market by the Chinese government. The Company may be exposed to the risk from a downward trend of electricity settlement price with ever increased proportion of market traded electricity in its total power generation.

2. Risks relating to environmental protection policies

To mitigate air pollution from emissions, the power plants of the Company have completed ultra-low-emissions renovations which are on par with or exceed applicable national standards, but are still exposed to the risk of sporadic non-compliance with emission requirements due to breakdown of environmental protection facilities. To contain discharge of waste water and by coal mines and ash yards, the Company has arranged renovations

by investment for wastewater treatment, coal yard closure and ash yard treatment in power plants in strategically important regions, while the weakness of existing facilities in some of these plants could subject those plants to environmental risks before completion of the renovation efforts.

3. Risks relating to fuel procurement market

First, the outbreak of the new coronavirus during the Spring Festival caused postponement of coal production, making a significant impact on coal production and transportation. Secondly, as coal production in the three major coal-producing regions of Inner Mongolia, Shanxi, and Shaanxi were further concentrated, the policies, extreme climate change, coal mine accidents and other emergencies occurred in those regions will have more impact on coal supply nationwide. Thirdly, the continued intensive inspection for environmental protection and safety is expected to have certain effect upon coal production in major production regions. Fourthly, the operation of certain new coal chemical projects during 2020 are expected to increase coal conversion in coal production and sourcing regions as well as to need large coal consumption, which will have significant impact on the supply of coal for thermal power generators.

4. Interest rate risks

In terms of RMB debt, the Chinese government is expected in 2020 to continue implementing prudent monetary policy with flexibility and appropriateness, maintain reasonable and sufficient liquidity, promote credit growth and social financing in line with economic development, and reduce social financing costs. The interest rates of money market is expected to continue its downward trend in 2020, as a result of which the Company's comprehensive interest rate on RMB debt would decrease. In terms of foreign currency debt, The cuts of U.S. dollar twice in March 2020 are expected to lower the interest rate of the Company's foreign currency debts which are mainly floating interest rate debts. The fluctuation of interest rates of foreign currency debts, which account for an insignificant proportion of our total debts, interest rate will have limited impact on the Company.

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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 2019, in order to fully implement the requirements of the Hong Kong Stock Exchange’s Environmental, Social and Governance Reporting Guide, 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 2019 will be published on the website of the Company and the website of the Hong Kong Stock Exchange.

(a) CORPORATE GOVERNANCE PRACTICES

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

(I) Enhancing and improving corporate governance

As a public company listed 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 2019, 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

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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. Corporate governance continued to improve.

In 2019, members of the Board, the Supervisory Committee, and special committees of the Company diligently performed their duties and scientifically made decisions, carrying out a series of tasks including the election of the chairman of the Board, personnel changes of directors, supervisors, and senior management, amendments to the Articles of Association, assessment and issuance of overseas debt, and on-site inspections by independent Directors. During the Reporting Period, the Company held seven board meetings, four meetings of the Supervisory Committee, eight meetings of the Audit Committee, one meeting of the Strategy Committee, and one meeting of the Remuneration and Appraisal Committee to consider the Company's major personnel appointment and removal, capital operations, equity and 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.

In 2019, 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 was honored as China Securities Golden Bauhinia "Outstanding Contribution Enterprise for the 70th Anniversary of the People's Republic of China". Mr. HUANG Lixin, chief accountant of the Company,

won Golden Bauhinia "CFO of the Year Award". Mr. HUANG Chaoquan, secretary to the Board of the Company, won "Most Innovative Secretary to the Board" at the 15th Golden Roundtable Forum of Boards of Chinese Listed Companies.

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 managers of various departments and headed by the Board Secretary and the Chief Accountant, which is responsible for examining 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 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 conduct specialized training 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

In 2019, the Company continued to carry out various detailed work on the preparation of financial reports, standardized financial operation and internal control under the principle of acting with honesty and integrity and treating shareholders in a fair manner. 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 order to regulate its financial management, the Company has completed a large amount of specific and detailed work, including:

1. In order to strictly implement the accounting regulations, strictly 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 Provisions on Construction Accounting, the Provisions on Fixed Assets Management, Lists of Fixed Assets and the Provisions on Cost Management. 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 order to safeguard the independence of the listed company, the Company realized the complete separation of the listed company and the controlling shareholder in terms of personnel, assets and finances according to the laws and regulations of the State and the requirements of regulatory rules.
3. 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 the Appraisal of Management of Funds Receipts and Expenses, the Measures on Use and Management of Funds in Large Sums by the Company, the Measures on the Management of Bills of Exchange, the Measures on Management of Fund Raising, the Measures on the Management of Derivative Financial Product Transactions, the Measures on the Management 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

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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 Security Regulation Commission (“CSRC”) and the Shanghai Stock Exchange (“SSE”), and there has not been any violation of rules relating to the use of funds. Moreover, the Company also conducted quarterly checking and clearing with related parties in relation to the operational fund transfers in order to ensure the safety of funds.

(IV) Risk Management and Internal Control

The Board of Directors attaches great importance to management of enterprise risk and internal control, thus the Company establishes a system of risk monitoring & 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 amended the “Comprehensive Approach of Risk Management”, which requires the basic risk control procedures to be applied 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 of 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 Board of Directors has an Audit Committee to identify and evaluate the fraud risk of senior management and the Board of Directors and to form an independent fraud risk assessment report.

In 2019, the Strategy Committee of the Board of Directors held one meeting in total to consider and approve the Company’s Overall Risk Management Report for the Year 2019. In line with the Company’s management process optimization and reform, the Company revised the Comprehensive Approach of Risk Management to further clarify the right of the Strategic Committee for decision-making on the comprehensive risk management of the Company, to emphasize the responsibilities of the Strategic Committee for the Company’s risk management, and to consolidate the foundation of Company’s risk management system, thereby providing a system guarantee for the Company to carry out comprehensive risk management. During the Reporting Period, the Company has complied with the Corporate Governance Code and the relevant provisions on risk management and internal control.

In 2019, 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 has developed sound system rules for five types of operations including development and construction, production and operation, financial assets, comprehensive management and supervision and evaluation, thereby achieving systematic management. In addition, the Company fully collated the potential internal and external risks and various business processes and compiled the Internal Control Handbook, and in the fifth edition of the Internal Control Handbook it sets out detailed provisions for 23 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 standardize the procedures and assessment method of internal control assessments and regulate the procedures and standards for deficiency definition, striving to standardize and regulate its internal control assessments. Each year, the Company evaluates the applicability and 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 building up the internal control environment inside the Company.

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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 2019, 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 clause, which is, implementing the strictest clause 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 (three have yet to be appointed). Of the members of the Ninth Session of the Board of Directors, Mr. Shu Yinbiao is the Chairman and executive director (prior to 30 January 2019, Mr. Cao Peixi); Mr. Huang Jian, Mr. Wang Yongxiang, Mr. Mi Dabin, 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. Yue Heng, Mr. Xu Mengzhou, Mr. Liu Jizhen, Mr. Xu Haifeng and Mr. Zhang Xianzhi, comprising one third of the members of the Board. Mr. Cao Peixi, former Chairman of the Board, resigned as Chairman and Director of the Company on 30 January 2019 due to age reasons.

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 seven 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 meetings to be attended	Number of meetings attended in person	Number of meetings attended by proxy	Attendance rate (%)
Executive Directors				
¹ Zhao Keyu	–	–	–	–
Non-executive Directors				
Huang Jian	7	7	0	100%
Wang Yongxiang	7	6	1	85.71% (Attendance by proxy rate: 14.29%)
Mi Dabin	7	6	1	85.71% (Attendance by proxy rate: 14.29%)
Guo Hongbo	7	4	3	57.14% (Attendance by proxy rate: 42.86%)
Cheng Heng	7	6	1	85.71% (Attendance by proxy rate: 14.29%)
Lin Chong	7	6	1	85.71% (Attendance by proxy rate: 14.29%)
Independent Non-executive Directors				
Yue Heng	7	6	1	85.71% (Attendance by proxy rate: 14.29%)
Xu Mengzhou	7	7	0	100%
Liu Jizhen	7	5	2	71.24% (Attendance by proxy rate: 28.76%)
Xu Haifeng	7	7	0	100.00%
Zhang Xianzhi	7	7	0	100.00%
Resigned Directors				
² *Cao Peixi	0	0	0	–
Shu Yinbiao	7	6	1	85.71% (Attendance by proxy rate: 14.29%)

Note: 1. Mr. Zhao Keyu was elected as Chairman and director of the Company on 5 March 2020, and did not attend relevant meetings in 2019.

2. Former Chairman Mr. Cao Peixi resigned on 30 January 2019, and did not attend relevant meetings in 2019.

OVERVIEW

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 2019 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 clauses 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 professional 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 2019 of the Company held on 30 January 2019 were Huang Jian (Director) and Zhang Xianzhi (Independent Director, chief member of the Remuneration and Appraisal Committee). The Directors who attended the Annual General Meeting for year 2018 of the Company held on 12 June 2019 were: Huang Jian (Director), Yue Heng (Independent Director, chief member of the Audit Committee), Xu Mengzhou (Independent Director) and Zhang Xianzhi (Independent Director, chief member of the Remuneration and Appraisal Committee). The Directors who attended the Second General Meeting for year 2019 of the Company held on

17 December 2019 were: Huang Jian (Director), Xu Mengzhou (Independent Director), Zhang Xianzhi (Independent Director, chief member of the Remuneration and Appraisal Committee) and Lin Chong (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. During the Reporting Period, Mr. Cao Peixi resigned as the Chairman of the Company on 30 January 2019. Mr. Shu Yinbiao succeeded Mr. Cao Peixi as the Chairman of the Company from 30 January 2019. 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 Chairman 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.

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

Names of Non-executive Directors	Term of office (yy.mm.dd – year)
Huang Jian	2017.6.13-2020
Wang Yongxiang	2017.6.13-2020
Mi Dabin	2017.6.13-2020
Guo Hongbo	2017.6.13-2020
Cheng Heng	2017.6.13-2020
Lin Chong	2017.6.13-2020

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CORPORATE GOVERNANCE REPORT

(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 acts as Chief Member of the Remuneration and Appraisal Committee.

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 2019 was convened on 18 March 2019, at which the Report of Total Wage Expenses was reviewed and the Company's arrangement for the total wage in 2019 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 (yy.mm.dd)	Members who attended the meeting in person	Members who attended the meeting by proxy
2019 First Meeting of the Remuneration and Appraisal Committee of the Ninth Session of the Board of Directors	2019.3.18	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.

The Nomination Committee of the ninth session of the Board of Directors comprises 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 acts as Chief Member of the Nomination Committee.

During the Reporting Period, no meeting of the Nomination Committee of the Board was convened. The attendance of meeting of the Nomination Committee of the Board in 2020 was as follows:

Name of meeting	Date of meeting (yy.mm.dd)	Members who attended the meeting in person	Members who attended the meeting by proxy
2020 First Meeting of the Nomination Committee of the Ninth Session of the Board of Directors	2020.1.20	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	2020.3.5	Liu Jizhen, Mi Dabin, Lin Chong, Yue Heng, Xu Mengzhou, Zhang Xianzhi	/

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CORPORATE GOVERNANCE REPORT

(h) REMUNERATION OF AUDITORS

Since 2019, 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 and other fees for the twelve months ended 31 December 2019 were RMB26.50 million, RMB2.19 million and RMB0.67 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 auditor 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 shall comprise five independent non-executive Directors. Members of the Audit Committee of the Ninth Session of the Board of Directors comprise 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 acts as the Chief Member.

During the Reporting Period, the Audit Committee held eight 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.

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

Name of meeting	Date of meeting (yy.mm.dd)	Members who attended the meeting in person	Members who attended the meeting by proxy
2019 First Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2019.2.28	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2019 Second Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2019.3.18	Yue Heng, Xu Mengzhou, Xu Haifeng, Zhang Xianzhi	Liu Jizhen
2019 Third Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2019.4.24	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2019 fourth Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2019.6.25	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2019 fifth Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2019.7.29	Xu Mengzhou, Xu Haifeng, Zhang Xianzhi	Liu Jizhen, Yue Heng
2019 Sixth Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2019.9.2	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2019 Seventh Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2019.10.21	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2019 Eighth Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2019.10.31	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/

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CORPORATE GOVERNANCE REPORT

(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 105 to 111.

(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.

Members of the Strategy Committee of the Ninth Session of the Board of Directors comprise 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 assumes the roles of Chairman of the Strategy Committee for the time being. Mr. Zhao Keyu assumes the roles of Chairman of the Strategy Committee since 5 March 2020.

On 23 April 2019, the Strategy Committee discussed and approved the Comprehensive Risk Management Report of Huaneng Power International, Inc. for 2019 and submitted the report to the Audit Committee of the Board of the Company on 29 July 2019 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 (yy.mm.dd)	Members who attended the meeting in person	Members who attended the meeting by proxy
2019 First Meeting of the Strategy Committee of the Ninth Session of the Board of Directors	2019.4.23	Shu Yinbiao (acting chairman), Huang Jian, Wang Yongxiang, 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 2019 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 2019 to 31 December 2019:

Name of director/supervisor	Type of Continuing Professional Development Plan
Huang Jian	A, B
Wang Yongxiang	A, B
Mi Dabin	A, B
Guo Hongbo	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
Ye Xiangdong	A, B
Mu Xuan	A, B
Zhang Mengjiao	A, B
Gu Jianguo	A, B
Zhang Xiaojun	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.

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CORPORATE GOVERNANCE REPORT

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 2019.

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) FORMULATION, REVIEW AND INSPECTION OF CODE OF CONDUCT AND COMPLIANCE HANDBOOK FOR EMPLOYEES AND DIRECTORS

The Company has formulated the Employee Handbook to set standards of conduct and regulate the employees' behaviour. The employees of the Company conscientiously comply with the Employee Handbook to enhance moral standards and strengthen correct value orientations.

(o) SHAREHOLDERS' RIGHTS

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.

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.

To make proposals to the shareholders' 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.

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.

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.

(p) INSURANCE FOR DIRECTORS

The Company has renewed its Directors' Liability Insurance policy of US\$10 million in 2019.

(q) COMPANY SECRETARY

Mr. Huang Chaoquan has been acting as the Company Secretary of the Company under the Listing Rules of Hong Kong 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.

(r) MAJOR CHANGES IN THE ARTICLES OF ASSOCIATION

In 2019, certain amendments were made to the Articles of Association, including the change of registered capital and structure of share capital of the Company.

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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 2019 in fulfilling its operation responsibilities, safety responsibilities, environmental responsibilities, staff responsibilities, social responsibilities and so on, with a view to giving a true presentation of the Company's concrete achievement in promoting comprehensive, healthy and sustainable development in 2019.

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 497.7million A shares. Currently, the total share capital of the Company amounts to approximately 15.7 billion shares. As at 31 December 2019, the Company's controlling generation capacity was 106,924 MW.

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 2019, the Company amended the Articles of Association and the Rules and Procedures of the General Meetings and completed the change of the legal representative of the Company to actively streamline management relations and standardize business processes. The Company formulated and issued 22 management regulations to improve the Company's regulation system.

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. In 2019, the Company was honored as China Securities Golden Bauhinia "Outstanding Contribution Enterprise for the 70th Anniversary of the People's Republic of China". The Company stresses on the importance of information disclosure. Accordingly, the Company has established the Information Disclosure Committee, headed by the Secretary to the Board and the Chief Accountant and comprised of various department heads and relevant personnel, which is responsible for reviewing the Company's regular reports. The Company has also adopted the policy of holding information disclosure meetings chaired by the Secretary to the Board every Monday to report on the Company's material issues of the week, thereby providing support for the Company to duly perform relevant information disclosure obligations. In 2019, The Company made 237 press releases and announcements in both domestic and overseas markets and was given best rating of class A for information disclosure by the SSE. The Company participated in 10 investor forums organized by domestic and overseas investment banks for

investors to better understand the Company. The Company received over 300 visits and calls from investors, responding to investors' concerns and demands more effectively.

II. OPERATION RESPONSIBILITY OF THE COMPANY

The Company took comprehensive budget management as general guidelines. It continued to further strengthen comprehensive budget management, implemented the functions under the budget management, including target-oriented, process control and review guidance, which enabled it to achieve the target of budget management, namely "target secured, transformation progressed and risks prevented". 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.

Marketing steadily improved. The Company implemented closed-loop management for marketing of power supply to ensure that the share of power generation exceeded the capacity share. The Company strengthened its policy research and carried out market transactions in accordance with local conditions, achieving power sales of 216.4 billion kWh for the year with the market share exceeding the capacity share by 1.28 percentage points. By vigorously exploring the heat supply market, the Company accomplished a supply of 240 million GJ of heat throughout the year, achieving a year-on-year growth. The Company achieved retail power sales of 112.8 billion kWh for the year with the market share exceeding the capacity share by 7.5 percentage points.

The Company's control over fuel costs was effective. The Company reasonably determined the amount of coal under long-term contracts, the amount of imported coal, and the procurement strategy, and strengthened the unified transportation of seaborne coal, thereby effectively control the purchase cost, reducing the unit price of standard coal purchase by RMB71/tonne.

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SOCIAL RESPONSIBILITY REPORT

The Company strictly controlled financing costs. Focusing on preventing and mitigating financial risks, the Company successfully reduced leverage ratio and financing costs. In 2019, the Company issued diversified, low-interest financing products, including a total of RMB30 billion of super short-term financing bonds and RMB2 billion of medium-term notes, with annual interest rates lower than the benchmark loan interest rate of the Central Bank for the same period. By innovating equity financing tools, the Company reduced its debt ratio by 4 percentage points through equity financing. The Company completed the international credit rating work with high quality, obtaining a high international credit rating to provide strong support for the guarantee of continuation of funds.

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. In 2019, the Company actively carried out inspections and assessments under the accountability system for production safety and improved the production safety system. There were no major or more severe safety accidents or accidents that threatened the safe operation of the power grid throughout the year. Production safety remained stable. We strengthened equipment safety management and vigorously “reduced defect and controlled unplanned operation suspension”, with 34 power plants achieved “zero unplanned operation suspension”. Thirteen generating units of the Company won the national power reliability competition. The Sahiwal Power Station was awarded the “2019 Most Stable and Reliable Power Plant in Pakistan Power Grid” by the National Transmission & Dispatch Company of Pakistan (巴基斯坦國家電力調度中心).

The Company smoothly carried out network offensive and defensive drills, and successfully provided services and support for major activities such as the celebration of the 70th anniversary of the People’s Republic of China, the “Belt and Road” summit forum, and the National People’s Congress and the Chinese Political Consultative Conference.

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 always place green development at a prominent position. We scientifically developed the “14th Five-Year” development plan and promoted the development of incremental projects and the transformation and upgrade of existing projects, reflecting the Company’s new strategic positioning under a clean, low-carbon, safe and efficient energy system, and demonstrating the Company’s new industrial development goals such as becoming the clean and efficient coal power leaders, offshore wind power leaders, model enterprise of technology innovation, digester of urban pollutant, and provider of comprehensive energy supply solution.

Robustly promoting thermal power transformation. We increased investment in heat supply transformation to improve the heat supply capacity of thermal power generating units. By actively carried out research on the 300,000-kilowatt units in service, we developed and proposed more than 10 measures such as developing long-distance heat supply and participating in the coupling of urban garbage and sludge. Yueyang Power Plant and Xi’an Thermal Power Research Institute developed a test platform for pre-carbonization of urban waste, which enabled disposal of multiple types of urban waste in the same system for first time, opening

a new path for coal-fired power generation, heat-value utilization of waste, and synergistic treatment of pollutants. Two generating units of Yantai Bajiao Power Plant (煙台八角電廠) were included in the national emergency peak shaving reserve power supply. The first-phase project of Yuhuan Power Plant was recognized as “100 Classic Projects for the 70th Anniversary of the Founding of the People’s Republic of China”.

Structural adjustment came into fruition. Tapping the group company’s “Two Lines and Two Integration” strategic layout, the Company increased investment in low-carbon clean energy. We commenced construction of power plants with capacity of 3,723 MW and put into production power plants with capacity of 1,286 MW throughout the year. The first phase of Jiangsu Dafeng Offshore Wind Farm (the farthest offshore wind power project in China) was completed and put into operation. We commenced construction of Zhejiang Jiaying No. 2 Offshore Wind Power Project, obtaining approximately 1,700 MW of development rights.

Constantly enhancing cleaner production. In 2019, the Company conscientiously carried out the state’s work arrangement for the battle against pollution, and completed the ultra-low emission transformation task under the “13th Five-Year Plan”. We continued to promote environmental protection technology innovation, completed the technology demonstration project for by-passage fuel gas evaporation of the desulfurization wastewater of Huangtai Power Plant, carried out research on the digital technology of circulating water discharge reduction at the Mianchi Power Plant (澗池電廠), and completed transformation of in-depth fuel gas treatment of four generating units of Yangliuqing Thermal Power Plant (楊柳青熱電廠). Our environmental protection indicators remained industry-lead. The annual emissions of sulfur dioxide, nitrogen oxides, and soot from thermal generating units were reduced to 0.06 g/kWh, 0.13 g/kWh, and 0.01 g/kWh, respectively. In the power efficiency competition of the SASAC, the Company’s 5 generating units were awarded the title of the best units in terms of coal consumption

for power generation and 4 were awarded the title of the best units in terms of house consumption rate. In the National Thermal Power Efficiency Competition for Generating Units, the Company’s 9 generating units were awarded the title of the best units in terms of coal consumption for power generation and 9 were awarded the title of the best units in terms of house consumption rate.

Constantly striving for technological innovation. We vigorously pushed forward the research and development of two national special scientific research tasks, namely “Key Technologies for New-Type High-alkali Coal Liquid Slagging Boiler (新型高城煤液態排渣鍋爐關鍵技術)” and “700℃ Grade High-Efficiency Ultra Supercritical Power Generation Technology (700攝氏度等級高效超超臨界發電技術)”. Jiangsu Branch facilitated the establishment of the Offshore Wind Power Technology Research And Development Center to commence research tasks such as key technologies of the optimized design and batch manufacturing, installation and commissioning, and operation of large-scale offshore wind turbine generators and key components; and relied on the construction project of the second phase of Ruijin Power Generation to promote the development of DCS localization technology and the application of high-temperature alloy HT700T material (高溫合金HT700T材料).

Enhancing overseas asset management. We actively implemented the “Belt and Road” initiative, adhered to international development, and strengthened the risk prevention and control and process control of overseas projects. We revised and improved the “Management Measures for the Supervision of Overseas Asset Operations” and other systems to implement risk prevention measures for overseas operations. We strengthened the supervision of the operation of Singapore Tuas company. By actively researching the market, optimizing competition strategies, improving the operating environment, and exploiting cost potential, we endeavored to enhance Tuas Power’s market competitiveness, achieving significant year-on-year improvement of operating performance.

OVERVIEW

SOCIAL RESPONSIBILITY REPORT

V. STAFF RESPONSIBILITY OF THE COMPANY

1. Protection of Staff Benefits

(1) Staff overview

With the belief that “elites are the forefront important assets”, the Company has actively implemented the strategy of developing the enterprise by talents, focused on the tri-tasks of attracting, training and making good use of talents, accelerated the establishment of a team with high-level and highly skilled talents as core members. 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.

(2) Rights protection

The Company has consistently implemented a fair, just and open employment policy, and endeavours to implement requirements of the Employment Contract Law and other laws and regulations. As such, the Company has entered into employment contracts with employees by laws.

The Company has focused on the improvement of the Staff Representative Congress System and the Plant Affairs Publicity System, supporting their active participation in democratic management and guaranteeing their rights to be informed and rights to participate, express and supervise. The Company has improved the accounting system for complaint handling and formulated the special system and standards relevant for interests claims made by employees.

All of the Company’s subsidiaries have established their respective trade unions in accordance with the Trade Union Law, and the rate of staff joining those unions remained at 100%. Trade unions at all levels have earnestly performed their duties, safeguarded legal interests of employees, encouraged employees to participate in management of decision making, jointly accomplished various objectives of the enterprises and assisted in mediating disputes between staff and enterprises.

The Company attaches great importance to staff health and safety. All of its subsidiaries have established a protection mechanism for staff health and safety. The enterprises have organized physical examinations for all staff annually, and special physical examinations for the staff who have been exposed to occupational hazards.

(3) Incentives and protection

The Company has further improved its remuneration allocation system, devised a series of remuneration management procedures in line with the overall strategies. In compliance with relevant laws, the Company has established various social insurance schemes and housing provident fund, and made due contribution to these schemes and fund in full, to secure the social benefits of its staff covering pensions, medical, work related injuries, unemployment, maternity and housing. In addition, as required under the national policies, the Company has also established corporate annuities and supplementary medical insurance to serve as a supplement to the basic pension and medical benefits of employees.

2. Support for Staff Development

(1) Staff training

As the Company emphasizes training for all staff, it has fully capitalized on its systematic training resources and increased cooperation with external training organizations to carry out multi-level, multi-channel and multi-dimensional trainings, targeting to reinforce management ability, professional technical capability, and labor skills and general quality of the staff. The major types of training include orientation training, post training (through shadowing, tutoring, etc.), management training, professional training, skill training and continuing education and commissioned cooperative training.

(2) Development opportunities

The Company has emphasized provision of growth opportunities for employees so as to provide them with development channels. We adhere to the talent promotion principles of “open policies, fair opportunities, just procedures, emphasis on performance, dynamic management, and quality before quantity”. The Company has reinforced leadership team and cultivate management reserve and enhanced the system under which human resources may be efficiently allocated to achieve the optimal arrangement of human resources. The development of skill-based talents is facilitated by the implementation of dual-channels promotion system emphasizing the approach of “positions come first, skills come second”.

VI. SOCIAL RESPONSIBILITY OF THE COMPANY

Entering the new era, China Huaneng Group proposed a strategic vision to accelerate the construction of a world-class energy company with “three colors, three strengths and three excellences”. The Company will continue to uphold the corporate mission of becoming a “three-color company” while giving it a new meaning in the era. That is, to become a “red” company that contributes to and serves national strategies, ensures energy security, and serves socialism with Chinese characteristics; a “green” company that carries out energy revolution, helps construct ecological civilization, and provides clean energy and power to meet the needs of the people for living beautiful lives; and a “blue” company that participates in global energy stewardship, serves the “Belt and Road” construction, and makes a positive contribution to building a community of shared future for mankind. At the same time, the Company will continue to make efforts in improving innovation leadership, value creation capability and global competitiveness to achieve breakthroughs in improving asset, management and performance standards.

Guided by the “three-color” culture, the Company actively fulfills its social responsibilities and stays committed to providing the society with safe, efficient, and clean power and high-quality energy services. We have formulated various emergency work plans and handling measures to ensure safe and stable power generation and heat supply in extreme weathers and during important periods. Upholding the harmonious development philosophy of “serving the country, benefiting the society, seeking win-win and achieving common growth”, we actively participate in the economic and social development of the regions we serve or operate in, support infrastructure construction, promote employment, and conduct various public welfare activities in the area of education, health-care, etc., so as to contribute to meeting the people’s needs for living beautiful lives.

In 2019, the Company earnestly implemented the work plan of the Central Party Committee and the State Council on winning the battle against poverty and implementing the strategy of rural vitalization. The Company innovated poverty alleviation models, carried out various types of charitable activities, paid donations totaling RMB23.7270 million out of the target poverty alleviation fund in China in the name of the Company, sent 76 cadres to station in villages, and carried out poverty alleviation work in 58 poverty-stricken villages across China. The Company won the “Outstanding Social Responsibility Enterprise” for the 2019 Golden Bull Award for Corporate Social Responsibility.

In the future, the Company will be strive to create greater value and achieve common sustainable development with relevant parties; to provide more clean energy for the people to live beautiful lives; to accelerate the establishment of a world-class listed power generation company that makes a positive contribution to building a community of shared future for mankind.

OVERVIEW

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 Connected 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.

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 9 overseas press releases and issued 228 announcements within and outside China in 2019.

NOTE TO SHAREHOLDERS

Dividend distribution

The Board proposed to declare a dividend of RMB0.135 (inclusive of tax) per share to all shareholders for 2019. Dividends will be denominated and declared in Renminbi. Dividends on domestic shares will be paid in Renminbi. Save 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 RMB6.9762 and HK\$1 to RMB0.89578 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.

Based on the above, 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, and accordingly formulated the Shareholders Return Plan for the Next

OVERVIEW

INVESTOR RELATIONS

Three Years (2018 to 2020) of Huaneng Power International, Inc. according to the Company Law and other relevant laws, regulations and Articles of Association of the Company. Detailed terms and the proportion of the Company's cash dividends in the next three years 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 listing, Huaneng International has been given tremendous support and concern by shareholders. The Company has also rewarded shareholders with a consistent, stable and increasing return over the years. The Company has been declaring dividends to shareholders every year since 1998. The accumulated dividend paid amounted to RMB57.743 billion.

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%

* 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 2019 will be subject to shareholders' approval at the annual general meeting.

INVESTOR RELATIONS ACTIVITIES

Conferences

In 2019, the Company organized one large – group presentations with investment analysts in Hong Kong and one large-group presentation with investment analysts and fund managers, two global telephone conferences for the quarterly results and one global telephone conference for interim results.

Roadshows

Roadshow is a commitment of the Company to investors and a specific reflection of respect shown to them. The Company believes that regular face-to-face meetings with investors are instrumental in promoting mutual understanding and providing better services to shareholders. Since its listing, the Company has all along attached importance to communication with investors and has a good reputation in the investment sector.

In 2019, the Company held annual non-deal roadshows in the United States. The management attended nearly 20 “one on one” meetings and group meetings with the Company’s former investors, existing shareholders and potential investors, to introduce the operation, future development and outlook of the Company in detail. The meetings effectively improved the communication between the Company and investors and provided investors with in-depth understanding of the Company and the industry. The meetings were welcomed by investors.

Reverse Roadshows

Reverse roadshow is an important channel for in-depth engagement and communication between the Company and investors. In 2019, the Company successfully held an investor reverse roadshow at Jiangsu Rudong Offshore Wind Power. The event took the form of on-site description and visit. Investors went out to sea by boat to visit the turbine and step-up substations Rudong Offshore Wind Power and did on-site research in person, which gave them more intuitive feelings. Investors were very satisfied with the Company’s reverse show.

Visits by and general enquiries from investors

The Company received nearly 20 groups of institutional investors for company visits and nearly 300 phone enquiries from investors during the year.

Investment forums

In 2019, the Company attended 10 large investment forums within or outside China, in which over 100 institutional investors were met.

OVERVIEW

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 2019.

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 2019.

For the twelve months ended 31 December 2019, the Company realized consolidated operating revenue of RMB174.009 billion, representing an increase of 2.63% compared to the same period last year, and net profit attributable to equity holders of the Company amounted to RMB766 million, representing an increase of 4.34% as compared with the same period last year. Earnings per share amounted to RMB0.01. The Board is satisfied with the Company's results last year.

The Board of the Company proposed to declare a cash dividend of RMB0.135 (inclusive of tax) for each ordinary share of the Company held by shareholders.

Details of the operating results are set out in the financial information.

BUSINESS REVIEW OF YEAR 2019

In 2019, the Company proactively adapted to the changes in the market and anticipated the dynamics of the reforms in national economy and power market system to promptly realign our operating strategy. Throughout the year, we maintained stable operation of safe and clean production, achieved notable results in improving quality and efficiency, made headway in optimizing the structure, and strengthened our corporate governance. As a result, we have satisfactorily achieved our annual business objectives and maintained our leading position in the industry.

1. Operating Results

For the twelve months ended 31 December 2019, the Company realized operating revenue of RMB174,009 million, representing an increase of 2.63% compared to the same period last year. Net profit attributable to shareholders of the Company amounted to RMB766 million, representing an increase of 4.34% as compared with the same period last year. Earnings per share amounted to RMB0.01.

As at the end of 2019, net assets per share of the Company amounted to RMB5.33, representing a decrease of 3.43% as compared with the same period last year.

The Audit Committee of the Company convened a meeting on 30 March 2020 and reviewed the 2019 annual results of the Company.

2. Power Generation

Total power generated by the Company's domestic operating power plants for the year on consolidated statements basis amounted to 405.006 billion kWh, representing a year-on-year decrease of 5.91%. The electricity sold amounted to 388.182 billion kWh, representing a year-on-year decrease of 4.38%. The annual average utilization hours of the Company's domestic power plants reached 3,915 hours, representing a year-on-year decrease of 293 hours. The utilization hours of coal-fired power generating units was 4,222 hours, representing a year-on-year decrease of 273 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's domestic operating power plants on consolidated statements basis amounted to 240 million GJ, representing a year-on-year increase of 10.69%.

