

HUANENG POWER INTERNATIONAL INC

Form 6-K

April 26, 2019

FORM 6-K

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

Report of Foreign Private Issuer

Pursuant to Rule 13a-16 or 15d-16 of

The Securities Exchange Act of 1934

For the month of April 2019

(Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.)

Form 20-F ☒ Form 40-F

(Indicate by check mark whether the registrant by furnishing the information contained in this form is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.)

Yes No ☒

(If "Yes" is marked, indicate below the file number assigned to registrant in connection with Rule 12g3-2(b):

82-\_\_\_\_\_. )

N/A

Huaneng Power International, Inc.

Huaneng Building,

6 Fuxingmennei Street,

Xicheng District,

Beijing, 100031 PRC

This Form 6-K consists of:

A copy of annual report for the year of 2018 of Huaneng Power International, Inc. (the Registrant”), submitted by the Registrant to the Hong Kong Stock Exchange.

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#### THE OBJECTIVES OF THE COMPANY

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.

DEVELOPING CLEAN ENERGY  
FOR A BETTER FUTURE

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## COMPANY PROFILE

Huaneng Power International, Inc. (“the Company”, “Huaneng Power” or “Huaneng International”) and its subsidiaries are mainly engaged in developing, constructing, operating and managing large-scale power plants throughout China. As at 31 December 2018, the Company is one of China’s largest listed power producers with controlling generation capacity of 105,991 MW and equity-based generation capacity of 93,755 MW, of which 16.5% was from clean energy sources (gas turbine, hydro, wind, photovoltaic and other power generation). The Company’s domestic power plants are located in 26 provinces, autonomous regions and municipalities, and also has a wholly-owned power company in Singapore.

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 approximately 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 coal-fired and gas turbine power plants, new energy power projects and related facilities, including ports, marine transportation and power distribution, so as to provide the community with electricity, heat and comprehensive energy services. 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 fuel 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 and was the first to realise mass production of wind turbine of 5 MW 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 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.



## MAJOR CORPORATE EVENTS IN 2018

### January

• The Company announced that its total power generation within China for 2017 recorded an increase of 25.76% year-on-year.

### March

• The Company announced its operating results for 2017. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB1,793 million, representing a decrease of 82.73% over the previous year.

• The Company held investor conferences within and outside China for its results for 2017.

### April

• The Company announced that its total power generation within China for the first quarter of 2018 recorded an increase of 8.67% year-on-year.

The Company announced its results for the first quarter of 2018. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB1,219 million, representing an increase of 86.96% over the corresponding period of the previous year.

• The Company held global investor telephone conferences for its results for the first quarter in 2018.

• The Company announced and paid the interest of its 10-year bonds issued in 2008 for the period from 8 May 2017 to 7 May 2018. The bonds were delisted upon expiry on 8 May 2018.

• The Company publicly issued 3-year corporate bonds of RMB1.5 billion to qualified investors.

### May

• The Company held annual non-deal roadshows in the United States.

### June

• The Company announced and paid the interest of its 5-year bonds and 10-year bonds issued in 2016 for the period from 13 June 2017 to 12 June 2018.

July

The Company announced the implementation of the profit distribution plan for the year of 2017 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 2018 increased by 11.51% year on year.

August

The Company announced its interim results for the year of 2018. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB2,128 million, representing an increase of 170.29% 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 2018.

September

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 2017 to 24 September 2018.

The Company ranked 135th in the “Platts Top 250 Global Energy Listed Company”.

The Company publicly issued 10-year corporate bonds of RMB5 billion to qualified investors.

October

The Company successfully completed the non-public issuance of 498 million A shares at an issue price of RMB6.55 per share and the total proceeds from the issuance was RMB3.26 billion.

The Company announced that its total domestic power generation for the first three quarters of 2018 recorded an increase of 11.04% year-on-year.

The Company announced its results for the first three quarters of 2018. According to the PRC GAAPs, the net profit attributable to shareholders of the Company was RMB1,989 million, representing a decrease of 29.33% 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 2018.

November

The Company was awarded “Listed Company with Outstanding Contribution to the 40th Anniversary of Reform and Opening-up” in the 2018 China Securities Golden Bauhinia Awards.

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

December

Mr. Zhao Keyu, President of the Company, won the “Best CEO of Listed Company” award in Sina Finance Golden Lion Awards 2018.

## FINANCIAL HIGHLIGHTS

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

## CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (Note 3)

	Year ended 31 December				
	2014	2015	2016	2017	2018
OPERATING REVENUE	125,406,855	128,904,873	113,814,236	152,459,444	169,550,624
Profit Before Income Tax Expense	19,049,580	22,958,050	13,813,138	2,801,733	1,973,147
Income Tax Expense	(5,487,208 )	(5,698,943 )	(3,465,151 )	(1,217,526 )	(643,173 )
Profit After Income Tax Expense	13,562,372	17,259,107	10,347,987	1,584,207	1,329,974
Attributable To:					
– Equity Holders of the Company	10,757,317	13,651,933	8,520,427	1,579,836	734,435
– Non-Controlling Interests	2,805,055	3,607,174	1,827,560	4,371	595,539
Basic Earnings Per Share (RMB/Share)	0.76	0.94	0.56	0.10	0.03
Diluted Earnings Per Share (RMB/Share)	0.76	0.94	0.56	0.10	0.03

## CONSOLIDATED STATEMENTS OF FINANCIAL POSITION (Note 4)

	As at 31 December				
	2014	2015	2016	2017	2018
Total assets	275,171,768	308,866,354	314,839,739	396,589,511	419,903,311
Total liabilities	(190,389,062)	(207,172,665)	(212,653,002)	(288,974,907)	303,781,641
Net assets	84,782,706	101,693,689	102,186,737	107,614,604	116,121,670
Equity holders of the Company	70,129,491	84,141,948	86,002,995	87,641,566	94,435,418
Non-controlling interests	14,653,215	17,551,741	16,183,742	19,973,038	21,686,252

## 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. As allowed by IFRS 9, the Company and its subsidiaries have not restated information relating to prior years. Differences in the carrying amounts of the financial assets resulting from the adoption of IFRS 9 were recognised in reserves at 1 January 2018. There was no difference in the carrying amounts of the financial liabilities. Prior to 1 January 2018, figures were stated in accordance with the policies applicable in those years.

The results for the years ended 31 December 2014, 2015, 2016 are derived from the historical financial statements of the Company. The results for the years ended 31 December 2017 and 2018 are set out on pages 128 to 130. All such information is extracted from the financial statements prepared under International Financial Reporting Standards (“IFRS”).

The consolidated statements of financial position as at 31 December 2014, 2015, 2016 are derived from the historical financial statements of the Company. The consolidated statements of financial position as at 31 December 2017 and 2018 are set out on pages 131 to 133. All such information is extracted from the financial statements prepared under IFRS.



ENERGY FOR BRIGHTER  
TOMORROW

Dear Shareholders,

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.

## LETTER TO SHAREHOLDERS

In 2018, the Company continued to focus on improving corporate development quality and operation benefits and proactively adapted to the new changes arising from the reform of power structure. Faced with a complex operating environment, the Company overcame difficulties and forged ahead to achieve annual business targets and continue to fulfil its responsibility of providing sufficient, reliable and environmentally-friendly power. In 2018, the Company achieved consolidated operating revenue of RMB169.551 billion, representing a year-on-year increase of 11.21%, and net profit attributable to the equity holders of the Company of RMB734 million, representing a year-on year decrease of 53.51%.

In 2018, the Company's safe and clean production was stable in general, the stability in equipment reliability was steadily improved, and the energy saving and environmental indicators continued improve. The Company continuously optimized the power structure and achieved initial results of structural adjustment. We achieved excellent marketing results with continued growth of power and heat supply. The Company leveraged its advantage in scale procurement of coal to effectively control fuel cost. The Company achieved outstanding results in capital operation, successful completing the non-public issuance of A shares and making positive progress in reducing leverage. Its risk resistance capability was further enhanced.

In 2018, the Company was awarded "Listed Company with Outstanding Contribution to the 40th Anniversary of Reform and Opening-up" in the China Securities Golden Bauhinia Awards. Mr. Zhao Keyu, President of the Company, won the "Best CEO of Listed Company" award in Sina Finance Golden Lion Awards. Besides, the Company was on the list of "Platts Top 250 Global Energy Listed Companies Award" for ten consecutive years and ranked 135th.

In order 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 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 2018 be: a cash dividend of RMB0.1 (including tax) shall be distributed to all shareholders of the Company. The distribution plan will be submitted to the 2018 Annual General Meeting of the Company for consideration.

In 2019, the Company will 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 structural and optimization 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 optimize the development of natural gas-fired cogeneration to increase the layout of integrated energy services. 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 power generation listed 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 economic 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; continue 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"; continue 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.

Shu Yinbiao  
Chairman

Beijing, the PRC  
19 March 2018  
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Management's Discussion and Analysis

HUANENG POWER  
TOWARDS A BETTER FUTURE  
TO THE CUSTOMERS WE SERVE  
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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 development in and construction, operation and management of power plants within China. As of 31 December 2018, the Company had a controlled generation capacity of 105,991 MW and an equity-based installed generation of 93,755 MW, of which 16.50% was from clean energy sources (gas turbine, hydro, wind, photovoltaic and other power generation). The Company located its power in 26 provinces, autonomous region and municipalities within China; the Company has a wholly owned power enterprise located in Singapore, and invested in a power generation company in Pakistan (consolidated since December 2018). The Company is one of the biggest listed power company.

For the year ended 31 December 2018, the operating revenue of the Company amounted to RMB169.551 billion, representing an increase of 11.21% over the same period of last year. The net profit attributable to equity holders of the Company was RMB0.734 billion, representing a decrease of 53.51% over the same period of last year; the earnings per share was RMB0.03.

## A. Operating Results

## 1. 2018 operating results

In July 2018, the Company completed the acquisition under the common control of the subsidiaries of Taishan Power Limited Company (“Taishan Power”) including Shandong Huaneng Liaocheng Thermal Power Co., Ltd. (“Shandong Liaocheng Thermal Power”), Shandong Huaneng Laiwu Thermal Power Co., Ltd. (“Shandong Laiwu Thermal Power”) and Shandong Huaneng Laizhou Wind Power Generation Co., Ltd. (“Laizhou Wind Power”). The aforementioned entities were included in the consolidated financial statements since early August 2018.

The power generation of the Company’s domestic power plants for the year ended 31 December 2018 is as listed below (in billion kWh):

Domestic Power Plant	Power Generation			Electricity Sold		
	2018	Change		2018	Change	
Heilongjiang Province	13.398	1.72	%	12.562	1.97	%
Coal-fired	12.282	0.26	%	11.466	0.47	%
Wind-power	1.039	12.74	%	1.021	12.50	%
PV	0.077	—		0.076	—	
Jinlin Province	10.053	16.94	%	9.504	17.18	%
Coal-fired	8.743	17.40	%	8.243	17.61	%
Wind-power	0.975	13.39	%	0.949	13.58	%
Hydro-power	0.076	21.38	%	0.074	20.91	%
PV	0.039	231.73	%	0.038	231.41	%
Biomass power	0.220	2.40	%	0.199	3.23	%
Liaoning Province	19.548	-0.79	%	18.168	-1.23	%
Coal-fired	18.984	-1.40	%	17.612	-1.87	%
Wind-power	0.350	5.02	%	0.348	5.07	%
Hydro-power	0.059	50.06	%	0.058	49.80	%
PV	0.155	95.97	%	0.151	93.96	%
Inner Mongolia	0.243	6.38	%	0.240	6.39	%
Wind-power	0.243	6.38	%	0.240	6.39	%
Hebei Province	13.423	0.17	%	12.601	0.13	%
Coal-fired	13.125	-0.05	%	12.315	-0.23	%
Wind-power	0.241	5.36	%	0.231	13.54	%
PV	0.057	43.20	%	0.055	46.22	%
Gansu Province	11.820	18.97	%	11.220	19.19	%
Coal-fired	9.819	17.84	%	9.273	17.90	%
Wind-power	2.000	24.88	%	1.947	25.78	%
Ningxia	0.022	111.02	%	0.021	115.47	%
PV	0.022	111.02	%	0.021	115.47	%
Beijing	8.521	37.98	%	8.086	45.39	%
Coal-fired	1.692	26.36	%	1.499	28.90	%
Combined Cycle	6.829	41.20	%	6.588	49.74	%