3. Cost Control

Throughout the year, the Company procured an aggregate of 183 million tons of coal. By continuously and accurately judging coal market trends, optimizing procurement strategy and regional supply structure, reinforcing cooperation with major coal mines, targeting high-quality low-cost resources on an advanced basis, and reducing the fuel procurement cost of the Company effectively. The unit fuel cost of our domestic power plants throughout the year incurred for sales of power was RMB223.22/MWh, representing a year-on-year decrease of 5.77%.

4. Energy Saving and Environmental Protection

The Company maintains a leading position among major domestic power companies in terms of safe operations, technology economy and energy – consuming index. In 2019, the Company maintains a leading position among major domestic power companies, with the average equivalent availability ratio of the domestic coal-fired generating units of the Company was 93.49%; its weighted average house consumption rate was 4.49%; the average yearly coal consumption rate for the power generated was 288.52 grams/kWh; and the Company's average coal consumption rate for power sold was 307.21 grams/kWh. 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 unorganized emissions such as 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 wind generating units and photovoltaic units was 864 MW and 422 MW, respectively. As of 31 December 2019, the Company's controlled and equity-based generation capacity was 106,924 MW and 93,676 MW, respectively.

6. Singapore 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 20.7%, representing a year-on-year decrease of 0.4 percentage point. The Singapore project (SinoSing Power and Tuas Power combined) recorded a pre-tax loss of RMB569 million, representing a decrease in loss of RMB261 million compared with RMB830 million in 2018.

7. Pakistan Business

The Sahiwal 2×660MW coal-fired power plant project in Pakistan is one of the projects given priority for implementation under the framework of the China-Pakistan Economic Corridor Energy Project Implementation Agreement. It 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. Its profit before tax was RMB739 million for 2019.

OVERVIEW

REPORT OF THE BOARD OF DIRECTORS

In 2019, with a sound decision-making philosophy and a complete corporate governance system, the Company once again won the recognition of the capital market, and was honored as China Securities Golden Bauhinia “Outstanding Contribution Enterprise at 70th Anniversary of the People’s Republic of China”. Mr. HUANG Lixin, chief accountant of the Company, won Golden Bauhinia “CFO of the Year Award”. Mr. HUANG Chaoquan, secretary to the Board of the Company, won the “Most Innovative Secretary to the Board” at the 15th Golden Roundtable Forum of Boards of Chinese Listed Companies.

PROSPECTS FOR 2020

In 2020, the Company will further strengthen market orientation, reform implementation, innovation incentive, and risk awareness. With safety and environmental protection as the foundation, quality and efficiency as the core, and reform and innovation as the driver, we will further optimize our structure, operations and assets and further enhance corporate governance, thereby continuing to improve our operating performance revolving around the goal of building a world-class listed power generation company, so as to create more value for the country, society and shareholders.

With respect to power generation, the Company will conscientiously implement the state’s various plans in production safety, strengthen inspections and assessments under the accountability system, and continuously improve our capabilities of risk prevention and control, emergency management, on-site supervision, key area management and control, comprehensive administration, and technological innovation. We will consolidate the results of building the “responsibility system, regulation system, support system, and prevention and control system” for production safety and accelerate the modernization of the production safety governance system and governance capabilities. We will carry out a comprehensive rating of generating units to improve the lean

management of equipment. We will accelerate the development of the heat supply business to achieve the transformation and upgrade of comprehensive energy services. We have carried out flexibility reformation for generating unit in areas with policy support and development potential to enhance the competitiveness of thermal power units, especially 300MW generating units. We will study the development of the business of heat supply by existing profitable thermal power generating units and biomass-coupled power generation plans to accelerate the construction and transformation of the heat grid. We will accelerate the implementation of key pollution prevention and control projects such as closure of coal yards and wastewater treatment in key areas such as Beijing, Tianjin and Hebei and the Yangtze River Delta to ensure completion on schedule. We will tighten the control of pollution discharge permits and accelerate the re-evaluation of the coverage of environmental protection zones for certain projects. We will continue to advance the construction of safety assurance system to ensure smooth and orderly production. We will properly establish regulations and standards and optimize the production safety management process to prevent major equipment hazards.

With respect to power marketing, the Company will continue to prioritize power marketing. We will innovate the production, operation, and management model and further enforce the responsibilities of regional company for marketing. We will effectively coordinate regional resources, strengthen policy and market research, and improve market responsiveness. We will continue to balance volume and price and prioritize revenue increase, gradually realize the physical operation of regional transaction operation centers and energy sales companies, and endeavor to increase power sales volume and stabilize power tariff. We will aim at delivering a domestic power generation of approximately 410 billion kWh and average utilization hours of around 3,800 hours for the year.

In respect of fuel, the Company will reinforce policy research and market analysis, combine coal under long-term contract and market coal, balance imported coal and domestic coal, and enhance the insights and stability in fuel procurement. The Company will establish a firm and effective fuel supply chain and dynamically optimize long-term contract resources based on the structural outlay and region characteristics of resources. Leveraging on its advantages in scale procurement, the Company will strengthen strategic cooperation with large-scale coal enterprises to strive for a more reasonable pricing mechanism. The Company will further improve the fuel management system, strengthen the management of coal yards, and continuously improve the mixing capability to strictly control fuel costs.

In respect of capital, the Company will closely monitor the changes in the domestic and overseas capital markets and give full play to its credit and management advantages. In addition to ensuring the efficiency of the main financing channel (i.e. credit financing), the Company will increase bond issuance, innovate new financing means and expand the scale and channels of financing, so as to ensure the security of funds while striving to reduce capital cost.

The Company will uphold the new development philosophy, adhere to the requirements of high-quality development, and thoroughly implement the new energy safety strategy of “Four Revolutions, One Cooperation”. We will comprehensively strengthen market capitalization management and substantial shareholder support to increase holding of the Company’s shares to maintain and increase the Company’s brand value. We will steadily advance reform and innovation, strengthen the innovation drivers for operation and development, enhance technological research and development for major projects, and accelerate the digital transformation. We will promote the construction of key areas. We will steadily advance the work of “dealing with stagnant enterprises and enterprises with difficulties” to ensure the stable implementation of various business plans with solid and efficient management capabilities.

SUMMARY OF FINANCIAL INFORMATION AND OPERATING RESULTS

Please refer to the Financial Highlights on page 10 for the summary of the operating results and assets and liabilities of the Company and its subsidiaries as at 31 December 2019 and for the accounting year ended 31 December 2019.

Please refer to pages 112 to 114 of the financial statements for the operating results of the Company and its subsidiaries for the accounting year ended 31 December 2019, which have been reviewed by the Company’s Audit Committee.

DISTRIBUTABLE RESERVE

The distributable reserve as at 31 December 2019 calculated in accordance with the Company’s Articles of Association is set out in Note 24 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 RMB57.743 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.

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REPORT OF THE BOARD OF DIRECTORS

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 2019, the Company proposed to declare a cash dividend of RMB0.135 (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 2020.

As the Company has yet to confirm the date of the 2019 annual general meeting, the record date(s) for determining the eligibility to attend and vote at the 2019 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 2019 annual general meeting. Such notice is expected to be issued to shareholders in late April or early May 2020.

In accordance with the "Enterprise Income Tax Law of China" and its implementation regulations which came into effect on 1 January 2008, the Company is required to withhold and pay enterprise income tax at the rate of 10% on behalf of the non-resident enterprise shareholders whose names appear on the register of members for H share of the Company when distributing 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.

In addition, 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 (2018 to 2020), and accordingly formulated the Shareholders Return Plan for the Next Three Years (2018 to 2020) of Huaneng Power International, Inc. according to relevant regulations. Detailed terms and the proportion of the Company's cash dividends in the next three years after 2018 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.

The new standards, revised standards and interpretation adopted by the Company and its subsidiaries for the current year, which are effective for accounting year beginning on 1 January 2013 and relevant to the Company and its subsidiaries, are set out in Note 2 to the financial statements prepared under the IFRS.

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

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

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 2019, the Company has invested RMB1,946,850,487.94 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 RMB1,324,516,887.49 (including interest).

BONDS

During the year, the Company successfully issued bonds with a total principal amount of RMB35,300,000,000 in meeting its operational needs. Please refer to Note 27 and 31 to the financial statements prepared under the IFRS for details.

BANK LOANS AND OTHER BORROWINGS

Please refer to Notes 26 and 32 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 2019.

CAPITALIZED INTERESTS

Please refer to Note 7 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.

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RESERVES

Please refer to the consolidated statement of changes in equity on pages 118 to 121 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 2019 were China Huaneng Group Fuel Co., Ltd., Shanghai Electric Wind Power Equipment Co., Ltd., Shanxi Yangquan Coal Industry (Group) Company Limited, China National Coal Group Corporation and Xinjiang Goldwind Science & Technology Co., Ltd. respectively. The total purchase from them amounted to approximately RMB51.212 billion, representing approximately 34.35% of the total purchase of the year.

As a domestic power producer, the Company sells the electricity generated by its power plants through local grid operators only and has no other customer. The five largest customers of the Company and its subsidiaries for 2019 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 RMB77.716 billion, representing approximately 48.29% of the total sales of power for the year.

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 2019.

CONTINUING CONNECTED TRANSACTIONS AND CONNECTED TRANSACTIONS

The following are the major continuing connected transactions and connected transactions of the Company in 2019 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 Huaneng Group Hong Kong Limited, a 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. 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 12 December 2018 and the circular dated 9 January 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 11 December 2018 for a term commencing on 1 January 2019 and expiring on 31 December 2019. 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 2019, the annual cap of the purchase of ancillary equipment and parts was RMB500 million (inclusive of value-added tax (“VAT”)). The actual transaction amount for the year ended 31 December 2019 was RMB55 million (inclusive of VAT) and RMB53 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.

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For the year ended 31 December 2019, the annual cap of the purchase of fuel and transportation services was RMB48.9 billion (inclusive of VAT). The actual transaction amount for the year ended 31 December 2019 was RMB36.968 billion (inclusive of VAT) or RMB32.624 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 2019, the annual cap of the leasing of facilities, land and office spaces was RMB200 million. The actual transaction amount for the year ended 31 December 2019 was RMB171 million.

- 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.

For the year ended 31 December 2019, the annual cap of the purchase of technical services, engineering contracting services and other services was RMB2.8 billion. The actual transaction amount for the year ended 31 December 2019 was RMB2.013 billion (inclusive of VAT) or RMB1.876 billion (exclusive of VAT).

- Purchase of entrusted sale services by the Company and its subsidiaries from 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 2019, the annual cap of entrusted sale services was RMB500 million (inclusive of VAT). The actual transaction amount for the year ended 31 December 2019 was RMB0 million (inclusive of VAT) or RMB0 million (exclusive of VAT).

- Provision of 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 Huaneng Group and its subsidiaries and associates by the Company and its subsidiaries 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 2019, 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 2019 was RMB0 million (inclusive of VAT) or RMB0 million (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 2019, the annual cap of the sales of products was RMB600 million. The actual transaction amount for the year ended 31 December 2019 was RMB0 million.

- 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.

For the year ended 31 December 2019, the annual cap of the purchase of electricity was RMB300 million. The actual transaction amount for the year ended 31 December 2019 was RMB0 million (inclusive of VAT) or RMB0 million (exclusive of VAT).

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- 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 2019, the annual cap of the sale of electricity was RMB900 million. The actual transaction amount for the year ended 31 December 2019 was RMB0 million (inclusive of VAT) or RMB0 million (exclusive of VAT).

- Sale of heat to Huaneng Group and its subsidiaries and associates, in circumstances where the demand exceeds the supply of heat by the Company and its subsidiaries. The prices for heat will be determined based on the guidance prices set by the price bureau of government (i.e. the provincial Development and Reform Commission).

For the year ended 31 December 2019, the annual cap of the sale of heat was RMB100 million. The actual transaction amount for the year ended 31 December 2019 was RMB0 million (inclusive of VAT) or RMB0 million (exclusive of VAT).

- (ii) Huaneng Finance Framework Agreement was entered into between the Company and Huaneng Finance on 5 December 2016 for a term of three years commencing on 1 January 2017 and expiring on 31 December 2019, so as to replace the framework agreement between the Company and Huaneng Finance on 22 April 2014.

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 2019 to 31 December 2019, 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 RMB13 billion (or its equivalent). For the year ended 31 December 2019, the maximum balance of deposits placed by the Company and its subsidiaries with Huaneng Finance on a daily basis was RMB13 billion.

- (iii) Framework Agreement was entered into between the Company and Tiancheng Leasing on 5 December 2016 for a term of three years commencing on 1 January 2017 and expiring on 31 December 2019.

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 2019 to 31 December 2019, the maximum daily balances of the Lease Principal were RMB15 billion and the Lease Interest was set at RMB1 billion. For the year ended 31 December 2019, the maximum daily balances of the Lease Principal between the Company and its subsidiaries and Tiancheng Leasing was RMB2.56 billion, and the Lease Interest was RMB61 million.

2. Continuing Connected Transactions with Yangquan Coal

Yangquan Coal Industry (Group) Co. Ltd. ("**Yangquan Coal**") holds 10% interest in a subsidiary of the Company, Huaneng Jinan Huangtai Co., Ltd.. According to the Hong Kong Listing Rules, Yangquan Coal is a connected person at subsidiary level of the Company.

The Company entered into the Yangquan Coal Framework Agreement with Yangquan Coal on 11 December 2018 for an effective period from 1 January 2019 to 31 December 2019. Pursuant to the Yangquan Coal Framework Agreement, the Company and its subsidiaries will purchase fuel and transportation services from Yangquan Coal and its subsidiaries and associates.

For the year ended 31 December 2019, the annual cap of the purchase of fuel and transportation services was RMB1.2 billion. The actual transaction amount for the year ended 31 December 2019 was RMB204 million (inclusive of VAT).

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

Upon the completion of the acquisition of SinoSing Power Pte. Ltd. by the Company, TPGS Green Energy Pte. Ltd. became an indirect non-wholly owned subsidiary of the Company, of which 75% is owned by Tuas Power Ltd., an indirect wholly-owned subsidiary of the Company, and the remaining 25% is owned by Gas Supply Pte. Ltd., which is a wholly-owned subsidiary of Temasek Holdings (Private) Limited ("**Temasek**").

Temasek therefore became a substantial shareholder of a subsidiary of the Company and a connected person of the Company, and the on-going transactions between certain subsidiaries of the Company and the associates of Temasek ("**Continuing Connected Transactions with Associates of Temasek**") became continuing connected transaction of the Company under the 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.

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Connected Transaction**Connected Transaction Regarding Undertaking the Obligations of Huaneng Group under the Guarantee Contract**

In order to enable Huaneng Shandong Ruyi (Pakistan) Energy (Private) Limited ("**Pakistan Company**") to start commercial operation earlier, Huaneng Group agreed to provide US\$100 million finance guarantee to Pakistan Company in advance. The above loan and guarantee were implemented on 30 September 2017. Upon communication between Huaneng Shandong Power Generation Co., Ltd. ("**Shandong Company**") and Industrial and Commercial Bank of China Limited ("**ICBC**"), ICBC agreed in principle to change the guarantor from Huaneng Group to Shandong Company, which holds a 50% equity interest in Pakistan Company. The provision of the guarantee by Shandong Company to its subsidiary Pakistan Company required the approval at general meeting.

Upon the approval obtained at the extraordinary general meeting of the Company held on 30 January 2018, Shandong Company on 6 March 2019 executed a confirmation letter confirming to, among others, ICBC and Huaneng Group that it would undertake the obligations of Huaneng Group under the Guarantee Contract from the issuance date of the confirmation letter.

The Company holds 80% equity interests in Shandong Company while the remaining 20% equity interest of Shandong Company is held by Huaneng Group. Shandong Company is a connected subsidiary of the Company. According to the Hong Kong Listing Rules, the guarantee (comprising the guarantee contract provided by Huaneng Group and the confirmation letter) 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 of the Company under the Hong Kong Listing Rules.

For details on the transaction, please refer to the Company's announcement dated 13 December 2017 and circular dated 12 January 2018.

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 Standard 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 38 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, is also engaged in the power industry in China. HIPDC, the direct controlling shareholder of the Company, is also engaged in the power industry in China. The Company and Huaneng Group (ultimate controlling shareholder) have power plants located in certain same regions. Huaneng Group and the Company have already entrusted mutually to manage certain of their power plants, and Huaneng Group was also entrusted to manage certain coal assets of the Company.

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 five years to improve the profitability of such assets and when the terms become appropriate, it would inject those assets into the Company. The Company had a right of first refusal to acquire from Huaneng Group the newly developed, acquired or invested projects which are engaged in the conventional energy business of Huaneng Group located in Shandong Province; (3) with respect to the other non-listed conventional energy business assets of Huaneng Group located in other provincial administrative regions, Huaneng Group undertook

that it would take approximately five years, and upon such assets meeting the conditions for listing, to inject such assets into the Company, with a view to supporting the Company's continuous and stable development; and (4) Huaneng Group would continue to perform each of its undertakings to support the development of its listed subsidiaries.

On 28 June 2014, with a view to further clarify the scope of the relevant agreement and in line with the requirements under the “Regulatory Guidelines for Listed Companies No. 4 – Undertakings and performance by Listed Companies and Listed Companies’ de facto Controllers, Shareholders, Related Parties and Acquirers”, and taking into account the actual situation, Huaneng Group further enhanced the aforesaid non-compete undertaking as follows: 1. the Company would be the sole platform for integrating the conventional energy business of Huaneng Group; 2. with respect to the conventional energy business assets of Huaneng Group located in Shandong Province, Huaneng Group undertook that it would, by the end of 2016, inject into the Company such assets of which the profitability should have been improved and meet with the requirements for injecting into a listed company (such as those assets with clean titles, the injection of which should not reduce the earnings per share of Huaneng Power, of no material non-compliance issues, with positive effect on preservation of and value appreciation of state owned assets, and 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 which 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

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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 undertaking is from 28 June 2014 to 31 December 2016.

Huaneng Group has diligently examined and analyses its performance on the 2014 undertakings, of which items (1) and (4) are long term undertaking and are being currently performed.

As of 31 December 2016, all coal fired generation assets of Huaneng Group located in Shandong region under the scope of undertakings had been injected into the Company, thus performance of the undertaking item (2) was completed within the term of the undertaking period.

As of 31 December 2016, all other non-listed coal fired power generation assets of Huaneng Group located in provincial administrative regions other than Shandong which met the conditions had been injected into the Company, thus performance of the undertaking item (3) was completed.

Currently, the Company has 12 directors and only

3 of them have positions in Huaneng Group and/or HIPDC. 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 HIPDC, and the operation of the Company is conducted for its own benefit.

DISCLOSURE PURSUANT TO RULE 14A.63 OF THE LISTING RULES

Reference is made to the announcement of the Company dated 1 April 2020 (the "Announcement").

As disclosed in the Announcement, Huaneng Group guaranteed that the audited actual net profit for 2017, 2018 and 2019 for each of Huaneng Laiwu Power Generation Limited, Huaneng Jiaxiang Power Generation Limited, Huaneng Jining Canal Power Generation Limited, Huaneng Liaocheng Thermal Power Limited and Huaneng Yantai Power Generation Limited (being certain subsidiaries of Huaneng Shandong Power Generation Limited as acquired by the Company) (collectively, "Profit Forecast Companies", and individually, "Each Profit Forecast Company") would not be less than the forecasted net profit. In 2019, the forecasted net profit for Each Profit Forecast Company was as follows:

Unit: RMB10,000

Company name	Direct or indirect interest held by Huaneng Group at time of equity transfer	Forecasted net profit for 2019
Huaneng Laiwu Power Generation Limited	80.00%	59,280.61
Huaneng Jiaxiang Power Generation Limited	50.00%	3,757.37
Huaneng Jining Canal Power Generation Limited	98.35%	16,624.85
Huaneng Liaocheng Thermal Power Limited	75.00%	7,100.78
Huaneng Shandong Power Generation Co., Ltd. Yantai Power Plant	100.00%	5,619.20

According to the Specific Audit Report on Situation Description of the Differences Between Actual Net Profit/(Loss) and the Forecast Net Profit, which was audited by Ernst & Young Hua Ming LLP, the aggregate difference between the actual net profit/(loss) (net of the non-recurring items) and the forecasted net profit for 2019 for the Profit Forecast Companies was RMB693.8797 million. As the Actual Net Profit of Each Profit Forecast Company for 2019 fell short of the forecasted net profit and according to the terms and compensation formula set out in the Profit Forecast Compensation Agreement (the "Profit Forecast Compensation Agreement") entered into between Huaneng Group and the Company on 14 October 2016, Huaneng Group should compensate the Company. The Profit Forecast Companies' total cash compensation for 2019 was RMB457.727 million. The compensation, which shall be payable by way of cash by Huaneng Group to the Company

within 20 working days from the date of disclosure of the specific audit report.

As at the date of this report, Huaneng Group had not yet fulfilled its payment obligation under the Profit Forecast Compensation Agreement.

PURCHASE, SALE OR REDEMPTION OF SHARES OF THE COMPANY

The Company and its subsidiaries did not sale, purchase or redeem any shares or other securities of the Company in 2019.

DIRECTORS OF THE COMPANY

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

Name of Director	Position	Date of appointment
Shu Yinbiao	Chairman	Appointed on 30 January 2019
Huang Jian	Director	Appointed on 27 August 2008
Wang Yongxiang	Director	Appointed on 13 June 2017
Mi Dabin	Director	Appointed on 18 September 2014
Guo Hongbo	Director	Appointed on 21 February 2012
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

OVERVIEW

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. Enquiry has been made with all Directors and Supervisors and all of them confirmed that they have complied with the code throughout 2019.

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

For the year ended 31 December 2019, 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 (the "SFO")), which are (a) required to be notified to the Company and the Stock Exchange of Hong Kong Limited (the "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; and (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 2019, 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 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. Yue Heng, Mr. Xu Mengzhou, Mr. Liu Jizhen, Mr. Xu Haifeng and Mr. Zhang Xianzhi has signed a confirmation letter by independent non-executive directors for 2019 on 30 March 2020 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 40 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 40 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 2019, 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 held 472,000,000 shares through its wholly owned subsidiary, China Hua Neng Group Hong Kong Limited, representing 3.01% of the total issued capital of the Company. 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 74,139,853 shares through its controlling subsidiary, China Huaneng Finance Corporation Limited, representing 0.47% of the total issued share capital of the Company. Other domestic shareholders held a total of 4,301,783,399 shares, representing 27.40% of the total issued share capital.

SHAREHOLDINGS OF MAJOR SHAREHOLDERS

The following table sets out the shareholdings of the top ten shareholders of the Company's outstanding shares as at 31 December 2019:

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	4,103,316,365	26.14
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	416,500,000	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
Dalian Construction Investment Group Co., Ltd.	225,910,000	1.44

* In 2019, Jiangsu Provincial Investment & Management Limited Liability Company allocated at nil consideration the shareholding interest held by it in the Company to Jiangsu Guoxin Investment Group Limited.

OVERVIEW

REPORT OF THE BOARD OF DIRECTORS

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

As at 31 December 2019, 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 (Note 2)	Domestic shares	5,066,662,118(L)	Beneficial owner	32.28%(L)	46.07%(L)	–
China Huaneng Group Co., Ltd. (Note 3)	Domestic shares	1,555,124,549(L)	Beneficial owner	9.91%(L)	14.14%(L)	–
China Huaneng Group Co., Ltd. (Note 4)	H Shares	472,000,000(L)	Beneficial owner	3.00%(L)	–	10.04%(L)
Blackrock, Inc. (Note 5)	H Shares	289,165,578(L)	Interest of controlled corporation	1.84%(L)	–	6.15%(L)
		1,168,000(S)	Interest of controlled corporation	0.007%(S)	–	0.02%(S)
Luo Yi 駱奕 (Note 6)	H Shares	736,370,000(L)	Interest of controlled corporation	4.69%(L)	–	15.67%(L)
		16,088,000	Interest of spouse	0.10%(L)	–	0.34%(L)
Qiu Guogen 裘國根 (Note 6)	H Shares	736,370,000(L)	Interest of controlled corporation	4.69%(L)	–	15.67%(L)
		16,088,000	Interest of spouse	0.10%(L)	–	0.34%(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 1,555,124,549 domestic shares, China Huaneng Group Co., Ltd. through its controlling subsidiary, China Huaneng Finance Corporation Limited held 74,139,853 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.
- (5) Blackrock, Inc. was deemed to hold interests in Long position of 1,708,000 shares through cash settled unlisted derivatives by virtue of its control over a number of corporations.
- (6) Long position of 490,980,000 H shares was held by 上海重陽戰略投資有限公司 Shanghai Chongyang Strategic Investment Co., Ltd., while long position of 211,590,000 H shares was held by 上海重陽投資管理股份有限公司 Shanghai Chongyang Investment Management Co., Ltd., long position of 30,800,000 H shares was held by 重陽集團有限公司 Chongyang Group Co., Ltd. and long position of 3,000,000 H shares was held by 重陽國際資產管理有限公司 Chongyang International Asset Management 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 2019, in the register required to be kept under Section 336 of SFO, no other persons were recorded to hold any interests or short positions in the shares or underlying shares of the equity derivatives of the Company.

DIRECTORS' AND SUPERVISORS' INTEREST IN CONTRACTS AND SERVICE CONTRACTS

Save for the service contracts mentioned below, as at the end of 2019, 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.

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 30% 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 55% of the total remuneration.

(3) Payments on pension, etc.

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

According to the resolution at the general meeting, the Company paid each independent director a subsidy amounting to RMB300,000 (inclusive of tax) in 2019. The Company also reimburses the independent directors 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 directors any other benefit.

STAFF HOUSING

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

OVERVIEW

REPORT OF THE BOARD OF DIRECTORS

STAFF MEDICAL INSURANCE SCHEME

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

RETIREMENT SCHEMES

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

Pursuant to the specified retirement contribution schemes, the Company and its subsidiaries have paid contributions according to the 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 2018 Annual General Meeting was held on 12 June 2019. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 13 June 2019.
2. The Company's 2019 First Extraordinary General Meeting was held on 30 January 2019. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 31 January 2019.
3. The Company's 2019 Second Extraordinary General Meeting was held on 17 December 2019. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 18 December 2019.

DISCLOSURE OF MAJOR EVENTS

1. The Company held the 17th meeting of the ninth session of the Board of Directors on 30 January 2019 to review and unanimously pass the "Proposal on Election of the Chairman of the Board of Directors" and approve the election of Mr. Shu Yinbiao as the Chairman of the ninth session of the Board of Directors of the Company. Due to age reasons, Mr. Cao Peixi resigned as Chairman and Director of the Company on 30 January 2019.
2. The Company held the 25th meeting of the ninth session of the Board of Directors on 20 January 2020 to review and unanimously pass the "Proposal on Election of the Director of the Company" and approve Mr. Zhao Keyu as a candidate for the Director of the ninth session of the Board of Directors of the Company for consideration at the general meeting.

3. The Company held the 26th meeting of the ninth session of the Board of Directors on 5 March 2020 to review and unanimously pass 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" and approve 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 Company. Mr. Shu Yinbiao resigned as the Chairman and Director of the Company due to work requirements. In view of the significant contributions by Mr. Shu Yinbiao to the Company during his term as the Chairman of the Company, after discussion between the Directors attending the meeting, Mr. Shu Yinbiao was appointed as the honorary chairman of the Company from the date his resignation took effect.
4. The Company has reviewed and approved the proposal of appointment of President of the Company at the 26th meeting of the ninth session of the Board held on 5 March 2020, and appointed Mr. Zhao Ping as the President of the Company. On the same day, Mr. Zhao Keyu resigned as President of the Company due to work needs.
5. The Company has reviewed and approved the proposal of appointment of vice President of the Company at the 25th meeting of the ninth session of the Board held on 20 January 2020, and appointed Mr. Huang Chaoquan as vice President of the Company.

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 2019" 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.

FOLLOW-UP PROGRESS OR CHANGES ON MATTERS REGARDING PREVIOUSLY DISCLOSED ANNOUNCEMENT

On 31 July 2018, Huaneng Shandong Power Generation Co., Ltd. ("Shandong Power Generation") and Huaneng Taishan Electric Power Co., Ltd. ("HTEP"), both of which were holding subsidiaries of the Company, entered into the Transfer Agreement on Certain Company Interests Between Huaneng Taishan Electric Power Co., Ltd. and Huaneng Shandong Power Generation Co., Ltd. In December 2018, as certain wind turbines of Laizhou Wind Power were demolished at the request of the local government, according to the provisions of the above agreement, Shandong Power Generation had transferred back 80% of the interests in Laizhou Wind Power to Huaneng Energy and Transportation Industrial Holdings Ltd., the designated third party of Taishan Power, in December 2019.

OVERVIEW

REPORT OF THE BOARD OF DIRECTORS

REQUIREMENTS UNDER THE ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORTING GUIDELINES

In 2019, in accordance with the requirements under the Environmental, Social and Governance Reporting Guide of the Hong Kong Stock Exchange, the Company has completed the preparation and disclosure of the Environmental, Social and Governance Report for 2018 in due time and accordingly further improved its corporate image in capital market. The Environmental, Social and Governance Report of the Company for 2019 will be published on the websites of the Company and the Hong Kong Stock Exchange, respectively in April 2020.

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 2019, 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 ON POVERTY ALLEVIATION

During the year, the payment for donation made in name of the Company within China for poverty alleviation amounted to RMB23.727 million.

LEGAL PROCEEDINGS

As at 31 December 2019, 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. The Company held the seventeenth meeting of the ninth session of the Board of Directors on 30 January 2019 to review and unanimously pass the "Proposal on Election of the Chairman of the Board of Directors of the Company" and approve the election of Mr. Shu Yinbiao as the Chairman of the ninth session of the Board of Directors of the Company. Due to age reasons, Mr. Cao Peixi resigned as Chairman and Director of the Company on 30 January 2019.
2. The Company held the twenty-fifth meeting of the ninth session of the Board of Directors on 20 January 2020 to review and unanimously pass the "Proposal on Election of the Director of the Company" and approve the election of Mr. Zhao Keyu as a Director of the ninth session of the Board of Directors of the Company.

3. The Company held an extraordinary general meeting on 5 March 2020 to consider and approve the proposal. Mr. Zhao Keyu was officially elected as the Director of the ninth session of Board of Directors of the Company. The Company held the twenty-sixth meeting of the ninth session of the Board of Directors on 5 March 2020 to review and unanimously pass the "Proposal on the Election of the Chairman of the Board of Directors and Chairman of the Strategy Committee and the Appointment of the Honorary Chairman of the Company" and approve 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 Company. Mr. Shu Yinbiao resigned as the Chairman and Director of the Company due to work requirements. In view of the significant contributions by Mr. Shu Yinbiao to the Company during his term as the Chairman of the Company, after discussion between the Directors attending the meeting, Mr. Shu Yinbiao was appointed as the honorary chairman of the Company from the date his resignation took effect.

AUDITORS

As approved by the Company's first extraordinary shareholders meeting in 2019, the Company appointed Ernst & Young Hua Ming LLP as the Company's domestic auditor for 2019 and the U.S. 20F annual report auditor, and appointed Ernst & Young as the Company's Hong Kong auditor for 2019.

By Order of the Board

Zhao Keyu
Chairman

Beijing, the PRC
31 March 2020

ANNUAL GENERAL MEETING AND CLOSURE OF REGISTER

As the Company has yet to confirm the date of the 2019 annual general meeting, the record date(s) for determining the eligibility to attend and vote at the 2019 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 2019 annual general meeting. Such notice is expected to be issued to shareholders in April 2020.

OVERVIEW

REPORT OF THE SUPERVISORY COMMITTEE

TO ALL SHAREHOLDERS,

In 2019, the Supervisory Committee of the Company (the "Supervisory Committee") 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. We hereby report the major work during 2019 as follows:

I. OVERALL EVALUATION ON THE COMPANY'S MANAGEMENT BEHAVIOUR AND PERFORMANCE IN 2019

In 2019, faced with complex situations, the Board of the Company adhered to the "three colors" mission, scientific decision-making and strategic guidance to continuously improve the Company's modern governance system and its governance capabilities. It actively researched and judged the changes in power, coal, capital and other markets to adapt to the new requirements of energy reform and ride with industry development trends, thereby driving the high-quality development of the Company. The management of the Company adhered to the problem-oriented and goal-oriented approach. It withstood the pressure and pooled all efforts to carry out key tasks such as structural adjustment, quality and efficiency improvement, dealing with stagnant enterprises and enterprises with difficulties, market competition, and risk prevention. We have achieved a variety of important results in improving green development, operational excellence, technological innovation, and team building, successfully completing the annual goals and tasks.

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 operating team has 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.

II. PARTICULARS OF WORK PERFORMED BY THE SUPERVISORY COMMITTEE DURING THE REPORTING PERIOD

(1) Particulars on convention of the meetings of the Supervisory Committee

During the reporting period, in accordance with the applicable laws and regulations, the Articles of Association of the Company and the practical needs of the Company's development, the Supervisory Committee of the Company convened four meetings during the year, of which two were held on-site and two via communication conference. At the meetings, the Supervisory Committee reviewed and examined 18 issues including working report of the Supervisory Committee, financial reports, regular reports, profit distribution plans, the proposal on provision for impairment of the Company's major assets, annual assessment reports on internal control by the Board, social responsibility reports, implementation of new accounting standards, and change in proceeds, thereby effectively performing the duties

of supervision and examination. 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.

(2) Training for the members of the Supervisory Committee

All the Supervisors of the Company place great emphasis on study of the relevant knowledge, so as to get an understanding of the most updated development of the laws and regulations and relevant policies of the place where the Company is listed in a timely basis. The Supervisors proactively attended the regular trainings and special trainings organized by the SSE, the relevant regulators and industry associations. In 2019, the Supervisors of the Company have attended a total of four of the aforesaid trainings, and further enhanced their capability to perform their duty and improve their practice through study. 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 SUPERVISORY COMMITTEE

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.

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 2019, and carefully audited the final financial reports of the Company for 2019, the profit distribution plan of the Company for 2019, the annual report of the Company for 2019 and the auditor's reports for 2019 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 2019. The domestic and international auditors of the

OVERVIEW

REPORT OF THE SUPERVISORY COMMITTEE

Company have issued their audit report for the Company for 2019 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 connected transactions

In 2019, the Supervisory Committee attached great importance to the implementation process and changes of the Board's resolution regarding the fund-raising activities, considered and approved the Special Report on the Deposit and the Actual Use of Proceeds for the First Half of 2019, and strictly complied with the regulations on the management of proceeds to ensure that the changes in proceeds do not change the implementation plan of the proceeds-funded projects, and do not affect the normal implementation of the proceeds investment plans. During the Reporting Period, the Supervisory Committee reviewed the Proposal on Provision for Impairment of the Company's Major Assets and the Proposal on the Provision of the Guaranteed by Shandong Company to Its Subsidiary that were considered and approved by the Board, evaluated the reasonableness and feasibility of the Board's resolutions on asset impairment and external guarantees, and urged the Company to make full, truthful and timely information disclosure. The Supervisory Committee continued to focus on the Company's connected party transactions, and reviewed three resolutions of the Board, namely the Proposal on Daily Connected Transactions with Huaneng Group in 2020, the Proposal on Daily Connected Transactions with Huaneng Finance from 2020 to 2022, and the Proposal on the Daily Connected Transactions with Tiancheng Leasing from 2020 to 2022.

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 related 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 "Administrative Measures for Information Disclosure" 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.

III. TASKS FOR THE NEXT PERIOD

In 2020, the Supervisory Committee of the Company will have a re-election. The Supervisory Committee will actively push forward the re-election to ensure a smooth transition and seamless hand over of the new and old session of the Supervisory Boards. Upholding the principle of diligence and integrity, it will further implement the new development philosophy to meet the requirements of high-quality development. It will focus on self-improvement, fulfill its duties, and stay realistic and pragmatic, conscientiously fulfilling the sacred supervisory duties given by shareholders. It will strengthen procedure control and process supervision, adhere to the bottom-line thinking, be prepared for unexpected development, and improve prevention and control capabilities to effectively safeguard and protect the legitimate rights and interests of shareholders and the Company. It will assist Shareholders' general meetings and the Board in standardizing and improving the corporate governance, and contribute to accelerating the building of a world-class listed power generation company with global competitiveness.

Supervisory Committee

Huaneng Power International Inc

Beijing, the PRC

31 March 2020

OVERVIEW

PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

PROFILES OF DIRECTORS AND SUPERVISORS

Directors



ZHAO Keyu, aged 53, 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 political work specialist.



HUANG Jian, aged 57, is a Director of the Company, a dedicated Director and Supervisor appointed by Huaneng Group, a dedicated director of HIPDC, a dedicated director of Shandong Power Generation Co., Ltd., and the Chairman of the Supervisory Committee of Huaneng Renewables Corporation Limited. 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 senior accountant.



WANG Yongxiang, aged 54, is a Director of the Company, security director (chief security officer) of China Huaneng Group. He was the Chairman of Huaneng Lancangjiang Hydropower Co., Inc., the President of Yunnan branch of Huaneng Group, the Chairman and Party Secretary of HIPDC, the Chief of Power Development Business Division and the Shale Gas Exploitation and Utilization Office of Huaneng Group, and the president of GreenGen Co., Ltd. He graduated from Tsinghua University where he majored in hydraulic engineering and holds a postgraduate degree of master in engineering. He is a professor-grade senior engineer.



MI Dabin, aged 51, is a Director of the Company, the President, Deputy Party Secretary and Vice Chairman of Hebei Construction & Investment Group Co., Ltd., Party Secretary and Chairman of Hebei Rong Tou Holding Group Co., Ltd., the Chairman of Hebei Xingtai Power Generation Limited, 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., 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 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.



GUO Hongbo, aged 51, is a Director of the Company, 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. 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 ShenyangJinshan 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-grade senior engineer.



CHENG Heng, aged 56, 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.

OVERVIEW

PROFILES OF DIRECTORS, SUPERVISORS
AND SENIOR MANAGEMENT

LIN Chong, aged 56, is a Director of the Company, a Member of CPC Committee 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 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.



YUE Heng, aged 45, is an Independent Director of the Company, 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, 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.



XU Mengzhou, aged 69, 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 68, is an Independent Director of the Company, an academician of the Chinese Academy of Engineering, a Director of the National Key Laboratory of New Energy Power System of North China Electric Power University, a chief scientist of the 973 Program, the Vice President of the 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.



XU Haifeng, aged 64, 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 62, 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 Dalian Zhiyun Automation Co., Ltd.. Mr. Zhang was formerly an accountant of Dalian City Transportation Bureau, a researcher of Dalian Economic Commission, professor and 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.

OVERVIEW

PROFILES OF DIRECTORS, SUPERVISORS
AND SENIOR MANAGEMENT

Supervisors



YE Xiangdong, aged 52, is the Chairman of the Supervisory Committee of the Company and the President and Deputy Secretary of Leading Party Members' Group of Huadian Group. He was the Executive Director and President of Huaneng Hulun Buir Energy Development Company Ltd. and the Chief Engineer, vice President and a Member of the Leading Party Members' Group of Huaneng Group. He graduated from Chongqing University, majoring in thermal energy, and holds a master's degree in Engineering. He is a senior engineer.



MU Xuan, aged 44, is the Vice Chairman of the Supervisory Committee of the Company, the Vice President and a Member of CPC 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.



ZHANG Mengjiao, aged 55, is a Supervisor of the Company. She was the Deputy Manager of the Finance Department of the Company, the Deputy Chief Accountant of HIPDC and the Manager of the Finance Department of HIPDC. She graduated from Xiamen University, majoring in accounting. She is a master's degree postgraduate in economics and is a senior accountant.



GU Jianguo, aged 53, is a Supervisor of the Company, the Chairman of Nantong Investment & Management Limited Company, and Vice Chairman and the Vice President of Nantong Industries Holdings Group Limited (南通產業控股集團有限公司). 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 53, is a Supervisor and Manager of the Discipline Inspection, Supervision and Audit Department of the Company. She was Deputy Manager of the Administration Department and the Vice Chairman of Labour Union 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.



ZHANG Xiancheng, aged 55, is a Supervisor and the Manager of Party Building Work Department of the Company. He was the Manager of the Political Work Department of the Company. He graduated from Northeast Agriculture University, majoring in business administration, and holds a bachelor's degree in economics. He is a senior economist.

OVERVIEW

PROFILES OF DIRECTORS, SUPERVISORS
AND SENIOR MANAGEMENT

Biographies of Senior Management



ZHAO Ping, aged 57, is the President and the Deputy Party Secretary of the Company. He was the Vice President 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-grade senior engineer. He enjoyed special government allowance of the State Council.



WU Senrong, aged 58, is currently the Vice President and a Member of Party Committee of the Company. He was a Member of the Party Committee and Secretary of Discipline & Inspection Committee of the Company. He graduated from the Economic Management School of Tsinghua University with an EMBA degree. He is a professor-grade senior engineer.



LI Jianmin, aged 58, is the Vice President and a Member of Party Committee of the Company. 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-grade senior engineer.



LIU Ranxing, aged 57, is the Vice President, a Member of Party Committee and the Secretary of the Discipline Inspection commission of the Company. He was the President of Huaneng Energy & Communications Holdings Co., Ltd. He graduated from Harbin Institute of Technology, majoring in management engineering, with a master's degree in science. He is a professor-grade senior engineer.



HUANG Lixin, aged 53, is currently the Chief accountant and a Member of Party Committee of the Company. He was the 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 senior accountant.



HUANG Chaoquan, aged 54, is currently the Vice President, a Member of Party Committee, the Secretary to the Board and Manager of the Administration Department of the Company. He was the Manager of the Corporate Management Department of the Company. He graduated from Harbin University of Science and Technology with a postgraduate degree in Management Engineering. He is a senior economist.

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PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

Resigned Directors, Supervisors and Senior Management



SHU Yinbiao, aged 61, is the honorary chairman of the Company, the Chairman and the Secretary of the Leading Party Members' Group of Huaneng Group, 36th president of International Electrotechnical Commission (IEC), an academican of the Chinese Academy of Engineering. He was the Chairman and Secretary of the Party Committee 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-grade senior engineer.



CAO Peixi, aged 64, was the Chairman of the Company during the reporting period. He graduated from Shandong University, majoring in electrical engineering. He is a postgraduate with master's degree in engineering awarded by the Party School of the Central Committee, and is a professor-grade senior engineer.



SONG Zhiyi, aged 59, was the Vice President and a Member of Party Committee of the Company during the reporting period. He graduated from the Guanghua Management Institute of Peking University, with an MBA degree. He is a senior engineer.

OVERVIEW

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

OVERVIEW
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
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
ADs:	The New York Stock Exchange, Inc. Ticker Symbol: HNP
A Shares:	Shanghai Stock Exchange Stock Code: 600011

DOCUMENTS FOR INSPECTION

The Company's report on interim results and the annual report (A share version and H share version) was published in August 2019 and will be published in April 2020, 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 2020. 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
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

OVERVIEW

GLOSSARY

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, = 10⁹W, gigawatt

MW: = 10⁶W, megawatt

kW: = 10³W, kilowatt

kWh: Unit of power, kilowatt hour

INDEPENDENT AUDITOR'S REPORT



Ernst & Young
22/F, CITIC Tower
1 Tim Mei Avenue
Central, Hong Kong

安永會計師事務所
香港中環添美道1號
中信大廈22樓

Tel 電話: +852 2846 9888
Fax 傳真: +852 2868 4432
ey.com

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 112 to 305, which comprise the consolidated statement of financial position as at 31 December 2019, 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 2019, and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards ("IFRSs") issued by the International Accounting Standards Board ("IASB") and have been properly prepared in compliance with the disclosure requirements of the Hong Kong Companies Ordinance.

BASIS FOR OPINION

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

KEY AUDIT MATTERS

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

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

INDEPENDENT AUDITOR'S REPORT

KEY AUDIT MATTERS *(Cont'd)*

Key audit matter

How our audit addressed the key audit matter

Impairment of property, plant and equipment

At 31 December 2019, the Group held property, plant and equipment ("PPE") in the amount of RMB285,623 million. As described in Notes 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 RMB5,720 million were recognised during the year ended 31 December 2019.

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 unexpected 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, that is, recoverable amount calculations based on future discounted cash flows, 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 analyzing 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 included in Note 7 to the consolidated financial statements regarding the impairment assessment.

KEY AUDIT MATTERS *(Cont'd)*

Key audit matter

Impairment of goodwill

At 31 December 2019, the Group's goodwill was RMB15,935 million. As described in Notes 2(k), 2(l), 4(a) and 15 to the consolidated financial statements, the Group is required to, at least annually, perform impairment assessments of goodwill. For the purpose of performing impairment assessments, goodwill was allocated to CGUs. A goodwill impairment loss is recognized if the carrying amount of the CGU exceeds its recoverable amount. As a result of the impairment assessment, there is no goodwill impairment loss during the year ended 31 December 2019.

Auditing management's annual 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 unexpected changes in 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 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, that is, recoverable amount calculations based on future discounted cash flows, 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 analyzing 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 key 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 included in Note 15 to the consolidated financial statements regarding the impairment assessment.

INDEPENDENT AUDITOR'S REPORT

KEY AUDIT MATTERS *(Cont'd)*

Key audit matter

Recognition of deferred tax assets

At 31 December 2019, the Group recognized deferred tax assets on deductible temporary differences and tax losses carried forward of RMB2,160 million. At 31 December 2019, the Group did not recognize deferred tax assets related to deductible temporary differences of RMB9,833 million and unused tax losses of RMB10,505 million. As described in Notes 2(w)(iii), 4(g) and 33 to the consolidated financial statements, the Group recognized deferred tax assets to the extent that it is probable that future taxable profits and taxable temporary differences will be available to utilize the deferred tax assets.

Auditing management's recognition of deferred tax assets is complex because it requires significant estimation and judgment and involves significant assumptions, including future taxable profits, future tax rates, the reversal of deductible and taxable temporary differences, and the possible utilization of tax losses carried forward that could be significantly affected by unexpected 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, nature of the deductible and taxable temporary differences, and the possible utilization of tax losses carried forwards, with the tax law framework. We recalculated the Group's utilization of losses carried forward and deductible temporary differences used in management's calculation to determine whether the amounts exceed 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 analyzing 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 agreed 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 included in Note 33 to the consolidated financial statements 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.

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.

INDEPENDENT AUDITOR'S REPORT

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

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.

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, related safeguards.

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

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

22/F CITIC Tower
1 Tim Mei Avenue
Central, Hongkong

31 March 2020

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2019

(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	
		2019	2018
Operating revenue	5	174,009,401	169,550,624
Tax and levies on operations		(1,832,975)	(1,788,998)
Operating expenses			
Fuel	6	(97,686,799)	(105,736,173)
Maintenance		(4,606,171)	(4,393,335)
Depreciation	6	(21,864,903)	(20,466,423)
Labour	39	(13,514,752)	(11,845,280)
Service fees on transmission and transformer facilities of HIPDC		(95,067)	(96,721)
Purchase of electricity		(5,151,578)	(4,678,431)
Others	6	(16,879,425)	(10,430,998)
Total operating expenses		(159,798,695)	(157,647,361)
Profit from operations		12,377,731	10,114,265
Interest income		264,554	234,604
Financial expenses, net			
Interest expense	6	(10,762,718)	(10,486,412)
Exchange loss and bank charges, net		(210,422)	(160,899)
Total financial expenses, net		(10,973,140)	(10,647,311)
Share of profits less losses of associates and joint ventures	8	1,185,622	1,823,415
Gain on fair value changes of financial assets/liabilities	6	36,667	726,843
Other investment income/(loss)	6	228,026	(278,669)
Profit before income tax expense	6	3,119,460	1,973,147
Income tax expense	35	(2,011,255)	(643,173)
Net profit		1,108,205	1,329,974

The notes on pages 125 to 305 are an integral part of these financial statements.

	For the year ended 31 December	
	2019	2018
Other comprehensive income/(loss), net of tax		
<i>Items that will not be reclassified to profit or loss in subsequent periods:</i>		
Fair value changes of other equity instrument investments	(61,652)	1,381
Share of other comprehensive income/(loss) of joint ventures and associates	367,528	(18,858)
Income tax effect	15,413	(345)
<i>Items that may be reclassified subsequently to profit or loss:</i>		
Share of other comprehensive income/(loss) of joint ventures and associates	1,168	(241,587)
Cash flow hedges:		
Effective portion of changes in fair value of hedging instruments arising during the year	264,691	(167,647)
Reclassification adjustments for gains included in the consolidated statement of profit or loss	(119,793)	(436,846)
Exchange differences on translation of foreign operations	128,494	343,702
Income tax effect	(24,962)	101,311
Other comprehensive income/(loss), net of tax	570,887	(418,889)
Total comprehensive income	1,679,092	911,085

The notes on pages 125 to 305 are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2019

(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	
		2019	2018
Net profit attributable to:			
– Equity holders of the Company		766,345	734,435
– Non-controlling interests		341,860	595,539
		1,108,205	1,329,974
Total comprehensive income attributable to:			
– Equity holders of the Company		1,498,013	340,101
– Non-controlling interests		181,079	570,984
		1,679,092	911,085
Earnings per share attributable to the shareholders of the Company (expressed in RMB per share)			
– Basic and diluted	36	0.01	0.03

The notes on pages 125 to 305 are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2019

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

	Note	As at 31 December	
		2019	2018
ASSETS			
Non-current assets			
Property, plant and equipment	7	285,622,907	282,061,272
Right-of-use assets	44	17,168,072	—
Investments in associates and joint ventures	8	20,783,259	19,553,964
Investment properties		671,710	232,554
Other equity instrument investments	10	779,218	2,083,419
Land use rights	11	—	11,450,034
Power generation licences	12	4,149,468	4,014,972
Mining rights	13	1,577,505	1,511,186
Deferred tax assets	33	2,160,187	2,282,585
Derivative financial assets	14	16,376	5,970
Goodwill	15	15,934,955	15,572,227
Other non-current assets	16	18,605,005	19,336,059
Total non-current assets		367,468,662	358,104,242
Current assets			
Inventories	17	8,883,183	9,543,691
Other receivables and assets	18	6,217,763	6,455,911
Accounts receivable	19	32,268,939	29,278,938
Contract assets	5(c)	30,466	11,058
Derivative financial assets	14	74,911	28,735
Bank balances and cash	37	13,306,139	15,832,788
		60,781,401	61,151,121
Assets held for sale	20	—	647,948
Total current assets		60,781,401	61,799,069
Total assets		428,250,063	419,903,311

The notes on pages 125 to 305 are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2019

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

	Note	As at 31 December 2019	2018
EQUITY AND LIABILITIES			
Capital and reserves attributable to equity holders of the Company			
Share capital	22	15,698,093	15,698,093
Other equity instruments	23	25,127,821	10,077,396
Capital surplus		26,215,137	26,194,931
Surplus reserves	24	8,140,030	8,140,030
Currency translation differences		(54,812)	(340,337)
Retained earnings		33,677,466	34,665,305
		108,803,735	94,435,418
Non-controlling interests	43	21,575,311	21,686,252
Total equity		130,379,046	116,121,670
Non-current liabilities			
Long-term loans	26	115,364,598	129,548,161
Long-term bonds	27	28,487,115	25,984,663
Lease liabilities	44	4,279,925	—
Deferred tax liabilities	33	3,137,791	3,866,159
Derivative financial liabilities	14	200,408	231,308
Other non-current liabilities	28	4,780,770	5,945,136
Total non-current liabilities		156,250,607	165,575,427

The notes on pages 125 to 305 are an integral part of these financial statements.

	Note	As at 31 December	
		2019	2018
EQUITY AND LIABILITIES <i>(Continued)</i>			
Current liabilities			
Accounts payable and other liabilities	29	37,270,081	35,138,680
Contract liabilities	5(c)	2,706,529	1,976,647
Taxes payable	30	2,101,617	1,474,437
Dividends payable		1,191,036	1,267,833
Derivative financial liabilities	14	250,300	313,984
Short-term bonds	31	9,025,535	11,541,454
Short-term loans	32	67,119,368	61,038,772
Current portion of long-term loans	26	18,658,114	20,620,849
Current portion of long-term bonds	27	2,799,808	3,993,479
Current portion of lease liabilities	44	432,745	—
Current portion of other non-current liabilities	28	65,277	475,646
		141,620,410	137,841,781
Liabilities held for sale	20	—	364,433
Total current liabilities		141,620,410	138,206,214
Total liabilities		297,871,017	303,781,641
Total equity and liabilities		428,250,063	419,903,311

These financial statements were approved for issue by the Board of Directors on 31 March 2020 and were signed on its behalf.

Zhao Keyu
Director

Huang Jian
Director

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2019

(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							Subtotal	Surplus reserve	Currency translation differences	Retained earnings	Total				
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value Reserve of financial assets at		Other capital reserve									
					through other comprehensive income	Other reserve in other comprehensive income										
Balance as at 31 December																
2018	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		
Total comprehensive income/ (loss) for the year ended 31																
December 2019	—	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 125 to 305 are an integral part of these 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		Other capital reserve	Subtotal	Surplus reserve	Currency translation differences	Retained earnings	Total	Total		
					through other comprehensive income	Other reserve in other comprehensive income									
fair value					Other reserve										
Issue of other equity instruments (Note 23)	—	14,982,165	—	—	—	—	—	—	—	—	14,982,165	—	14,982,165		
Dividends relating to 2018 (Note 25)	—	—	—	—	—	—	—	—	—	(1,569,809)	(1,569,809)	(1,359,777)	(2,929,586)		
Cumulative distribution of other equity instruments (Note 23)	—	(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 (Note 10)	—	—	—	—	(501,547)	—	—	(501,547)	—	—	501,547	—	—	—	
Balance as at 31 December 2019	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	

The notes on pages 125 to 305 are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2019
(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							Subtotal	Surplus reserve	Currency translation differences	Retained earnings	Total			
	Share capital	Other equity instruments	Share premium	Hedging reserve	Fair value Reserve of financial assets		Other reserve in other comprehensive income								
					at fair value through other comprehensive income	Other reserve in other comprehensive income									
Adjusted balance as at 1 January 2018	15,200,383	5,068,550	22,250,503	38,769	944,603	138,857	1,111,614	24,484,346	8,140,030	(675,054)	35,793,257	88,011,512	19,973,038	107,984,550	
Profit for the year ended 31 December 2018	—	342,349	—	—	—	—	—	—	—	—	392,086	734,435	595,539	1,329,974	
Other comprehensive income/ (loss):															
Fair value changes of other equity investment instruments, net of tax	—	—	—	—	1,059	—	—	1,059	—	—	—	1,059	(23)	1,036	
Shares of other comprehensive income of investees – accounted for under the equity method, net of tax	—	—	—	—	(18,858)	(241,587)	—	(260,445)	—	—	—	(260,445)	—	(260,445)	
Changes in fair value of effective portion and reclassification of cash flow hedges, net of tax	—	—	—	(469,665)	—	—	—	(469,665)	—	—	—	(469,665)	(33,517)	(503,182)	
Currency translation differences	—	—	—	—	—	—	—	—	—	334,717	—	334,717	8,985	343,702	
Total comprehensive income/ (loss) for the year ended 31 December 2018	—	342,349	—	(469,665)	(17,799)	(241,587)	—	(729,051)	—	334,717	392,086	340,101	570,984	911,085	

The notes on pages 125 to 305 are an integral part of these financial statements.

	Attributable to equity holders of the Company													
	Capital surplus												Non-controlling interests	Total equity
	Share capital	Other equity		Hedging reserve	Fair value Reserve of financial assets		Other capital reserve	Subtotal	Surplus reserve	Currency translation differences	Retained earnings	Total		
		instruments	Share premium		at fair value through other comprehensive income	Other reserve in other comprehensive income								
Business combination	—	—	—	—	—	—	—	—	—	—	—	1,590,753	1,590,753	
Issue of new A shares, net of issue expenses	497,710	—	2,747,620	—	—	—	2,747,620	—	—	—	3,245,330	—	3,245,330	
Issue of other equity instruments	—	5,000,000	—	—	—	—	—	—	—	—	5,000,000	—	5,000,000	
Dividends relating to 2017	—	—	—	—	—	—	—	—	—	(1,520,038)	(1,520,038)	(797,858)	(2,317,896)	
Cumulative distribution of other equity instruments	—	(333,503)	—	—	—	—	—	—	—	—	(333,503)	—	(333,503)	
Net capital injection from non-controlling interests of subsidiaries	—	—	—	—	—	—	—	—	—	—	—	726,531	726,531	
Acquisition of non-controlling interests of subsidiaries	—	—	(227,441)	—	—	—	(227,441)	—	—	—	(227,441)	(377,196)	(604,637)	
Share of other capital reserve of investees accounted for under the equity method	—	—	—	—	—	(80,543)	(80,543)	—	—	—	(80,543)	—	(80,543)	
Balance as at 31 December 2018	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

The notes on pages 125 to 305 are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 31 DECEMBER 2019

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

	Note	For the year ended 31 December	
		2019	2018
OPERATING ACTIVITIES			
Profit before income tax expense		3,119,460	1,973,147
Adjustments to reconcile profit before income tax expense to net cash provided by operating activities:			
Depreciation	6	21,130,076	20,466,423
Depreciation of right-of-use assets	6	734,827	—
Provision for impairment loss on property, plant and equipment	6	5,719,990	989,778
Provision for impairment on goodwill	6	—	409,371
Provision for impairment on mining rights	6	—	135,085
Provision for impairment on other non-current assets	6	464,867	8,432
Amortisation of land use rights	6	—	344,068
Amortisation of other non-current assets	6	101,902	105,623
Recognition of provision for loss allowance	6	74,557	40,967
Recognition/(reversal) of provision for inventory obsolescence	6	22,453	253,816
Gain on fair value changes of financial assets/liabilities	6	(36,667)	(726,843)
Other investment loss		59,996	278,669
Net gain on disposals of non-current assets	6	(69,449)	(47,005)
Net gain on disposal of subsidiaries	6	(256,009)	—
Unrealised exchange loss, net		113,850	103,888
Share of profits less losses of associates and joint ventures		(1,185,622)	(1,823,415)
Interest income		(264,554)	(234,604)
Interest expense	6	10,762,718	10,486,412
Others		(364,033)	(197,393)
Changes in working capital:			
Inventories		638,055	(1,996,075)
Other receivables and assets		82,840	(150,782)
Accounts receivable		(3,442,544)	(3,273,058)
Contract assets		(19,408)	(11,058)
Restricted cash		(141,271)	(347,777)
Accounts payable and other liabilities		(520,570)	349,703
Contract liabilities		730,356	471,721
Taxes payable		1,740,068	2,565,786
Interest received		264,554	173,986
Income tax paid		(2,136,249)	(1,620,887)
Net cash provided by operating activities		37,324,193	28,727,978

The notes on pages 125 to 305 are an integral part of these financial statements.

	Note	For the year ended 31 December	
		2019	2018
INVESTING ACTIVITIES			
Payment for the purchase of property, plant and equipment		(31,382,657)	(20,613,314)
Proceeds from disposal of property, plant and equipment, land use rights and other non-current assets		464,542	127,182
Prepayments of land use rights		—	(94,684)
Payment for the purchase of other non-current assets		(113,124)	30,107
Cash dividends received		668,906	618,592
Capital injection for investments in associates and joint ventures		(313,197)	(463,259)
Cash paid for acquiring other equity instrument investments		(7,450)	(450)
Cash paid for acquiring a subsidiary, net of cash acquired	42a	(71,696)	(674,845)
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		500,041	694,789
Net cash used in investing activities		(29,033,985)	(20,375,882)

The notes on pages 125 to 305 are an integral part of these financial statements.

CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 31 DECEMBER 2019
(Prepared in accordance with International Financial Reporting Standards)
(Amounts expressed in thousands of RMB)

	Note	For the year ended 31 December	
		2019	2018
FINANCING ACTIVITIES			
Issuance of short-term bonds		30,000,000	40,000,000
Repayments of short-term bonds		(32,500,000)	(39,500,000)
Proceeds from short-term loans		92,890,098	77,005,025
Repayments of short-term loans		(87,001,921)	(98,345,708)
Proceeds from long-term loans		27,408,223	48,859,376
Repayments of long-term loans		(43,915,444)	(34,269,623)
Issuance of long-term bonds		5,300,000	13,999,807
Repayments of long-term bonds		(4,000,000)	(4,000,000)
Interest paid		(11,641,439)	(10,987,871)
Net proceeds from the issuance of other equity instruments		14,982,165	5,000,000
Net proceeds from the issuance of new shares		—	3,245,330
Net capital injections from non-controlling interests of subsidiaries		1,016,150	725,683
Dividends paid to shareholders of the Company		(1,569,809)	(1,520,038)
Dividends paid to non-controlling interests of subsidiaries		(1,436,574)	(1,265,451)
Lease payments/finance lease rental payments		(488,015)	(637,026)
Cash paid for acquisition of non-controlling interests of a subsidiary		(6,802)	—
Others		(364,815)	(552,574)
Net cash used in financing activities		(11,328,183)	(2,243,070)
Effect of exchange rate fluctuations on cash held		63,551	26,266
NET (Decrease)/INCREASE IN CASH AND CASH EQUIVALENTS		(2,974,424)	6,135,292
Cash and cash equivalents as at beginning of the year		15,417,682	9,282,390
CASH AND CASH EQUIVALENTS AS AT END OF THE YEAR	37	12,443,258	15,417,682

The notes on pages 125 to 305 are an integral part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2019

(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, which HIPDC is the parent company and Huaneng Group is 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 (“IFRS”) 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.

Non-current assets and disposal group held for sale are stated at the lower of carrying amount and fair value less costs to sell.

The preparation of financial statements in conformity with IFRS requires the use of certain critical accounting estimates. It also requires management to exercise its judgement in the process of applying the Group’ 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 2019

(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 2019, the Group had net current liabilities of approximately RMB80.84 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 RMB295.7 billion as at 31 December 2019, 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 following new and revised IFRSs for the first time for the current year's consolidated financial statements.

- (i) Amendments to IFRS 9 *Prepayment Features with Negative Compensation*
- (ii) IFRS 16 *Leases*
- (iii) Amendments to IAS 19 *Plan Amendment, Curtailment or Settlement*
- (iv) Amendments to IAS 28 *Long-term Interests in Associates and Joint Ventures*
- (v) IFRIC 23 *Uncertainty over Income Tax Treatments*
- (vi) *Annual Improvements to IFRSs 2015-2017 Cycle*-Amendments to IFRS 3, IFRS 11, IAS 12 and IAS 23

Except for the amendments to IFRS 9 and IAS 19, and IFRS 3 and IFRS 11 as part of *Annual Improvements to IFRSs 2015-2017 Cycle*, which are not relevant to the preparation of the Group's financial statements, the nature and the impact of the new and revised IFRSs are described below:

2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

(i) IFRS 16 Leases

IFRS 16 replaces IAS 17 *Leases*, IFRIC 4 *Determining whether an Arrangement contains a Lease*, SIC 15 *Operating Leases – Incentives* and SIC Int 27 *Evaluating the Substance of Transactions Involving the Legal Form of a Lease*. The standard sets out the principles for the recognition, measurement, presentation and disclosure of leases and requires lessees to account for all leases under a single on-balance sheet model to recognise and measure right-of-use assets and lease liabilities, except for certain recognition exemptions. Lessor accounting under IFRS 16 is substantially unchanged from IAS 17. Lessors will continue to classify leases as either operating or finance leases using similar principles as in IAS 17. IFRS 16 did not have any significant impact on leases where the Group is the lessor.

The Group has adopted IFRS 16 using the modified retrospective method of adoption with the date of initial application of 1 January 2019. Under this method, 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 2018 was not restated and continued to be reported under IAS 17.

New definition of a lease

Under IFRS 16, a contract is, or contains, a lease if the contract conveys a right to control the use of an identified asset for a period of time in exchange for consideration. Control is conveyed where the customer has both the right to obtain substantially all of the economic benefits from use of the identified asset and the right to direct the use of the identified asset. The Group elected to use the transition practical expedient allowing the standard to be applied only to contracts that were previously identified as leases applying IAS 17 and IFRIC 4 at the date of initial application. Contracts that were not identified as leases under IAS 17 and IFRIC 4 were not reassessed. Therefore, the definition of a lease under IFRS 16 has been applied only to contracts entered into or changed on or after 1 January 2019.

At inception or on reassessment of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease and non-lease component on the basis of their stand-alone prices. A practical expedient is available to a lessee, which the Group has adopted, not to separate non-lease components and to account for the lease and the associated non-lease components (e.g., property management services for leases of properties) as a single lease component at the date of initial application.