Domestic Power Plant	Power Generation			Electricity Sold		
	2018	Change		2018	Change	
Tianjin	7.504	3.18	%	7.042	2.93	%
Coal-fired	5.793	2.39	%	5.380	2.09	%
Combined Cycle	1.708	5.84	%	1.659	5.64	%
PV	0.003	111.87	%	0.003	112.26	%
Shanxi Province	10.916	11.24	%	10.196	11.00	%
Coal-fired	8.807	25.19	%	8.143	25.36	%
Combined Cycle	2.033	-25.88	%	1.977	-25.89	%
PV	0.076	116.85	%	0.076	242.30	%
Shandong Province	97.700	9.20	%	91.654	9.39	%
*Coal-fired	96.481	8.59	%	90.491	8.81	%
*Wind-power	0.835	89.49	%	0.785	78.58	%
PV	0.384	105.94	%	0.378	104.27	%
Henan Province	27.074	21.89	%	25.516	21.93	%
Coal-fired	25.201	21.90	%	23.689	21.83	%
Combined Cycle	1.750	22.90	%	1.712	22.86	%
Wind-power	0.098	15.29	%	0.090	17.28	%
PV	0.025	98.97	%	0.025	98.90	%
Jiangsu Province	42.653	-0.21	%	40.445	-0.02	%
Coal-fired	34.804	-4.45	%	32.762	-4.75	%
Combined Cycle	6.009	15.59	%	5.892	17.61	%
Wind-power	1.747	62.49	%	1.701	69.37	%
PV	0.093	110.43	%	0.090	107.50	%
Shanghai	18.180	-1.64	%	17.185	-1.74	%
Coal-fired	16.325	-3.60	%	15.373	-3.78	%
Combined Cycle	1.855	19.69	%	1.813	19.78	%
Chongqing	9.951	16.32	%	9.224	16.31	%
Coal-fired	8.558	15.84	%	7.873	16.01	%
Combined Cycle	1.360	15.79	%	1.327	16.01	%
Wind-power	0.032	—		0.024	—	
Zhejiang Province	27.090	-1.81	%	26.002	-1.83	%
Coal-fired	26.356	-2.71	%	25.281	-2.76	%
Combined Cycle	0.674	50.05	%	0.660	50.73	%
PV	0.062	24.66	%	0.061	23.79	%
Hubei Province	17.519	18.89	%	16.386	18.46	%
Coal-fired	16.736	18.31	%	15.674	18.61	%
Wind-power	0.458	75.31	%	0.396	38.24	%
Hydro-power	0.303	-9.85	%	0.294	-9.53	%
PV	0.022	271.80	%	0.022	269.60	%

Domestic Power Plant	Power Generation			Electricity Sold		
	2018	Change		2018	Change	
Hunan Province	11.410	22.58	%	10.696	22.81	%
Coal-fired	10.509	23.98	%	9.808	24.33	%
Wind-power	0.545	2.54	%	0.539	2.52	%
Hydro-power	0.325	13.95	%	0.319	14.04	%
PV	0.032	98.30	%	0.031	93.50	%
Jiangxi Province	21.106	6.59	%	20.188	6.73	%
Coal-fired	20.720	6.10	%	19.812	6.12	%
Wind-power	0.385	41.32	%	0.376	53.35	%
Anhui Province	6.151	3.59	%	5.873	3.45	%
Coal-fired	5.776	1.09	%	5.506	0.94	%
Wind-power	0.298	136.37	%	0.290	133.56	%
Hydro-power	0.077	-22.01	%	0.077	-22.07	%
Fujian Province	12.495	20.37	%	11.800	20.52	%
Coal-fired	12.482	20.34	%	11.787	20.44	%
PV	0.012	69.23	%	0.012	199.78	%
Guangdong Province	25.648	19.58	%	24.539	19.76	%
Coal-fired	25.626	19.61	%	24.517	19.78	%
PV	0.022	-1.37	%	0.022	-1.33	%
Guangxi Province	0.339	1,052.18	%	0.325	—	
Combined Cycle	0.339	1,052.18	%	0.325	—	
Yunnan Province	4.450	20.66	%	4.146	22.00	%
Coal-fired	3.885	18.80	%	3.596	19.99	%
Wind-power	0.565	35.17	%	0.549	36.94	%
Guizhou Province	0.197	240.83	%	0.194	260.17	%
Wind-power	0.197	240.83	%	0.194	260.17	%
Hainan Province	13.044	11.99	%	12.129	12.21	%
Coal-fired	12.635	11.54	%	11.725	11.72	%
Combined Cycle	0.024	21.22	%	0.023	21.34	%
Wind-power	0.097	-16.50	%	0.095	-16.47	%
Hydro-power	0.228	48.80	%	0.226	49.20	%
PV	0.060	97.20	%	0.059	97.67	%
Total	430.457	9.12	%	405.943	9.30	%

The statistics marked \* comprise newly acquired power plants of the Company that were included in the Note: consolidated financial statements in early August 2018. The comparison figures thereof are solely for reference purposes.

The increase in the Company's power generation for the year was mainly attributable to the following reasons: (1) the growth of the national total electricity consumption was better than that anticipated at the beginning of the year, especially the electricity consumption by the tertiary industry and urban and rural residents maintained at a double-digit growth; (2) affected by factors such as increased demand and reduced water supply, the Company's thermal power utilization hours rebounded significantly; and (3) the new gas turbine, wind-power and photovoltaic units contributed to the growth of power generation.

For the year ended 31 December 2018, the accumulated power generation of Tuas Power Ltd., the Company's wholly owned subsidiary in Singapore, accounted for a market share of 21.1%, representing a decrease of 0.8 percentage point from the same period last year.

In respect of tariff, the Company's domestic average tariff for the year ended 31 December 2018 was RMB418.48 per MWh, increased by RMB4.47 per MWh from last year. SinoSing Power's average tariff for 2018 was RMB648.74 per MWh, representing an increase by 19.22% from last year.

In respect of fuel costs, due to the increase in fuel prices, the Company's fuel cost per unit of power sold by domestic power plants increased by 4.85% to RMB236.89 per MWh from last year.

Combining the forgoing factors, for the year ended 31 December 2018, the Company recorded an operating revenue of RMB169.551 billion, representing an increase of 11.21% from RMB152.459 billion of last year, and the net profit attributable to equity holders of the Company of RMB0.734 billion, representing a decrease of 53.51% from RMB1.580 billion of last year.

For the year ended 31 December 2018, the net profit attributable to equity holders of the Company from domestic operations was RMB1.429 billion, representing a decrease of RMB0.628 billion from RMB2.057 billion for the same period last year. The decrease was primarily attributable to rising fuel prices, increased financial costs and reduced investment income. The net loss attributable to equity holders of the Company from its operations in Singapore was RMB695 million, representing a loss increase of RMB218 million compared to the same period last year, which is principally attributable to Tuas Power's decreased profit by RMB320 million (about S\$65 million) from the disposal of fuel oil and impairment provision for fuel oil.

## 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 2018, the consolidated operating revenue of the Company and its subsidiaries amounted to RMB169.551 billion, representing an increase of 11.21% from RMB152.459 billion for the year ended 31 December 2017. The operating revenue from domestic operations of the Company increased by RMB15.166 billion over the same period of last year, while the operating revenue generated from newly acquired entities and newly operated generating units was RMB5.592 billion.

The operating revenue from the operations of the Company in Singapore increased by RMB1.925 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.

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)			Change
	2018	2017		
Heilongjiang Province				
Coal-fired	393.28	376.88	4.35	%
Wind-power	516.82	595.75	-13.25	%
PV	750.90	—	N/A	
Jilin Province				
Coal-fired	385.18	383.75	0.37	%
Wind-power	518.74	551.80	-5.99	%
Hydro-power	426.74	426.63	0.03	%
PV	834.14	879.95	-5.21	%
Biomass power	754.58	750.02	0.61	%
Liaoning Province				
Coal-fired	398.85	370.25	7.73	%
Wind-power	572.25	583.79	-1.98	%
Hydro-power	330.00	330.00	0.00	%
PV	898.76	907.54	-0.97	%
Inner Mongolia				
Wind-power	461.87	452.91	1.98	%
Hebei Province				
Coal-fired	378.05	366.23	3.23	%
Wind-power	522.09	541.30	-3.55	%
PV	801.90	978.48	-18.05	%
Gansu Province				
Coal-fired	289.85	246.89	17.40	%
Wind-power	403.12	459.23	-12.22	%
Ningxia				
PV	805.11	800.00	0.64	%
Beijing				
Coal-fired	463.40	749.82	-38.20	%
Combined Cycle	667.36	674.07	-1.00	%
Tianjin				
Coal-fired	397.46	393.82	0.92	%
Combined Cycle	708.05	699.14	1.27	%
PV	881.64	879.99	0.19	%
Shanxi Province				
Coal-fired	326.40	317.52	2.80	%
Combined Cycle	684.65	678.32	0.93	%
PV	908.91	1,370.19	-33.67	%

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)			Change
	2018	2017		
Shandong Province				
*Coal-fired	404.01	397.13	1.73	%
*Wind-power	564.46	625.68	-9.78	%
PV	862.56	881.74	-2.18	%
Henan Province				
Coal-fired	349.86	370.27	-5.51	%
Combined Cycle	640.53	600.00	6.76	%
Wind-power	551.34	610.00	-9.62	%
PV	380.00	375.34	1.24	%
Jiangsu Province				
Coal-fired	438.53	401.57	9.21	%
Combined Cycle	590.83	599.85	-1.50	%
Wind-power	724.53	679.60	6.61	%
PV	929.01	957.89	-3.02	%
Shanghai				
Coal-fired	411.76	398.00	3.46	%
Combined Cycle	848.25	911.36	-6.93	%
Chongqing				
Coal-fired	412.66	392.74	5.07	%
Combined Cycle	746.10	811.53	-8.06	%
Wind-power	615.26	—	N/A	
Zhejiang Province				
Coal-fired	418.61	421.15	-0.60	%
Combined Cycle	867.83	912.07	-4.85	%
PV	1,054.58	1,128.38	-6.54	%
Hubei Province				
Coal-fired	422.40	402.46	4.96	%
Wind-power	630.28	676.00	-6.76	%
Hydro-power	381.98	378.04	1.04	%
PV	887.76	880.00	0.88	%
Hunan Province				
Coal-fired	463.72	455.94	1.71	%
Wind-power	610.84	606.72	0.68	%
Hydro-power	376.07	376.17	-0.03	%
PV	907.78	879.57	3.21	%

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)			Change
	2018	2017		
Jiangxi Province				
Coal-fired	420.96	411.82	2.22	%
Wind-power	612.62	610.00	0.43	%
Anhui Province				
Coal-fired	380.70	371.86	2.38	%
Wind-power	613.38	610.00	0.55	%
Hydro-power	384.40	376.74	2.03	%
Fujian Province				
Coal-fired	400.15	375.59	6.54	%
PV	985.72	980.00	0.58	%
Guangdong Province				
Coal-fired	415.14	431.23	-3.73	%
PV	986.49	980.00	0.66	%
Guangxi Province				
Combined Cycle	547.20	—	N/A	
Yunnan Province				
Coal-fired	514.50	577.23	-10.87	%
Wind-power	470.14	478.37	-1.72	%
Guizhou Province				
Wind-power	608.00	599.76	1.37	%
Hainan Province				
Coal-fired	441.68	431.33	2.40	%
Combined Cycle	1,565.26	1,619.97	-3.38	%
Wind-power	612.15	608.99	0.52	%
Hydro-power	402.62	399.53	0.77	%
PV	958.71	991.44	-3.30	%
Domestic total	418.48	414.01	1.08	%
SinoSing Power	648.74	544.15	19.22	%

Note 1: The tariff of combined-cycle power plants in Shanghai, Zhejiang, Jiangsu and Chongqing consists of on-grid settlement price and capacity subsidy income.

Note 2: The statistics marked \* comprise newly acquired power plants of the Company that were included in the consolidated financial statements in early August 2018. The comparison figures thereof are solely for reference purposes.

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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 2018, the tax and levies on operations of the Company and its subsidiaries were RMB1.789 billion, representing an increase of RMB413 million from RMB1.376 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 RMB18 million.

## 2.2 Operating expenses

For the year ended 31 December 2018, the total operating expenses of the Company and its subsidiaries was RMB157.647 billion, representing an increase of 11.10% from the same period last year. The operating expenses in domestic operations of the Company increased by RMB13.638 billion, or 10.36%, from the same period last year, of which the newly acquired entities and the new generating units accounted for RMB1.530 billion; the costs attributable to the existing entities increased by RMB12.108 billion, which was primarily attributable to the increased fuel costs for domestic operations in China.

The operating expenses from the operations in Singapore increased by RMB2.109 billion, or 20.55%, from the same period last year, which was mainly due to increased gas price attributable to the rise of international oil price.

### 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 2018, fuel costs of the Company and its subsidiaries increased by 14.02% to RMB105.736 billion from the RMB92.737 billion for the year ended 31 December 2017. The fuel costs from domestic operations of the Company and its subsidiaries increased by RMB12.307 billion, which was primarily attributable to the increased fuel price. The fuel costs of the newly acquired entities and new generating units were RMB0.890 billion and the fuel costs of the existing generating units increased by RMB11.417 billion from same period last year. Fuel costs in Singapore increased by RMB0.692 billion from the same period last year, mainly due to increased fuel costs arising from increased natural gas prices. For the year ended 31 December 2018, the average price (excluding tax) of natural fuel coal consumed of the Company and its domestic subsidiaries was RMB551.35 per ton, representing a 0.61% increase from the RMB548.02 per ton for the year ended 31 December 2017. The fuel cost per unit of power sold by the Company's domestic power plants increased by 4.85% to RMB236.89/MWh from RMB225.92/MWh in 2017.

### 2.2.2 Maintenance

For the year ended 31 December 2018, the maintenance expenses of the Company and its subsidiaries amounted to RMB4.393 billion, representing an increase of RMB45 million from RMB4.348 billion for the year ended 31 December 2017. The maintenance expenses of the Company's domestic operations increased by RMB54 million compared to the same period last year. The maintenance expenses of operations in Singapore decreased by RMB9 million compared to the same period last year.