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

(i) IFRS 16 Leases (Cont'd)

As a lessee – Leases previously classified as operating leases

Nature of the effect of adoption of IFRS 16

The Group has lease contracts for various items of building, electric utility plant in service, transportation facilities, land use rights and other equipment. As a lessee, the Group previously classified leases as either finance leases or operating leases based on the assessment of whether the lease transferred substantially all rewards and risks of ownership of assets to the Group. Under IFRS 16, the Group applies a single approach to recognise and measure right-of-use assets and lease liabilities for all leases, except for two elective exemptions for leases of low value assets (elected on a lease by lease basis) and short-term leases (elected by class of underlying assets). Instead, the Group recognises the lease payments associated with those leases as an expense on a straight-line basis over the lease term. Instead of recognising rental expenses under operating leases on a straight-line basis over the lease term commencing from 1 January 2019, the Group recognises depreciation (and impairment, if any) of the right-of-use assets and interest accrued on the outstanding lease liabilities as finance expenses.

Impact on transition

Lease liabilities at 1 January 2019 were recognised based on the present value of the remaining lease payments discounted using the incremental borrowing rate at 1 January 2019 and included in non-current liabilities or current liabilities.

The right-of-use assets were measured at the amount of the lease liabilities, adjusted by the amount of any prepaid or accrued lease payments relating to the lease recognised in the statement of financial position immediately before 1 January 2019. All these assets were assessed for any impairment based on IAS 36 on that date. The Group elected to present the right-of-use assets separately in the statement of financial position. This includes the lease assets recognised previously under finance leases of RMB1,617 million and prepayments on land use rights of RMB11,450 million that were reclassified from property, plant and equipment and land use right, respectively.

The Group has used the following elective practical expedients when applying IFRS 16 at 1 January 2019:

- Used a single discount rate to a portfolio of leases with reasonably similar characteristics
- Applied the short-term leases exemptions to leases with lease term that ends within 12 months at the date of initial application
- Excluded the initial direct costs from the measurement of the right-of-use asset at the date of initial application
- Used hindsight in determining the lease term where the contract contains options to extend or terminate the lease

2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

(i) IFRS 16 Leases (Cont'd)

As a lessee – Leases previously classified as finance leases

The Group did not change the initial carrying amounts of recognised assets and liabilities at the date of initial application for leases previously classified as finance leases. Accordingly, the carrying amounts of the right-of-use assets and the lease liabilities at 1 January 2019 were the carrying amounts of the recognised assets of RMB775 million and liabilities of RMB775 million. (i.e., finance lease payables) measured under IAS 17.

The effect of adoption of IFRS 16 as at 1 January 2019 is as follows:

Assets	Increase/ (Decrease)
	RMB'000
Increase in right-of-use assets	13,858,230
Decrease in property, plant and equipment	(1,616,551)
Decrease in land use rights	(11,450,034)
Decrease in other non-current assets	(17,027)
Increase in total assets	774,618
Liabilities	
Increase in non-current portion of lease liabilities	2,113,533
Increase in current portion of lease liabilities	103,259
Decrease in other non-current liabilities	(1,442,174)
Increase in total liabilities	774,618
Decrease in retained earnings	—
Decrease in non-controlling interests	—

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

(i) IFRS 16 Leases (Cont'd)

Financial impact at 1 January 2019

The lease liabilities as at 1 January 2019 are reconciled to the operating lease commitments as at 31 December 2018 as follows:

	RMB'000
Operating lease commitments as at 31 December 2018	1,647,251
Less:	
Commitments relating to short-term leases and those leases with a remaining lease term ended on or before 31 December 2019	85,604
Adjustment related to variable rents	755,986
Add:	
Commitments relating to leases previously classified as finance leases as at 31 December 2018	1,758,970
Total undiscounted lease liabilities as at 1 January 2019 for adoption of IFRS 16	2,564,631
Weighted average incremental borrowing rate as at 1 January 2019	4.75%
Lease liabilities as at 1 January 2019	2,216,792

(ii) Amendments to IAS 28 Long-term Interests in Associates and Joint Ventures

Amendments to IAS 28 clarify that the scope exclusion of IFRS 9 only includes interests in an associate or joint venture to which the equity method is applied and does not include long-term interests that in substance form part of the net investment in the associate or joint venture, to which the equity method has not been applied. Therefore, an entity applies IFRS 9, rather than IAS 28, including the impairment requirements under IFRS 9, in accounting for such long-term interests. IAS 28 is then applied to the net investment, which includes the long-term interests, only in the context of recognising losses of an associate or joint venture and impairment of the net investment in the associate or joint venture. The Group assessed its business model for its long-term interests in associates and joint ventures upon adoption of the amendments on 1 January 2019 and concluded that the long-term interests in associates and joint ventures continued to be measured at amortised cost in accordance with IFRS 9. Accordingly, the amendments did not have any impact on the financial position or performance of the Group.

2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

(iii) IFRIC 23 Uncertainty over Income Tax Treatments

IFRIC 23 addresses the accounting for income taxes (current and deferred) when tax treatments involve uncertainty that affects the application of IAS 12 (often referred to as “uncertain tax positions”). The interpretation does not apply to taxes or levies outside the scope of IAS 12, nor does it specifically include requirements relating to interest and penalties associated with uncertain tax treatments. The interpretation specifically addresses (i) whether an entity considers uncertain tax treatments separately; (ii) the assumptions an entity makes about the examination of tax treatments by taxation authorities; (iii) how an entity determines taxable profits or tax losses, tax bases, unused tax losses, unused tax credits and tax rates; and (iv) how an entity considers changes in facts and circumstances. Upon adoption of the interpretation, the Group considered whether it has any uncertain tax positions arising from transactions during the year. Based on the management’s assessment, the directors are of opinion that the eventual outcome of the uncertain position shall not have a material adverse financial impact.

(iv) Annual Improvements to IFRSs 2015-2017 Cycle-Amendments to IFRS 3, IFRS 11, IAS 12 and IAS 23

IAS 12 Income Taxes

The amendments clarify that the income tax consequences of dividends are linked more directly to past transactions or events that generated distributable profits than to distributions to owners. Therefore, an entity recognises the income tax consequences of dividends in profit or loss, other comprehensive income or equity according to where it originally recognised those past transactions or events. Since the Group’s current practice is in line with these amendments, they have had no impact on the consolidated financial statements of the Group.

IAS 23 Borrowing Costs

The amendments clarify that an entity treats as part of general borrowings any borrowing originally made to develop a qualifying asset when substantially all of the activities necessary to prepare that asset for its intended use or sale are complete. Since the Group’s current practice is in line with these amendments, they have had no impact on the consolidated financial statements of the Group.

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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.

2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(c) Consolidation (Cont'd)

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.

(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 disposed directly of the previously held equity interest.

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.

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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.

2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

(c) Consolidation *(Cont'd)*

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

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

When the investees appropriate profit or declare dividends, the carrying value of long-term equity investments are 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)).

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(d) Separate financial statements of the Company

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

(e) Segment reporting

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

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

(f) Foreign currency translation

(i) Functional and presentation currency

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

(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.

2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

(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.

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 are 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 difference is reclassified to profit or loss.

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(g) Property, plant and equipment

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

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.

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

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

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

2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

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

The carrying amount of property, plant and equipment is written down immediately to its recoverable amount when its carrying amount is greater than its 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).

(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 amortized. 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).

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(k) Goodwill

Goodwill arising from the acquisitions of subsidiaries, associates and joint ventures represents 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 Group' share of the net fair value of the net identifiable assets, liabilities and contingent liabilities 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.

Goodwill is stated 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 annually for impairment (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.

(l) 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-lived 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.

2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

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

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

(m) Financial instruments

(i) Recognition and initial measurement

All financial assets and financial liabilities are initially recognised when the Group become 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.

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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)*

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 the 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.

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 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(m) Financial instruments (Cont'd)

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

(2) Subsequent measurement of financial assets

- Financial assets at FVTPL
These assets are subsequently measured at fair value. Net gains and losses, including any interest or dividend income, are recognised in profit or loss, unless the financial assets are part of a hedging relationship.
- Financial assets at amortised cost
These assets are subsequently measured at amortised cost using the effective interest method. A gain or loss on a financial asset that is measured at amortised cost and is not part of a hedging relationship shall be recognised in profit or loss when the financial asset is derecognised, through the amortisation process or in order to recognise impairment gains or losses.
- Debt investments at FVOCI
These assets are subsequently measured at fair value. Interest income calculated using the effective interest method, impairment and foreign exchange gains and losses are recognised in profit or loss. Other net gains and losses are recognised in other comprehensive income. On derecognition, gains and losses accumulated in other comprehensive income are reclassified to profit or loss.
- Equity investments at FVOCI
These assets are subsequently measured at fair value. Dividends are recognised as income in profit or loss. Other net gains and losses are recognised in other comprehensive income and are transferred to retained earnings on derecognition.

(iii) Classification and subsequent measurement of financial liabilities

Financial liabilities are classified as measured at FVTPL, financial guarantee contracts 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.

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2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

(iii) Classification and subsequent measurement of financial liabilities *(Cont'd)*

- Financial guarantee contracts
Financial guarantees are contracts that require the issuer (i.e. the guarantor) to make specified payments to reimburse the beneficiary of the guarantee (the “holder”) for a loss the holder incurs because a specified debtor fails to make payment when due in accordance with the terms of a debt instrument.

After initial recognition at fair value, an issuer of such a contract shall subsequently measure it at the higher of: (i) the amount of the loss allowance determined in accordance with Note 2(m)(vi) and (ii) the amount initially recognised less, when appropriate, the cumulative amount of income recognised.

- 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 its entirety, the difference between the two amounts below is recognised in profit or loss:

- the carrying amount of the financial asset transferred (measured at the date of derecognition) and
- the consideration received, along with the cumulative gain or loss previously recognised in other comprehensive income, for the part derecognised.

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

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

(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
- debt investments measured at FVOCI;
- lease receivables; and
- financial guarantee contracts issued, which are not measured at FVTPL.

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(m) Financial instruments (Cont'd)

(vi) Credit losses (Cont'd)

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

Measurement of ECLs

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

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

In measuring ECLs, the Group takes into account reasonable and supportable information that is available without undue cost or effort. This includes information about past events, current conditions and forecasts of future economic conditions.

ECLs are measured on either of the following bases:

- 12-month ECLs: these are losses that are expected to result from possible default events within the 12 months after the reporting date; and
- lifetime ECLs: these are losses that are expected to result from all possible default events over the expected lives of the items to which the ECL model applies.

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.

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2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

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

Significant increases in credit risk *(Cont'd)*

The Group considers a financial asset to be in default when the borrower is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realising security (if any is held).

Credit-impaired financial assets

At each reporting date, the Group assesses whether financial assets carried at amortised cost and debt investments at FVOCI are credit-impaired. A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

Evidence that a financial asset is credit-impaired includes the following observable events:

- significant financial difficulties of the debtor;
- a breach of contract, such as a default or delinquency in interest or principal payments;
- for economic or contractual reasons relating to the borrower's financial difficulty, the Group having granted to the borrower a concession that would not otherwise consider;
- it becoming probable that the borrower will enter into bankruptcy or other financial reorganisation;
- 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.

2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

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

Write-off policy

The gross carrying amount of a financial asset is written off (either partially or in full) to the extent that there is no realistic prospect of recovery. A write-off constitutes a derecognition event. This is generally the case when the Group determines that the debtor does not have assets or sources of income that could generate sufficient cash flows to repay the amounts subject to the write-off. However, financial assets that are written off could still be subject to enforcement activities in order to comply with the Group's procedures for recovery of amounts due.

Subsequent recoveries of an asset that was previously written off are recognised as a reversal of impairment in profit or loss in the period in which the recovery occurs.

(vii) Cash flow hedge

Cash flow hedge is a hedge of the exposure to variability in cash flows that is attributable to a particular risk associated with all, or a component of, a recognised asset or liability or a highly probable forecast transaction, and could affect profit or loss.

The hedged items of cash flow hedge are the designated items with respect to the risks associated with future cash flow changes, and can be reliably measurable. Hedging instruments are designated financial instruments for cash flow hedge whose cash flows are expected to offset changes in the cash flows of a hedged item.

When designating a hedging relationship and on an ongoing basis, the Group shall analyse the sources of hedge ineffectiveness that are expected to affect the hedging relationship during its term. If a hedging relationship ceases to meet the hedging effectiveness requirement relating to the hedge ratio, but the risk management objective for that designated hedging relationship remains the same, the Group shall adjust the hedge ratio of the hedging relationship, so that it meets the qualifying criteria again, which is referred to as rebalancing.

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(m) Financial instruments (Cont'd)

(vii) Cash flow hedge (Cont'd)

When a derivative is designated as a cash flow hedging instrument, the effective portion of changes in the fair value of the derivative is recognised in other comprehensive income and accumulated in the cash flow hedge reserve. The cash flow hedge reserve is adjusted to the lower of the following:

- the cumulative gain or loss on the hedging instrument from inception of the hedge; and
- the present value of the cumulative change in the hedged expected future cash flows from inception of the hedge.

The portion of the gain or loss on the hedging instrument that is determined to be an effective hedge shall be recognised in other comprehensive income. Any remaining gain or loss on the hedging instrument is hedge ineffectiveness that shall be recognised in profit or loss.

On rebalancing, the hedge ineffectiveness of the hedging relationship is determined and recognised immediately before adjusting the hedging relationship. Adjusting the hedge ratio allows an entity to respond to changes in the relationship between the hedging instrument and the hedged item that arise from their 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.

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.

2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

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

When the Group discontinues hedge accounting for a cash flow hedge, the Group accounts for the amount that has been accumulated in the cash flow hedge reserve as follows:

- if the hedged future cash flows are still expected to occur, that amount shall remain in the cash flow hedge reserve until the future cash flows occur.
- if the hedged future cash flows are no longer expected to occur, that amount shall be immediately reclassified from the cash flow hedge reserve to profit or loss. A hedged future cash flow that is no longer highly probable to occur may still be expected to occur.

When the future cash flows occur, the amounts accumulated in the hedging reserve of the effective portion are reclassified to profit or loss or included directly in the initial cost of the non-financial item. If the hedged future cash flows are no longer expected to occur, then the amounts that have been accumulated in the hedging reserve and the cost of hedging reserve are immediately reclassified to profit or loss.

(n) Dividend Distribution

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 realizable 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.

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(o) Inventories (Cont'd)

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.

(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.

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. Capitalization 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.

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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, which is 16% 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.

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. 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.

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 legal 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.

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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 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.

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.

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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 conditioned 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) Sales 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.

2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

(vi) Dividend income

Dividend income from unlisted investments is recognised when the shareholders' right to receive payment is established. Dividend income from listed investments is recognised when the share price of the investment goes ex-dividend.

(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.

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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

Leases (applicable from 1 January 2019)

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	3 years
Land use rights	10 – 50 years
Others	5 – 15 years

If ownership of the leased asset transfers to the Group by the end of the lease term or the cost reflects the exercise of a purchase option, depreciation is calculated using the estimated useful life of the asset.

2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(ab) Leases (Cont'd)

Leases (applicable from 1 January 2019) (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 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 are 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.

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.

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(ab) Leases (Cont'd)

Leases (applicable from 1 January 2019) (Cont'd)

Group as a lessor (Cont'd)

Leases that transfer substantially all the risks and rewards incidental to ownership of an underlying assets 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.

Leases (applicable before 1 January 2019)

Leases where all the risks and rewards incidental to ownership of the assets are in substance transferred to the lessees are classified as finance leases. All other leases are operating leases.

(i) Operating leases

Operating lease expenses are capitalised or expensed on a straight-line basis over the lease term.

The cost of acquiring land held under an operating lease is amortised on a straight-line basis over the period of the lease term.

(ii) Finance leases

The Group recognises the aggregate of the minimum lease receipts and the initial direct costs on the lease inception date as the receivable. The difference between the aggregate of the minimum lease receipts and the initial direct costs and sum of their respective present values is recognised as unrealised finance income. The Group adopts the effective interest method to allocate such unrealised finance income over the lease term. At the end of the reporting period, the Group presents the net amount of finance lease receivable after deducting any unrealised finance income in non-current assets and current assets, respectively.

Please refer to Note 2(m)(vi) for the impairment test on finance lease receivables.

Where the Group acquires the use of assets under finance leases, the amounts representing the fair value of the leased asset, or, if lower, the present value of the minimum lease payments, of such assets are included in fixed assets and the corresponding liabilities, net of finance charges, are recorded as obligations under finance leases. Depreciation is provided at rates which write off the cost of the assets over the term of the relevant lease or, where it is likely the Group will obtain ownership of the asset, the life of the asset. Impairment losses are accounted for in accordance with the accounting policy as set out in Note 2(l). Finance charges implicit in the lease payments are charged to profit or loss over the period of the leases so as to produce an approximately constant periodic rate of charge on the remaining balance of the obligations for each accounting period. Contingent rentals are charged to profit or loss in the accounting period in which they are incurred.

2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

(ac) Non-current assets (or disposal group) held for sale

Non-current assets, or disposal groups comprising assets and liabilities, are classified as held-for-sale if it is highly probable that they will be recovered primarily through sale rather than through continuing use.

Such assets, or disposal groups, are generally measured at the lower of their carrying amount and fair value less costs to sell. Any impairment loss on a disposal group is allocated first to goodwill, and then to the remaining assets and liabilities on a pro rata basis, except that no loss is allocated to inventories, financial assets or deferred tax assets, which continue to be measured in accordance with the Group's other accounting policies. Impairment losses on initial classification as held for sale and subsequent gains and losses on remeasurement are recognised in profit or loss.

Once classified as held-for-sale, intangible assets and property, plant and equipment are no longer amortised or depreciated, and any equity-accounted investee is no longer equity accounted.

(ad) Contingencies

Contingent liabilities are not recognised in the financial statements. They are disclosed unless the possibility of an outflow of resources embodying economic benefits is remote. Contingent assets are not recognised in the financial statements but disclosed when an inflow of economic benefit is probable.

(ae) Fair value management

The Group measures its equity investments at fair value at the end of each reporting period. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either in the principal market for the asset or liability, or in the absence of a principal market, in the most advantageous market for the asset or liability. The principal or the most advantageous market must be accessible by the Group. The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

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.

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2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(ae) Fair value management (Cont'd)

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

Level 1 – based on quoted prices (unadjusted) in active markets for identical assets or liabilities

Level 2 – based on valuation techniques for which the lowest level input that is significant to the fair value measurement is observable, either directly or indirectly

Level 3 – based on valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable

For assets and liabilities that are recognised in the financial statements on a recurring basis, the Group determines whether transfers have occurred between levels in the hierarchy by reassessing categorisation (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

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

The Group has not applied the following new and revised IFRSs, that have been issued but are not yet effective, in these financial statements.

- Amendments to IFRS 3 *Definition of a Business*¹
- Amendments to IFRS 9, IAS 39 and IFRS 7 *Interest Rate Benchmark Reform*¹
- Amendments to IFRS 10 and IAS 28 *Sale or Contribution of Assets between an Investor and its Associate or Joint Venture*⁴
- IFRS 17 *Insurance Contracts*²
- Amendments to IAS 1 and IAS 8 *Definition of Material*¹
- Amendments to IAS 1 *Classification of Liabilities as Current or Non-current*³

1 Effective for annual periods beginning on or after 1 January 2020

2 Effective for annual periods beginning on or after 1 January 2021

3 Effective for annual periods beginning on or after 1 January 2022

4 No mandatory effective date yet determined but available for adoption

2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

Further information about those IFRSs that are expected to be applicable to the Group is described below.

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 expects to adopt the amendments prospectively from 1 January 2020. Since the amendments apply prospectively to transactions or other events that occur on or after the date of first application, the Group will not be affected by these amendments on the date of transition.

Amendments to IFRS 9, IAS 39 and IFRS 7 address the effects of interbank offered rate reform on financial reporting. The amendments provide temporary reliefs which enable hedge accounting to continue during the period of uncertainty before the replacement of an existing interest rate benchmark. 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 are effective for annual periods beginning on or after 1 January 2020. The amendments are not expected to have any significant impact on the Group's financial statements.

Amendments to IFRS 10 and IAS 28 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.

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2 PRINCIPAL ACCOUNTING POLICIES *(Cont'd)*

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

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. A misstatement of information is material if it could reasonably be expected to influence decisions made by the primary users. The Group expects to adopt the amendments prospectively from 1 January 2020. The amendments are not expected to have any significant impact on the Group's financial statements.

Amendments to IAS 1 issued in January 2020 amended the definition of the current liabilities and non-current liabilities. The entity's right to defer settlement of a liability for at least twelve months after the reporting period and the definition of settlement are considered when making the classification of a liability. The amendment clarifies that classification of a liability is unaffected by the likelihood that the entity will exercise its right to defer settlement of the liability for at least twelve months after the reporting period. The Group expects to adopt the amendments retrospectively from 1 January 2022. The amendments are not expected to have any significant impact on the Group's financial statements.

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 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, accounts receivable financial lease receivables, accounts payable and other liabilities, short-term loans and long-term loans that are denominated primarily in US\$, a currency other than Pakistan rupee ("PKR"), their functional currency. Please refer to Notes 16, 18, 19, 26, 29, 32, 37 and 44 for details. The Group manages exchange risk through closely monitoring interest and exchange market.

As at 31 December 2019, if RMB had weakened/strengthened by 5% (2018: 5%) against US\$ and 3% (2018: 3%) against EUR ("€") with all other variables constant, the Group would further recognise an exchange loss/gain amounting RMB77 million (2018: RMB98 million) and RMB4 million (2018: RMB5 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 2019, if S\$ had weakened/strengthened by 10% (2018:10%) against US\$ with all other variables constant, SinoSing Power and its subsidiaries would further recognise exchange loss/gain amounting RMB39 million (2018:gain/loss RMB6 million). The range of such sensitivity disclosed above was based on the management's experience and forecast.

SinoSing Power and its subsidiaries also are exposed to foreign exchange risk on fuel purchases that are denominated primarily in US\$. They substantially hedge their estimated foreign currency exposure in respect of forecast fuel purchases over the next three months using primarily foreign currency contracts.

As at 31 December 2019, if PKR had weakened/strengthened by 5% (2018: 5%) against US\$ with all other variables constant, Ruyi Pakistan Energy would further recognise an exchange gain/loss amounting RMB3 million (2018: RMB47 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 14 for details.

(3) Cash flow interest rate risk

The interest rate risk of the Group primarily arises from long-term loans. Loans borrowed at variable rates expose the Group to cash flow interest rate risk. The exposures of these risks are disclosed in Note 26 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 2019, 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 RMB746 million (2018: RMB786 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 RMB57 million (2018: RMB54 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 RMB79 million (2018: RMB74 million) higher/lower. If interest rates on PKR-denominated borrowings had been 50 basis points higher/lower with all other variables held constant, interest expense for the year would have been RMB1 million (2018: RMB2 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.

Tuas Power Generation Pte. Ltd. ("TPG") and 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, TPG 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 semi-annually until 2020. 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 14 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), 16, 18, 19 and 37 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 38(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 CaiJian [2012] No. 102 Notice on the Interim Measures for Administration of Subsidy Funds for Tariff Premium of Renewable Energy jointly issued by the Ministry of Finance, the National Development and Reform Commission and the National Energy Administration in March 2012, a set of new standardised procedures for the settlement of the aforementioned renewable energy tariff premium has come into force since 2012 and approvals on a project by project basis are required before the allocation of funds to local grid companies. As at 31 December 2019, 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. Pursuant to CaiJian [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 instead of obtaining approval as mentioned in CaiJian [2012] No. 102. 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.

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 does not have high credit risk.

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3 FINANCIAL AND CAPITAL RISKS MANAGEMENT (Cont'd)

(a) Financial risk management (Cont'd)

(ii) Credit risk (Cont'd)

Finance lease receivables are mainly from a domestic related party, business enterprises in Singapore and CPPA-G in Pakistan. As the related party and 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 RMB3.09 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.

Accounts receivable and contract assets	Gross carrying amount	Loss allowance
Current (not past due)	30,218,242	—
Within 1 year past due	2,052,658	68,017
1 – 3 years past due	100,696	6,816
More than 3 years past due	123,129	120,487
	32,494,725	195,320

Other receivables	Gross carrying amount	Loss allowance
Current (not past due)	1,967,567	18,253
Within 1 year past due	—	—
1 – 3 years past due	—	—
More than 3 years past due	37,908	34,278
	2,005,475	52,531

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.

3 FINANCIAL AND CAPITAL RISKS MANAGEMENT (Cont'd)

(a) Financial risk management (Cont'd)

(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 Note 14, 26, 27 and 44, respectively.

(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 2019 on a recurring basis.

	Level 1	Level 2	Level 3	Total
Recurring fair value measurements				
Assets				
Financial assets at fair value through profit or loss				
– Trading derivatives (Note 14)	—	4,601	—	4,601
– Contingent consideration (Note i)	—	—	457,727	457,727
– Accounts Receivable at fair value through other comprehensive income	—	1,364,579	—	1,364,579
Derivatives used for hedging (Note 14)	—	86,686	—	86,686
Other equity instrument investments (Note 10)	8,390	—	770,828	779,218
Total assets	8,390	1,455,866	1,228,555	2,692,811
Liabilities				
Financial liabilities at fair value through profit or loss				
– Trading derivatives (Note 14)	—	2,987	—	2,987
Derivatives used for hedging (Note 14)	—	447,721	—	447,721
Total liabilities	—	450,708	—	450,708

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3 FINANCIAL AND CAPITAL RISKS MANAGEMENT (Cont'd)

(b) Fair value estimation (Cont'd)

(i) Fair value measurements (Cont'd)

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.

The following table presents the assets and liabilities that are measured at fair value at 31 December 2018 on a recurring basis.

	Level 1	Level 2	Level 3	Total
Recurring fair value measurements				
Assets				
Financial assets at fair value through profit or loss				
– Trading derivatives	—	14	—	14
– Contingent consideration	—	—	991,383	991,383
Derivatives used for hedging	—	34,691	—	34,691
Other equity instrument investments	8,558	—	2,074,861	2,083,419
Total assets	8,558	34,705	3,066,244	3,109,507
Liabilities				
Financial liabilities at fair value through profit or loss				
– Trading derivatives	—	17,752	—	17,752
Derivatives used for hedging	—	527,540	—	527,540
Total liabilities	—	545,292	—	545,292

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 2019, 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 2019, the expected contingent considerations are determined based on the audited financial statements of the acquired entities for the year ended 31 December 2019.

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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, 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 2019:

	Valuation technique	Significant unobservable input	Range	Sensitivity of fair value to the input
Unlisted equity investments	Valuation multiples	Average P/B	2019: 1.17 to 1.49	10% increase/decrease in multiple would result in increase/decrease in fair value by RMB70.24 million.
		Discount for lack of marketability	2019: 25% to 30.1%	10% increase/decrease in multiple would result in decrease/increase in fair value by RMB30.02 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.

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 2019, there are 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:

	As at 31 December 2019	2018
<hr/>		
Contingent consideration		
Beginning of the year	991,383	859,547
Movement:		
Gains on fair value changes	17,175	746,850
Profit compensation received from Huaneng Group	(550,831)	(615,014)
End of the year	457,727	991,383
Total gains for the year included in profit or loss for assets held at the end of the reporting period	17,175	746,850
	As at 31 December 2019	As at 31 December 2018
<hr/>		
Other equity instrument investments		
Beginning of the year	2,074,861	2,072,365
Addition	7,450	450
Disposal	(1,250,000)	—
Fair value changes	(61,483)	2,046
End of the year	770,828	2,074,861
Changes in fair value recognised in other comprehensive income for the year	46,113	2,046

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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 RMB133.79 billion and RMB31.64 billion as at 31 December 2019 (2018: RMB149.76 billion and RMB30.08 billion), respectively. The aggregate book value of these liabilities was approximately RMB134.02 billion and RMB31.29 billion as at 31 December 2019 (2018: RMB150.17 billion and RMB29.98 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 monitor 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 2019, the strategy of the Group's remained unchanged from 2018. The debt ratio of the Group as at 31 December 2019 was 69.55% (2018: 72.35%).

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.

(a) Accounting estimates on impairment of goodwill

The Group performs annual tests on whether goodwill have suffered any impairment in accordance with the accounting policies stated in Note 2(l). 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 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 unexpected changes in future market or economic conditions.

4 CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS (Cont'd)

(b) Accounting estimates on impairment of power generation licence

The Group performs annual tests on whether power generation licence have suffered any impairment in accordance with the accounting policies stated in Note 2(l). 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 was complex because the determination of the recoverable amount involved 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. These estimates and judgments may be significantly affected by unexpected changes in future market or economic conditions.

(c) Useful life of the 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.

(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 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 unexpected changes in future market or economic conditions.

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4 CRITICAL ACCOUNTING ESTIMATES AND JUDGEMENTS (Cont'd)

(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 asset 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 judgment, 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 unexpected 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).

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 2019	PRC power segment	Overseas segment Note i	All other segments	Inter- segment revenue	Total
– 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
Total	155,641,635	18,135,461	700,486	(468,181)	174,009,401
Revenue:					
– From contracts with customers within the scope of IFRS 15					172,157,998
– From other sources					1,851,403

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5 REVENUE AND SEGMENT INFORMATION (Cont'd)

(a) Disaggregation of revenue (Cont'd)

For the year ended 31 December 2018	PRC power segment	Overseas segment	All other segments	Inter- segment revenue	Total
– Sales of power and heat	154,816,070	11,490,601	—	—	166,306,671
– Sales of coal and raw materials	649,374	214,402	—	—	863,776
– Port service	—	—	441,637	(296,639)	144,998
– Transportation service	—	—	206,691	(153,334)	53,357
– Others	1,860,823	297,857	45,071	(21,929)	2,181,822
Total	<u>157,326,267</u>	<u>12,002,860</u>	<u>693,399</u>	<u>(471,902)</u>	<u>169,550,624</u>

Revenue:

– From contracts with customers within the scope of IFRS 15					169,467,647
– From other sources					82,977

Note i: Overseas segment mainly consists of the operations in Singapore and the operation in Pakistan (consolidated since 31 December 2018).

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.

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

(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 Standard 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 other equity instrument investments, investment in Huaneng Finance and assets related to the centrally managed and resource allocation functions of headquarters that are not attributable to any operating segment (“corporate assets”). Segment liabilities exclude liabilities related to the centrally managed and resource allocation functions of headquarters that are not attributable to any operating segment (“corporate liabilities”). These are part of the reconciliation to total assets and total liabilities of the consolidated statement of financial position.

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
For the year ended 31 December 2019				
Total revenue	155,641,635	17,610,861	700,486	173,952,982
Intersegment revenue	—	—	(468,181)	(468,181)
External revenue	155,641,635	17,610,861	232,305	173,484,801
Segment results	4,808,383	162,465	(204,137)	4,766,711
Interest income	162,973	100,177	1,404	264,554
Interest expense	(9,260,294)	(1,308,380)	(114,490)	(10,683,164)
Impairment loss	(5,320,376)	(6,119)	(485,325)	(5,811,820)
Credit loss	(6,570)	(67,987)	—	(74,557)
Depreciation and amortisation	(19,953,257)	(752,285)	(167,553)	(20,873,095)
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	(2,501,763)	89,006	(22,140)	(2,434,897)

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5 REVENUE AND SEGMENT INFORMATION (Cont'd)

(b) Segment information (Cont'd)

	PRC power segment	Overseas segment	All other segments	(Under PRC GAAP) Total
For the year ended 31 December 2018				
Total revenue	157,636,808	12,002,860	693,399	170,333,067
Intersegment revenue	—	—	(471,902)	(471,902)
External revenue	157,636,808	12,002,860	221,497	169,861,165
Segment results	3,596,245	(363,636)	389,876	3,622,485
Interest income	163,699	69,841	2,198	235,738
Interest expense	(9,879,911)	(465,099)	(101,694)	(10,446,704)
Impairment loss	(895,121)	(251,031)	—	(1,146,152)
Credit loss	(38,368)	(4,210)	—	(42,578)
Depreciation and amortisation	(18,909,485)	(774,625)	(142,179)	(19,826,289)
Net gain/(loss) on disposal of non-current assets	70,186	(1,052)	(11)	69,123
Share of profits less losses of associates and joint ventures	640,057	737,185	307,417	1,684,659
Income tax expense	(1,146,997)	134,573	(16,523)	(1,028,947)
	PRC power segment	Overseas segment	All other segments	Total
31 December 2019				
Segment assets	354,648,084	43,122,947	9,857,566	407,628,597
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	39,564,514	716,642	251,957	40,533,113
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	(262,154,063)	(27,397,122)	(2,552,860)	(292,104,045)
31 December 2018				
Segment assets	345,057,426	40,886,478	10,406,648	396,350,552
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	18,467,651	581,225	492,585	19,541,461
Investments in associates	12,351,738	—	3,275,398	15,627,136
Investments in joint ventures	1,111,854	—	1,239,876	2,351,730
Segment liabilities	(269,224,115)	(25,600,861)	(2,683,920)	(297,508,896)

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

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

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

	For the year ended 31 December	
	2019	2018
External revenue (PRC GAAP)	173,484,801	169,861,165
Reconciling item:		
Impact of restatement under PRC GAAP in relation to business combination under common control	—	(310,541)
Impact of recognition of BOT*related revenue under IFRS	524,600	—
Operating revenue per IFRS consolidated statement of comprehensive income	174,009,401	169,550,624

* BOT refer to the build-operate-transfer (Note 3)

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

	For the year ended 31 December	
	2019	2018
Segment results (PRC GAAP)	4,766,711	3,622,485
Reconciling items:		
Loss related to the headquarters	(155,395)	(354,162)
Share of profits of associate - Huaneng Finance	200,810	166,864
Dividend income of other equity instrument investments	685	1,168
Impact of restatement under PRC GAAP in relation to business combination under common control	—	7,121
Impact of other IFRS adjustments*	(1,693,351)	(1,470,329)
Profit before income tax expense per IFRS consolidated statement of comprehensive income	3,119,460	1,973,147

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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:

	As at 31 December	
	2019	2018
Total segment assets (PRC GAAP)	407,628,597	396,350,552
Reconciling items:		
Investment in Huaneng Finance	1,416,183	1,391,431
Deferred income tax assets	3,271,488	3,143,465
Prepaid income tax	139,617	134,477
Other equity instrument investments	779,217	2,083,419
Corporate assets	361,441	338,113
Impact of other IFRS adjustments*	14,653,520	16,461,854
Total assets per IFRS consolidated statement of financial position	428,250,063	419,903,311

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

	As at 31 December	
	2019	2018
Total segment liabilities (PRC GAAP)	(292,104,045)	(297,508,896)
Reconciling items:		
Current income tax liabilities	(748,957)	(231,299)
Deferred income tax liabilities	(996,021)	(1,050,326)
Corporate liabilities	(2,458,677)	(2,864,737)
Impact of other IFRS adjustments*	(1,563,317)	(2,126,383)
Total liabilities per IFRS consolidated statement of financial position	(297,871,017)	(303,781,641)

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	Impact of other IFRS adjustments*	Total
For the year ended						
31 December 2019						
Total revenue	173,484,801	—	—	—	524,600	174,009,401
Interest expense	(10,683,164)	(79,554)	—	—	—	(10,762,718)
Depreciation and amortisation	(20,873,095)	(14,147)	—	—	(1,079,563)	(21,966,805)
Impairment loss	(5,811,820)	—	—	—	(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	(2,434,897)	—	—	—	423,642	(2,011,255)
For the year ended						
31 December 2018						
Total revenue	169,861,165	—	—	(310,541)	—	169,550,624
Interest expense	(10,446,704)	(98,398)	—	58,690	—	(10,486,412)
Depreciation and amortisation	(19,826,289)	(26,122)	—	167,910	(1,231,613)	(20,916,114)
Impairment loss	(1,146,152)	—	—	(8)	(650,322)	(1,796,482)
Credit loss	(42,578)	—	—	1,611	—	(40,967)
Share of profits less losses of associates and joint ventures	1,684,659	—	166,864	—	(28,108)	1,823,415
Net gain/(loss) on disposal of non- current assets	69,123	(5)	—	—	(26,612)	42,506
Income tax expense	(1,028,947)	—	—	3,936	381,838	(643,173)

* 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 IFRS):

(i) External revenue generated from the following countries:

	For the year ended 31 December	
	2019	2018
PRC	155,873,940	157,547,764
Overseas	18,135,461	12,002,860
Total	174,009,401	169,550,624

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	
	2019	2018
PRC	327,410,156	317,850,476
Overseas	24,830,127	23,302,942
Total	352,240,283	341,153,418

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 2019, the revenue from grid companies under common control of State Grid Corporation of China within the PRC power segment in total accounted for 79% of external revenue (2018: 76%). 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			
	2019		2018	
	Amount	Proportion	Amount	Proportion
State Grid Shandong Electric Power Company	29,575,604	17%	31,156,948	18%

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 RMB224 million at the beginning of the year has been recognised as revenue of heating pipeline service in 2019. The contract liabilities of RMB1,732 million at the beginning of the year has been recognized as revenue of heat sales in 2019.

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

	As at 31 December 2019	As at 31 December 2018
With 1 year	220,046	224,230
Over 1 year	2,223,208	2,024,452
Total (Note 28)	2,443,254	2,248,682

The transaction price allocated to the above remaining performance obligations expected to be recognized more than one year relate to the provision of heating pipeline services, of which the performance obligations are to be satisfied within 17 years. 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. No information is provided about the performance obligations at 31 December 2019 that have an original expected duration of one year or less, as allowed by IFRS 15.

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6 PROFIT BEFORE INCOME TAX EXPENSE

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

	For the year ended 31 December	
	2019	2018
Total interest expense on borrowing	11,342,526	10,982,230
Less: Amounts capitalised in property, plant and equipment	579,808	495,818
Interest expenses charged in consolidated statement of comprehensive income	10,762,718	10,486,412
Including: Interest expenses on lease liabilities	171,573	—
Auditors' remuneration audit services	42,019	68,750
Operating leases charge	—	377,162
Minimum lease payments under operating leases, lease payments not included in the measurement of lease liabilities	234,139	—
Fuel	97,686,799	105,736,173
Depreciation of property, plant and equipment (Note i)	21,130,076	20,466,423
Depreciation of right-of-use assets (Note i)	734,827	—
Amortisation of land use rights (Note i)	—	344,068
Amortisation of other non-current assets	101,902	105,623
Impairment loss of property, plant and equipment (Note 7)	5,719,990	989,778
Impairment loss of goodwill (Note 15)	—	409,371
Impairment loss of mining rights (Note 13)	—	135,085
Impairment loss of other non-current assets	464,867	8,432
Recognition of loss allowance for receivables	74,557	40,967
Recognition/(reversal) of provision for inventory obsolescence (Note 17)	22,453	253,816
Net gain on disposals of non-current assets	(69,449)	(42,506)
Government grants	(818,101)	(521,380)
Included in other investment income		
– Dividends on other equity instrument investments	(685)	(1,168)
– Gains on disposal of subsidiaries (Note 20,42(b))	(256,009)	—
– Loss on disposal of a joint venture	—	270,741
Included in (gain)/loss on fair value changes of financial assets/liabilities		
– Contingent consideration of the business combination	(17,175)	(746,850)
– Loss on fair value changes of trading derivatives	(19,492)	20,007

6 PROFIT BEFORE INCOME TAX EXPENSE (Cont'd)

Other operating expenses consist of impairment losses of property, plant and equipment, goodwill, mining rights and impairment losses of other non-current assets, loss on disposal of a joint venture, recognition of loss allowance for receivables, recognition/(reversal) of provision for inventory obsolescence, gain on disposals of non-current assets substituted power arrangement expenses, insurance, government grants and other miscellaneous expenses.

Note i: Upon the adoption IFRS 16, depreciation of finance lease assets was reclassified from "property, plant and equipment" to "right-of-use assets", and amortisation of land use rights was reclassified from "land use rights" to "right-of-use assets".

7 PROPERTY, PLANT AND EQUIPMENT

	Dams	Port facilities	Buildings	Electric utility plant in service	Transportation facilities	Others	CIP	Total
As at 1 January 2018								
Cost	2,220,224	3,358,811	11,173,669	418,360,698	1,155,392	5,972,688	29,534,677	471,776,159
Accumulated depreciation	(226,512)	(443,259)	(3,019,198)	(170,525,898)	(362,222)	(3,523,292)	—	(178,100,381)
Accumulated impairment losses	(356,023)	—	(52,387)	(7,914,640)	—	(33,213)	(991,422)	(9,347,685)
Net book value	1,637,689	2,915,552	8,102,084	239,920,160	793,170	2,416,183	28,543,255	284,328,093
Year ended 31 December 2018								
Beginning of the year	1,637,689	2,915,552	8,102,084	239,920,160	793,170	2,416,183	28,543,255	284,328,093
Reclassification	—	—	90,791	(108,874)	—	18,083	—	—
Business combination	—	—	38,845	3,128,388	1,683	294,629	5,120	3,468,665
Additions	—	195	18,996	543,660	—	71,414	15,981,274	16,615,539
Transfer from CIP	5,867	50,824	514,167	17,726,156	460	108,477	(18,405,951)	—
Reclassification to assets held for sale	—	—	—	(547,720)	—	(3,668)	(2,645)	(554,033)
Disposals/write-off	—	—	(41,618)	(449,894)	—	(16,568)	—	(508,080)
Depreciation charge	(38,832)	(117,025)	(405,045)	(19,446,539)	(62,771)	(423,051)	—	(20,493,263)
Impairment charge	—	—	(20,002)	(947,520)	—	(112)	(22,144)	(989,778)
Currency translation differences	—	—	—	193,872	—	191	66	194,129
End 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
As at 31 December 2018								
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

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7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

	Dams	Port facilities	Buildings	Electric utility plant in service	Transportation facilities	Others	CIP	Total
Year ended 31 December 2019								
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 (note 42)	—	—	—	—	—	—	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
As at 31 December 2019								
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 loss	(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

Interest capitalisation

Interest expense of approximately RMB580 million (2018: RMB496 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 4.44% (2018: 4.57%) per annum.

7 PROPERTY, PLANT AND EQUIPMENT (Cont'd)

Impairment

When any indicators of impairment are identified, property, plant and equipment are reviewed for impairment based on each CGU. The CGU is an individual plant or entity. The carrying values of these individual plants or entities were compared to the recoverable amounts of the CGUs, which were based predominantly on value-in-use. 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.

In 2018, impairment losses for property, plant and equipment of certain power projects amounting to approximately RMB990 million have been recognised. Factors leading to the impairment include lower than expected operating results of subsidiaries in 2018 due to oversupply and fierce competition within the electricity market. Pre-tax discount rates, ranging from 7.74% to 12.84%, were adopted in the value in use model in the determination of the recoverable amounts for the power plants. In addition, as a result of the low demand of coal-fired power in local market and site selection issues, management estimated the possibility of further development of a coal-fired power project and a wind power project was remote; and thus, the projects under construction with a carrying value of RMB14 million and RMB8 million were fully impaired in 2018, respectively.

Security

As at 31 December 2019, certain property, plant and equipment were secured to a bank as collateral against a long-term loan (Note 26).

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

Buildings without ownership certificate

At 31 December 2019, 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 RMB7,779 million (2018: RMB8,386 million). The managements are of the opinion that the Group is entitled to lawfully and validly occupy and use of the abovementioned buildings. There has 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

	2019	2018
Beginning of the year	19,553,964	19,517,623
Capital injections in associates and joint ventures	313,197	463,258
Transfer to subsidiaries	—	(1,314,040)
Share of net profits less losses	1,185,622	1,823,415
Share of other comprehensive income/(loss)	368,696	(531,186)
Currency translation differences	—	45,762
Share of other capital reserve of equity-method investees	—	(80,543)
Dividends	(638,220)	(370,325)
End of the year	20,783,259	19,553,964

8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES (Cont'd)

As at 31 December 2019, 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 ¹
Associates:					
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%	—
Huaneng Finance	PRC	RMB5,000,000,000	Provision of financial services including fund deposit services, lending, finance lease arrangements, notes discounting and entrusted loans and investment arrangement within Huaneng Group	20%	—
China Huaneng Group Fuel Co., Ltd. Group ("Huaneng 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	RMB5,063,640,000	Construction and operation of nuclear power plants; production and sale of electricity and related products	30%	—

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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 ¹
Joint ventures:					
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%

¹ The indirect percentage of equity interest held represents the effective ownership interest of the Group.

* As at 31 December 2019, the fair value of the Group's shares in SECL was RMB6,159 million (2018: RMB5,207 million).

** In accordance with the articles of association of the investee, the Group could only exercise significant influence on the investee and therefore accounts 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)

Summarized 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	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Gross amounts of the associates'												
Current assets	873,821	1,064,837	20,887,020	24,066,320	23,099,357	31,484,547	849,386	934,257	6,010,002	5,157,038	3,085,059	2,520,515
Non-current assets	14,305,871	14,472,981	76,623,640	62,798,620	20,746,004	20,106,246	1,661,565	1,810,145	3,781,166	3,928,269	20,749,672	22,091,197
Current liabilities	(2,772,221)	(3,903,679)	(25,533,260)	(24,141,930)	(36,733,579)	(44,560,156)	(442,628)	(642,355)	(3,827,415)	(2,900,223)	(3,338,370)	(2,490,271)
Non-current liabilities	(7,788,402)	(7,060,740)	(38,446,550)	(35,193,400)	(30,867)	(73,483)	(166,718)	(35,503)	(2,121,112)	(2,464,580)	(15,930,100)	(17,908,511)
Equity	4,619,069	4,573,399	33,530,850	27,529,610	7,080,915	6,957,154	1,901,605	2,066,544	3,842,641	3,720,504	4,566,261	4,212,930
– Equity attributable to shareholders	3,464,302	3,409,111	24,103,107	21,118,225	7,080,915	6,957,154	1,901,605	2,066,544	3,590,096	3,477,211	4,566,261	4,212,930
– Non-controlling interests	1,154,767	1,164,288	9,427,743	6,411,385	—	—	—	—	252,545	243,293	—	—
Revenue	2,252,535	2,242,269	20,851,430	18,518,430	1,574,856	1,610,768	2,081,865	2,232,700	27,832,662	20,568,107	3,453,022	2,626,882
Gross Profit	575,401	502,266	6,472,550	4,933,510	1,064,181	908,198	(46,899)	73,828	173,371	84,037	142,906	(5,652,406)
Net Profit	509,034	426,154	1,749,600	716,390	1,004,048	834,318	(54,444)	(6,665)	150,460	80,882	307,135	(392,000)
Profit/(loss) from operations attributable to shareholders	327,042	225,705	1,598,540	589,821	1,004,048	834,318	(54,444)	(6,665)	144,500	70,766	307,135	(392,000)
Other comprehensive (loss)/income attributable to shareholders	—	—	1,589,390	(1,117,524)	(150,286)	78,951	—	—	2,164	6,101	—	—
Total comprehensive income/(loss) attributable to shareholders	327,042	225,705	3,187,930	(527,703)	853,762	913,269	(54,444)	(6,665)	146,664	76,867	307,135	(392,000)
Dividend received from the associates	116,505	106,598	49,587	79,339	146,000	128,000	43,132	—	20,000	—	—	—

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8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES (Cont'd)

	Sichuan Hydropower		SECL		Huaneng Finance		Hanfeng Power		Huaneng Group Fuel Company		Hainan Nuclear	
	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018
Reconciled to the interests in the associates												
Gross amounts of net assets attributable to shareholders of the associate	3,464,302	3,409,111	24,103,107	21,118,225	7,080,915	6,957,154	1,901,605	2,066,544	3,590,096	3,477,211	4,566,261	4,212,930
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 associate	1,697,508	1,670,464	6,030,597	5,282,723	1,416,183	1,391,431	760,642	826,618	1,795,048	1,738,606	1,369,878	1,263,879
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	1,905,094	1,878,050	7,192,407	6,444,533	1,416,183	1,391,431	1,053,724	1,119,700	1,811,569	1,755,127	1,383,954	1,277,955

8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES (Cont'd)

Summarized 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	
	2019	2018	2019	2018
Gross amounts of joint ventures'				
Current assets	280,687	345,658	396,850	763,572
Non-current assets	4,083,160	4,335,923	5,294,584	5,399,783
Current liabilities	(2,367,244)	(2,151,722)	(2,660,119)	(2,826,652)
Non-current liabilities	(54,623)	(709,165)	(901,583)	(1,128,274)
Equity	1,941,980	1,820,694	2,129,732	2,208,429
Revenue	1,613,813	2,423,130	2,959,197	3,287,872
Gross Profit	135,846	129,789	490,578	444,914
Net Profit	121,284	425,900	211,589	174,652
Total comprehensive income/ (loss)	121,284	425,900	211,589	174,652
Dividend received in cash from the joint ventures	—	—	145,143	24,387
Reconciled to the interest in the joint ventures:				
Gross amounts of net assets	1,941,980	1,820,694	2,129,732	2,208,429
The Group's effective interest rates	50%	50%	50%	50%
The Group's share of net assets	970,990	910,347	1,064,866	1,104,215
Impact of adjustments	18,324	18,324	—	—
Carrying amount in the consolidated financial statements	989,314	928,671	1,064,866	1,104,215

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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:

	2019	2018
Aggregate carrying amount of individually immaterial associates and joint ventures in the consolidated financial statements	3,966,148	3,654,282
Aggregate amounts of the Group's share of those associates and joint ventures		
Profit from continuing operations	123,869	52,935
Total comprehensive income	123,954	53,197

As at 31 December 2019, 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 RMB538 million (2018: RMB505 million).

As at 31 December 2019, there were no proportionate interests in the associates' and a joint ventures' capital commitments. 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 2019, 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 Shanghai Shidongkou Power Generation Limited Liability Company ("Shidongkou Power") (i)	PRC	Held directly	RMB1,179,000,000	Power generation	50%	100%
Huaneng Nantong Power Generation Limited Liability Company	PRC	Held directly	RMB798,000,000	Power generation	70%	70%

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 Yingkou Co-generation Limited Liability Company	PRC	Held directly	RMB844,030,000	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%
Huaneng Zuoquan Coal-fired Power Generation Limited Liability Company	PRC	Held directly	RMB960,000,000	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	RMB407,200,000	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	RMB2,610,000,000	Construction, operation and management of wind power generation and related projects	100%	100%
Huaneng Rudong Wind Power Generation Co., Ltd.	PRC	Held directly	RMB90,380,000	Operation, management of wind power generation projects	90%	90%
Huaneng Guangdong Haimen Port Limited Liability Company	PRC	Held directly	RMB331,400,000	Loading, warehousing and conveying services, providing facility services and water transportation services	100%	100%
Huaneng Taicang Port Limited Liability Company	PRC	Held directly	RMB600,000,000	Port provision, cargo loading and storage	85%	85%
Huaneng Taicang Power Generation Co., Ltd.	PRC	Held directly	RMB867,996,200	Power generation	75%	75%

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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 Huaiyin II Power Generation Limited Company	PRC	Held directly	RMB930,870,000	Power generation	63.64%	63.64%
Huaneng Xindian Power Generation Co., Ltd.	PRC	Held directly	RMB465,600,000	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	RMB719,170,000	Construction, operation and management of wind power generation and related projects	100%	100%
Huaneng Qingdao Co-generation Limited Company	PRC	Held directly	RMB214,879,000	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 directly	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%
Chongqing Huaqing Energy Co.,Ltd. ("Huaqing Energy") (ii)	PRC	Held indirectly	RMB44,420,000	Providing thermal energy and cold energy services; supplying electricity	54%	60%

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 Yunnan Fuyuan Wind Power Generation Co., Ltd.	PRC	Held directly	RMB157,290,000	Wind power project investment, management and sales	100%	100%
Huaneng Guizhou Panzhou State City Wind Power Co., Ltd.	PRC	Held directly	RMB188,180,000	Construction and management of wind power plants and related projects	100%	100%
Huaneng Jiangxi Clean Energy Limited Liability Company	PRC	Held directly	RMB436,398,000	Power generation and supply development, management and construction of clean	100%	100%
Huaneng Nanjing Combined Cycle Co-generation Co.,Ltd ("Nanjing Combined Cycle Co-generation") (iii)	PRC	Held directly	RMB938,350,000	Construction, operation and management of power plants and energy projects	57.39%	93.90%
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	RMB182,500,000	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	RMB600,000,000	Construction and operation of thermal heating networks, development and utilisation of clean energy resources	100%	100%
Huaneng Xuzhou Tongshan Wind Power Generation Co., Ltd. ("Tongshan Wind Power")	PRC	Held directly	RMB287,951,400	Wind power generation, electricity engineering design services maintenance of power supply and control facilities, solar energy power generation	70%	70%

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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 Co-generation Co., Ltd.	PRC	Held directly	RMB300,000,000	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%
Huaneng Nanjing Luhe Wind Power Generation Co., Ltd.	PRC	Held directly	RMB63,800,000	Investment, construction, operation, management of electricity projects	100%	100%
Huaneng Luoyuan Power Generation Limited Liability Company	PRC	Held directly	RMB1,000,000,000	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	RMB122,000,000	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%

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 Yingkou Xianrendao Co-generation Co., Ltd.	PRC	Held directly	RMB352,020,000	Power generation and supply development and utilisation of clean energy resources	100%	100%
Huaneng Nanjing Xingang Comprehensive Energy Co., Ltd.	PRC	Held directly	RMB10,000,000	Thermal generation and supply, power distribution and sale	65%	65%
Huaneng Changxing Photovoltaic Power Generation Limited Liability Company ("Changxing Photovoltaic Power")	PRC	Held directly	RMB26,000,000	Construction and operation of distributed photovoltaic power generation plants and related projects	100%	100%
Huaneng Rudong Baxianjiao Offshore Wind Power Generation Co., Ltd.	PRC	Held directly	RMB1,629,338,700	Infrastructure construction of wind power plants	70%	70%
Huaneng Guilin Gas Distributed Energy Co., Ltd.	PRC	Held directly	RMB267,450,000	Construction, operation and management of power plants and thermal energy	80%	80%
Huaneng(Dalian) Co-generation Co.,Ltd	PRC	Held directly	RMB575,291,769	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 directly	RMB15,000,000	Construction, operation and management of co-generation power plants, heating network and expansion engineering	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 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%
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	RMB10,000,000	Wind Power generation, new energy development and utilisation	100%	100%
Huaneng Zhuolu Clean Energy Limited Liability Company	PRC	Held directly	RMB78,878,100	Construction, operation and management of power plants and related projects	100%	100%
Huaneng Tongwei Wind Power Generation Limited Liability Company	PRC	Held directly	RMB248,000,000	Construction, operation and management of wind power 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 Yizheng Wind Power Generation Limited Liability Company	PRC	Held directly	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 directly	RMB5,000,000	Construction, operation and management of wind power photovoltaic power plant	100%	100%
Huaneng Wafangdian Wind Power Generation Co., Ltd	PRC	Held directly	RMB50,000,000	Construction, operation and management of power plants and related projects	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 directly	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%
Huaneng Guangdong Energy Sales Limited Liability Company	PRC	Held directly	RMB200,000,000	Power and thermal energy supply, energy conservation technology service, transmission and substation project 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 heating	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 Changle Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB10,000,000	Construction, operation and management of photovoltaic power plants and related projects	100%	100%
Huaneng Longyan Wind Power Generation Limited Liability Company	PRC	Held directly	RMB10,000,000	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 directly	RMB50,000,000	Investment of electricity projects, thermal power generation and supply, investment in heating pipe networks, development and utilisation of clean energy resources	100%	100%
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	RMB100,000	Investment, construction and management of photovoltaic power plants	100%	100%
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%

9 INVESTMENTS IN SUBSIDIARIES (Cont'd)

(i) Subsidiaries acquired through establishment or investment (Cont'd)

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Chongqing Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Operation of natural gas, electric energy and thermal energy product sale	100%	100%
Huaneng Chongqing Luohuang Energy Sales Limited Liability Company	PRC	Held indirectly	RMB210,000,000	Sale and supply of electricity, sale of thermal products	90%	90%
Huaneng 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 heating 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 heating and power supply facilities	100%	100%
Huaneng Henan Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Sale of electricity, heating, 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 directly	RMB10,000,000	Photovoltaic power generation; power supply, purchase and sale	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 Fujian Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Sale of electricity, heating, gas and other energy products	100%	100%
Huaneng Hubei Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	Sale of electricity, heating, gas and other energy products	100%	100%
Huaneng (Sanming) Clean Energy Limited Liability Company	PRC	Held directly	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 indirectly	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, heating 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 directly	RMB26,000,000	Sale of electricity	100%	100%
Huaneng Jianchang Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB10,000,000	Production and supply of electricity, development and utilisation of clean energy resources	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 Chaoyang Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB10,000,000	Production and supply of electricity, development and utilisation of clean energy resources	100%	100%
Huaneng (Fujian) Port Limited Company	PRC	Held directly	RMB169,710,000	Port management, investment and development	100%	100%
Huaneng Shijiazhuang Energy Limited Liability Company	PRC	Held directly	RMB60,000,000	Production and supply of heating, purchase and sale of electricity	66.60%	66.60%
Huaneng Jiangyin Combined Cycle Co-generation Limited Liability Company	PRC	Held directly	RMB600,000,000	Production and supply of electricity, production and supply of heating	51%	51%
Huaneng Anyang Energy Limited Liability Company	PRC	Held directly	RMB10,000,000	Production and supply of electricity, production and supply of heating	100%	100%
Huaneng Shanxi Comprehensive Energy Limited Liability Company ("Shanxi Comprehensive Energy")	PRC	Held directly	RMB120,000,000	Production and supply of electricity, production and supply of heating	100%	100%
Huaneng Zhanhua Photovoltaic Power Generation Limited Company ("Zhanhua Photovoltaic Company") (iv)	PRC	Held indirectly	RMB145,790,000	Photovoltaic power generation	46.40%	58%
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%

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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 Ruyi (Helan) New Energy Limited Company ("Helan New Energy") (iv)	PRC	Held indirectly	RMB19,000,000	Photovoltaic power generation	40%	100%
Huaneng Dezhou New Energy Limited Company (iv)	PRC	Held indirectly	RMB3,100,000	Photovoltaic power generation, wind power generation, and biomass power generation	80%	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	RMB10,000,000	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%
Huaneng Ruzhou Clean Energy Limited Liability Company ("Ruzhou Clean Energy") (v)	PRC	Held directly	RMB80,000,000	Production and supply of electricity projects, investment, construction and operation of electricity projects	95%	100%
Huaneng Hunan Lianping Wind Power Generation Limited Liability Company	PRC	Held indirectly	RMB173,920,000	Production and supply of electricity	80%	80%
Huaneng Abagaqi Clean Energy Limited Liability Company	PRC	Held directly	RMB100,000	Production, supply and sale of electricity and thermal 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
Huaneng Jiashan Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB10,000,000	Production and supply of electricity	100%	100%
Huaneng Zhejiang Energy Sales Limited Liability Company	PRC	Held directly	RMB210,000,000	New energy technology development and technology consulting	100%	100%
Huaneng Guangdong Shantou Power Generation Limited Liability Company	PRC	Held directly	RMB10,000,000	Production and supply of electricity and thermal energy	100%	100%
Huaneng Shantou Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB100,000	Production and supply of electricity	100%	100%
Huaneng Guigang Clean Energy Limited Liability Company	PRC	Held directly	RMB10,000,000	Production and supply of electricity, investment construction and operation of electricity projects	100%	100%
Huaneng Changxing Jiapu Photovoltaic Power Generation Limited Liability Company	PRC	Held directly	RMB10,000,000	Production and supply of electricity, 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 directly	RMB2,200,000,000	Production and supply of electricity, and investment and construction of electricity distribution networks	100%	100%
Huaneng Liaoning Clean Energy Limited Liability Company ("Liaoning Clean Energy")	PRC	Held directly	RMB170,000,000	Technology development technical advice services for clean energy	100%	100%
Jiangsu Huaneng Zhongyang New Energy Power Generation Co., Ltd.	PRC	Held directly	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	RMB10,000,000	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	Sales of electricity, heat and gas	100%	100%
Huaneng Guangdong Shantou Offshore Wind Power Generation Co., Ltd.	PRC	Held directly	RMB10,000,000	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 Zhenlai Photovoltaic Power Generation Co., Ltd. ("Zhenlai Photovoltaic Power") (vi)	PRC	Held indirectly	RMB29,958,660	Investment, construction, production, operation and overhaul of photovoltaic power generation projects	50%	100%
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%

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 Anhui Mengcheng Wind Power Co., Ltd.	PRC	Held directly	RMB10,000,000	Production and supply of electricity, and investment, construction and operation of electricity projects	100%	100%
Huaneng Anshun Comprehensive Energy Co., Ltd.	PRC	Held directly	RMB100,000	Production and supply of electricity, and investment, construction and operation of electricity projects	100%	100%
Huaneng Shengdong Rudong Offshore Wind Power Co., Ltd. ("Huaneng Shengdong Rudong")	PRC	Held directly	RMB1,000,000,000	Production and sale of electric power; investment in wind power generation	79%	79%
Huaneng Zhejiang Cangnan Offshore Wind Power Co., Ltd.	PRC	Held 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 directly	RMB10,000,000	Production and sale of electric power, and investment in wind power generation	100%	100%
Shengdong Rudong Offshore Wind Power Co., Ltd. ("Shengdong Rudong Offshore Wind Power")	PRC	Held indirectly	RMB5,000,000	Ancillary projects, construction of wind farm and wind farm maintenance	79%	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	RMB500,000	Construction, operation and management of wind power 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 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	RMB500,000	Production and sale of electric power, and investment in electricity projects	100%	100%
Huaneng (Anhui Shitai) Wind Power Co., Ltd. *("Anhui Shitai Wind Power")	PRC	Held directly	RMB100,000	Production and sale of electric power, and investment in electricity projects	100%	100%
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 project 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 Jiyang Biomass Thermal Power Co., Ltd. *("Jiyang Biomass Thermal Power")	PRC	Held indirectly	RMB20,000,000	Production and sale of new energy power	80%	100%
Huaneng Wulian New Energy Limited Company *("Wulian New Energy")	PRC	Held indirectly	RMB300,000,000	Photovoltaic power generation, wind power generation, investment and development of new energy power projects	88.80%	100%
Huaneng Sheyang New Energy Power Generation Co., Ltd. *("Sheyang New Energy")	PRC	Held directly	RMB1,080,000,000	Production and sale of electricity and heat	34%	70%

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 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	RMB144,000,000	Development and management of new energy technology, operation and management of wind power, maintenance of wind power equipment	100%	100%
Huaneng Sihong New Energy Co., Ltd. *("Sihong New Energy")	PRC	Held directly	RMB150,000,000	Development and management of new energy technology	100%	100%
Huaneng Taiqian Wind Power Co., Ltd. *("Taiqian Wind Power")	PRC	Held directly	RMB97,800,000	Production and sale of electricity and heat, development, investment and management of new energy technology, development and utilization of clean energy	51%	51%
Huaneng Zhenping Clean Energy Co., Ltd. *("Zhenping Clean Energy")	PRC	Held directly	RMB500,000	Production and sale of electricity, development and utilization of clean energy	100%	100%
Huaneng (Heze Dongming) New Energy Co., Ltd. *("Heze Dongming New Energy")	PRC	Held directly	RMB15,000,000	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, development and utilization of clean energy	100%	100%

* These companies were newly established in 2019.