### 2.2.3 Depreciation

For the year ended 31 December 2018, depreciation expenses of the Company and its subsidiaries increased by 1.41% to RMB20.466 billion, compared to RMB20.181 billion for the year ended 31 December 2017; the increase is mainly due to the newly acquired entities and new generating units put into operation. The depreciation expenses of domestic operations increased by RMB0.369 billion compared to the same period last year, of which the depreciation costs incurred by the newly acquired entities and new generating units was RMB0.320 billion. The depreciation expenses of the operations in Singapore decreased by RMB84 million compared to the same time last year.

### 2.2.4 Labor

Labor costs consist of salaries to employees and contributions payable for employees' housing funds, medical insurance, pension and unemployment insurance, as well as training costs. For the year ended 31 December 2018, the labor costs of the Company and its subsidiaries amounted to RMB11.845 billion, representing an increase of RMB1.255 billion from RMB10.590 billion for the year ended 31 December 2017. This is mainly attributable to good operating results of the Company's domestic plants and the raise of the Company's annuity contribution percentage. Labor costs for Singapore operations decreased by RMB17 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, land fee, insurance premiums, office expenses, amortization, Tuas Power's electricity power purchase costs, impairment losses, government subsidies and net gains or losses on disposal of non-current assets. For the year ended 31 December 2018, other operating expenses (including electricity power purchase costs and service fees paid to HIPDC) of the Company and its subsidiaries was RMB15.206 billion, representing an increase of RMB1.162 billion from RMB14.044 billion for the year ended 31 December 2017. The other operating expenses from the Company's domestic operations decreased by RMB0.365 billion due to decreased exchange of tariff quota and change of environmental protection fee into the tax and levies on operations. The other operating expenses from the newly acquired entities and new generating units were RMB0.108 billion. Other operating expenses of the operations in Singapore increased by RMB1.527 billion compared to the same period last year.

### 2.3 Financial expenses, net

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

### 2.3.1 Interest expenses

For the year ended 31 December 2018, the interest expenses of the Company and its subsidiaries were RMB10.486 billion, representing an increase of 7.56% from RMB9.749 billion for the year ended 31 December 2017. The interest expenses from the Company's domestic operations increased by RMB0.723 billion. The interest expenses from the newly acquired entities and new generating units were RMB0.210 billion and those incurred by the existing entities in China increased by RMB0.513 billion, which is largely attributable to increased debts scale. The interest expenses of Singapore operations increased by RMB14 million compared to the same period last year.

### 2.3.2 Net exchange differences and bank charges

For the year ended 31 December 2018, the Company and its subsidiaries recorded a net loss of RMB161 million from exchange difference and bank charges, while a net gain of RMB144 million was recorded for the year ended 31 December 2017, mainly due to the weakened exchange rate of RMB against U.S. dollar.

The operations in Singapore recorded net loss of RMB25 million in exchange losses and bank charges, representing a increase of RMB8 million from the net loss of RMB17million for the year ended 31 December 2017, mainly due to the strengthened exchange rate of U.S. dollar against Singapore dollar.

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

For the year ended 31 December 2018, the share of profits less losses of associates and joint ventures was RMB1.823 billion, representing an increase of RMB1.398 billion from RMB0.425 billion of last year, mainly due to increased profit of associates and joint ventures.

### 2.5 Income tax expenses

For the year ended 31 December 2018, the Company and its subsidiaries recognized income tax expenses of RMB0.643 billion, representing a decrease of RMB0.575 billion from RMB1.218 billion for the year ended 31 December 2017. The income tax expenses for the domestic operations decreased by RMB0.540 billion primarily attributable to increase in coal price from same period last year, which reduced the profitability of the Company's coal-fired power plants. The income tax expenses of the operations in Singapore decreased by RMB35 million.

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

For the year ended 31 December 2018, the Company and its subsidiaries achieved a net profit of RMB1.330 billion, representing a decrease of RMB0.254 billion, or 16.04%, from RMB1.584 billion for the year ended 31 December 2017; the net profit attributable to equity holders of the Company was RMB0.734 billion, representing a decrease of RMB0.846 billion from RMB1.580 billion for the year ended 31 December 2017.

The profit attributable to equity holders of the Company from its domestic operations decreased by RMB0.628 billion, mainly contributable to rising fuel prices, increased financial costs and reduced investment income. The net loss attributable to equity holders of the Company from its operations in Singapore was RMB695 million, representing an increase of RMB218 million from same period last year. This was mainly due to Tuas Power's decreased profit by RMB320 million (about S\$65 million) from the disposal of fuel oil and impairment provision of fuel oil.

The Company's recorded net profit attributable to non-controlling interests increased to RMB596 million for the year ended 31 December 2018 from RMB4 million for the year ended 31 December 2017, mainly attributable to the increases of the profit of non-wholly owned subsidiaries.

## 2.7 Comparison of financial positions

### 2.7.1 Comparison of asset items

As of 31 December 2018, consolidated total assets of the Company and its subsidiaries were RMB419.903 billion, representing an increase of 5.88% from RMB396.590 billion as of 31 December 2017; total assets of the domestic operations increased by RMB10.230 billion to RMB378.859 billion, including a net decrease of RMB0.437 billion in non-current assets, which is mainly attributable to the newly acquired entities and the capital expenditure on construction projects.

As of 31 December 2018, for overseas operation, total assets of the operations in Singapore were RMB27.258 billion, representing a decrease of RMB703 million from the same period last year, non-current assets increased by RMB4 million to RMB23.813 billion. Total assets of the operations in Pakistan were RMB13.786 billion, non-current assets were RMB10.485 billion.

### 2.7.2 Comparison of liability items

As of 31 December 2018, consolidated total liabilities of the Company and its subsidiaries were RMB303.782 billion, representing an increase of 5.12% from RMB288.975 billion as of 31 December 2017.

As of 31 December 2018, interest-bearing debts of the Company and its subsidiaries totaled RMB254.170 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 financial leases payable (including those maturing within a year). The interest-bearing debts denominated in foreign currencies amounted to RMB2.279 billion.

As of 31 December 2018, for overseas operation, the total liabilities of the operations in Singapore were RMB15.309 billion, representing an increase of 1.40% from RMB15.098 billion as of 31 December 2017. The total liabilities of the operations in Pakistan were RMB11.158 billion.

### 2.7.3 Comparison of equity items

As of 31 December 2018, excluding the impact of profit and profit appropriations, total equity attributable to the equity holders of the Company increased, including an increase impact arising from the issuance of Yingda insurance financing plan at face value of RMB5 billion in September, 2018, an increase of post-tax impact of RMB1 million arising from fair value changes of other equity instrument investment held by the Company and its subsidiaries, a decrease of post-tax impact of RMB0.260 billion arising from changes in other comprehensive income of the Company's investees accounted for under equity method, a decrease of post-tax impact of RMB0.470 billion arising from fair value changes of cash flow hedge instruments, an increase of RMB0.335 billion from translation difference of the financial statements of foreign operations.

Non-controlling interests as of 31 December 2018 increased by RMB1.713 billion.

## 2.7.4 Major financial position ratios

	2018	2017
Current ratio	0.45	0.31
Quick ratio	0.38	0.26
Ratio of liability to equity holders' equity	3.22	3.30
Multiples of interest earned	1.13	1.23

## 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 equity holders' equity 
$$= \frac{\text{balance of liabilities as of the year end}}{\text{balance of equity holders' equity (excluding non-controlling interests) as of the year end}}$$

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

The current ratio increased as of 31 December 2018 compared to that of 31 December 2017 mainly due to increase of current assets especially inventories and bank balances and cash. The ratio of liabilities to equity holders' equity as of 31 December 2018 decreased compared to that of 31 December 2017 mainly due to the issuance of Yingda insurance financing plan at face value of RMB5 billion. The multiples of interest earned decreased mainly due to reduced pre-tax profit for the year ended 31 December 2018.

## B. Liquidity and Cash Resources

## 1. Liquidity

	For the year ended December 31		
	2018	2017	Change
	RMB	RMB	
	billion	billion	%
Net cash provided by operating activities	28.729	29.198	-1.61 %
Net cash used in investing activities	-20.376	-31.749	-35.82 %
Net cash (used in)/provided by financing activities	-2.243	4.013	-155.89 %
Currency exchange impact	0.026	0.010	160.00 %
Net increase in cash and cash equivalents	6.136	1.472	316.85 %
Cash and cash equivalents as at the beginning of the year	9.282	7.810	18.85 %
Cash and cash equivalents as at the end of the year	15.418	9.282	66.11 %

For the year ended 31 December 2018, net cash provided by operating activities of the Company and its subsidiaries was RMB28.729 billion, representing a decrease of 1.61% from last year, which is principally because that the Company's revenue increase from electricity growth and rising electricity prices in the reporting period was offset by the increase in fuel purchase costs. Net cash provided by operating activities in Singapore was RMB830 million. The net cash used in investing activities was RMB20.376 billion, representing an decrease of 35.82% from last year, which is mainly due to less cash outflows from relatively smaller acquisitions during this year. The net cash used in financing activities was RMB2.243 billion, representing an decrease of RMB6.256 billion to the net cash inflow in 2017, which was RMB4.013 billion. This was mainly due to repayment of more borrowings by the Company in this year compared to last year. As of 31 December 2018, the cash and cash equivalents of the Company and its subsidiaries denominated in RMB, Singapore dollar, U.S. dollar, Pakistan Rupee were RMB14.317 billion, RMB927 million, RMB141 million and RMB33 million, respectively.

As of 31 December 2018, net current liabilities of the Company and its subsidiaries were approximately RMB76.407 billion. Based on the Company's proven financing record, readily available banking facilities and sound credibility, the Company believes it is able to duly repay outstanding debts, obtain long-term financing and secure funding necessary for its operations. The Company has also capitalized on its good credit record to make short-term loans at relatively lower interest rates, thus reducing its interest expenses.

## 2. Capital expenditure and cash resources

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

The capital expenditures for the year ended 31 December 2018 were RMB20.707 billion, mainly for construction and renovation of projects, including RMB2.931 billion for Shandong Power project, RMB1.679 billion for Yancheng Dafeng New Energy project, RMB1.114 billion for ShangAn Power Plant project, RMB789 million for Heilongjiang Power Generation project, RMB746 million for Anyang Energy project, RMB711 million for Dongguan Combined Cycle project, RMB661 million for Luoyuan Power Generation project, RMB598 million for Nanjing Xingang Integrated Energy project, RMB505 million for Kangbao Wind Power project, RMB451 million for Jiangxi Clean Energy project, RMB450 million for Rudong Baxianjiao Offshore Wind Power project, RMB435 million for Zhongxiang Wind Power project, RMB406 million for Hainan Power Generation project, RMB346 million for Fengjie Wind Power project, RMB343 million for Beijing Thermal Power project, RMB335 million for Dalian Thermal Power project, RMB303 million for Jiuquan Wind Power project, RMB278 million for Guigang Clean Energy project, RMB267 million for Huaining Wind Power project, RMB257 million for Jiangyin Combined Cycle project, RMB243 million for Mianchi Clean Energy project, RMB222 million for Diandong Energy project, RMB216 million for Jilin Power Generation project, RMB207 million for Fuyuan wind power project, RMB206 million for Luoyuan Port project, RMB205 million for Luohuang Power Generation project, RMB198 million for Dezhou Power Plant, RMB194 million for Yizheng Wind Power project, RMB171 million for Dalian Power Plant project, RMB167 million for Shanxi Comprehensive Energy project, RMB165 million for Suzhou Co-generation Power project, RMB159 million for Changxing Power Plant project, RMB159 million for Fuzhou Power Plant project, RMB146 million for Panzhou Wind Power project, RMB146 million for Huaiyin Power project, RMB144 million for Diandong Yuwang Energy project, RMB141 million for Chaohu Power project, RMB139 million for Weihai Power project, RMB119 million for Luoyang Co-generation Power project and RMB119 million for Tongshan Wind Power. The capital expenditures of the Company's operations in Singapore were RMB180 million. The expenditures on other projects were RMB3.456 billion.

The above capital expenditures are sourced mainly from internal capital, cash flows provided by operating activities, and debt and equity financing. In the next few years, the Company will maintain its leading position in clean and efficient traditional energy, make further efforts to develop new energy and promote structural adjustment. It is expected that there will still be 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 2019	Cash resources arrangements	Financing costs and note on use
Thermal power projects	41.70	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Hydropower projects	0.23	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Wind power projects	239.54	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Coal mining projects	7.40	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Photovoltaic power projects	0.74	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Port	2.04	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Technology renovation	62.47	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 2018, the undrawn banking facilities available to the Company and its subsidiaries amount to approximately RMB268.8 billion, which are granted by Bank of China, China Construction Bank and Agricultural Bank of China.

The Company completed issuances of unsecured super short-term bonds in 16 installments on 24 February, 2 March, 21 March, 23 March, 2 May, 2 May, 18 May, 30 May, 1 June, 24 August, 19 October, 16 November, 22 November, 23 November, 28 November and 6 December of 2018, at principal amount of RMB4 billion, 2 billion, 2 billion, 4 billion, 2.5 billion, 4 billion, 2 billion, 2 billion, 4 billion, 2 billion, 2.5 billion, 2 billion, 2 billion, 2 billion, 2 billion and 1 billion, with nominal annual interest rates of 4.35%, 4.35%, 4.40%, 4.45%, 4.25%, 4.08%, 3.98%, 3.80%, 4.05%, 2.80%, 3.20%, 2.78%, 3.10%, 3.05%, 2.78% and 3.30%, respectively. Each installment of the bonds was denominated in RMB, issued at par value, and would successively mature in 90 days, 90 days, 150 days, 180 days, 180 days, 150 days, 180 days, 90 days, 180 days, 90 days, 180 days, 90 days, 180 days, 180 days, 90 days and 270 days from the value date.