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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
Huaneng (Suzhou Industrial Park) Power Generation Co., Ltd.	PRC	Held directly	RMB632,840,000	Power generation	75%	75%
Huaneng Qinbei Power Generation Co., Ltd. ("Qinbei Power")	PRC	Held directly	RMB1,540,000,000	Power generation	60%	60%
Huaneng Yushe Power Generation Co., Ltd.	PRC	Held directly	RMB615,760,000	Power generation, power distribution, sale of power	60%	60%
Huaneng Hunan Yueyang Power Generation Limited Liability Company	PRC	Held directly	RMB1,935,000,000	Power generation	55%	55%
Huaneng Chongqing Luohuang Power Generation Limited Liability Company ("Luohuang Power")	PRC	Held directly	RMB1,748,310,000	Power generation	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 directly	RMB1,513,136,000	Power generation	60%	70%
Huaneng Qidong Wind Power Generation Co., Ltd.	PRC	Held directly	RMB391,738,500	Development of wind power projects, 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%

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 Beijing Co-generation Limited Liability Company ("Beijing Co-generation") (vii)	PRC	Held directly	RMB3,702,090,000	Construction and operation of power plants and related construction projects	41%	66%
Huaneng Wuhan Power Generation Co., Ltd. ("Wuhan Power")	PRC	Held directly	RMB1,478,461,500	Investment, construction, operation and management of electricity projects, and development and utilisation of clean energy resources	75%	75%
Huaneng Anyuan Power Generation Co., Ltd. ("Anyuan Power")	PRC	Held directly	RMB1,175,117,300	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 Chaohu Power Generation Co., Ltd. ("Chaohu Power") (viii)	PRC	Held directly	RMB840,000,000	Construction, operation, management of electricity projects, and development and utilisation of clean energy resources	60%	70%
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%

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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 Suzhou Thermal Power Co., Ltd. ("Suzhou Thermal Power") (ix)	PRC	Held directly	RMB600,000,000	Construction, operation and management of electricity projects, and development and utilisation of clean energy	53.45%	100%
Huaneng Hainan Power Generation Limited Company ("Hainan Power")	PRC	Held directly	RMB1,326,419,587	Investment, construction, operation of various power plants, regular energy and new energy development	91.80%	91.80%
Huaneng Ruijin Power Generation Co., Ltd. ("Ruijin Power Generation") (xi)	PRC	Held directly	RMB609,923,299	Construction, operation, management of electricity projects, and development and utilisation of clean energy	50%	100%
Huaneng Yingcheng Thermal Power Co., Ltd. ("Yingcheng Thermal Power")	PRC	Held directly	RMB650,000,000	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	RMB945,350,000	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 and, development projects, heat production and supply	64%	64%
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%

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 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%
Huaneng Yichun Thermal Power Limited Company ("Yichun Thermal Power")	PRC	Held indirectly	RMB581,000,000	Power construction, production and sale, and thermal production and sale	100%	100%
Huaneng Heilongjiang Energy Sales Limited Company ("Heilongjiang Energy Sales")	PRC	Held indirectly	RMB210,000,000	Power supply, the production of heat and hot water	100%	100%
Zhaodong Huaneng Thermal Power Limited Company ("Zhaodong Thermal Power")	PRC	Held indirectly	RMB10,000,000	Heating production and supply	100%	100%
Huaneng Jilin Power Generation Limited Company ("Jilin Power")	PRC	Held directly	RMB2,879,340,000	Power (thermal) projects, development of new energy projects investment, construction, production, operation and sales	100%	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 Linjiang Jubao Hydropower Limited Company ("Jubao Hydropower")	PRC	Held indirectly	RMB45,624,000	Hydropower development and operation, 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, power supply	100%	100%
Shandong Power	PRC	Held directly	RMB4,241,460,000	Power (thermal) project development, investment, construction and management	80%	80%
Huaneng Jining New Energy Limited Company ("Jining New Energy") (iv)	PRC	Held indirectly	RMB38,000,000	Investment, construction and management of photovoltaic and wind power projects	80%	100%
Huaneng Zibo Boshan Photovoltaic Power Limited Company ("Zibo Photovoltaic") (iv)	PRC	Held indirectly	RMB22,000,000	Solar power generation, sales	80%	100%
Huaneng Rizhao Thermal Power Limited Company ("Rizhao Thermal Power") (iv)	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") (iv)	PRC	Held indirectly	RMB68,000,000	Photovoltaic power and wind power generation	80%	100%
Huaneng Shandong Sishui New Energy Limited Company ("Sishui New Energy") (iv)	PRC	Held indirectly	RMB36,000,000	Solar energy grid connected generation	80%	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 Electric and Thermal Power Marketing Limited Company ("Shandong Power Marketing") (iv)	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") (iv)	PRC	Held indirectly	RMB80,000,000	Information technology and management consulting services	80%	100%
Huaneng Zhanhua New Energy Limited Company ("Zhanhua New Energy") (iv)	PRC	Held indirectly	RMB235,298,200	Wind power, photovoltaic power generation	80%	100%
Huaneng Weihai Port Photovoltaic Power Generation Limited Company ("Port Photovoltaic") (iv)	PRC	Held indirectly	RMB30,760,000	Photovoltaic power generation projects development and construction, electricity sales	80%	100%
Huaneng Jinan Huangtai Power Limited Company ("Huangtai Power") (iv)	PRC	Held indirectly	RMB1,391,878,400	Electricity power production, heat management	72%	90%
Huaneng Dezhou Thermal Power Limited Company ("Dezhou Thermal Power") (iv)	PRC	Held indirectly	RMB40,000,000	Urban heat construction, maintenance and operation, design and construction of heat engineering	68%	85%
Huaneng Dongying New Energy Limited Company ("Dongying New Energy") (iv)	PRC	Held indirectly	RMB92,601,483	Wind power projects development, wind power generation and sales of electricity	56%	70%

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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 Power Generation Maintenance Technology Limited Company ("Shandong Maintenance Company") (iv)	PRC	Held indirectly	RMB50,000,000	Power engineering design, construction	76.55%	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%
Shandong Rizhao Power Generation Limited Company ("Rizhao Power") (iv)	PRC	Held indirectly	RMB1,245,587,900	Heat; engaged in power business	88.80%	100%
Huaneng Laiwu Power Generation Limited Company ("Laiwu Power") (iv)	PRC	Held indirectly	RMB1,800,000,000	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 Jiaxiang Power Generation Limited Company ("Jiaxiang Power") (iv)	PRC	Held indirectly	RMB646,680,000	Power generation, electrical equipment maintenance	40%	100%
Huaneng Qufu Co-generation Limited Company ("Qufu Co-generation") (iv)	PRC	Held indirectly	RMB300,932,990	Sales and production of electric power, thermal power	40%	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 Jining Hi-Tech Zone Co-generation Limited Company ("Jining Co-generation") (iv)	PRC	Held indirectly	RMB118,699,760	Heat supply and power generation	40%	100%
Huaneng Shandong (Hong Kong) Investment Limited Company ("Hong Kong Investment") (iv)	Hong Kong	Held indirectly	10,000 Shares	Investment	80%	100%
Shandong Silk Road International Power Limited Company ("Shandong Silk Road") (iv)	PRC	Held indirectly	RMB35,000,000	Contracting overseas projects and domestic international bidding projects, construction and operation of power projects	80%	100%
Huaneng Rongcheng New Energy Co., Ltd. ("Rongcheng New Energy") (iv)	PRC	Held indirectly	RMB36,540,000	Wind power generation	48%	100%
Huaneng Jining Yunhe Power Generation Co., Ltd. ("Yunhe Power") (iv)	PRC	Held indirectly	RMB696,355,300	Electrical (thermal) production and on-grid sales, technology consulting and services	78.68%	98.35%
Huaneng Linyi Power Generation Limited Company ("Linyi Power") (iv)	PRC	Held indirectly	RMB1,093,313,400	Power generation	60%	75%

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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
Liaocheng Changrun National Electric Heating Limited Company ("Liaocheng Changrun") (iv)	PRC	Held indirectly	RMB130,000,000	Heat operation, installation and repair of water, electricity, heating	60%	75%
Linyi Lantian Thermal Power Limited Company ("Lantian Thermal Power") (iv)	PRC	Held indirectly	RMB36,000,000	Heat supply, maintenance of thermal power network, power sales, installation and maintenance of distribution facilities	54.40%	68%
Yantai 500 Heating Limited Company ("Yantai 500") (iv)	PRC	Held indirectly	RMB20,500,000	Central heat services, plumbing and pipe installation services	64%	80%
Huaneng Liaocheng Co-generation Limited Company ("Liaocheng Co-generation") (iv)	PRC	Held indirectly	RMB610,670,000	Power, heat production and sales	60%	100%
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, development and utilisation of clean energy resources	90%	90%

The subsidiaries above and the Group are all controlled by Huaneng Group before and after the acquisitions.

9 INVESTMENTS IN SUBSIDIARIES (Cont'd)

(iii) Subsidiaries acquired from business combinations not under common control

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Weihai Power Generation Limited Liability Company ("Weihai Power")	PRC	Held directly	RMB1,822,176,621	Power generation	60%	60%
Huaneng Huaiyin Power Generation Limited Company	PRC	Held directly	RMB265,000,000	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%
Huaneng Zhanhua Co-generation Limited Company	PRC	Held directly	RMB190,000,000	Production and sales 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, goods storage	53%	53%
Huaneng Qingdao Port Limited Company	PRC	Held directly	RMB219,845,000	Loading and conveying warehousing, conveying, water carriage materials supply	51%	51%
Huaneng Yunnan Diandong Energy Limited Liability Company ("Diandong Energy")	PRC	Held directly	RMB3,769,140,000	Electricity projects investment, power generation and sales, coal exploitation and investment	100%	100%
Yunnan Diandong Yuwang Energy Limited Company ("Diandong Yuwang")	PRC	Held directly	RMB1,700,740,000	Electricity projects investment, power generation and sales, coal exploitation and investment	100%	100%
Huaneng Luoyang Co-generation Limited Liability Company	PRC	Held directly	RMB600,000,000	Production and sales of electricity and heating	80%	80%
Huaneng Zhumadian Wind Power Generation Co., Ltd.	PRC	Held directly	RMB30,000,000	Wind power generation, new energy development and utilisation	90%	90%
SinoSing Power	Singapore	Held directly	US\$1,476,420,585	Investment holding	100%	100%

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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 sales	100%	100%
TP Asset Management Pte. Ltd.	Singapore	Held indirectly	S\$2	Render of environment engineering services	100%	100%
TPGS Green Energy Pte. Ltd.	Singapore	Held indirectly	S\$1,000,000	Provision of utility services	75%	75%
Shanxi Xiaoyi Economic Development Zone Huaneng Energy Service Co., Ltd. ("Shanxi Xiaoyi Energy") (x)	PRC	Held indirectly	RMB100,000,000	Electricity sales, sales of raw coal and processed coal	51%	100%
Ruzhou Xuji Wind Power Generation Co., Ltd.	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%
Ruyi Pakistan Energy (iv)	Pakistan	Held indirectly	US\$360,000,000	Electric power production and sales	40%	100%
Shandong Huatai Electric Power Operation & Maintenance (Private) Co., Ltd. ("Huatai Power") (iv)	Pakistan	Held indirectly	100,000 shares	Power generation operation and maintenance	40%	100%

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") (xii)	PRC	Held indirectly	RMB539,000,000	Construction, operation and management of photovoltaic power projects	100%	100%
Licheng Yingheng Clean Energy Limited Company** ("Yingheng Clean Energy") (xii)	PRC	Held indirectly	RMB1,100,000,000	Construction, operation and management of photovoltaic power projects	49%	100%

** These companies were newly acquired in 2019.

Note:

- (i) According to its article 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.
- (ii) The Group holds 90% interests in Liangjiang Power, and Liangjiang Power holds 60% interests in Huaqing Energy. Therefore, the Group indirectly holds 54% equity interests in Huaqing Energy.

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9 INVESTMENTS IN SUBSIDIARIES (Cont'd)

Note: (Cont'd)

- (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 Cogeneration, 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 Cogeneration, 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 Group holds 80% interests in Shandong Power. Thus, the Group indirectly holds 80% interests in these companies through their parent company.

Zhanhua New Energy, a wholly-owned subsidiary of Shandong Power, holds 58% equity interests in Zhanhua Photovoltaic Company. Thus, the Group indirectly holds 46.4% equity interests in Zhanhua Photovoltaic Company.

Weishan New Energy and Helan New Energy are wholly-owned subsidiaries of Ruyi Coal Power, a 50% owned subsidiary of Shandong Power. As a result, the Group indirectly holds 40% interests in Weishan New Energy and Helan New Energy.

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 in Shandong Fuel Company and Shandong Maintenance Company respectively through its own subsidiaries: Huangtai Power, Linyi Power, Liaocheng Co-generation and Yunhe Power. Thus, the Group indirectly holds 76.55% interests in Shandong Maintenance Company and Shandong Fuel Company respectively.

The Group directly holds 44% equity interests in Rizhao Power and Shandong Power directly holds 56% interests in Rizhao Power. The Group holds 88.8% interests in Rizhao Power.

Jiaxiang Power, Qufu Co-generation, Jining Co-generation are wholly-owned subsidiaries of Ruyi Coal Power. The Group indirectly holds 40% interests in Ruyi Coal Power, Jiaxiang Power, Qufu Co-generation and Jining Co-generation.

In according to the voting in concert agreement entered into among the 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 the Shandong Power. As a result, the Group has control over these companies.

According to the voting in concert agreement entered into between Hong Kong Investment and the other shareholder in December 2019, 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 since 31 December 2019.

9 INVESTMENTS IN SUBSIDIARIES *(Cont'd)*

Note: *(Cont'd)*

- (v) According to the investment cooperation agreement between the Group and another shareholder, Ruzhou Clean Energy has an executive director appointed by the Company. At the same time, the shareholder agreed to withdraw from Ruzhou Clean Energy in compliance with the law within 3 months upon the completion of the project. Therefore, the Group has control over Ruzhou Clean Energy.
- (vi) According to the investment cooperation agreement and articles of association signed by Jilin Power and another shareholder, 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.
- (vii) Pursuant to an agreement entered into between the Group 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 article of association to control the operation and financial policies of Beijing Co-generation. Accordingly, the Group has control over Beijing Co-generation.
- (viii) 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.
- (ix) According to the voting in concert agreement entered into between the Group and the other two shareholders in 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.
- (x) 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 control over Shanxi Xiaoyi Energy since February 2017.
- (xi) In 2019, the Group'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 Group entered into a voting in concert agreement with the other shareholder, the other shareholder agreed to vote the same in respect of significant financial and operating decisions. As a result, the Group still has control over Ruijin Power Generation.

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9 INVESTMENTS IN SUBSIDIARIES (Cont'd)

Note: (Cont'd)

- (xii) These companies are subsidiaries of Shanxi Comprehensive Energy. The Group holds 100% interests in Shanxi Comprehensive Energy. Thus, the Group indirectly holds equity interests in these companies through their parent company.

Xvheng New Energy, a wholly-owned subsidiary of Shanxi Comprehensive Energy which was acquired from a third party, holds 49% equity interests in Yingheng Clean Energy. The aforesaid third party holds the remaining 51% equity interests in Yingheng Clean Energy. Pursuant to the cooperation agreement entered into between Shanxi Comprehensive Energy and the aforesaid third party, the third party will not pay any share capital to Yingheng Clean Energy and thus will neither enjoy any shareholder rights nor bear any shareholder obligations in Yingheng Clean Energy. As a result, the Group has control over Yingheng Clean Energy.

For the information of material non-controlling interests ("NCI"), please refer to Note 43.

10 OTHER EQUITY INSTRUMENT INVESTMENTS

	31 December 2019	31 December 2018
Equity securities designated at FVOCI (non-recycling)		
Listed equity investments at fair value	8,390	8,558
Unlisted equity investments at fair value		
10% of Shanxi Xishan Jinxing Energy Co., Ltd. ("JinXing")	—	1,085,462
9.09% of Ganlong Double-track Railway Co., Ltd.	678,565	924,453
Others	92,263	64,946
Subtotal	770,828	2,074,861
Total	779,218	2,083,419

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.

In August 2019, the Group sold its equity interest in Jinxing to a third party. The fair value on the date of sale was RMB1,250 million and the accumulated fair value gain recognised in other comprehensive income of RMB502 million was transferred to retained earnings.

11 LAND USE RIGHTS

The movements in the carrying amount of land use rights during the year are as follows:

	2018
Beginning of the year	
Cost	13,775,976
Accumulated amortisation	(2,128,752)
Accumulated impairment losses	(382,439)
Net book value	<u>11,264,785</u>
Movement:	
Business combination	398,591
Addition	260,971
Amortisation charge for the year	(368,025)
Reclassification to assets held for sale	(29,924)
Disposals	(81,788)
Disposal of subsidiaries	—
Currency translation differences	5,424
End of the year	<u>11,450,034</u>
Cost	14,324,288
Accumulated amortisation	(2,486,181)
Accumulated impairment losses	(388,073)
Net book value	<u>11,450,034</u>

All the lands located in the PRC and Singapore are leased from respective governments according to corresponding regulations applied across the countries. The Group will renew the leases according to the operation requirements of the Group and the related regulations of the respective countries.

Upon the adoption of IFRS 16 on 1 January 2019, land use rights were reclassified to "right -of-use assets". Please refer to note 44 for details of right-of-use assets.

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11 LAND USE RIGHTS (Cont'd)

Land use rights without ownership certificates

As at 31 December 2019, the Group were in the process of applying for the ownership certificates for certain land use rights (which were reclassified and recognized as right-of-use assets upon the adoption of IFRS 16 on 1 January 2019) with an aggregate net book value of RMB350 million (2018: RMB543 million). Management is of the opinion that the Group is entitled to the lawful and valid occupation and use of the abovementioned land. There has 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.

12 POWER GENERATION LICENCES

The movements in the carrying amount of power generation licences during the years are as follows:

	2019	2018
Beginning of the year	4,014,972	3,916,246
Movement:		
Currency translation differences	134,496	98,726
End of the year	4,149,468	4,014,972

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 expect 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 2019 as indefinite and therefore the licence is not amortised.

Impairment test of power generation licence

Power generation licence belongs to and has been assigned to Tuas Power, a CGU. The recoverable amount of the CGU is determined based on value-in-use calculation. Management prepared the impairment model based on budget approved by the Board and various factors, such as inflation, power demand and other factors as well as the terminal value. There is no impairment provided for the power generation licence for the year ended 31 December 2019 (2018: Nil).

12 POWER GENERATION LICENCES *(Cont'd)*

Key assumptions used for value-in-use calculations:

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. The pre-tax discount rate applied in determining the recoverable amounts of the CGU was 7.33% (31 December 2018: 8.02%). An absolute increase in the pre-tax discount rate of 0.5% (31 December 2018: 0.5%) would result in approximately RMB1,706 million (31 December 2018: RMB1,715 million) decrease in the recoverable amount of the CGU.

Other key assumptions include projection of its business performance based on estimation of gross margin from electricity sold, sales volume of electricity sold and other operating expenses, which are largely based on a combination of past performance of the CGU, its expectation of market developments and consistency with forecasts included in industry reports. On average, the growth rates of 2.0% was used in consideration of future expansion plans and new development projects as part of the long-term strategy. Cash flows beyond the terminal year was extrapolated using a growth rate of 2.0%.

13 MINING RIGHTS

The movements in the carrying amount of mining rights during the years are as follows:

	2019	2018
Beginning of the year		
Cost	2,406,567	2,406,567
Accumulated impairment losses	(895,381)	(760,296)
Net book value	1,511,186	1,646,271
Movement:		
Addition	66,319	—
Impairment charge for the year	—	(135,085)
End of the year	1,577,505	1,511,186
Cost	2,472,886	2,406,567
Accumulated impairment losses	(895,381)	(895,381)
Net book value	1,577,505	1,511,186

In 2019, no impairment losses for mining rights (2018: RMB135 million) have been recognised.

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14 DERIVATIVE FINANCIAL INSTRUMENTS

Details of derivative financial instruments are as follows:

	As at 31 December	
	2019	2018
Derivative financial assets		
– Hedging instruments for cash flow hedge (fuel swap contracts)	82,367	25,629
– Hedging instruments for cash flow hedge (exchange forward contracts)	4,319	9,062
– Financial instruments at fair value through profit or loss (fuel swap contracts)	4,601	—
– Financial instruments at fair value through profit or loss (exchange forward swap contracts)	—	14
Total	91,287	34,705
Less: Non-current portion		
– Hedging instruments for cash flow hedge (fuel swap contracts)	15,101	2,543
– Hedging instruments for cash flow hedge (exchange forward contracts)	1,275	3,427
Total non-current portion	16,376	5,970
Current portion	74,911	28,735
Derivative financial liabilities		
– Hedging instruments for cash flow hedge (fuel swap contracts)	243,045	357,088
– Hedging instruments for cash flow hedge (exchange forward contracts)	42,082	21,335
– Hedging instruments for cash flow hedge (interest rate swap contracts)	162,594	149,117
– Financial instruments at fair value through profit or loss (fuel swap contracts)	2,987	17,705
– Financial instruments at fair value through profit or loss (exchange forward swap contracts)	—	47
Total	450,708	545,292
Less: Non-current portion		
– Hedging instruments for cash flow hedge (fuel swap contracts)	39,684	78,587
– Hedging instruments for cash flow hedge (exchange forward contracts)	13,641	4,384
– Hedging instruments for cash flow hedge (interest rate swap contracts)	145,590	144,999
– Financial instruments at fair value through profit or loss (fuel swap contracts)	1,493	3,338
Total non-current portion	200,408	231,308
Total current portion	250,300	313,984

14 DERIVATIVE FINANCIAL INSTRUMENTS *(Cont'd)*

For the years ended 31 December 2019 and 2018, no material ineffective portion was recognised in profit or loss arising from cash flow hedges.

TPG uses foreign currency forward contracts which are designated as hedging instruments in cash flow hedges of forecast 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 2019 was S\$929 million (RMB equivalents of RMB4,086 million) (2018: S\$992 million (RMB equivalents of RMB4,968 million)). Through these arrangements, TPG swaps original floating interest (6-month SOR) to annual fixed interest determined by individual swap contracts. Such swap contracts are settled semi-annually from September 2011 to March 2020. TPSTMWR swaps 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 2019, these interest rate swap contracts are carried on the consolidated statement of financial position as financial liability of RMB163 million (2018: financial liability of RMB145 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 that 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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14 DERIVATIVE FINANCIAL INSTRUMENTS (Cont'd)

The analysis of contractual cash inflows/(outflows) of major derivative financial instruments is as follows:

	Carrying amounts	Contractual cash flows	Maturity		
			Within 1 year	Between 1 and 5 years	After 5 years
As at 31 December 2019					
Derivative financial assets					
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	—	—
Derivative financial liabilities					
Fuel derivatives used for hedging (net settlement)	243,045	(243,045)	(203,362)	(39,683)	—
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)	—
Forward exchange contracts that do not qualify as hedges (net settlement)	—	—	—	—	—

14 DERIVATIVE FINANCIAL INSTRUMENTS (Cont'd)

	Maturity Carrying amounts	Contractual cash flows	Within 1 year	Between 1 and 5 years	After 5 years
As at 31 December 2018					
Derivative financial assets					
Fuel derivatives used for hedging (net settlement)	25,629	25,629	23,086	2,543	—
Forward exchange contracts used for hedging					
– inflows		744,936	534,355	210,581	—
– outflows		(730,691)	(526,988)	(203,703)	—
	9,062	14,245	7,367	6,878	—
Forward exchange contracts that do not qualify as hedges (net settlement)	14	12	12	—	—
Derivative financial liabilities					
Fuel derivatives used for hedging (net settlement)	357,088	(357,088)	(278,501)	(78,587)	—
Forward exchange contracts used for hedging					
– inflows		2,425,238	2,059,061	366,177	—
– outflows		(2,433,994)	(2,069,218)	(364,776)	—
	21,335	(8,756)	(10,157)	1,401	—
Net-settled interest rate swaps used for hedging					
– net cash inflows/(outflows)	149,117	(151,975)	(37,769)	(47,562)	(66,644)
Fuel derivatives that do not qualify as hedges (net settlement)	17,705	(17,705)	(14,366)	(3,339)	—
Forward exchange contracts that do not qualify as hedges (net settlement)	47	(32)	(32)	—	—

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15 GOODWILL

The movements of goodwill during the years are as follows:

	2019	2018
Beginning of the year		
Cost	18,941,078	18,435,954
Accumulated impairment losses	(3,368,851)	(2,951,834)
Net book value	15,572,227	15,484,120
Movement:		
Business combination	—	231,218
Impairment charge for the year	—	(409,371)
Disposal of subsidiary – cost	(21,723)	—
Disposal of subsidiary – impairment	21,723	—
Currency translation differences – cost	373,142	273,906
Currency translation differences – impairment	(10,414)	(7,646)
End of the year	15,934,955	15,572,227
Cost	19,292,497	18,941,078
Accumulated impairment losses	(3,357,542)	(3,368,851)
Net book value	15,934,955	15,572,227

Impairment tests for goodwill

Goodwill is allocated to the CGUs of the Group. The carrying amounts of major goodwill allocated to individual CGUs are as follows:

	2019	2018
PRC power segment:		
Yunhe Power	700,346	700,346
Linyi Power	541,307	541,307
Wuhan Power	518,484	518,484
Liaocheng Co-generation	339,361	339,361
Overseas segment:		
Tuas Power	11,190,944	10,828,216

15 GOODWILL (Cont'd)

Impairment tests for goodwill (Cont'd)

The recoverable amount of a CGU is determined based on value-in-use calculations. For domestic CGUs, these calculations use cash flow projections based on management's financial budgets covering periods of no more than five years. The Group expects cash flows beyond such periods will be similar to that of the respective final forecast years on existing production capacity and thus a zero terminal growth rate is utilised in the forecasts.

For the goodwill allocated to Tuas Power, management has based their assessment of recoverable amount on value-in-use calculations. Management prepared the impairment model based on financial budgets covering a period of no more than 5 years utilising the key assumptions disclosed below. On average, the growth rates of 2.0% was used in consideration of future expansion plans and new development projects as part of the long-term strategy. Cash flows beyond the terminal year was extrapolated using a terminal growth rate of 2.0%. There is no impairment provided for the goodwill for the year ended 31 December 2019.

Pre-tax discount rates used for value-in-use calculations:

Yunhe Power	9.22%
Linyi Power	9.23%
Wuhan Power	9.21%
Liaocheng Co-generation	9.18%
Tuas Power	7.33%

Key assumptions used for value-in-use calculations:

Key assumptions applied in the impairment tests include the expected future sales volumes, fuel prices, gross margin and terminal growth rate. Management determined these key assumptions based on past performance and its expectations on market development. The pre-tax discount rate used reflect specific risks relating to individual CGUs. Management believes that any reasonably possible change in any of these key assumptions on which recoverable amounts of individual CGUs are based may cause carrying amounts of individual CGUs to exceed their recoverable amounts.

For the goodwill allocated to CGUs in the PRC, changes of assumptions in future sales volume and fuel price could have affected the results of goodwill impairment assessment. As at 31 December 2019, 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 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 RMB170 million and RMB1,829 million, respectively. Please refer to Note 12 for details of sensitivity analysis of oversea CGU impairment testing.

In 2019 and 2018, the increase of goodwill in respect of Tuas Power was due to currency translation differences.

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16 OTHER NON-CURRENT ASSETS

Details of other non-current assets are as follows:

	As at 31 December	
	2019	2018
Finance lease receivables (i)	10,519,845	10,811,603
VAT recoverable	4,172,871	3,282,075
Prepayments for pre-construction cost	788,081	987,469
Intangible assets (ii)	784,594	698,541
Profit compensation from		
Huaneng Group (iii)	—	440,551
Prepayments for capacity quota (iv)	—	303,399
Prepaid connection fees	37,484	113,587
Contract assets	642,557	92,995
Others	1,659,573	2,605,839
Total	18,605,005	19,336,059

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 44 for other details of finance lease receivables.
- (ii) The intangible assets primarily consist of software, patented technologies and etc. In 2019, there was no impairment provided for the intangible assets (2018: Nil).
- (iii) The Company acquired several subsidiaries including Shandong Power from Huaneng Group which 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 profit 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 abovementioned contingent consideration from Huaneng Group amounting to RMB458 million was recognised (31 December 2018: RMB991 million), which was recorded in other receivables and assets. The profit compensation is solely related to year 2019.
- (iv) This represents a capacity quota purchased by a subsidiary of the Group to build a co-generation project in prior years. Management assessed it could not be utilised in the foreseeable future according to the change of the current market condition and therefore provided full impairment of the prepayments of RMB303 million in the current period.

17 INVENTORIES

Inventories comprised:

	As at 31 December	
	2019	2018
Fuel (coal and oil) for power generation	7,304,783	8,150,398
Materials and supplies	1,765,827	1,824,000
	9,070,610	9,974,398
Less: Provision for inventory obsolescence	187,427	430,707
Total	8,883,183	9,543,691

Movements of provision for inventory obsolescence during the years are analyzed as follows:

	2019	2018
Beginning of the year	(430,707)	(168,875)
Provision*	(23,507)	(255,181)
Reversal	1,054	1,365
Write-off*	272,659	—
Currency translation differences	(6,926)	(8,016)
End of the year	(187,427)	(430,707)

* In 2018, approximately RMB255 million provision was provided for the fuel oil, which was recognised based on the net realisable value. In 2019, approximately RMB254 million provision was written-off for the fuel oil sold which was included in the inventory provision balance in 2018.

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18 OTHER RECEIVABLES AND ASSETS

Other receivables and assets comprised the following:

	As at 31 December	
	2019	2018
Prepayments for inventories	758,834	990,742
Prepaid income tax	139,617	134,477
Others	266,252	270,330
Subtotal of prepayments	1,164,703	1,395,549
Less: Loss allowance	2,638	4,638
Total prepayments, net	1,162,065	1,390,911
Dividends receivable	—	30,000
Receivables from sales of fuel	99,649	74,578
Others (Note i)	2,077,156	1,569,181
Subtotal of other receivables	2,176,805	1,673,759
Less: Loss allowance	52,531	38,531
Total other receivables, net	2,124,274	1,635,228
Profit compensation from Huaneng Group (Note 16)	457,727	550,832
VAT recoverable	1,773,396	1,927,638
Finance lease receivables (Note 44)	483,691	871,302
Designated loan to a joint venture	80,000	80,000
Others	136,610	—
Gross total	6,272,932	6,499,080
Net total	6,217,763	6,455,911

Please refer to Note 38 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.

18 OTHER RECEIVABLES AND ASSETS (Cont'd)

The gross amounts of other receivables are denominated in the following currencies:

	As at 31 December	
	2019	2018
RMB	1,943,568	1,572,651
S\$ (RMB equivalent)	86,422	68,390
US\$ (RMB equivalent)	11,898	7,401
PKR (RMB equivalent)	134,917	25,317
Total	2,176,805	1,673,759

Movements of loss allowance during the years are analyzed as follows:

	2019	2018
Beginning of the year	(43,169)	(33,879)
Provision	(25,578)	(24,924)
Reversal/write-off	13,578	15,634
End of the year	(55,169)	(43,169)

Note i: Included in others, there were advances amounting to RMB232 million as at 31 December 2019 (31 December 2018: RMB273 million) which were due from Huangtai #8 Power Plant with indefinite repayment terms. For the year ended 31 December 2019, Huaneng Jinan Huangtai Power Limited Company ("Huangtai Power"), a subsidiary of the Company, received total repayments amounting to RMB41 million (for the year ended 31 December 2018: RMB60 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.

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19 ACCOUNTS RECEIVABLE

Accounts receivable comprised the following:

	As at 31 December	
	2019	2018
Accounts receivable	26,911,837	24,804,671
Notes receivable	5,552,422	4,621,180
	32,464,259	29,425,851
Less: Loss allowance	195,320	146,913
Total	32,268,939	29,278,938
Analysed into:		
Accounts receivable		
– At amortised cost	25,547,258	24,804,671
– At fair value through other comprehensive income	1,364,579	—
Notes receivable		
– At amortised cost	5,552,422	4,621,180

In 2019, the Group entered into several accounts receivable factoring arrangements (the “Factoring Arrangements”) and transferred certain accounts receivable, with the carrying amount of RMB150 million, to the banks. Under the Factoring Arrangements, 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 of the accounts receivable transferred under the arrangement that have not been settled as at 31 December 2019 was RMB150 million (2018: Nil).

In December 2019, the Group’s subsidiary Shandong Power entered into an agreement of a single assets management plan (the “Assets Management Plan”) with Yingda Securities Co., Ltd (“Yingda”), with an aggregate amount of RMB1,000 million of accounts receivables purchased from Shandong Power through the asset management plan established by Yingda. Under the Assets Management Plan, 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 of the accounts receivable transferred under the arrangement that have not been settled as at 31 December 2019 was RMB1,000 million.

During the year ended 31 December 2019, the Group recognised RMB10,528 thousand loss on the date of transfer of the accounts receivable.

19 ACCOUNTS RECEIVABLE (Cont'd)

The gross amounts of accounts receivable are denominated in the following currencies:

	As at 31 December	
	2019	2018
RMB	29,382,384	26,879,470
S\$ (RMB equivalent)	1,077,008	1,016,299
US\$ (RMB equivalent)	39,146	6,673
PKR (RMB equivalent)	1,965,721	1,523,409
Total	32,464,259	29,425,851

The Group usually grant 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 collaterals that correspond to these accounts receivable. Ruyi Pakistan Energy entered into the agreement with CPPA-G with a one month credit period.

As at 31 December 2019, no accounts receivable were secured to banks as collateral against loans (2018: Nil). The Group 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 29 for details.

Movements of loss allowance during the years are analyzed as follows:

	2019	2018
Beginning of the year	(146,913)	(112,086)
Provision	(64,838)	(40,064)
Reversal	16,596	4,728
Write-off	—	607
Currency translation differences	(165)	(98)
End of the year	(195,320)	(146,913)

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19 ACCOUNTS RECEIVABLE (Cont'd)

Ageing analysis of accounts receivable and notes receivable based on the invoice date was as follows:

	As at 31 December	
	2019	2018
Within 1 year	31,566,008	28,379,742
Between 1 to 2 years	696,401	833,358
Between 2 to 3 years	57,667	29,517
Over 3 years	144,183	183,234
Total	32,464,259	29,425,851

As at 31 December 2019, the maturity period of the notes receivable ranged from 1 to 12 months (2018: from 1 to 12 months).