The company issued two tranches of unsecured medium-term notes of RMB3 billion and RMB2 billion on 2 May and 11 July, 2018 with nominal annual interest rates of 4.80% and 4.41%, respectively. The notes were denominated in RMB and issued at par value with maturity of three years from the date of issue.

The Company issued unsecured non-public debt financing instrument of RMB2.5 billion on 26 July, 2018 with a nominal annual rate of 4.68%. The instrument was denominated in RMB and issued at par value with maturity of in three years from the value date.

The company issued two tranches of unsecured corporate bonds on 4 April and 10 September 2018, at a principal amount of RMB1.5 billion and RMB5 billion, respectively, with nominal annual interest rates of 4.90% and 5.05%, respectively. The bonds were denominated in RMB and issued at face value with maturity of three and ten years from the date of issue, respectively.

As of 31 December 2018, short-term loans of the Company and its subsidiaries were RMB61.039 billion (2017: RMB80.251 billion), Loans from banks were charged at annual interest rates ranging from 3.30% to 11.51% per annum (2017: 3.74% to 5.50%).

As of 31 December 2018, short-term bonds payable by the Company and its subsidiaries were RMB11.541 billion (2017: RMB11.068 billion).

As of 31 December 2018, long-term loans (including those maturing within a year) of the Company and its subsidiaries were RMB150.169 billion (2017: RMB125.129 billion), of which RMB loans were RMB126.844 billion (2017: RMB110.073 billion), US dollar loans were approximately US\$1.548 billion (2017: US\$348 million), and Euro loans were approximately €22 million (2017: €30 million), Singapore dollar loans were S\$2.472 billion (2017: S\$2.539 billion), Japanese yen loans were 2.482 billion (2017: 2.593 billion). Among them, US dollar loans and Singapore dollar loans are all floating rate loans, and other foreign currency loans are fixed rate loans. For the financial year ended 31 December 2018, the annual interest rates of long-term bank loans were between 0.75% to 7.29% per annum (2017: 0.75% to 6.03%).

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 equity holders.

### 2.3 Other financing requirements

The objective of the Company is to bring steadily growing returns to equity holders 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 2018, the Company expects to pay a cash dividend of RMB1.570 billion.

### 2.4 Maturity profile of loans and bonds

(RMB100 million)

Maturity Profile	2019	2020	2021	2022	2023
Principal amount planned for repayment	971.60	315.01	465.98	199.14	113.13
Interest amount planned for repayment	102.93	64.67	49.72	33.97	25.16
Total	1,074.53	379.68	515.70	233.11	138.29

This table was prepared by the principal and interest amount actually repaid accordingly to contracts already Note: signed. The amount of principle to be paid in 2019 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 innovative, coordinated, green, open and sharing development with the aim to create a clean, low-carbon, safe and efficient energy system. The Company would focus on quality and efficient growth which will be driven by reform and innovation, safeguarded by institutional mechanism, and led by supply-side structural reform, and therefore strive to become a world-class listed power generator with sound management, leading technologies, bests energy saving and environmental protection practices, reasonable structure, and excellent operations, corporate governance and market value.

The Company will respond to the needs of energy transformation and reform with strategic growth towards a green power producer, continue to focus on development and acquisition initiatives for building an integrated, large-scale clean energy base of production and distribution of renewable and thermal power as well as investment on offshore wind power base. The Company will enhance technological innovations on clean and efficient use of coal and make active efforts to develop a grid-source-load integrated co-generation network. The Company will comply with power market reform requirements to change from a business mainly engaged in power generation to a provider of integrated services ranging from power and heating generation, peak adjustment, power distribution and sale, energy storage, energy conservation and environmental protection; promote integration of industrial, supply and value chains, and strive to develop into an integrated energy service provider. With the upcoming era of artificial intelligence, the Company will carry out strategies towards digitalized operations, make consistent progress in building smart power plants, industrial Internet and online operation systems, and so as to increase the Company's overall market competitiveness. The Company will rise to the needs from innovation-led development with strategies to recruit and maintain talented employees, laying down solid human resources basis for the Company's business transformation and upgrading and high quality development.

#### D. Trend analysis

2019 is expected to see the shift of China's economy from high-speed growth to high-quality development characterized by accelerated optimization and upgrading of economic structure. The Chinese government will be consistently committed to supply-side, market-oriented structural reform, build upon the achievements from the initiatives of reducing overcapacity and excess inventory, deleveraging, lowering costs and identifying the underdeveloped sectors for improvement to make reinforced efforts on infrastructure development and promote energy production and consumption revolution, with the view to creating a clean, low-carbon, safe and efficient energy system. As local governments and competent authorities will actively comply with the requirements for stable investment, fixed assets investment is expected to maintain steady growth, which will provide strong support for power consumption growth.

Regarding the electricity market, considering market environment at home and abroad, assuming no occurrence of far-reaching extreme climate changes in 2019, total electricity consumption nationwide will grow by 5.5%, with newly installed generation capacity of approximately 110 million kW, of which thermal generation units will represent a slight increased percentage from last year. In 2019, annual utilization hours of thermal generating units are estimated to be 4,400 hours, representing slight increase from last year. In 2019, the Company will actively participate in the reform of power market, strengthen research and study of power supply and demand and market competition, and design flexible and effective marketing strategies. The Company will also actively participate in power market transactions, attach importance to power sales business, actively participate in the building of electricity trading market and auxiliary service market, continuously explore new business opportunities, make focused efforts to offer value-added services so as to consolidate high-quality client base and improve client stickiness, with the view to gradually transitioning from traditional energy vendor to integrated energy supplier, further enhancing the Company's market competitiveness, and strengthening the Company's position in the industry and market.

In the coal market, coal supply is expected to be sufficient with increased production from operation of new and expansion coal production projects which have been approved by competent Chinese government agencies, while the effect of environmental protection and safety production inspections, though continuing to weigh upon coal production, will be lessened in 2019. In spite of coal demand from large-scale infrastructure and other projects, consumption of coal by thermal power generators is expected to decrease due to the soft macro-economic conditions, uncertainty of China-U.S. trade relations, industrial transformation and upgrading, as well as increased supply of UHV-based clean energy and nuclear power. The railway capacity continues to increase as the operation of Menghua Railway is expected to ease the resources shortage in "two lakes and one river". The general supply and demand in the electricity and coal market in 2019 will be eased compared with the tight balance in 2018, with the price moving downward and volatility further reduced. The Coal prices will gradually move to the green range.

In terms of capital market, the Chinese government is expected to implement active fiscal policies and sound monetary policies. The fiscal policies would be focused on reducing taxes and other fiscal levies with the view to addressing, in collaboration with the implementation of monetary policies, funding difficulties and prohibitive funding prices encountered by business enterprises. The sound monetary policies would be implemented to underscore overall economic stability, strengthen counter-cyclical monetary administration, optimize credit structure, and maintain reasonably adequate liquidity. Accordingly, it is expected that the market would have reasonably sufficient funding in 2019 and funding costs are expected to be consistent with slight decline.

The Company would seize the important strategic opportunities arising from power market reform, redesigning of energy ecosystem, and cross-sector integration to accelerate transformation to quality and efficient development driven by innovation based on improved existing capacities and optimized added capacities. The Company will develop from a business mainly engaged in power generation to a provider of integrated services ranging from power and heating generation, peak adjustment, power distribution and sale, energy storage, energy conservation and environmental protection, as well as highly value-added solutions and services, so as to promote growth of higher quality, efficiency and sustainability.

**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 equity holders 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 2018, Shenzhen Energy distributed RMB0.80 of cash dividend out of every 10 shares to its equity holders, and the Company held 992 million shares of Shenzhen Energy by 31 December 2018. These investments brought a net profit attributable to the equity holders of the Company of RMB148 million for the year ended 31 December 2018 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 holders of the Company of RMB111 million for the year ended 31 December 2018 under IFRS. This investment is expected to provide steady returns to the Company.

**F. Employee Benefits**

As of 31 December 2018, the Company and its subsidiaries had 57,970 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 2018, the Company provided guarantees of approximately RMB12.273 billion for the long-term bank loans of Tuas Power.

As of 31 December 2018, the details of secured loans of the Company and its subsidiaries were as follows:

As of 31 December 2018, short-term loans of RMB461 million (2017: RMB24 million) represented the notes receivable that were discounted with recourse. As these notes receivable had not yet matured, the proceeds received were recorded as short-term loans.

As of 31 December 2018, long-term loans of RMB0.986 billion (2017: RMB4.605 billion) of the Company and its subsidiaries were secured by certain property, plant and equipment with net book value of approximately RMB1.756 billion (2017: RMB5.166 billion).

As of 31 December 2018, long-term loans of approximately RMB8.938 billion (2017: RMB10.559 billion) were secured by future electricity and heating revenue of the Company and its subsidiaries.

As of 31 December 2018, the restricted bank deposits of the Company and its subsidiaries were RMB430 million (2017: RMB82 million).

As of 31 December 2018, the property, plant and equipment leased under finance lease of the Company and its subsidiaries with net book value amounted to RMB1.774 billion (2017: RMB2.565 billion).

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.

I. Impairment Sensitivity Analysis

1. Goodwill impairment

The Company and its subsidiaries conducts impairment test on each individually recognized goodwill every year. In 2018, the management recognized goodwill impairment of approximately RMB409 million based on the impairment assessment.

For goodwill allocated to CGUs in the PRC, changes of assumptions in tariff and fuel price could have affected the results of goodwill impairment assessment. As of 31 December 2018, if tariff had decreased by 1% or 5% from management's estimates with other variables constant with the expectations, the Company and its subsidiaries would have to further recognize impairment against goodwill by approximately RMB900 million and RMB3,915 million, respectively. If fuel price had increased by 1% or 5% from the management's estimates with other variables constant with the expectations, the Company and its subsidiaries would have to further recognize impairment against goodwill by approximately RMB421 million and RMB3,185 million, respectively.

## 2. Impairment of other non-current assets

The Company and its subsidiaries will test its property, plant and equipment, land use rights and mining rights suffered any impairment whenever an impairment indication exists.

In 2018, impairment losses for certain property, plant and equipment and mining rights of approximately RMB990 million and RMB135 million have been recognized, respectively. 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. 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. Therefore the project under construction of two subsidiaries with a carrying value of RMB14 million and 8 million were fully impaired in 2018.

Changes of assumptions in tariff and fuel price will affect the result of property, plant and equipment, land use rights and mining rights impairment assessment. As at 31 December 2018, if tariff had decreased by 1% or 5% from management's estimates with other variables constant with the expectation, the Company and its subsidiaries would have to further recognize impairment against property, plant and equipment, land use rights and mining rights by approximately RMB460 million and RMB5,599 million, respectively; if fuel price had increased by 1% or 5% from the management's estimates with other variables constant with the expectations, the impairment against property, plant and equipment, land use rights and mining rights of the Company and its subsidiaries would increase by approximately RMB46 million and RMB1,598 million, respectively.

## J. Risk Factors

### 1. Risks relating to coal market

The tight supply-demand condition in the coal market is expected to be generally eased in 2019 with coal prices moving towards the green range, but market risks still exist. First, the coal production capacity is further concentrated in the three leading coal-producing regions of Inner Mongolia, Shanxi and Shaanxi, where the local policies, extreme climate conditions and coal mine accidents would have an increasing impact on the national coal supply. Secondly, environmental safety inspection is conducted regularly to maintain high pressure on coal producers, which would have certain effect on utilization of production capacity in these regions. Thirdly, several coal chemical projects would be put into operation with significant demand for coal supply. Lastly, the transit center for the ports in Northern China is expected to migrate to Caofeidian Port in the next few years, which migration could further complicate the mismatch between railway capacity and the port resources and therefore affect the coal market.

### 2. Risks relating to electricity market

In 2019, the national electricity consumption growth rate is expected to be 5.5%, which is 3 percentage points lower than that in 2018. The estimated new installed capacity is expected to be 110 million kilowatts. Based on 2018 utilization hours, the estimated electricity consumption growth would all come from operation of new generating units, and the oversupply of power generation would not change significantly. Market competition is increasingly intensified, creating uncertainty to the Company's efforts to increase power generation and market share.

### 3. Risks relating to electricity tariff

With issue of the policies to liberalize electricity consumption in coal, steel, nonferrous metals and building materials sectors, more and more electricity is sourced from market-based transactions. Medium and long-term transaction amounts continue to increase, the market share of inter-provincial transactions increase substantially, and spot transactions are accelerated. With an ever more diversified transaction types and models, market competition is extremely fierce and impose more downward pressure on electricity pricing.

4. Risks relating to electricity trading policies

Traditionally advantageous areas are at risk of being affected by coal-restricted and inter-provincial trading policies. In 2019, the restrictions on total coal consumption in Hebei, Zhejiang, Shanghai, Jiangsu, Shandong and other regions are expected to be more stringent, which could further affect local power generation. The Chinese government will increase inter-provincial UHV electricity transmission, which could have a material effect upon the Company in a short term as we have more generating capacities in the receiving area than in the delivery area.

5. Risks relating to environmental protection policies

The Chinese government is committed to resolute fight against pollution. The State Council has issued a three-year anti-pollution action plan requiring industrial enterprises such as power plants to further reduce emission of major air pollutants. Any power plant shall be held for legal liabilities if it fails to reinforce management on operation and maintenance of generating units and environmental protection facilities, or to ensure strict compliance with emission permit requirements, or to discharge pollutants in accordance with required intensity and amounts.

6. Interest rate risks

Regarding our debts denominated in RMB, the central bank is expected to strengthen application of counter-cyclical adjustment measures as part of the its macro-control initiatives, which could lead to reduced interest rates at the money market and bond market and therefore lower the interest rates of the Company's RMB debts generally in 2019. Regarding our debts denominated in other currencies, it is less likely that the U.S. and other major economies would further increase interest rates due to expected slowdown of the global economy. As the debts denominated in other currencies represent a small percentage in our total debts, the change of interest rates of foreign currencies are not expected to have material effect on the Company.

## CORPORATE GOVERNANCE REPORT

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

The Company has complied with the provisions of the Corporate Governance Code in Appendix 14 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the “Listing Rules”) during this Reporting Period. In 2018, 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 2018 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

Apart from complying with the provisions of the applicable laws, 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. Accordingly, our fundamental principle is to adopt a corporate governance structure that balances and coordinates the decision-making powers, supervisory powers and operating powers, and ensures that we act with honesty and integrity, and comply with the law and operating in accordance with the law.

Over the years, the Board of the Company has formulated and implemented various rules such as the Rules of Procedures for General Meetings, the Rules of Procedures for the Board Meetings, the Rules of Procedures for the Supervisory Committee Meetings, the Detailed Rules on the Work of the President, the Terms of Reference of the Strategy Committee under the Board of Directors, the Terms of Reference of the Audit Committee under the Board of Directors, the Terms of Reference of the Nomination Committee under the Board of Directors, the Terms of Reference of the Remuneration and Appraisal Committee under the Board of Directors, and the System on Work of Independent Directors, the System on Work of Independent Directors on the Annual Report, and the Working Guidelines on Annual Report for the Audit Committee. A standardized and optimized corporate governance structure has been gradually formed, and an effective mechanism with a good match for the Company’s needs in its development has been established and further improved. During the reporting period, the Company added provisions on “inclusion of Party building into Articles of Association” and “Accumulative Voting System” to the Articles of Association as per regulatory requirements, and specified the implementation rules of the Cumulative Voting System in the rules of procedures for general meetings.

The Board of the Company always regards the improvement of corporate governance and the proper operation of the general meeting, the Board, and the Supervisory Committee as its responsibility. It continuously improves itself and operates in compliance with laws and regulations, laying a solid foundation for the Company's sustained and healthy development. In 2018, in order to optimize management processes and human resources allocation and improve management efficiency, the Board of the Company carried out management process optimization reforms by adjusting the internal departments and personnel of the Company's headquarters, revising and improving the Company's relevant management systems, streamlined the decision-making process, and improving operational efficiency, thereby providing support for the Board to make effective decisions and further improve the Company's operational quality.

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 2018, 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, 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 separation of personnel in organizational structure and specifically established the relevant institution responsible for the entrusted business so that the Company may realize 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.

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

3.Regulating Fund Transfers with Related Parties. The Company's Articles of Association also set out provisions relating to loans, guarantees and investment. In the annual reports of the Company over the previous years, the Company has engaged registered accountants to conduct an examination on the use of funds by the controlling shareholder and other related parties and issue individual statements according to the requirements of the China 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 2018, 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 2018. 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 2018, 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.

The Company has defined 48 items of risks related to 16 categories of business, including strategic management, production and operation, legal affairs, financial management, capital operation, security assurance, energy saving, infrastructure projects and compliance, and assigned risk control to business units at all levels. The Internal Control Handbook provides for control measures against the risks identified 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.

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 2018, 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. During the Reporting Period, the Board of Directors has assessed the risk management and internal control system of the Company and its subordinate enterprises and reviewed their effectiveness and found neither violation of laws, regulations and rules, nor insufficiency or any major mistake in compliance monitoring and risk management. The Board considers that the risk management and internal control systems of the Company and its subordinate enterprises are effective.

The above systems and measures have formed a sound management framework for our production and operation. They ensure the ongoing standardization of operations of the Company and gradual enhancement of corporate management quality. In 2018, the Company was awarded “Listed Company with Outstanding Contribution to the 40th Anniversary of Reform and Opening-up” in the China Securities Golden Bauhinia Awards, and Mr. Zhao Keyu, President of the Company, won the “Best CEO of Listed Company” award in Sina Finance Golden Lion Awards. These honours helped improve further the corporate image of the Company in the domestic and overseas capital markets.

**(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. Mr. Liu Guoyue resigned as an Executive Director and President of the Company on 15 May 2018 due to change in work. Mr. Fan Xiaxia resigned as an Executive Director and Vice President of the Company on 28 February 2018 due to change in work.

During the Reporting Period, the Board of Directors of the Company held nine 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				
*Shu Yinbiao	—	—	—	—
Non-executive Directors				
Huang Jian	9	9	0	100%
Wang Yongxiang	9	7	2	77.77% (Attendance by proxy rate: 22.23%)
Mi Dabin	9	8	1	88.88% (Attendance by proxy rate: 11.12%)
Guo Hongbo	9	6	3	66.66% (Attendance by proxy rate: 33.34%)
Cheng Heng	9	9	0	100%
Lin Chong	9	7	2	77.77% (Attendance by proxy rate: 22.23%)
Independent Non-executive Directors				
Yue Heng	9	6	3	66.66% (Attendance by proxy rate: 33.34%)
Xu Mengzhou	9	9	0	100%
Liu Jizhen	9	5	4	55.55% (Attendance by proxy rate: 44.45%)
Xu Haifeng	9	8	1	88.88% (Attendance by proxy rate: 11.12%)
Zhang Xianzhi	9	7	2	77.77% (Attendance by proxy rate: 22.23%)
Resigned Directors				
Cao Peixi	9	7	2	77.77% (Attendance by proxy rate: 22.23%)
Liu Guoyue	3	3	0	100%
Fan Xiaxia	1	1	0	100%

Note: Mr. Shu Yinbiao was elected as Chairman on 30 January 2019, and did not attend relevant meetings in 2018.

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 2018 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 2018 of the Company held on 30 January 2018 were Liu Guoyue (Director, chief member of the Strategy Committee), Wang Yongxiang (Director), Xu Mengzhou (Independent Director), Zhang Xianzhi (Independent Director, chief member of the Remuneration and Appraisal Committee) and Xu Haifeng (Independent Director). The Directors who attended the Annual General Meeting for year 2017 of the Company held on 4 May 2018 were: Liu Guoyue (Director, chief member of the Strategy Committee), Mi Dabin (Director), Xu Mengzhou (Independent Director) and Zhang Xianzhi (Independent Director, chief member of the Remuneration and Appraisal Committee).

(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 acts as Chairman of the Board (Mr. Shu Yinbiao acts as Chairman of the Board after 30 January 2019) and Mr. Zhao Keyu acts as President 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

(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 2018 was convened on 12 March 2018, at which the Report of Total Wage Expenses was reviewed and the Company's arrangement for the total wage in 2018 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. On 28 June 2018, the second meeting for 2018 was held to consider and pass the Proposal on Adjusting the Allowances of Independent Directors of the Company, which was submitted to the Board for consideration and approval.

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
2018 First Meeting of the Remuneration and Appraisal Committee of the Ninth Session of the Board of Directors	2018.3.12	Zhang Xianzhi, Liu Guoyue, Guo Hongbo, Cheng Heng, Yue Heng, Liu Jizhen, Xu Haifeng	/
2018 Second Meeting of the Remuneration and Appraisal Committee of the Ninth Session of the Board of Directors	2018.6.28	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, 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.

The Nomination Committee of the Board operates normally under the Detailed Rules on the Work of the Nomination Committee of the Company. On 29 March 2018, the Committee held its first meeting for 2018, at which relevant information regarding the candidates of the Vice President of the Company was examined and the Review Report on the Qualification of the Candidates of the Vice President of the Company was prepared. On 30 July 2018, the Committee held its second meeting for 2018, at which relevant information regarding the candidates of the President of the Company was examined and the Review Report on the Qualification of the Candidates of the President of the Company was prepared. On 10 December 2018, the Committee held its third meeting for 2018, at which relevant information regarding the candidates of Directors of the Company was examined and the Review Report on the Information of the Candidates of the Directors of the ninth session of the Board of Directors was prepared; the Committee agreed to submit the report to the Board of the Company for consideration to provide reference and suggestions for the Board's decision-making. In the coming financial year, the Nomination Committee will carry out relevant work in accordance with the aforesaid detailed work rules based on actual conditions at appropriate times.

During the Reporting Period, the attendance of meeting of the Nomination 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
2018 First Meeting of the Nomination Committee of the Ninth Session of the Board of Directors	2018.3.29	Liu Jizhen, Mi Dabin, Lin Chong, Yue Heng, Xu Mengzhou, Zhang Xianzhi	/
2018 Second Meeting of the Nomination Committee of the Ninth Session of the Board of Directors	2018.7.30	Liu Jizhen, Mi Dabin, Lin Chong, Yue Heng, Xu Mengzhou, Zhang Xianzhi	/
2018 Third Meeting of the Nomination Committee of the Ninth Session of the Board of Directors	2018.12.10	Liu Jizhen, Mi Dabin, Lin Chong, Yue Heng, Xu Mengzhou, Zhang Xianzhi	/

(H) REMUNERATION OF AUDITORS

KPMG and KPMG Huazhen LLP were appointed as the international and domestic auditors of the Company for 2018, respectively. For the twelve months ended 31 December 2018, the total remuneration amounted to RMB45.45 million.

The 2019 First Extraordinary General Meeting held on 30 January 2019 agreed to appoint Ernst & Young and Ernst & Young Hua Ming LLP as the Company's international and domestic auditors for 2019 for the proposed remuneration of RMB26.50 million.

(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 seven meetings. As per Audit Committee's duties, the Audit Committee interviewed with the Company's legal advisors, external auditors, management and the relevant departments separately and exchanged ideas and communicated with them. With the understandings on the applicable laws and regulations of those jurisdictions in which the shares of the Company are listed, anti-fraud position in the Company, recruitment of staff, implementation and execution of internal control mechanism, audit work carried out by external auditors, and the preparation of the financial statement, the Audit Committee has rendered their views and opinions and made certain proposals.

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
2018 First Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2018.2.28	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2018 Second Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2018.3.12	Yue Heng, Xu Mengzhou, Xu Haifeng, Zhang Xianzhi	Liu Jizhen
2018 Third Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2018.4.23	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2018 fourth Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2018.7.30	Yue Heng, Xu Mengzhou, Xu Haifeng	Liu Jizhen, Zhang Xianzhi
2018 fifth Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2018.9.13	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2018 Sixth Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2018.10.22	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/
2018 Seventh Meeting of the Audit Committee of the Ninth Session of the Board of Directors	2018.12.10	Yue Heng, Xu Mengzhou, Liu Jizhen, Xu Haifeng, Zhang Xianzhi	/

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

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

The reporting responsibility statements made by the auditors of the Company in relation to the financial statements of the Company are set out in auditor's reports on pages 121 to 127.

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

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

**(L) STRATEGY COMMITTEE**

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

Members of the Strategy Committee of the Ninth Session of the Board of Directors comprise five directors (one has yet to be appointed), 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. As Mr. Liu Guoyue (former Chairman of the Strategy Committee) resigned, Chairman Shu Yinbiao assumes the roles of Chairman of the Strategy Committee for the time being.

On 23 April 2018, the Strategy Committee discussed and approved the Comprehensive Risk Management Report of Huaneng Power International, Inc. for 2018 and submitted the report to the Audit Committee of the Board of the Company on 30 July 2018 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
2018 First Meeting of the Strategy Committee of the Ninth Session of the Board of Directors	2018.4.23	Liu Guoyue, 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 2018 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 2018 to 31 December 2018:

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
Cao Peixi	A, B
Liu Guoyue	A, B
Fan Xiaxia	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
Zhu Daqing	A, B

Notes:

A: attending briefings and/or seminars.

B: reading seminar materials and updates on the latest developments of the Listing Rules and other applicable regulatory requirements.

All the Directors and Supervisors must submit their training records to the Company on a quarterly basis. The Company Secretary will keep the records for regular inspections. Each of the Directors and Supervisors of the Company have received more than 15 hours of trainings in 2018.

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 2018.

#### (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 2018, certain amendments were made to the Articles of Association, including the addition of provisions on the adoption of the accumulative voting system for election of Directors and Supervisors.

## 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 2018 in fulfilling its economic 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 2018.

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 478 million A shares. Currently, the total share capital of the Company amounts to approximately 15.7 billion shares. As at 31 December 2018, the Company’s controlling generation capacity was 105,991 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 dramatically facilitated the great-leap forward development of the power business and technological advancement of the power station equipment manufacturing industry in China, and also greatly 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.

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 2018, the Company was awarded “Listed Company with Outstanding Contribution to the 40th Anniversary of Reform and Opening-up” in the China Securities Golden Bauhinia Awards and “Best CEO of Listed Company” award in Sina Finance Golden Lion Awards. 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 weekly information disclosure meetings chaired by the Secretary to the Board 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 2018, The Company made 8 press releases and 324 announcements in both domestic and overseas markets, participated in 6 investment forums organised by investment banks within and outside China, and participated for the first time in the investors group reception day for listed companies in Beijing where it answered questions of investors online, thereby responding to investors’ concerns and requests more effectively.