20 DISPOSAL GROUP HELD FOR SALE

On 31 July 2018, Shandong Power entered into an acquisition agreement with Taishan Power, a subsidiary of Huaneng Group, to acquire certain equity interest of Laizhou Wind Power. According to the acquisition agreement, part or all of the wind power generators of Laizhou Wind Power could be dismantled upon the requirement of the local government after the completion of the acquisition. In that case, Shandong Power is entitled to request Taishan Power or another third party designated by Taishan Power to repurchase 80% equity interests of Laizhou Wind Power in cash at fair value (no less than the fair value of equity interest of Laizhou Wind Power in the acquisition agreement).

In December 2018, as part of the wind power generators of Laizhou Wind Power had been dismantled, which is the case in the acquisition agreement, Shandong Power intended to sell 80% equity interests of Laizhou Wind Power back to Taishan Power. The assets and liabilities of Laizhou Wind Power are presented as a disposal group held for sale in the consolidated financial statements.

In 2019, some of the wind turbines were dismantled and a disposal loss of RMB166 million was recorded. In 2019, Shandong Power, Taishan Power and Huaneng Energy & Communications Holdings Co., Ltd. ("Huaneng Energy & Communications"), a subsidiary of Huaneng Group, entered into an agreement, which Taishan Power designates Huaneng Energy & Communication to purchase the 80% of equity interests of Laizhou Wind Power from Shandong Power, at a cash consideration of RMB1.05 million. The disposal of Laizhou Wind Power does not constitute a discontinued operation of the Group.

20 DISPOSAL GROUP HELD FOR SALE (Cont'd)

The transaction was completed on 27 December 2019. At the date of disposal, the carrying values of the net assets of the disposal group are as follows:

	Date of disposal
	RMB'000
Property, plant and equipment and other non-current assets	364,184
Land use rights	29,924
Other non-current assets	1,752
Inventories	3
Other receivables and assets	3,006
Accounts receivable	44,603
Bank balances and cash	28,208
Long-term loans	513,200
Accounts payable and other liabilities	67,514
Taxes payable	2,365
Current portion of long-term loans	68,800
Non-controlling interest	(36,040)
Net asset subject to disposal	<u>(144,159)</u>
Consideration	1,050
Gain on disposal of a subsidiary	145,209
Loss on disposal of wind turbines	<u>(165,540)</u>
Net impact	<u>(20,331)</u>
	RMB'000
Satisfied by:	
Cash received in 2019	<u>525</u>
Receivable as at 31 December 2019	<u>525</u>
Total consideration	<u>1,050</u>

An analysis of the net inflow of cash and cash equivalents in respect of the disposal of a subsidiary is as follows:

	2019
	RMB'000
Cash consideration received	525
Cash and bank balances disposed of	(28,208)
Net outflow of cash and cash equivalents in respect of the disposal of a subsidiary	<u>(27,683)</u>

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21 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
Balance as at 31 December 2018	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 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 (Note 23)	—	14,982,165	—	—	—	—	—	—	—	—	14,982,165
Cumulative distribution of other equity instruments (Note 23)	—	(617,662)	—	—	—	—	—	—	—	—	(617,662)
Dividends relating to 2018 (Note 25)	—	—	—	—	—	—	—	—	—	(1,569,809)	(1,569,809)
Disposal of Other equity instrument	—	—	—	—	(501,547)	—	—	(501,547)	—	501,547	—
Balance as at 31 December 2019	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

21 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	
Balance as at 1 January 2018	15,200,383	5,068,550	22,239,399	(16,709)	402,352	—	1,093,892	23,718,934	8,140,030	35,034,741	871,162,638
Profit for the year ended 31 December 2018	—	342,349	—	—	—	—	—	—	—	204,542	546,891
Other comprehensive income/(loss):											
Fair value changes of other equity investment instruments – net of tax	—	—	—	—	1,535	—	—	1,535	—	—	1,535
Effective portion of cash flow hedges, net of tax	—	—	—	13,623	—	—	—	13,623	—	—	13,623
Total comprehensive income for the year ended 31 December 2018	—	342,349	—	13,623	1,535	—	—	15,158	—	204,542	562,049
Issue of other equity instruments	—	5,000,000	—	—	—	—	—	—	—	—	5,000,000
Issuance of new A shares, net of issuance expenses	497,710	—	2,747,620	—	—	—	—	2,747,620	—	—	3,245,330
Cumulative distribution of other equity instruments	—	(333,503)	—	—	—	—	—	—	—	—	(333,503)
Dividends relating to 2017	—	—	—	—	—	—	—	—	—	(1,520,038)	(1,520,038)
Balance as at 31 December 2018	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

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22 SHARE CAPITAL

	2019		2018	
	Number of shares	Share capital RMB'000	Number of shares	Share capital RMB'000
As at 1 January				
A shares	10,997,709,919	10,997,710	10,500,000,000	10,500,000
Overseas listed foreign shares	4,700,383,440	4,700,383	4,700,383,440	4,700,383
Subtotal	15,698,093,359	15,698,093	15,200,383,440	15,200,383
Issuance of new A shares	—	—	497,709,919	497,710
As at 31 December				
A shares	10,997,709,919	10,997,710	10,997,709,919	10,997,710
Overseas listed foreign shares	4,700,383,440	4,700,383	4,700,383,440	4,700,383
Total	15,698,093,359	15,698,093	15,698,093,359	15,698,093

23 OTHER EQUITY INSTRUMENTS

(a) Other equity instruments as at 31 December 2019

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 A	September 2017	Equity Instrument	5.05%		0.1	25,000,000	2,500,000	3 Years	None	None
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
Total							<u>25,000,000</u>			

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23 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 perpetual corporate bonds have no fixed maturity date and are callable at the Company's discretion in whole in August 2020 and 2022 respectively, the payment of the principal may be deferred for each renewal period as 3 and 5 years. The applicable distribution rate will be reset on first call date and each renewal period after first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

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) occurred. The Yingda plan has no fixed maturity date and are callable at the Company's discretion in whole at each distribution date after 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.

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 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) occurred. The China Life plan has no fixed maturity date and are callable at the Company's discretion in whole at each distribution date after 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, the basis rate plus 300 basis points, and will remain 8.05% afterwards.

23 OTHER EQUITY INSTRUMENTS *(Cont'd)*

(b) Major provisions *(Cont'd)*

In 2019, the Company issued two tranches of PICC Financing Plan ("the PICC plan") with the aggregate proceeds of RMB2,670 million. The PICC plan has no fixed period with 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) occurred. 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, 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) occurred. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, the payment of the principal may be deferred for each renewal period as 3 years, respectively. The applicable distribution rate will be reset on first call date and each renewal period after first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

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 medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, the payment of the principal may be deferred for each renewal period as 3 and 5 years. The applicable distribution rate will be reset on first call date and each renewal period after 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 2019, the profit attributable to holders of other equity instruments, based on the applicable distribution rate, was RMB686 million.

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23 OTHER EQUITY INSTRUMENTS (Cont'd)

(c) Changes of other equity instruments during 2019

Type of instruments	As at 1 January 2019		Issuance		Cumulative distributions		As at 31 December 2019	
	Number	Amount RMB'000	Number	Amount RMB'000	Accrued distribution RMB'000	Distribution payment RMB'000	Number	Amount RMB'000
Bond A	25,000,000	2,533,872	—	—	126,158	(126,250)	25,000,000	2,533,780
Bond B	25,000,000	2,534,678	—	—	129,155	(129,250)	25,000,000	2,534,583
Yingda Insurance Financing Plan (1st)	—	3,288,808	—	—	192,726	(192,726)	—	3,288,808
Yingda Insurance Financing Plan (2nd)	—	828,463	—	—	48,548	(48,548)	—	828,463
Yingda Insurance Financing Plan (3rd)	—	891,575	—	—	52,247	(52,247)	—	891,575
China Life Financing Plan (1st)	—	—	—	2,070,000	29,037	(25,553)	—	2,073,484
PICC Financing Plan (1st)	—	—	—	930,000	12,911	(11,989)	—	930,922
2019 medium-term notes (2nd)	—	—	20,000,000	1,994,811	16,722	—	20,000,000	2,011,533
2019 medium-term notes (3rd)	—	—	20,000,000	1,996,222	15,049	—	20,000,000	2,011,271
China Life Financing Plan (2nd)	—	—	—	2,260,000	20,606	(16,802)	—	2,263,804
PICC Financing Plan (2nd)	—	—	—	1,740,000	16,023	(14,297)	—	1,741,726
2019 medium-term notes (4th)	—	—	25,000,000	2,495,283	16,158	—	25,000,000	2,511,441
2019 medium-term notes (4th)	—	—	15,000,000	1,495,849	10,582	—	15,000,000	1,506,431
Total		<u>10,077,396</u>		<u>14,982,165</u>	<u>685,922</u>	<u>(617,662)</u>		<u>25,127,821</u>

24 SURPLUS RESERVES

**As at
1 January 2019 and
31 December 2019**

Surplus reserves	8,140,030
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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 2019, the Company made no provision this 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 2019 and 2018, 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 IFRS shall be adopted. As at 31 December 2019, in accordance with PRC GAAP and IFRS, the balance of retained earnings for the Group amounted to approximately RMB30.708 billion and RMB33.677 billion, respectively; and the balance of retained earnings for the Company amounted RMB38.980 billion and RMB36.830 billion, respectively.

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25 DIVIDENDS OF ORDINARY SHARES AND CUMULATIVE DISTRIBUTION OF OTHER EQUITY INSTRUMENTS

(a) Dividends of ordinary shares

On 31 March 2020, the Board of Directors proposed a cash dividend of RMB0.135 per share, totaling approximately RMB2,119 million. This proposal is subject to the approval of the shareholders at the annual general meeting.

On 12 June 2019, upon the approval from the annual general meeting of the shareholders, the Company declared 2018 final dividend RMB0.1 (2017: RMB0.1) per ordinary share, totalling approximately RMB1,570 million (2017: RMB1,520 million).

(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 2019, net profit attributable to holders of other equity instruments, based on the applicable rate, was RMB686 million, and the cumulative distribution paid-in 2019 was RMB618 million.

26 LONG-TERM LOANS

Long-term loans comprised the following:

	As at 31 December	
	2019	2018
Loans from Huaneng Group and its subsidiaries (a)	5,403,574	4,724,753
Bank loans and other loans (b)	128,619,138	145,444,257
	134,022,712	150,169,010
Less: Current portion of long-term loans	18,658,114	20,620,849
Total	115,364,598	129,548,161

26 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 2019				
	Original currency '000	RMB equivalent	Less: Current portion	Non- current portion	Annual interest rate
Loans from Huaneng Group					
<i>Unsecured</i>					
RMB					
– Variable rate	665,225	665,225	—	665,225	4.75%
Loans from Huaneng Finance					
<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%
Loans from Huaneng Tiancheng Financial Leasing Co., Ltd. ("Tiancheng Financial Leasing")					
<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	

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26 LONG-TERM LOANS (Cont'd)

(a) Loans from Huaneng Group and its subsidiaries (Cont'd)

	As at 31 December 2018				
	Original currency '000	RMB equivalent	Less: Current portion	Non- current portion	Annual interest rate
Loans from Huaneng Group					
<i>Unsecured</i>					
RMB					
– Variable rate	665,225	665,225	—	665,225	4.75%
Loans from Huaneng Finance					
<i>Unsecured</i>					
RMB					
– Variable rate	3,596,000	3,596,000	469,200	3,126,800	4.28%-4.75%
Loans from Huaneng Tiancheng Financial Leasing Co., Ltd. ("Tiancheng Financial Leasing")					
<i>Secured</i>					
RMB					
– Variable rate	463,528	463,528	141,265	322,263	4.42%-4.75%
Total		4,724,753	610,465	4,114,288	

26 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 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>	

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26 LONG-TERM LOANS (Cont'd)

(b) Bank loans and other loans (Cont'd)

	As at 31 December 2018				
	Original currency '000	RMB equivalent	Less: Current portion	Non- current portion	Annual interest rate
<i>Secured</i>					
RMB					
– Fixed rate	5,853,730	5,853,730	1,211,700	4,642,030	4.41%-4.90%
– Variable rate	3,504,911	3,504,911	528,586	2,976,325	4.28%-4.90%
S\$					
– Variable rate	20,359	101,920	—	101,920	3.25%
<i>Unsecured</i>					
RMB					
– Fixed rate	11,133,929	11,133,929	4,184,303	6,949,626	2.00%-5.39%
– Variable rate	101,626,230	101,626,230	12,589,306	89,036,924	1.80%-6.55%
US\$					
– Variable rate	1,548,255	10,625,985	910,948	9,715,037	1.74%-7.29%
S\$					
– Variable rate	2,451,466	12,272,527	530,272	11,742,255	3.46%
€					
– Fixed rate	21,841	171,393	48,441	122,952	0.75%-2.15%
JPY					
– Fixed rate	2,482,335	153,632	6,828	146,804	0.75%
Total		<u>145,444,257</u>	<u>20,010,384</u>	<u>125,433,873</u>	

As at 31 December 2019, long-term loans of approximately RMB7,287 million were secured by future electricity revenue (31 December 2018: RMB8,938 million).

As at 31 December 2019, long-term loans of RMB3,586 million (31 December 2018: RMB986 million) were secured by certain property, plant and equipment with a net book value amounting to approximately RMB4,913 million (31 December 2018: RMB1,756 million).

26 LONG-TERM LOANS (Cont'd)

Certain subsidiaries of the Group had sales and leaseback agreements with Tiancheng Financial Leasing and other financial leasing companies. According to the agreements, these subsidiaries have an option to buy back the equipment at a nominal price (RMB1) when the lease term expires. The substance of the transaction was to obtain financing secured by relevant assets within the leasing period. As at 31 December 2019, the equipment mentioned above had total carrying amounts of RMB1,955 million and RMB2,958 million (31 December 2018: RMB769 million and RMB987 million) respectively, which were recognised in property, plant and equipment while the long-term borrowings were RMB902 million and RMB2,684 million (31 December 2018: RMB464 million and RMB522 million) from Tiancheng Financial Leasing and other financial leasing companies, respectively.

As at 31 December 2019, long-term loans of approximately RMB8,797 million were guaranteed by Huaneng Group or other third parties. Please refer to Note 38(c) for details of long term loans guaranteed by the related parties.

The maturity of long-term loans is as follows:

	Loans from Huaneng Group and its subsidiaries As at 31 December		Bank loans and other loans As at 31 December	
	2019	2018	2019	2018
1 year or less	809,749	610,465	17,848,365	20,010,384
More than 1 year but no more than 2 years	1,320,611	760,580	28,426,578	27,940,579
More than 2 years but no more than 5 years	1,583,453	2,006,708	48,138,639	58,803,559
More than 5 years	1,689,761	1,347,000	34,205,556	38,689,735
	5,403,574	4,724,753	128,619,138	145,444,257
Less: amount due within 1 year included under current liabilities	809,749	610,465	17,848,365	20,010,384
Total	4,593,825	4,114,288	110,770,773	125,433,873

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27 LONG-TERM BONDS

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 31 December		Interest RMB'000	Amortization RMB'000	Repayment RMB'000	Balance as at 31 December 2019 RMB'000
							2018 RMB'000	Issued Amount RMB'000				
2014 medium-term notes (1st)	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 (1st)	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 (1st)	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 (1st)	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 (1st)	500,000	July 2017 November	3 years	4.75%	4.81%	500,000	499,563	—	23,750	283	—	499,846
2017 corporate bonds (1st)	2,300,000	2017	3 years	4.99%	4.99%	2,300,000	2,299,916	—	114,770	46	—	2,299,962
2018 corporate bonds (1st)	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 (1st)	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 (2nd)	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 (1st)	2,500,000	July 2018 September	3 years	4.68%	4.81%	2,500,000	2,492,636	—	117,000	2,911	—	2,495,547
2018 corporate bonds (2nd)	5,000,000	2018	10 years	5.05%	5.05%	5,000,000	4,999,963	—	252,500	30	—	4,999,993
2019 corporate bonds (1st)	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 (2nd)	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 (1st)	500,000	July 2019	3 years	3.55%	3.65%	500,000	—	500,000	8,051	(1,241)	—	498,759
2019 medium-term notes (1st)	1,500,000	July 2019	5 years	3.85%	3.96%	1,500,000	—	1,500,000	26,193	(6,567)	—	1,493,433
Total						35,300,000	29,978,142	5,300,000	1,439,099	8,781	(4,000,000)	31,286,923

27 LONG-TERM BONDS (Cont'd)

Outstanding corporate bonds, medium-term notes and debt financing instrument of the Group as at 31 December 2018 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		Interest RMB'000	Amortization RMB'000	Repayment RMB'000	Balance as at 31	
							December 2017 RMB'000	December 2018 RMB'000				December 2017 RMB'000	December 2018 RMB'000
2008 corporate bonds (1st)	4,000,000	May 2008	10 years	5.20%	5.42%	4,000,000	3,997,033	—	72,943	2,967	(4,000,000)	—	—
2014 medium-term notes (1st)	4,000,000	July 2014	5 years	5.30%	5.37%	4,000,000	3,993,809	—	212,000	(330)	—	3,993,479	3,993,479
2016 corporate bonds (1st)	3,000,000	June 2016	5 years	3.48%	3.48%	3,000,000	2,999,949	—	104,400	61	—	3,000,010	3,000,010
2016 corporate bonds (1st)	1,200,000	June 2016	10 years	3.98%	3.98%	1,200,000	1,199,961	—	47,760	12	—	1,199,973	1,199,973
2017 medium-term notes (1st)	5,000,000	July 2017	5 years	4.69%	4.90%	5,000,000	5,000,000	—	234,500	939	—	5,000,939	5,000,939
2017 debt financing instrument (1st)	500,000	July 2017	3 years	4.75%	4.81%	500,000	500,129	—	23,750	(566)	—	499,563	499,563
2017 corporate bonds (1st)	2,300,000	November 2017	3 years	4.99%	4.99%	2,300,000	2,299,985	—	114,770	(69)	—	2,299,916	2,299,916
2018 corporate bonds (1st)	1,500,000	April 2018	3 years	4.90%	4.90%	1,500,000	—	1,500,000	54,773	10	—	1,500,010	1,500,010
2018 medium-term notes (1st)	3,000,000	May 2018	3 years	4.80%	4.91%	3,000,000	—	3,000,000	96,263	(6,865)	—	2,993,135	2,993,135
2018 medium-term notes (2nd)	2,000,000	July 2018	3 years	4.41%	4.56%	2,000,000	—	2,000,000	42,046	(1,482)	—	1,998,518	1,998,518
2018 debt financing instrument (1st)	2,500,000	July 2018	3 years	4.68%	4.81%	2,500,000	—	2,500,000	55,775	(7,364)	—	2,492,636	2,492,636
2018 corporate bonds (2nd)	5,000,000	September 2018	10 years	5.05%	5.05%	5,000,000	—	5,000,000	78,171	(37)	—	4,999,963	4,999,963
Total						34,000,000	19,990,866	14,000,000	1,137,151	(12,724)	(4,000,000)	29,978,142	29,978,142

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28 OTHER NON-CURRENT LIABILITIES

	As at 31 December	
	2019	2018
Finance lease payables(a)	—	1,442,174
Government grants		
– Environmental subsidies(b)	1,155,147	1,224,878
– Other government grants	306,077	320,083
Contract liabilities	2,443,254	2,248,682
Other deferred income	52,760	70,211
Others	888,809	1,114,754
Subtotal	4,846,047	6,420,782
Current portion of finance lease payables(a)	—	(326,048)
Current portion of other non-current liabilities	(65,277)	(149,598)
Subtotal	(65,277)	(475,646)
Total	4,780,770	5,945,136

(a) The Group's certain leases were classified as finance leases prior to IFRS 16 becoming effective on 1 January 2019 and had remaining lease terms ranging from 2 to 9 years. Upon the adoption of IFRS 16, finance lease payables were classified from "other non-current liabilities" to "lease liabilities". Please refer to note 44 for other details of liabilities.

As at 31 December 2018, the Group's finance lease obligation is as follows:

	31 December 2018
Within 1 year	415,962
After 1 year but within 2 years	341,415
After 2 years but within 3 years	327,239
After 3 years	674,355
	1,758,971
Less: Total future interest expense	316,797
Total	1,442,174

(b) This primarily represented subsidies for the construction of desulphurisation equipment and other environmental protection projects.

29 ACCOUNTS PAYABLE AND OTHER LIABILITIES

Accounts payable and other liabilities comprised:

	As at 31 December	
	2019	2018
Accounts and notes payable	15,850,958	14,683,707
Payables to contractors for construction	12,695,720	12,353,097
Retention payables to contractors	1,537,024	1,557,737
Accrued interests	1,276,703	1,152,767
Others	5,909,676	5,391,372
Total	37,270,081	35,138,680

Please refer to Note 38(a)(iv) for details of accounts payable and other liabilities due to the related parties.

As at 31 December 2019, there were notes payable, amounting to RMB89 million (2018:RMB nil), secured by notes receivable.

As at 31 December 2019 and 31 December 2018, the accounts and notes payables and other liabilities are non-interest-bearing.

The carrying amounts of financial liabilities included in accounts payable and other liabilities are denominated in the following currencies:

	As at 31 December	
	2019	2018
RMB	34,996,912	33,354,665
S\$ (RMB equivalent)	1,024,453	561,064
US\$ (RMB equivalent)	940,749	1,075,678
JPY (RMB equivalent)	12,564	10,088
EUR (RMB equivalent)	1,194	—
PKR (RMB equivalent)	294,209	137,185
Total	37,270,081	35,138,680

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29 ACCOUNTS PAYABLE AND OTHER LIABILITIES *(Cont'd)*

The ageing analysis of accounts and notes payable was as follows:

	As at 31 December	
	2019	2018
Within 1 year	15,435,470	14,423,179
Between 1 to 2 years	311,880	143,514
Over 2 years	103,608	117,014
Total	15,850,958	14,683,707

30 TAXES PAYABLE

Taxes payable comprise:

	As at 31 December	
	2019	2018
VAT payable	908,491	867,615
Income tax payable	748,957	231,299
Others	444,169	375,523
Total	2,101,617	1,474,437

31 SHORT-TERM BONDS

Outstanding short-term bonds as at 31 December 2019 are summarised as follows:

	Face value RMB'000	Issuance Date	Maturity	Issued Price RMB'000	Coupon Rate	Balance as at 31		Interest RMB'000	Amortization RMB'000	Repayment RMB'000	Balance as at 31 December 2019 RMB'000
						December 2018 RMB'000	December 2019 RMB'000				
Super short-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-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-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-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-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-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-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-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-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-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-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-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-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-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-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-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-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

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32 SHORT-TERM LOANS

Short-term loans are as follows:

	As at 31 December 2019			As at 31 December 2018		
	Original currency '000	RMB equivalent	Annual interest rate	Original currency '000	RMB equivalent	Annual interest rate
<i>Secured</i>						
RMB						
– Fixed rate	667,979	667,979	0.00%-4.20%	435,856	435,856	3.41%-6.90%
– Variable rate	—	—	—	75,000	75,000	3.60%-3.85%
<i>Unsecured</i>						
RMB						
– Fixed rate	13,935,660	13,935,660	3.15%-4.35%	11,740,658	11,740,658	3.30%-4.90%
– Variable rate	50,948,412	50,948,412	3.60%-4.79%	47,227,150	47,227,150	3.92%-4.65%
US\$						
– Variable rate	200,000	1,394,304	3.32%	180,401	1,238,131	3.79%
PKR						
– Variable rate	3,857,000	173,013	14.58%	6,500,000	321,977	11.51%
Total		67,119,368			61,038,772	

As at 31 December 2019, short-term loans of RMB659 million (31 December 2018: RMB461 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 2019, short-term loans borrowed from China Minsheng Banking Corp., Ltd. ("China Minsheng Bank") amounted to RMB9 million were secured by deposit of RMB1.49 million.

As at 31 December 2019, short-term loans of RMB1,567 million (31 December 2018: RMB1,560 million) represented the guaranteed loan borrowed by Ruyi Pakistan Energy, of which US\$0.2 billion (RMB equivalents of RMB1,394 million) is 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 (RMB equivalents of RMB173 million) is guaranteed by Shandong Luyi Power International Limited Company ("Luyi Power"), a joint venture of Shandong Power.

As at 31 December 2019, short-term loans borrowed from Huaneng Finance amounted to RMB8,583 million (31 December 2018: RMB9,454 million) with annual interest rates ranging from 3.91% to 4.35% (31 December 2018: from 4.13% to 4.35%), and short-term loans borrowed from Tiancheng Financial Leasing amounted to RMB166 million (31 December 2018: Nil) with an annual interest rate 4.35%.

33 DEFERRED INCOME TAX ASSETS AND LIABILITIES

The deferred income tax assets and liabilities are as follows:

	As at 31 December	
	2019	2018
Deferred income tax assets before offsetting	3,844,143	3,903,331
Offset amount	(1,683,956)	(1,620,746)
Deferred income tax assets after offsetting	2,160,187	2,282,585
Deferred income tax liabilities before offsetting	(4,821,747)	(5,486,905)
Offset amount	1,683,956	1,620,746
Deferred income tax liabilities after offsetting	(3,137,791)	(3,866,159)
	(977,604)	(1,583,574)

The gross movement on the deferred income tax accounts is as follows:

	2019	2018
Beginning of the year	(1,583,574)	(2,373,238)
Business combination	—	(68,083)
Disposal of other equity instrument investments	167,182	—
Credited to profit or loss (Note 35)	470,330	775,820
(Charged)/credited to other comprehensive income	(9,550)	100,966
Currency translation differences	(21,992)	(19,039)
End of the year	(977,604)	(1,583,574)

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33 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 gains	Amortization 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
As at 1 January 2018	5,571	—	13,422	593,957	1,032,633	54,251	179,576	561,422	—	1,163,745	3,604,577
Business combination	—	—	—	—	—	—	—	2,919	—	27,616	30,535
(Charged)/credited to profit or loss	—	—	(493)	43,640	(106,076)	1,766	(25,433)	210,336	—	61,317	185,057
Credited to other comprehensive income	77,050	—	—	—	—	—	—	—	—	—	77,050
Currency translation differences	1,493	—	—	992	—	—	—	—	—	3,627	6,112
As at 31 December 2018	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
As at 31 December 2019	61,376	80,359	12,436	818,940	840,535	75,987	128,710	549,759	965	1,275,076	3,844,143

33 DEFERRED INCOME TAX ASSETS AND LIABILITIES (Cont'd)

Deferred income tax liabilities:

	Hedging reserve	Fair value gains	Amortization of land use rights	Depreciation	Power Generation licence	Mining rights	Territorial water use right	Right of use assets	Others	Total
As at 1 January 2018	(24,261)	(108,625)	(1,010,606)	(3,820,274)	(665,760)	(129,383)	(2,409)	—	(216,497)	(5,977,815)
Disposal of subsidiaries credited to profit or loss	—	—	—	(98,618)	—	—	—	—	—	(98,618)
Credited to profit or loss	—	—	28,760	51,884	—	—	—	—	43,160	590,763
Credited/(charged) to other comprehensive income	24,261	(345)	—	—	—	—	—	—	—	23,916
Currency translation differences	—	—	(599)	(7,769)	(16,783)	—	—	—	—	(25,151)
As at 31 December 2018	—	(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)
As at 31 December 2019	—	(6,731)	(946,676)	(2,997,191)	(705,407)	(129,383)	(2,409)	(120)	(33,830)	(4,821,747)

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33 DEFERRED INCOME TAX ASSETS AND LIABILITIES (Cont'd)

As at 31 December 2019 and 2018, taxable temporary differences relating to interest in equity method investees amounted to RMB4.04 billion and RMB3.08 billion, respectively. No deferred tax liabilities were recognised as at 31 December 2019 and 2018 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 2019, taxable temporary differences relating to the interest of wholly-owned foreign subsidiaries amounted to RMB2.22 billion. 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 2019 as the Company controls the dividend policy of the subsidiary, 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:

	As at 31 December	
	2019	2018
Deductible temporary differences	9,832,527	5,324,572
Unused tax losses	10,504,590	9,581,856
Total	20,337,117	14,906,428

The expiry dates of the tax losses of the Group for which no deferred income tax assets were recognised are summarised as follows:

	As at 31 December	
	2019	2018
Year of expiry		
2019	—	1,553,294
2020	1,452,554	1,520,528
2021	1,420,522	1,438,360
2022	2,208,635	2,359,946
2023	2,472,090	2,709,728
2024	2,950,789	—
Total	10,504,590	9,581,856

34 ADDITIONAL FINANCIAL INFORMATION TO THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

As at 31 December 2019, the net current liabilities of the Group amounted to approximately RMB80,839 million (2018: RMB76,407 million). On the same date, total assets less current liabilities were approximately RMB286,630 million (2018: RMB281,697 million).

35 INCOME TAX EXPENSE

	For the year ended 31 December	
	2019	2018
Current income tax expense	2,481,585	1,418,993
Deferred income tax (Note 33)	(470,330)	(775,820)
Total	2,011,255	643,173

No Hong Kong profits tax has been provided as there were no estimated assessable profits in Hong Kong for the year (2018: 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 2019 and 2018.

The income tax rate applicable to Singapore subsidiaries is 17% (2018: 17%). The Company's overseas subsidiary in Pakistan engaged in the power generation business is entitled to an income tax exemption according to Pakistani 2015 Fiscal Act. Another subsidiary located in Pakistan engaged in the provision of maintenance services. Before 1 July 2019, the subsidiary's tax liability would be calculated as the amount higher 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.

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35 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	
	2019	2018
PRC statutory enterprise income tax rate	25.00%	25.00%
Effect of different tax rates of certain subsidiaries	(7.33%)	(3.56%)
Utilisation of previously unrecognised tax losses and deductible temporary differences	(6.00%)	(2.66%)
Unrecognized tax losses for the year	27.76%	29.49%
Unrecognized deductible temporary differences	34.68%	5.92%
Effect of non-taxable income	(10.44%)	(28.53%)
Effect of non-deductible expenses	3.18%	11.22%
Others	(2.38%)	(4.27%)
Effective tax rate	64.47%	32.61%

36 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	
	2019	2018
Consolidated net profit attributable to equity holders of the Company	766,345	734,435
Less: Cumulative distribution of other equity instruments	685,922	342,349
Consolidated net profit attributable to ordinary shareholders of the Company	80,423	392,086
Weighted average number of the Company's outstanding ordinary shares ('000)*	15,698,093	15,283,335
Basic and diluted earnings per share (RMB)	0.01	0.03

* Weighted average number of ordinary shares:

	2019 '000	2018 '000
Issued ordinary shares at 1 January	15,698,093	15,200,383
Effect of share issue	—	82,952
Weighted average number of ordinary shares at 31 December	15,698,093	15,283,335

There was no dilutive effect on earnings per share since the Company had no dilutive potential ordinary shares for the years ended 31 December 2019 and 2018.

37 NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS

Bank balances and cash comprise the following:

	As at 31 December	
	2019	2018
Total bank balances and cash	13,306,139	15,832,788
Add: Cash and cash equivalents transferred to disposal group	—	15,104
Less: Restricted cash	862,881	430,210
Cash and cash equivalents as at year end	12,443,258	15,417,682

The bank balances and cash of the Group are denominated in the following currencies:

	As at 31 December	
	2019	2018
RMB	10,649,660	14,389,435
S\$ (RMB equivalent)	1,243,481	927,395
US\$ (RMB equivalent)	716,233	482,666
Others	696,765	33,292
Total	13,306,139	15,832,788

During the year, the Group had non-cash additions to right-of-use assets and lease liabilities of RMB2,234 million and RMB2,234 million, respectively, in respect of lease arrangements (2018: Nil).