## II. ECONOMIC 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.

The Company achieved outstanding results in marketing. Focusing on maintaining and increasing our market share, the Company improved its marketing system, strengthened research on policies, actively responded to power reform, vigorously promoted industry self-discipline, and carried out market transactions according to local conditions. As a result, its growth rate of power generation exceeded the national average, the equipment utilization hours increased by 257 hours year-on-year, and the percentage of power transaction in total settled electricity volume increased year-on-year. By vigorously exploring the heat supply market, the heat supply volume and the price increased year-on-year during the year.

The Company’s control over fuel costs was effective. Leveraging its advantage in scale of coal procurement, the Company stabilized coal supply long-term contracts and implemented a number of contract models which were in sync with the market price mechanism. The Company optimized the procurement structure of coal imports and increased the stable import of first-hand coal resources to stabilize market price. We effectively led market expectation by strengthening management of Seaborne coal and implementing measures to the curb price of market coal and procurement through tendering.

The Company strictly controlled financing costs. Focusing on preventing and mitigating financial risks, the Company successfully reduced leverage ratio and financing costs. In 2018, the Company issued diversified, low-interest financing products, including a total of RMB40 billion of super short-term financing bonds, RMB2.5 billion of private bonds and RMB5 billion of mid-term notes, with annual interest rates lower than the benchmark loan interest rate of the People’s Bank for the same period.

## III. SAFETY RESPONSIBILITY OF THE COMPANY

The Company has firmly established the concept of safe development and solidly carried out the activities for “Year of Implementing Safe Production Responsibility System for All Employees” to improve the production safety system on an ongoing basis. No major or significant safety issues occurred over the year and no accidents that endangered the safe operation of power grids occurred, therefore, the overall production safety was stable. The Company strengthened equipment safety management and intensified efforts in “reducing defects and control unplanned suspension”. As a result, 20 power plants recorded no unplanned suspension of operation.

The Company successfully provided service support for major events such as the Summit of the Forum on China-Africa Cooperation, Shanghai Cooperation Organisation Summit, and China International Import Expo.

#### IV. ENVIRONMENT RESPONSIBILITY OF THE COMPANY

The Company unwaveringly adhered to the basic national policy of saving resources and protecting the environment. We fully understood the importance, urgency and difficulties of establishing a green development approach and lifestyle, and put green development in a more prominent position. In strict compliance with the latest environmental protection laws of the PRC, the Company actively assumed the responsibility of environmental protection, pushed forward technical innovation, improved resources utilization efficiency, vigorously developed clean energy projects and improved energy conservation and emission reduction capabilities to drive the Company's low-carbon, recycling, and sustainable development.

Structural adjustments began to bear fruit. We increased the investment in low-carbon clean energy, approving 2,172 MW and putting into production of 652.1 MW throughout the year. Rudong H3 offshore wind power project successfully started construction and actively secured 900 MW resource of offshore wind power in Hainan.

Level of clean production was constantly improved. In 2018, the Company fully accomplished its annual targets as set forth in the Statement of Responsibility for Energy Saving and Environment Protection with no violation of the national environmental laws and regulations and no environmental pollution issue occurred. The Company focused on tough tasks in relation to pollution prevention and control such as implementation of ultra-low emission transformation, treatment of coal yards and ash yards, and wastewater treatment, maintaining the lead in the industry regarding pollution control effectiveness. In the National Thermal Power Efficiency Competition for Generating Units, the Company's 5 generating units were awarded the title of the best units in terms of coal consumption for power generation and 7 were awarded the title of the best units in terms of house consumption rate.

The Company constantly strived for technological innovation. It cooperated with Xi'an Thermal Power Research Institute and other entities to complete the project approval of 17 key scientific research projects such as "high-temperature steam pipeline welding technology for 650°C high-efficiency ultra-supercritical generating units", and commenced research for 20 key scientific research projects such as "optimization of system operation of environmental protection facilities with ultra-low emission of flue gas for coal-fired generating units". It studied the "zero emission" process route of desulfurization wastewater and promoted the "Technical Route of Spray Evaporation and Crystallization System for Desulfurization Wastewater with a Combination of High and Low Temperature Flue Gas in Luoyuan Power Plant" within the system.

The Company enhanced overseas asset management. It actively implemented the “Belt and Road” strategy, adhered to international development, and strengthened the risk prevention and control and process control of overseas projects, among which, the Sahiwal Coal-Fired Power Generating Project won the Outstanding Achievement Award of Pakistan and the Quality Engineering Award of China.

## 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, standardized the pay system and criteria and optimized the income allocation structure. The Company has fully implemented the annual salary system for major principals, and management of remuneration has become more regulated. Staff remuneration has been determined in accordance with the principles of “determining salaries based on the specific positions, receiving compensation based on performance, giving priority to efficiency and emphasizing fairness” and linked to individual performance, thereby establishing a scientific and effective incentive mechanism.

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. The Company is attentive of its staff's personal life, and has actively organized “warmth and care delivery” activities to provide living supports and assistance for staff in need.

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 general quality of the staff. The major types of training include orientation training, post training, skill training and international cooperation training.

(2) Development opportunities

The Company has emphasized provision of growth opportunities for employees so as to realize joint development of both employees and enterprise. To reinforce establishment of leadership, the Company has amended the Provisional Administration Measures on Leadership Establishment to further emphasize cultivation of management reserve. Besides, the Company has also enhanced the system under which human resources may be efficiently allocated to achieve the optimal arrangement of human resources. Qualifications facilitate learning; contests facilitate training; rotation and assessment facilitate the overall improvement of the staff. 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”. Zheng Weidong, an employee of the Company, was recognized as a Great Country Craftsmen by the National Federation of Trade Unions. Gao Xing won the 2018 National May 1st Labour Medal.

## VI. SOCIAL RESPONSIBILITY OF THE COMPANY

The Company has taken the establishment of a “three-colour” company as its corporate mission, i.e. a “red” company that serves the socialism country with the special characteristics of China, a “green” company with focuses on scientific and technological advancement and environment protection, and a “blue” company that keeps abreast of the latest development and is open world widely for innovative learning. The Company has capitalized on its capacity of a “three-color” company to guide positive culture, seek for sustainable development, serve the Country, benefit the society, proactively fulfil social responsibilities, create a sound internal and external environment, work together with all interested parties to promote economic and social development and share corporate development achievements in order to make its own contribution to construction of a harmonious socialist society.

The Company attaches great importance to fulfilling social responsibilities by implementing social responsibilities work to all aspects of production and operation. To ensure the supply of electricity and thermal power, all power plants have formulated corresponding emergency work plans and measures to ensure the safe and stable power and heat generation in important time slots.

The Company earnestly implemented the work plan of the Party Central Committee and the State Council on winning the battle against poverty and implementing the strategy of rural vitalization. Adhering to Huaneng’s mission of becoming a “three-colour” company, the Company innovated poverty alleviation models and carried out various types of charitable activities to actively give back to the society. In 2018, RMB19,860,200 was donated in the Company’s name, and the Company sent 49 cadres to stationed in villages. The poverty alleviation work of 18 secondary entities in the Company’s system in 47 poverty-stricken villages across China progressed comprehensively.

In the future, the Company will continue to strive for delivery of long-term, stable and increasing returns for shareholders, provision of adequate, reliable and environmentally friendly power for the society, and developing itself as a global first-class listed power producer with leading technology, excellent management, reasonable layout, optimized structure, industry synergy and remarkable efficiency.

## 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 8 overseas press releases and issued 324 announcements within and outside China in 2018.

## NOTE TO SHAREHOLDERS

### 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 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.

The Board proposed a dividend of RMB0.1 (inclusive of tax) per share for 2018. 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 RMB6.7088 and HK\$1 to RMB0.85466 respectively. All the dividends payable to shareholders shall be subject to shareholders' approval at the annual general meeting of the Company.

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 RMB56.173 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	—

\* 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 2018 will be subject to shareholders' approval at the annual general meeting.

## INVESTOR RELATIONS ACTIVITIES

### Conferences

In 2018, the Company organized large-group presentations with investment analysts in Hong Kong and one large-group presentation with investment analysts and fund managers in Beijing, 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 2018, 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.

### Visits by and general enquiries from investors

The Company received nearly 30 groups of institutional investors for company visits and nearly 100 phone enquiries from investors during the year.

### Investment forums

In 2018, the Company attended 6 large investment forums within or outside China, in which over 100 institutional investors were met.

## 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 2018.

### 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 2018.

For the twelve months ended 31 December 2018, the Company realized consolidated operating revenue of RMB169.551 billion, representing an increase of 11.21% compared to the same period last year, and net profit attributable to equity holders of the Company amounted to RMB734 million, representing a decrease of 53.51% as compared with the same period last year. Earnings per share amounted to RMB0.03. The Board is satisfied with the Company’s results last year.

The Board proposed to declare a cash dividend of RMB0.10 (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 2018

In 2018, 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, constantly optimised the power structure, realised increases in both quantity and price in power generation, achieved excellent marketing results, effectively controlled the fuel cost, and steadily carried out capital operation. 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 2018, the Company realized consolidated operating revenue of RMB169.551 billion, representing an increase of 11.21% compared to the same period last year. Net profit attributable to equity holders of the Company amounted to RMB734 million, representing a decrease of 53.51% as compared with the same period last year. Earnings per share amounted to RMB0.03.

As at the end of 2018, net assets (excluding non-controlling interests) per share of the Company amounted to RMB6.18, representing an increase of 7.11% as compared with the same period last year.

The Audit Committee of the Company convened a meeting on 18 March 2019 and reviewed the 2018 annual results of the Company.

## 2. Power Generation

Total power generated by the Company's domestic operating power plants for the year of 2018 on consolidated basis amounted to 430.457 billion kWh, representing a year-on-year increase of 9.12%. The electricity sold amounted to 405.943 billion kWh, representing a year-on-year increase of 9.30%. The annual average utilization hours of the Company's domestic power plants reached 4,208 hours, representing a year-on-year increase of 257 hours. The utilization hours of coal-fired power generating units was 4,495 hours, representing a year-on-year increase of 301 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 basis amounted to 216 million GJ, representing a year-on-year increase of 19.58%.

## 3. Cost Control

Throughout 2018, the Company procured an aggregate of 196 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 increase of unit procurement price of standard coal effectively, the Company controlled the fuel procurement costs in a better way, while the market price of coal remained high throughout the year. The unit fuel cost of our domestic power plants throughout the year occurred for sales of power was RMB236.89/MWh, representing a year-on-year increase of 4.85%.

## 4. Energy Saving and Environmental Protection

In 2018, the Company continued to lead its peers in terms of production safety, technical, economic and energy consumption indicators. The average equivalent availability ratio of coal-fired units of the Company's domestic power plants was 94.51% and its weighted average house consumption rate was 4.34%. The average yearly coal consumption rate of the Company's coal-fired units for the power generated was 288.45 grams/kWh. The Company's average coal consumption rate for power sold was 307.03 grams/kWh.

The Company attaches great importance to energy saving and environmental protection and has so far equipped all of its coal-fired generating units with desulphurization, denitrification and dust removal devices, with each indicator meeting the requirements for environmental protection. The Company also implemented ultra-low emission renovation as planned. In 2018, the Chinese government put forward the request to resolutely fight the tough battle against pollution. The State Council issued a three-year action plan on defending the blue sky, requiring industrial enterprises such as power plants to further reduce the total emission of major air pollutants. The Company's power plants continue to strengthen the operation and maintenance management of generating units and environmental protection facilities to ensure that we meet the requirements under the discharge permit.

#### 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 482 MW and 171 MW, respectively. As of 31 December 2018, the Company's controlled and equity-based generation capacity was 105,991 MW and 93,755 MW, respectively.

#### 6. Capital Operation

In October 2018, the Company successfully completed the non-public issuance of A shares. The Company issued a total of approximately 498 million A shares to seven placees at an issue price of RMB6.55 per share. The total proceeds from the issuance was RMB3.260 billion.

#### 7. Singapore Business

In 2018, Tuas Power Ltd. ("Tuas Power"), a wholly-owned subsidiary of the Company in Singapore, maintained safe and stable operation of the generation units throughout the year. The total market share of Tuas Power in the power generation market for the whole year was 21.1%, representing a year-on-year decrease of 0.8 percentage point. The net loss attributable to equity holders of the Company amounted to RMB695 million. In light of factors such as the adjustment to the fuel reserve policy by the Singapore Energy Market Authority, Tuas Power seized the favorable opportunity arising from the rise of fuel oil prices to dispose of some fuel oil inventories in 2018. After deducting fuel oil disposal losses and provision for deduction in price in an aggregate of RMB320 million, the loss has been reduced by RMB67 million as compared to that of 2017.

The Company continues to deliver promising performance in the capital markets. It was awarded "Listed Company with Outstanding Contribution to the 40th Anniversary of Reform and Opening-up" in the 2018 China Securities Golden Bauhinia Awards. Mr. Zhao Keyu, general manager of the Company, won the "Best CEO of Listed Company" award in Sina Finance Golden Lion Awards. Besides, the Company was on the list of "Platts Top 250 Global Energy Listed Companies Award" for ten consecutive years and ranked 135th in 2018.

#### PROSPECTS FOR 2019

In 2019, the Company will thoroughly implement development strategies and proactively seize market opportunities. Based on safety and environmental protection, focusing on quality and efficiency, and driven by reform and innovation, it will further promote quality improvement, efficiency enhancement, transformation and upgrading. The Company will focus on its objective of building an internationally leading power generation listed company and continuously improve its business performance, so as to create more values for the nation, the society and its shareholders.

In respect of power generation, the Company will endeavor to implement the state's plans on safe production and strengthen the accountability of all employees. It will strengthen grading-based risk management and control, hazard investigation and management, as well as anti-violation governance, so as to prevent personal injury and death. It will strengthen the maintenance of generating units and quality evaluation and assessment to maintain a sound overall excellence rate in the overhaul. It will concretely procure "no unplanned outage" of its power plants and unceasingly enhance the safe and stable operation of generating units. The Company will persistently improve the standard of smart power generation and clean power generation as well as diligently promote energy conservation reform and optimize its operation so as to reinforce its leading position in energy saving and environmental protection areas.

In respect of the power marketing, the Company will take a market-oriented approach and strengthen research on policies and trading mechanism to grasp market opportunities. It will create differentiated competitive advantages, optimize regional power generation structure, and strive to expand the scale of transactions. It will actively explore the spot market, accelerate the establishment of the decision-making process for bidding and quoting, the risk control mechanism and the information support system, and push forward the construction of integrated operation centres in pilot areas. It will centrally plan and coordinate cross-provincial and cross-regional transactions and strive to increase transaction prices. It will aim at delivering a domestic power generation of approximately 440.0 billion kWh and average utilization hours of around 4,200 hours for the year. In areas with low heat prices, it will make active efforts to increase the heat prices. It will further increase the recovery rate of electricity and heat fee.

In respect of fuel, the Company will reinforce policy research and market analysis, 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 capital market and give full play to its management advantages. In addition to ensuring the efficiency of the main financing channel (i.e. credit financing), the Company will seize the cost advantages presented by the proactive fiscal policy and prudent monetary policy to innovate new financing means and to expand the scale and channels of direct financing, so to ensure the security of funds while striving to reduce capital cost.

The Company will adhere to the new development philosophy, fully reinforce the management of market value and enhance its brand value. The Company will steadily introduce reforms and innovations to strengthen the dynamics for innovation in business development. The Company will safeguard the sound implementation of its various business plans by its solid and efficient basic management standards.

## SUMMARY OF FINANCIAL INFORMATION AND OPERATING RESULTS

Please refer to the Financial Highlights on page 8 for the summary of the operating results and assets and liabilities of the Company and its subsidiaries as at 31 December 2018 and for the accounting year ended 31 December 2018.

Please refer to pages 128 to 130 of the financial statements for the operating results of the Company and its subsidiaries for the accounting year ended 31 December 2018, which have been reviewed by the Company's Audit Committee.

## DISTRIBUTABLE RESERVE

The distributable reserve as at 31 December 2018 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 RMB56.173 billion paid.

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

In 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 2018, the Company proposed to declare a cash dividend of RMB0.10 (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 28 August 2019.

As the Company has yet to confirm the date of the 2018 annual general meeting, the record date(s) for determining the eligibility to attend and vote at the 2018 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 2018 annual general meeting. Such notice is expected to be issued to shareholders in April 2019.

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, 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 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 standard and amendments to published standards adopted by the Company and its subsidiaries for the current year, which are effective for accounting year beginning on 1 January 2018 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. 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 2018, the Company has invested RMB878,208,339.80 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 RMB2,369,269,864.93 (including interest).

#### **BONDS**

During the year, the Company successfully issued bonds with a total principal amount of RMB54.0 billion 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 2018.

#### **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.

#### **RESERVES**

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

#### PRE-EMPTIVE RIGHTS

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

#### LARGEST SUPPLIERS AND CUSTOMERS

The five largest suppliers of the Company and its subsidiaries for 2018 were China Huaneng Group Fuel Co., Ltd., Shanxi Yangquan Coal Industry (Group) Company Limited, Jinneng Group Co., Ltd., China Energy Investment Corporation Limited and China National Coal Group Corporation respectively. The total purchase from them amounted to approximately RMB41.679 billion, representing approximately 31.5% of the total coal 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 2018 were State Grid Shandong Electric Power Company, State Grid Jiangsu Electric Power Company, State Grid Zhejiang Electric Power Company, Guangdong Power Grid Corporation and State Grid Henan Electric Power Company. The five customers accounted for approximately 49.5% of the operating revenue for the year.

None of the directors, supervisors of the Company and their respective close associates (as defined under 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 2018.

#### CONTINUING CONNECTED TRANSACTION AND CONNECTED TRANSACTION

The following are the major continuing connected transactions and connected transactions of the Company in 2018 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”). HIPDC, as the controlling shareholder of the Company, holds 32.28% of the total issued share capital of the Company. Huaneng Group holds a 75% direct interest and a 25% indirect interest in HIPDC. In addition, Huaneng Group holds a 9.91% direct equity interest in the Company, a 3.01% indirect equity interest in the Company through China Hua Neng Group Hong Kong Limited, a wholly-owned subsidiary of Huaneng Group, and a 0.47% 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 13 December 2017 and the circular dated 12 January 2018 published by the Company, particulars of which are summarized as follows:

- Huaneng Group Framework Agreement was entered into between the Company and Huaneng Group on 12 December 2017 for a term commencing on 1 January 2018 and expiring on 31 December 2018. Pursuant to the
- (i) 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 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 2018, the annual cap of the purchase of ancillary equipment and parts was RMB1.6 billion (inclusive of value-added tax (“VAT”). The actual transaction amount for the year ended 31 December 2018 was RMB187 million (inclusive of VAT) and RMB177 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 for the same or similar type of coal supply or transportation services. The payment of the consideration will be settled in cash in arrears, or in accordance with the payment terms agreed by the relevant parties in the contracts to be entered into pursuant to the Framework Agreement.

For the year ended 31 December 2018, the annual cap of the purchase of fuel and transportation services was RMB35.9 billion (inclusive of VAT). The actual transaction amount for the year ended 31 December 2018 was RMB27.448 billion (inclusive of VAT) or RMB23.874 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 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 2018, the annual cap of the leasing of facilities, land and office spaces was RMB300 million. The actual transaction amount for the year ended 31 December 2018 was RMB234 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 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 2018, the annual cap of the purchase of technical services, engineering contracting services and other services was RMB2.1 billion (inclusive of VAT), of which RMB1.475 billion being the fees for the technical services, engineering contracting services and other services and RMB625 million being the fees for the operation/production and related coastal port supportive services. The actual transaction amount for the year ended 31 December 2018 was RMB1,212 million (inclusive of VAT) or RMB1,127 million (exclusive of VAT).

Provision of entrusted sale services by the Company and its subsidiaries for 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 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 by the Company to 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 2018, the annual cap of the provision of entrusted sale services was RMB900 million (inclusive of VAT). The actual transaction amount for the year ended 31 December 2018 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 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 2018, the annual cap of the sales of products was RMB3.6 billion. The actual transaction amount for the year ended 31 December 2018 was RMB739 million.

Purchase 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 2018, the annual cap of the purchase of electricity was RMB900 million (inclusive of VAT). The actual transaction amount for the year ended 31 December 2018 was RMB0 million (inclusive of VAT) or RMB0 million (exclusive of VAT).

Sale 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 2018, the annual cap of the sale of electricity was RMB100 million. The actual transaction amount for the year ended 31 December 2018 was RMB24 million (inclusive of VAT).

Purchase of heat from 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 2018, the annual cap of the purchase of heat was RMB800 million. The actual transaction amount for the year ended 31 December 2018 was RMB76 million (inclusive of VAT) or RMB61 million (exclusive of VAT).

Huaneng Finance Framework Agreement was entered into between the Company and Huaneng Finance on 5 (ii) 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 2018 to 31 December 2018, 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 2018, the maximum balance of deposits placed by the Company and its subsidiaries with Huaneng Finance on a daily basis was RMB12.999 billion.

(iii) Tiancheng Leasing 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 2018 to 31 December 2018, the maximum daily balances of the Lease Principal were estimated to be RMB12 billion and the Lease Interest for 2018 was set at RMB800 million. For the year ended 31 December 2018, the maximum daily balances of the Lease Principal between the Company and its subsidiaries and Tiancheng Leasing was RMB4.267 billion, and the Lease Interest was RMB145 million.

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

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

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

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

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

## CONNECTED TRANSACTIONS

### 1. Connected Transaction Regarding Capital Increase in Tiancheng Leasing

On 12 February 2018, the Company entered into a capital increase agreement with the existing shareholders of Huaneng Tiancheng Financial Leasing Co., Ltd. (“Tiancheng Leasing”), pursuant to which the Company and the existing shareholders of Tiancheng Leasing agreed to subscribe by way of cash for the new registered capital of Tiancheng Leasing pro rata to their respective proportion of shareholding in Tiancheng Leasing. The Company paid to Tiancheng Leasing an amount of not more than RMB270 million as the consideration of the capital increase, which sum was funded by the Company’s internal cash resources.

Huaneng Group holds a 61.22% equity interest in Huaneng Capital Services Company Limited (“Huaneng Capital”), a direct 49.77% equity interest in Huaneng Renewables Corporation Limited (“Huaneng Renewables”), and a 2.62% indirect equity interest in Huaneng Renewables through Huaneng Capital, and a 56% equity interest of Huaneng Lancang River Hydropower Co., Ltd. (“Huaneng Lancang River”). Huaneng Capital, Huaneng Renewables and Huaneng Lancang River are the controlled subsidiaries of Huaneng Group, whereas Huaneng Renewables HK is the wholly-owned subsidiary of Huaneng Renewables. China Hua Neng Group Hong Kong Limited (“Hua Neng HK”) is a wholly-owned subsidiary of Huaneng Group. Pursuant to the Hong Kong Listing Rules, Huaneng Group is a connected person of the Company. Huaneng Capital, Hua Neng HK, Huaneng Lancang River, Huaneng Renewables and Huaneng Renewables HK involved in the Capital Increase are all associates of Huaneng Group. Accordingly, the capital increase constituted a connected transaction of the Company.

Given the successive expansion in the business scale of Tiancheng Leasing, further capital increase could greatly enhance the business expansion and the external financing capability of Tiancheng Leasing, which was conducive to consolidate its edges in business areas and better cope with market competition. Following completion of the capital increase, the Company’s proportion of shareholding in Tiancheng Leasing remained unchanged at 20%.

For details on the above transaction, please refer to the Company’s announcements dated 13 February 2018.

### 2. Acquisition of the equity interests in Liaocheng Thermal Power, Laizhou Wind Power, Laiwu Thermal Power and Laiwu Power Generation

On 31 July 2018, Huaneng Shandong Power Generation Limited (“Shandong Company”) (a subsidiary of the Company) and Huaneng Taishan Power Generation Limited (“Taishan Power”) (a subsidiary of Huaneng Group) entered into the Transfer Agreement, pursuant to which Shandong Company shall acquire from Taishan Power (i) 75% interests in the registered capital of Shandong Huaneng Liaocheng Thermal Power Company Limited (“Liaocheng Thermal Power”), (ii) 80% interests in the registered capital of Shandong Huaneng Laizhou Wind Power Generation Company Limited (“Laizhou Wind Power”), (iii) 80% interests in the registered capital of Shandong Huaneng Laiwu Thermal Power Company Limited (“Laiwu Thermal Power”), and (iv) 15% interests in the registered capital of Huaneng Laiwu Power Generation Limited (“Laiwu Power Generation”) at the consideration of RMB1,800,020,000. Upon completion of the Transfer, Liaocheng Thermal Power, Laizhou Wind Power, and Laiwu Thermal Power will become subsidiaries of Shandong Company (Laiwu Power Generation is already a subsidiary of the Company).

The Company holds an 80% equity interest in Shandong Company and Huaneng Group holds a 56.53% indirect interest in Taishan Power through Huaneng Energy and Transportation (Holding) Company Limited (“HETHC”). HETHC is an associate of Huaneng Group. According to the Hong Kong Listing Rules, the Transfer constitutes a connected transaction of the Company.

The Transfer is the specific implementation of Huaneng Group’s undertaking to avoid horizontal competition with the Company, which is conducive for the Company to further expand its scale, increase market share and enhance the Company’s competitiveness.

For details on the above transaction, please refer to the Company’s announcements dated 31 July 2018.

### 3. Connected Transaction Regarding Formation of Joint Venture

On 23 October 2018, Jiangsu Sub-Company of the Company entered into the joint venture and co-operation agreement with Hua Neng HK and CSIC Haizhuang (Beijing) Renewables Energy Investment Co., Ltd. (“Haizhuang Renewables”). Pursuant to the terms and conditions of the joint venture and co-operation agreement, the Company would jointly establish Huaneng Shengdong Rudong Offshore Wind Power Co., Ltd. (“Rudong Wind Power”) with Hua Neng HK and Haizhuang Renewables. The Company would subscribe for the registered capital of no more than RMB790 million by cash with its own fund; Hua Neng HK would subscribe for the registered capital of RMB200 million (or its equivalent) by cash; and Haizhuang Renewables would subscribe for the registered capital of RMB10 million by injecting net assets of its wholly-owned subsidiary Shengdong Rudong Offshore Wind Power Co., Ltd. with value of RMB10 million after valuation.