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:

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37 NOTES TO THE CONSOLIDATED STATEMENT OF CASH FLOWS (Cont'd)

Items	Loans (Note 26,32)	Loans in Disposal group held for sale (Note 20)	Bonds (Note 27,31)	Accrued interests (Note 29)	Cumulative distribution of other equity instrument (Note 25)	Finance lease payables/Lease liabilities (Note 28,44)	Dividends payable
As at 31 December 2018	211,207,782	297,400	41,519,596	1,152,767	8,846	1,442,174	1,267,833
Effect of adoption of IFRS 16	—	—	—	—	—	774,618	—
As at 1 January 2019 (restated)	211,207,782	297,400	41,519,596	1,152,767	8,846	2,216,792	1,267,833
(a) Asset acquisitions	9,418	—	—	—	—	602,257	—
(b) Changes from financing cash flows:							
Proceeds from new 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)	—	—	—	—
(c) Exchange adjustments	811,524	—	—	—	—	(23,673)	—
(d) Other changes:							
New leases	—	—	—	—	—	2,233,736	—
Interest expenses	—	—	314,280	10,276,865	—	171,573	—
Accrued cumulative distribution of other equity instrument	—	—	—	—	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)	—	—	—	—
As at 31 December 2019	201,142,080	—	40,312,458	1,276,703	77,106	4,712,670	1,191,036

37 NOTES TO CONSOLIDATED STATEMENT OF CASH FLOWS

(Cont'd)

Items	Loans (Note 26,32)	Bonds (Note 27,31)	Accrued interests (Note 29)	Cumulative distribution of other equity instrument (Note 25)	Finance lease payables (Note 28)	Interest rate swap contracts (liabilities) (Note 14)
As at 1 January 2018	205,380,764	31,059,223	947,302	—	1,600,106	130,643
(a) Business combination	11,983,707	—	16,798	—	249,161	—
(b) Changes from financing cash flows:						
Proceeds from new bank loans	126,001,437	—	—	—	—	—
Repayment of bank loans	(132,293,601)	—	—	—	—	—
Proceeds from new bonds	—	54,000,000	—	—	—	—
Repayment of bonds	—	(43,500,000)	—	—	—	—
Capital element of finance lease rentals paid	—	—	—	—	(549,169)	—
Interest element of finance lease rentals paid	—	—	—	—	(87,857)	—
Interest paid	—	(643,356)	(10,011,011)	(333,504)	—	—
Others	(20,466)	(73,562)	—	—	—	—
(c) Exchange adjustments	415,219	—	2,959	—	(242)	—
(d) Changes in fair value	—	—	—	—	—	18,474
(e) Other changes:						
New finance leases	—	—	—	—	34,911	—
Interest expenses	—	686,017	9,701,316	—	99,079	—
Accrued cumulative distribution of other equity instrument	—	—	—	342,350	—	—
Capitalised borrowing costs	—	—	495,818	—	—	—
Transfer to a disposal group held for sale	(297,400)	—	(415)	—	—	—
Others	38,122	(8,726)	—	—	96,185	—
As at 31 December 2018	211,207,782	41,519,596	1,152,767	8,846	1,442,174	149,117

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37 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 2019
Within financing activities*	(488,015)
Total	(488,015)

* During the year, the principal portion of lease liabilities paid was RMB316 million.

38 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
Sichuan Hydropower	An associate of the Company and also a subsidiary of Huaneng Group*
Hanfeng Power	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng (Tianjin) Coal Gasification Power Generation Co., Ltd.	An associate of the Company and also a subsidiary of Huaneng Group
Tiancheng Financial Leasing	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 Finance	An associate of the Company and also a subsidiary of Huaneng Group
Shanghai Leading Energy Shipping Ltd.	An associate of the Company and also a subsidiary of Huaneng Group
Huaneng supply chain platform technology Co., Ltd and its subsidiaries	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
Jilin Zhanyu Wind Power Asset Management Co., Ltd.	An associate of the Company
Chongqing Huaneng Lime Company Limited	An associate of the Company
Shanxi Transition and Comprehensive Reform District Electricity Distribution Co., Ltd.	An associate of the Company
Gucheng Yingdong Electricity Sales Co., Ltd.	An associate of the Company
Hainan Nuclear	An associate of the Company

38 RELATED PARTY BALANCES AND TRANSACTIONS (Cont'd)

Names of related parties	Nature of relationship
Yangquan coal industry group Huaneng Coal Power Investment Co., Ltd	An associate of the Company
Shanghai Time Shipping	A joint venture of the Company
Jiangsu Nantong Power	A joint venture of the Company
Suzhou Sugao Renewables Service Co. Ltd.	A joint venture of the Company
Huaneng Yingkou Port Limited Liability Company	A joint venture of the Company
Luyi Power	A joint venture of the Company
Hong Kong Energy and its subsidiaries(note i)	Joint ventures of the Company
Huaneng Group Clean Energy Technology Research Institute Co., Ltd.	A subsidiary of Huaneng Group
Huaneng Group Hong Kong Limited Company	A subsidiary of Huaneng Group
Beijing Changping Huaneng Training Center	A subsidiary of Huaneng Group
North United Power Co., Ltd. and its subsidiaries	Subsidiaries 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	A subsidiary 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
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 Hainan Industry Co.,Ltd.	A subsidiary of Huaneng Group
Huaneng Integrated Industries Management Co., Ltd.	A subsidiary of Huaneng Group
Huangtai #8 Power Plant	Note 18(i)
Other government-related enterprises**	Related parties of the Company

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38 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

* Transactions with subsidiaries of Huaneng Group which also are associates of the Group are presented as transactions with subsidiaries of Huaneng Group for Note 38(a) and 38(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").

Note i: Hong Kong Energy and its subsidiaries were changed from joint ventures to subsidiaries of the Group since 31 December 2018.

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.

38 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(a) Related party balances

(i) Cash deposits in related parties

	As at 31 December	
	2019	2018
Deposits in Huaneng Finance		
– Savings deposit	9,529,586	10,914,633

For the year ended 31 December 2019, the annual interest rates for these savings deposits ranged from 0.35% to 1.35% (2018: from 0.35% to 1.35%).

(ii) As described in Note 26 and 32, certain loans of the Group were borrowed from Huaneng Group, Huaneng Finance, and Tiancheng Financial Leasing.

(iii) Except for those disclosed in Note 26 and 32, 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 2019 and 2018, no provision is made on receivable balances from these parties.

Accounts receivable, other receivables and assets and other non-current assets comprise the following balances due from related parties:

	As at 31 December	
	2019	2018
Due from Huaneng Group	464,087	1,010,023
Due from HIPDC	—	2,850
Due from joint ventures	106,251	122,775
Due from subsidiaries of Huaneng Group	125,288	125,777
Due from Huangtai #8 Power Plant	792,136	839,067
Total	1,487,762	2,100,492

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38 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(a) Related party balances *(Cont'd)*

(iv) Accounts payable and other liabilities and other non-current liabilities comprise the following balances due to related parties:

	As at 31 December	
	2019	2018
Due to Huaneng Group	285,725	284,244
Due to HIPDC	13,430	13,628
Due to joint ventures	120,153	97,431
Due to associates	—	8,962
Due to subsidiaries of Huaneng Group	5,762,265	4,528,500
Total	6,181,573	4,932,765

(v) As at 31 December 2019, included in long-term loans (including current portion) and short-term loans are loans payable to other government-related enterprises amounting to RMB186.8 billion (2018: RMB208.4 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.

(vi) As at 31 December 2019, lease liabilities due to subsidiaries of Huaneng Group amounted to RMB1,730 million.

38 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(b) Related party transactions

(i) Procurement of goods and receiving services

	For the year ended 31 December	
	2019	2018
Huaneng Group		
Other purchases	570	506
HIPDC		
Technical services and engineering contracting services	—	7
Subsidiaries of Huaneng Group		
Purchase of coal and transportation services	32,623,831	23,873,672
Technical services and engineering contracting services	1,776,442	1,121,516
Purchase of equipment	52,802	176,506
Purchase of heat	61,080	69,527
Other purchases	46,627	260
Joint ventures of the Group		
Purchase of coal and transportation services	835,462	1,798,673
Entrusting other parties for power generation	—	10,127
Associates of the Group		
Other purchases	529	36,826
Technical services and engineering contracting services	—	3,812
Purchase of equipment	38,387	—
Purchase of coal and transportation services	181,479	—

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38 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	
	2019	2018
Huaneng Group		
Service provided	31,756	15,472
HIPDC		
Service provided	124	1,067
Other sales	—	2,534
Subsidiaries of Huaneng Group		
Sales of power generation quota	—	3,065
Sales of goods	—	637,059
Other sales	2,922	11,399
Service provided	68,052	45,677
Joint ventures of the Group		
Service provided	52,602	392,744
Other sales	25,102	45,997
Huangtai #8 Power Plant		
Service provided	—	2,830

38 RELATED PARTY BALANCES AND TRANSACTIONS *(Cont'd)*

(b) Related party transactions *(Cont'd)*

(iii) Other related party transactions

	For the year ended 31 December	
	2019	2018
(1) Rental charge paid		
HIPDC	104,929	107,712
Subsidiaries of Huaneng Group	61,076	123,472
A joint venture of the Group	—	589
(2) Rental income received		
A joint venture of the Group	7,448	7,448
Subsidiaries of Huaneng Group	2,400	3,609
(3) Loans (repaid to)/received from		
Subsidiaries of Huaneng Group	(11,369)	(113,430)
A joint venture of the Group	150,000	—
(4) Interest expense on loans		
Huaneng Group	30,224	32,037
A joint venture of the Group	4,374	—
Subsidiaries of Huaneng Group	515,532	524,716
(5) Interest income on loans		
A joint venture of the Group	3,747	3,540
An associate of the Group	—	6,639
(6) Capital injection from a subsidiary of Huaneng Group		
A subsidiary of Huaneng Group	227,569	379,906
(7) Capital injection to		
Subsidiaries of Huaneng Group	94,770	320,680
Associates of the Group	43,427	142,579
Joint ventures of the Group	175,000	—

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38 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	
	2019	2018
(8) Pre-construction cost paid by		
A subsidiary of Huaneng Group	—	90
(9) Finance lease payments received from		
A subsidiary of Huaneng Group	—	57,676
(10) Interest expense of finance lease		
Subsidiaries of Huaneng Group	32,127	30,720
(11) Entrusted management fee		
Huaneng Group	12,340	15,000
(12) Trusteeship management income		
Huaneng Group	4,821	5,110
(13) Net proceeds received from an investee with significant influence		
Huangtai #8 Power Plant	41,328	60,246
(14) Interest income from a finance lease		
Huangtai #8 Power Plant	21,253	22,497
(15) Collateral received under a loan agreement		
An associate of the Group	—	96,902
(16) Profit compensation received		
Huaneng Group	550,832	615,013
(17) Disposal consideration		

In 2019, Laizhou Wind Power was sold to Taishan Power. Please refer to Note 20 for details of the disposal consideration.

38 RELATED PARTY BALANCES AND TRANSACTIONS (Cont'd)

(b) Related party transactions (Cont'd)

Transactions with government-related enterprises

For the years ended 31 December 2019 and 2018, 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 2019 and 2018, other collectively-significant transactions with government-related enterprises also include a large portion of domestic fuel purchases, property, plant and equipment construction and related labour employed.

(c) Guarantees

	As at 31 December	
	2019	2018
(i) Long-term loans guaranteed by		
– Huaneng Group	2,335,611	3,028,109
– HIPDC	2,014,800	2,057,200
(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	
	2019	2018
Salaries	6,881	6,754
Pension	1,262	1,292
Total	8,143	8,046

(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 reporting period are as follows:

(i) Capital commitments

	As at 31 December	
	2019	2018
Subsidiaries of Huaneng Group	714,129	315,609

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38 RELATED PARTY BALANCES AND TRANSACTIONS (Cont'd)

(e) Related party commitments (Cont'd)

(ii) investment commitment (Note 41)

	As at 31 December 2019
A joint venture	<u>31,116</u>

(iii) Fuel purchase and transportation commitments

	As at 31 December	
	2019	2018
Subsidiaries of Huaneng Group	2,174,241	1,382,058
A joint venture of the Group	143,614	358,441
Total	<u>2,317,855</u>	<u>1,740,499</u>

(iv) Operating lease commitments (Note i)

	As at 31 December 2018
Subsidiaries of Huaneng Group	126,492
HIPDC	55,973
Total	<u>182,465</u>

Note i: Upon adoption of IFRS 16 on 1 January 2019, the operating leases have been recognised as right-of-use assets. Please refer to note 44 for other details of right-of-use assets.

(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 38(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 Director's Report of the Group for the year ended 31 December 2019.

39 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 22% (2018: 14% to 22%) of the basic salary of the PRC employees. The retirement plan contributions paid by the Group for the year ended 31 December 2019 were approximately RMB1,198 million (2018: RMB1,179 million), including approximately RMB1,155 million (2018: RMB1,135 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 2019, the contributions to the supplementary defined contribution retirement scheme paid by the Group amounted to approximately RMB601 million (2018: RMB483 million), including approximately RMB581 million (2018: RMB465 million) charged to profit or loss.

SinoSing Power and its subsidiaries in Singapore appropriate a specified rate, currently set at 7.5% to 17% (2018: 6.5% to 16%) 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 2019 amounted to approximately RMB20.73 million (2018: RMB17.53 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 RMB898 million (2018: RMB802 million) and RMB1,034 million (2018: RMB930 million) for the year ended 31 December 2019 including approximately RMB859 million (2018: RMB764 million) and RMB994 million (2018: RMB886 million) charged to profit or loss, respectively.

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40 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 2019 is set out below:

	Fees	Basic salaries	Performance salaries	Pension	Total
Name of director					
Mr. Zhao Keyu ¹	—	—	—	—	—
Mr. Shu Yinbiao ²	—	—	—	—	—
Mr. Cao Peixi ³	—	—	—	—	—
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
Name of supervisor					
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

40 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 2018 is set out below:

	Fees	Basic salaries	Performance salaries	Pension	Total
Name of director					
Mr. Shu Yinbiao	—	—	—	—	—
Mr. Cao Peixi	—	—	—	—	—
Mr. Liu Guoyue	—	—	—	—	—
Mr. Fan Xiaxia	—	—	—	—	—
Mr. Huang Jian	—	—	—	—	—
Mr. Wang Yongxiang	—	—	—	—	—
Mr. Mi Dabin	—	—	—	—	—
Mr. Guo Hongbo	—	—	—	—	—
Mr. Cheng Heng	—	—	—	—	—
Mr. Lin Chong	—	—	—	—	—
Mr. Yue Heng	74	—	—	—	74
Mr. Xu Mengzhou	74	—	—	—	74
Mr. Liu Jizhen	74	—	—	—	74
Mr. Xu Haifeng	74	—	—	—	74
Mr. Zhang Xianzhi	74	—	—	—	74
Sub-total	370	—	—	—	370
Name of supervisor					
Mr. Ye Xiangdong	—	—	—	—	—
Mr. Mu Xuan	—	—	—	—	—
Ms. Zhang Mengjiao	—	—	—	—	—
Mr. Gu Jianguo	—	—	—	—	—
Ms. Zhang Xiaojun	—	154	476	130	760
Mr. Zhu Daqing	—	66	250	63	379
Mr. Zhang Xiancheng	—	36	87	22	145
Sub-total	—	256	813	215	1,284
Total	370	256	813	215	1,654

1 Appointed on 5 March 2020

2 Appointed on 30 January 2019 and resigned on 5 March 2020

3 Resigned on 30 January 2019

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40 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 (2018: 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 (2018: nil).

No director or supervisor had waived or agreed to waive any emoluments during the years 2019 and 2018.

(b) Five highest paid individuals

The five individuals whose emoluments were the highest in the Group for the year included no director (2018: no director). Directors emoluments are reflected in the analysis presented above. The emoluments payable to all the five (2018: five) individuals during the year (within the range of nil to RMB1.03 million) are as follows:

	For the year ended 31 December	
	2019	2018
Basic salaries	1,578	1,500
Performance salaries	2,329	2,100
Pension	695	679
	4,602	4,279

41 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	
	2019	2018
Contracted but not provided	42,634,992	16,790,739

41 COMMITMENTS (Cont'd)

(a) Capital commitments (Cont'd)

As at 31 December 2019, the commitments to make capital contributions to a Group's joint venture was as follows:

	As at 31 December 2019
A joint venture	31,116

(b) Operating lease commitments as at 31 December 2018

The Group had various operating lease arrangements for land and buildings. Some of the leases contained renewal options and most of the leases contained escalation clauses. Lease terms did not contain restrictions on the Group's activities concerning dividends, additional debts or further leasing.

Total future minimum lease payments under non-cancelable operating leases are as follows:

	As at 31 December 2018
Land and buildings	
– not later than 1 year	194,333
– later than 1 year and not later than 2 years	99,149
– later than 2 year and not later than 5 years	191,853
– later than 5 years	1,161,916
Total	1,647,251

The Group has no lease contracts that have not yet commenced as at 31 December 2019.

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41 COMMITMENTS (Cont'd)

(c) 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:

	Periods	As at 31 December 2019	
		Purchase quantities	Estimated unit costs (RMB)
A government-related enterprise	2020-2039	2.8 million m ³ /day*	2.88/m ³
A government-related enterprise	2020-2023	991 million m ³ /year*	2.31/m ³
	2020-2023	541 million m ³ /year*	2.19/m ³
	2020-2023	450 million m ³ /year*	2.25/m ³
A government-related enterprise	2020-2026	200 million m ³ /year*	2.60/m ³
Other suppliers	2020-2021	201.5-251.5 BBtu**/day	approximately 47,000/BBtu
	2022	205.5-255.5 BBtu**/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

41 COMMITMENTS (Cont'd)

(c) Fuel purchase commitments (Cont'd)

As at 31 December 2018			
	Periods	Purchase quantities	Estimated unit costs (RMB)
A government-related enterprise	2019-2039	2.8 million m ³ /day*	2.31/m ³
A government-related enterprise	2019-2023	991 million m ³ /year*	2.50/m ³
	2019-2023	541 million m ³ /year*	2.32/m ³
	2019-2023	450 million m ³ /year*	2.50/m ³
A government-related enterprise	2019-2026	200 million m ³ /year*	2.45/m ³
Other suppliers	2019	238 BBtu**/day	approximately 76,000/BBtu
	2020-2021	241.5-242 BBtu**/day	approximately 76,000/BBtu
	2022	242.5 BBtu**/day	approximately 76,000/BBtu
	2023	81.5-247.5 BBtu**/day	approximately 82,000/BBtu
	2024-2028	42.4-81.5 BBtu**/day	approximately 89,000/BBtu
	2029	42.4 BBtu**/day	approximately 81,000/BBtu

* The quantities represent maximum volume, while others represent minimum or forecasted volume if not specified.

** BBtu: Billion British Thermal Unit

42 ACQUISITION, DISPOSAL AND OTHER TRANSACTIONS

(a) Acquisition

On 28 November 2019, the Group's subsidiary, Huaneng Jiangxi Clean Energy Power Generation and Supply Limited Liability Company ("Jiangxi Clean Energy"), and a third party entered into an equity transfer agreement, pursuant to which the third party agreed to sell and the Jiangxi Clean Energy agreed to acquire a 100% equity interest in Shangrao Hongyuan Power Co., Ltd ("Hongyuan Power") at a cash consideration of RMB99.84 million. The consideration has been fully paid by 27 December 2019 and the transaction was completed on the same day. As of the acquisition date, Hongyuan Power had no business operations but the construction in process of a photovoltaic power generation project.

Therefore, the Group was not capable of integrating the project with its inputs and processes to produce outputs as of acquisition date. As such, management determined that the acquisition did not constitute a business combination for accounting purpose.

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42 ACQUISITION, DISPOSAL AND OTHER TRANSACTIONS (Cont'd)

(b) Disposal

On 31 May 2019, Luoyang Yangguang Co-generation Co., Ltd. ("Luoyang Yangguang") filed for bankruptcy to Luoyang Intermediate People's Court ("Luoyang Court"). On 23 July 2019, Luoyang Court declared the bankruptcy of Luoyang Yangguang. Luoyang Yangguang was not consolidated by the Group since then. The Group recognised a net gain of RMB111 million upon the deconsolidation of Luoyang Yangguang.

The details of the net assets disposed of are as follows:

	Date of disposal
	RMB'000
Net assets disposed of:	
Property, plant and equipment	54,572
Intangible assets	56,364
Inventories	6,170
Accounts receivable	61,101
Other receivable and assets	23,955
Cash and cash equivalents	1,667
Accounts payable and other liabilities	177,429
Interest-bearing loans and borrowings	353,000
Net liabilities	(326,600)
Consideration	—
Gain on disposal of Luoyang Yangguang	326,600
Loss on receivables due from Luoyang Yangguang	(215,800)
Net impact on disposal	110,800

42 ACQUISITION, DISPOSAL AND OTHER TRANSACTIONS (Cont'd)

(b) Disposal (Cont'd)

An analysis of the cash flow of cash and cash equivalents in respect of the Disposal of Luoyang Yangguang is as follows:

	Date of disposal
Cash consideration received	—
Cash and bank balances disposed of	(1,667)
Net outflows of cash and cash equivalents in respect of disposal of Luoyang Yangguang	(1,667)

(c) Capital injection of Ruijin Power Generation

The Group previously had a 100% equity interest in Ruijin Power Generation. On 4 September 2019, the Group entered into a capital injection and enlargement agreement on Ruijin Power Generation with a third party. Pursuant to the agreement, the third party will subscribe RMB610 million of the registered capital of Ruijin Power Generation, with a total cash consideration of RMB648 million. Upon completion of the transaction, the registered capital of Ruijin Power Generation was RMB1,220 million, of which the Group's equity interest in Ruijin Power Generation decreased from 100% to 50%. On 28 December 2019, the Group and the third party shareholder entered into a voting in concert agreement which was effective immediately. According to the voting in concert agreement, the third party shareholder agreed to vote the same in respect of significant financial and operating decisions made by the Group. As a result, the Group still has control over Ruijin Power Generation.

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43 NON-CONTROLLING INTERESTS

The following table summarizes the information relating to each subsidiary of the Group that has material non-controlling interests ("NCI"):

	Qinbei 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 (loss)/profit	30,270	705,311	64,093	193,754	265,457	453,869	216,595	59,733	(430,222)		
Total comprehensive (loss)/income	30,270	705,311	64,093	193,754	265,457	453,869	216,595	59,733	(675,666)		
(Loss)/Profit 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 income/(loss) allocated to NCI	—	—	—	—	—	—	—	—	(49,089)	(111,692)	(160,781)
Cash flow from operating activities	667,432	1,623,975	360,226	273,607	821,975	689,723	655,910	171,531	7,066,137		
Cash flow from investment activities	(205,703)	(273,374)	(101,279)	(95,699)	(128,541)	(163,584)	(86,427)	(16,465)	(2,787,419)		
Cash flow from financing activities	(613,468)	(1,329,614)	(247,546)	(260,953)	(792,266)	(503,852)	(582,452)	(167,846)	(2,673,351)		
Net increase/(decrease) 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		

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44 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	Trans- portation facilities	Land use rights	Others	
As at 1 January 2019	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
As at 31 December 2019	143,314	3,800,493	206,421	12,553,477	464,367	17,168,072

(b) Lease liabilities

The carrying amount of lease liabilities and the movements during the year are as follows:

	As at 31 December 2019
Carrying amount at 1 January	2,216,792
New leases	2,835,993
Accretion of interest recognised during the year	171,573
Currency translation difference	(23,673)
Payments	(488,015)
Carrying amount at 31 December	4,712,670
Analysed into:	
Current portion	432,745
Non-current portion	4,279,925

44 LEASES (Cont'd)

The Group as a lessee (Cont'd)

(b) Lease liabilities (Cont'd)

The maturity analysis of lease liabilities is as follows:

	31 December 2019
Within 1 year	432,745
After 1 year but within 2 years	1,323,826
After 2 years but within 3 years	332,986
After 3 years	2,623,113
Total	4,712,670

(c) The amounts recognised in profit or loss in relation to leases are as follows:

	As at 31 December 2019
Interest on lease liabilities	171,573
Depreciation charge of right-of-use assets	734,827
Expense relating to short-term leases and other leases with remaining lease terms ended on or before 31 December 2019	231,651
Expense relating to leases of low-value assets	2,488
Total amount recognised in profit or loss	1,140,539

(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 2019, there is 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 payment

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 37 to these financial statements.

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44 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-suits agreements with third parties which contains sale and lease back agreement and operation maintenance services.

Shandong Maintenance Company entered into the Energy Management Contract with Huangtai #8 Power Plant to provide the 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 during the year was RMB1,711 million.

As at 31 December 2019, the maturity analysis of the Group's finance lease receivables are as follows:

	31 December 2019
Within 1 year	2,172,707
After 1 year but within 2 years	2,156,047
After 2 years but within 3 years	2,146,481
After 3 years but within 4 years	2,132,394
After 4 years but within 5 years	2,163,914
After 5 years	21,184,829
Total undiscounted finance lease payments	31,956,372
Unearned finance income	(20,949,750)
Allowance for ECL	(3,086)
Total finance lease receivables as at 31 December 2019	11,003,536

44 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 during the year was RMB140 million.

As at 31 December 2019, the undiscounted lease payments receivable by the Group in future periods under non-cancellable operating leases with its tenants are as follows:

	31 December 2019
Within 1 year	28,143
After 1 year but within 2 years	27,867
After 2 years but within 3 years	27,695
After 3 years but within 4 years	27,617
After 4 years but within 5 years	27,645
After 5 years	16,974
Total	155,941

45 STATEMENT OF FINANCIAL POSITION

	As at 31 December 2019	2018 (Note)
ASSETS		
Non-current assets		
Property, plant and equipment	48,334,645	51,487,868
Right-of-use assets	1,930,127	—
Investments in associates and joint ventures	14,773,712	14,616,511
Investments in subsidiaries	84,943,492	76,529,927
Loans to subsidiaries	22,950,170	21,701,410
Investment property	148,025	154,794
Other equity investment	726,893	2,052,794
Land use rights	—	1,277,688
Deferred income tax assets	748,446	436,917
Goodwill	106,854	106,854
Other non-current assets	2,296,621	1,853,790
Total non-current assets	176,958,985	170,218,553
Current assets		
Inventories	2,548,500	2,546,965
Other receivables and assets	4,461,558	5,074,105
Accounts receivable	6,220,050	5,636,997
Loans to subsidiaries	8,173,710	8,206,550
Bank balances and cash	1,248,842	4,312,255
Total current assets	22,652,660	25,776,872
Total assets	199,611,645	195,995,425
EQUITY AND LIABILITIES		

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45 STATEMENT OF FINANCIAL POSITION (Cont'd)

	As at 31 December 2019	2018 (Note)
Capital and reserves attributable to equity holders of the Company		
Share capital	15,698,093	15,698,093
Capital surplus	25,922,243	26,481,712
Other equity instruments	25,127,821	10,077,396
Surplus reserves	8,140,030	8,140,030
Retained earnings	36,829,957	33,719,245
Total equity	111,718,144	94,116,476
Non-current liabilities		
Long-term loans	8,628,240	25,367,936
Long-term bonds	28,487,115	25,984,663
Lease liabilities	267,156	—
Derivative financial liabilities	—	—
Other non-current liabilities	823,916	1,002,359
Total non-current liabilities	38,206,427	52,354,958
Current liabilities		
Accounts payable and other liabilities	6,537,408	6,758,376
Contract liabilities	299,477	246,742
Taxes payables	465,138	114,945
Dividend payable	—	—
Derivative financial liabilities	—	4,118
Short-term bonds	9,025,535	11,541,454
Short-term loans	28,967,990	22,875,000
Current portion of long-term loans	1,521,420	3,960,716
Current portion of long-term bonds	2,799,808	3,993,479
Current portion of lease liabilities	70,298	—
Current portion of other non-current liabilities	—	29,161
Total current liabilities	49,687,074	49,523,991
Total liabilities	87,893,501	101,878,949
Total equity and liabilities	199,611,645	195,995,425

Note: The Company initially applied IFRS 16 as at 1 January 2019. Under the transition method chosen, comparative information was not restated. See Note 2(b).

46 SUBSEQUENT EVENTS

Issuance of corporate bonds

On 21 February 2020, The Group's subsidiary Sinosing Services Pte. Ltd. (a company incorporated in the Republic of Singapore with limited liability) completed an issuance of a guaranteed bond with a total face value of US\$0.3 billion with a fixed annual coupon interest rate of 2.250% which will mature in 2025 and a guaranteed bond with a total face value of US\$0.3 billion with a fixed annual coupon interest rate of 2.625% which will mature in 2030. These bonds are unconditionally and irrevocably guaranteed by the Group.

Issuance of an other equity instrument

On 18 March 2020, the Group completed an issuance of perpetual corporate bond with a total face value of RMB3 billion at par value of RMB100.00 per unit with no fixed maturity date. Interest of these perpetual corporate bonds is recorded as distribution, which is paid annually in arrears on the 19 March and may be deferred at the discretion of the Company unless compulsory distribution payment events (including distributions to ordinary shareholders of the Company, reduction of the registered capital of the Company or external equity investment in equity) have occurred. These perpetual corporate bonds have no fixed maturity dates and are callable at the Company's option in whole on the first call date or any distribution payment date falling after the first call date at their principal amounts together with any accrued, unpaid or deferred distributions.

Response to COVID-19

The wide spread of the novel coronavirus (COVID-19) in the PRC since January 2020 is a fluid and challenging situation that all industries facing. The Group has taken all possible effective measures to limit and keep the impact in control. The Group will keep continuous attention on the change of situation and make timely response and adjustments in the future. Given the uncertainty of the situation, the duration of the business disruption and related financial impact, if any, cannot be reasonably estimated at this time.

47 COMPARATIVE INFORMATION

The Group have initially applied IFRS 16 since 1 January 2019. Under the transition methods chosen, comparative information is not restated. Further details of the changes in accounting policies are disclosed in Note 2(b).

These financial statements were approved for issue by the Board of Directors on 31 March 2020 and were signed on its behalf.

Zhao Keyu

Director

Huang Jian

Director

FINANCIAL STATEMENTS RECONCILIATION BETWEEN PRC GAAP AND IFRS

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The financial statements, which are prepared by the Group in conformity with the Accounting Standards for Business Enterprises ("PRC GAAP"), differ in certain respects from that of IFRS. Major impact of adjustments for IFRS, on the net consolidated profit and equity attributable to equity holders of the Company, are summarized as follows:

	Consolidated profit attributable to equity holders of the Company For the year ended		Total equity attributable to equity holders of the Company As at 31 December	
	2019	2018	2019	2018
Consolidated net profit/ equity attributable to equity holders of the Company under PRC GAAP	1,686,460	1,438,881	98,558,643	83,234,629
Impact of IFRS adjustments:				
Differences in accounting treatment on business combinations under common control, depreciation, amortization, disposal and impairment of assets acquired in business combinations under common control (a)	(1,611,157)	(1,232,974)	11,743,192	13,354,351
Difference on depreciation related to borrowing costs capitalized in previous years (b)	(27,016)	(27,016)	128,438	155,454
Others	(55,179)	(199,281)	(413,762)	(383,026)
Applicable deferred income tax impact on the GAAP differences above (c)	423,642	381,838	1,632,334	1,208,692
Profit/Equity attributable to non-controlling interests on the adjustments above	349,595	372,987	(2,845,110)	(3,134,682)
Consolidated net Profit/ Equity attributable to equity holders of the Company under IFRS	766,345	734,435	108,803,735	94,435,418

(a) Differences in accounting treatment on business combinations under common control and depreciation, amortization, 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 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 are regarded as business combinations under common control.

In accordance with PRC GAAP, under common control business combination, 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 carrying amounts of the net assets acquired and the consideration paid is adjusted to 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 the business combination occurred prior to 1 January 2007, in accordance with Previous PRC GAAP, when equity interests acquired is less than 100%, the assets and liabilities of the acquirees are measured at their carrying amounts. The excess of consideration over the proportionate share of the carrying amounts of the net assets acquired was recorded as equity investment difference and amortized 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 method similar to purchase accounting. Goodwill arising from such transactions is amortized over the estimated useful lives on a straight-line basis. On 1 January 2007, in accordance with PRC GAAP, the unamortized equity investment differences and goodwill arising from business combinations under common control were written off against undistributed profits.

Under IFRS, the Company and its subsidiaries 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 acquisition cost over the proportionate share of fair value of net identifiable assets acquired was recorded as goodwill. Goodwill is not amortized 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 are 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 accounting treatment under PRC GAAP and IFRS on business combinations under common control affect both equity and profit. Meanwhile, due to different measurement basis of the assets acquired, depreciation and amortization 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, amortization and disposal of related assets.

FINANCIAL STATEMENTS RECONCILIATION BETWEEN PRC GAAP AND IFRS

FOR THE YEAR ENDED 31 DECEMBER 2019

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(b) Effect of depreciation on the capitalization of borrowing costs in previous years

In previous years, under Previous PRC GAAP, the scope of capitalization of borrowing costs was limited to specific borrowings, and thus, borrowing costs arising from general borrowings were not capitalized. In accordance with IFRS, the Company and its subsidiaries capitalized borrowing on general borrowing used for the purpose of obtaining qualifying assets in addition to the capitalization 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 capitalized borrowing costs included in the cost of related assets under IFRS in previous years.

(c) Deferred income tax impact on GAAP differences

This represents related deferred income tax impact on the GAAP differences above where applicable.



華能國際電力股份有限公司

Huaneng Power International, Inc.