Hua Neng HK is a wholly-owned subsidiary of Huaneng Group. Hua Neng HK is an associate of Huaneng Group. According to the Hong Kong Listing Rules, Hua Neng HK is a connected person of the Company, the transaction constitutes a connected transaction of the Company.

The establishment of Rudong Wind Power could help increase the portion of clean renewable energy installed capacity of the Company, further optimize the Company’s installed capacity structure and make a positive contribution to adjusting power source structure of the Company. Upon completion of the transaction, the Company, Hua Neng HK and Haizhuang Renewables would hold 79%, 20% and 1% of equity interests, respectively, in Rudong Wind Power.

For details on the transaction, please refer to the Company’s announcement dated 24 October 2018.

In accordance with the requirements of Rule 14.55 & 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 of which the profitability should have been improved and meet with the requirements for injecting into a listed company (such as those assets with clear titles,

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the injection of which should not reduce the earnings per share of Huaneng Power, of no material non-compliance issues, with positive effect on preservation of and value appreciation of state owned assets, and waiver of pre-emptive rights being obtained from other shareholders of the assets), so as to support a sustainable and stable development of the Company; 4. Huaneng Group would continue to perform each of its aforesaid undertakings in order to support the development of its subordinated listed companies. The undertaking time 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.

Huaneng Group will continue to perform the undertaking as made previously that it will procure relevant parties such as Huaneng Energy and Transportation (Holding) Company Limited to inject non-listed conventional energy assets located in Shandong to the Company after completion of the significant asset disposal transaction announced on 30 September 2017 by Shandong Xinneng Taishan Power Generation Co., Ltd.. On 31 July 2018, Taishan Power (a holding subsidiary of Huaneng Energy and Transportation (Holding) Company) and Shandong Company (a holding subsidiary of the Company) entered into an agreement, pursuant to which Taishan Power shall transfer the power plants purchased from Xinneng Taishan to Shandong Company in order to perform such undertaking made by Huaneng Group.

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 20 March 2019 (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 Jiexiang Power Generation Limited, Huaneng Jining Canal Power Generation Limited, Huaneng Liaocheng Thermal Power Limited and Huaneng Yantai Power Generation Limited (which was transferred as Huaneng Shandong Power Generation Co., Ltd. Yantai Power Plant since September 2018 (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. For 2018, 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 2018
Huaneng Laiwu Power Generation Limited	80.00%	57,698.23
Huaneng Jiexiang Power Generation Limited	50.00%	4,869.78
Huaneng Jining Canal Power Generation Limited	98.35%	17,122.24
Huaneng Liaocheng Thermal Power Limited	75.00%	7,320.51
Shandong Power Generation Co., Ltd. Yantai Power Plant	100.00%	4,867.51

According to the the specific audit report provided by KPMG Huazhen LLP, the aggregate difference between the actual net profit/(loss) (net of the non-recurring items) and the forecasted net profit for 2018 for the Profit Forecast Companies was RMB807.165 million. As the Actual Net Profit of Each Profit Forecast Company for 2018 fell short of the forecasted net profit and according to the terms and compensation formula set out in the Profit Forecast Compensation Agreement, Huaneng Group should compensate the Company the sum of RMB550.832 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 sell, purchase or redeem any shares or other securities of the Company in 2018.

#### 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

#### 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 2018.

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

For the year ended 31 December 2018, 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 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 2018, 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 2018 on 18 March 2019 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 announcement, 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 2018, 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 SUBSTANTIAL SHAREHOLDERS

The following table sets forth the shareholdings of the top ten holders of the Company’s outstanding shares as at 31 December 2018:

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	4,068,667,659	25.92
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 Provincial Investment & Management Limited Liability Company	416,500,000	2.65
Fujian Investment & Development Group Co., Ltd.	321,814,185	2.05
Dalian Construction Investment Group Co., Ltd.	301,500,000	1.92
Liaoning Energy Investment (Group) Limited Liability Company	284,204,999	1.81

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

As at 31 December 2018, 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 and 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 (Note 3)	Domestic shares	1,629,264,402 (L)	Beneficial owner	10.38%(L)	14.81%(L)	—
China Huaneng Group (Note 4)	H shares	472,000,000 (L)	Beneficial owner	3.01%(L)	—	10.04%(L)
Blackrock, Inc. (Note 5)	H shares	341,903,694 (L)	Interest of controlled corporation	2.17%(L)	—	7.27%(L)
		35,354,000 (S)	Interest of controlled corporation	0.22%(S)	—	0.75%(S)
Citigroup Inc. (Note 6)	H shares	54,000 (L)	Person having a security interest in shares	0.0003%(L)	—	0.0011%(L)
		35,078,730 (L)	Interest of controlled corporation	0.22%(L)	—	0.74%(L)
		4,671,449 (S)	Interest of controlled corporation	0.02%(S)	—	0.09%(S)
		223,121,523 (L)	Approved lending agent	1.42%(L)	—	4.74%(L)

Luo Yi (Note 7)	H shares	476,108,000 (L)	Interest of controlled corporation	3.03%(L)	—	10.12%(L)
Qiu Guogen (Note 7)	H shares	476,108,000 (L)	Interest of controlled corporation	3.03%(L)	—	10.12%(L)

Notes:

(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, Huaneng Group holds 75% direct interests and 25% indirect interests in HIPDC.

(3) Of the 1,629,264,402 domestic shares, China Huaneng Group Co., Ltd. through its controlling subsidiary, Huaneng Finance, 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 1,944,000 shares and short position of 7,916,000 shares through cash settled unlisted derivatives by virtue of its control over a number of corporations.

(6) Citigroup Inc. was deemed to hold interests in long position of 6,137,320 shares and short position of 98,960 shares through physically settled listed derivatives, long position of 2,864,750 shares and short position of 492,400 shares through physically settled unlisted derivatives, and long position of 2,509,750 shares and short position of 142,000 through cash settled unlisted derivatives by virtue of its control over a number of corporations.

(7) Qiu Guogen, the spouse of Luo Yi, was deemed to hold interest in long position of 476,108,000 shares.

Save as stated above, as at 31 December 2018, 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 2018, 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 had 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 32% 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 52% of the total remuneration.

### (3) Payments on pension, etc.

Contributions for various pension schemes such as social insurances, corporate annuity and housing fund established by the Company for the Directors, Supervisors and senior management accounts for about 16% of the total remuneration.

According to the resolution at the general meeting, the Company pays each independent director a subsidy amounting to RMB60,000 (after tax) each year. The Company also reimburses the independent director for the expenses they incur in attending board meetings and general meetings and other reasonable expenses they incur while fulfilling their obligations under the Company Law and the Company's Articles of Association (including travelling expenses and administrative expenses). Besides these, the Company does not give the independent director any other benefit.

## STAFF HOUSING

The Company established a housing fund for the employees of the Company and its subsidiaries in accordance with the relevant regulations of the state and local governments.

## STAFF MEDICAL INSURANCE SCHEME

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

## RETIREMENT SCHEMES

The Company and its subsidiaries have implemented specified retirement contribution schemes in accordance with the relevant requirements of the state and the relevant 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 one extraordinary general meeting.

1. The Company's 2017 Annual General Meeting was held on 3 May 2018. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 4 May 2018.
2. The Company's 2018 First Extraordinary General Meeting was held on 30 January 2018. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 31 January 2018.

## DISCLOSURE OF MAJOR EVENTS

- On 15 October 2018, the Company completed the non-public issuance of A shares. The Company issued a total of 497,709,919 A shares to seven subscribers. The nominal value per share is RMB1.00. The issue price is RMB6.55 per share. The total proceeds raised from the Non-public Issuance of A Shares are RMB3,259,999,969.45. After deducting the costs of the Non-public Issuance of A Shares of RMB14,669,999.86, the net proceeds of the
1. Non-public Issuance of A Shares is RMB3,245,329,969.59. The proceeds will be invested in the Xiegang Gas Turbine Project in Guangdong, Dafeng Offshore Wind Power Project in Jiangsu, Mianchi Phoenix Mountain Wind Power Project in Henan, Longchi Wind Power Project in Anhui. As at 31 December 2018, RMB878,208,339.80 has been used.

- The Company held the seventeenth meeting of the ninth session of the Board of Directors on 30 January 2019 to
2. 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.
  3. The Company has reviewed and approved the proposal of appointment of President at the 14th meeting of the ninth session of the Board held on 31 July 2018, and appointed Mr. Zhao Keyu as President of the Company.

Due to change in work, Mr. Liu Guoyue (Director and President of the Company), tendered his resignation report to  
4. the Board of Directors of the Company on 15 May 2018, requesting resignation from the positions of Director and President of the Company.

Due to change in work, Mr. Fan Xiaxia (Director and Vice President) tendered his resignation report to the Board of  
5. Directors of the Company on 28 February 2018, requesting resignation from the positions of Director and Vice President of the Company.

Due to change in work, Mr. Zhu Daqing, an Employee Supervisor of the Company, tendered his resignation report  
to the Supervisory Committee of the Company on 30 October 2018. In accordance with relevant regulations of the  
6. Company, the employees of the Company have unanimously elected Mr. Zhang Xiancheng as an Employee Representative Supervisor of the ninth session of the Supervisory Committee 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 2018" in this annual report. In addition, discussions on the Company's environmental policies and performance, relationship with its major stakeholders, permitted indemnity provisions provided by the Company to its Directors and compliance with the relevant laws and regulations which have a significant impact on the Company are included in the sections headed "Management's Discussion and Analysis", "Corporate Governance Report" and "Social Responsibility Report" in this annual report. These discussions form part of this Report of the Board of Directors.

#### REQUIREMENTS UNDER THE ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORTING GUIDE

In 2018, in accordance with the requirements of the Hong Kong Stock Exchange's Environmental, Social and Governance Reporting Guide, the Company completed the preparation and disclosure of the Environmental, Social and Governance Report in a timely manner 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 2018 will be published on the website of the Company and the website of the Hong Kong Stock Exchange.

#### CODE OF CORPORATE GOVERNANCE PRACTICES

During the year, save as otherwise disclosed below, 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 2018, the Company and its subsidiaries did not have any designated deposit with any financial institutions within the PRC nor any overdue fixed deposit which could not be recovered.

#### DONATION

During the year, the Company made a donation of RMB19.8602 million.

#### LEGAL PROCEEDINGS

As at 31 December 2018, 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

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” and approve the  
1. 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.

Due to change in work, Mr. Liu Guoyue (Director and President of the Company), tendered his resignation report to  
2. the Board of Directors of the Company on 15 May 2018, requesting resignation from the positions of Director and President of the Company.

Due to change in work, Mr. Fan Xiaxia (Director and Vice President) tendered his resignation report to the Board of  
3. Directors of the Company on 28 February 2018, requesting resignation from the positions of Director and Vice President of the Company.

Due to change in work, Mr. Zhu Daqing (Employee Supervisor), tendered his resignation report to the Supervisory Committee of the Company on 30 October 2018. In accordance with relevant regulations of the Company, the employees of the Company have elected Mr. Zhang Xiancheng as an Employee Representative Supervisor of the ninth session of the Supervisory Committee of the Company.

#### ANNUAL GENERAL MEETING AND CLOSURE OF REGISTER

As the Company has yet to confirm the date of the 2018 annual general meeting, the record date(s) for determining the eligibility to attend and vote at the 2018 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 2018 annual general meeting. Such notice is expected to be issued to shareholders in April 2019.

#### AUDITORS

As approved at the 2017 annual general meeting, KPMG Huazhen LLP was appointed as the Company's domestic auditor for 2018 and U.S. 20F annual report auditor, and KPMG was appointed as the Company's Hong Kong auditor for 2018.

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  
Shu Yinbiao  
Chairman

Beijing, the PRC  
19 March 2019

## REPORT OF THE SUPERVISORY COMMITTEE

### TO ALL SHAREHOLDERS:

In 2018, 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. Members of the Supervisory Committee presented at all Board meetings and attended general meetings, acted honestly and in good faith, 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 the reporting period as follows:

### I. OVERALL EVALUATION ON THE COMPANY’S MANAGEMENT BEHAVIOUR AND PERFORMANCE IN 2018

The year 2018 was the opening year of the 19th National Congress and the 40th anniversary of reform and opening up. During the year, China’s economy was moving towards a high-quality development stage and remained generally stable, but there were changes in the otherwise stable economic environment that were alarming. Faced with the complicated and ever-changing market environment and the increasingly deepened industry reforms, the Board of Company carefully studied the situation and made rapid adjustment to strategies. The management team adhered to the principle of problem-oriented, bottom-line thinking and leading standards, and all staff across the Company worked diligently together and strictly implemented strategies, focusing and working strenuously on cost reduction and de-leveraging, target poverty alleviation, and the three tough battles against pollution. By further strengthening market awareness, reform awareness, innovation awareness and risk awareness, we effectively reduced costs and increased efficiency, ended and reduced losses, carried out capital operations, implemented structural adjustments, deepened optimization reform on management processes, strengthened party building, thereby solidly and effectively driving the Company’s high-quality development and successfully completed the 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 are in compliance with applicable laws and regulations such as the Company Law 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 five meetings during the year, of which four were held on-site and one via communication conference. At the meetings, the Supervisory Committee reviewed and examined 17 issues in 2018 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. Replacement and election of member of Supervisory Committee

On 30 October 2018, due to work relocation, Mr. Zhu Daqing, an Employee Supervisor of the Company, submitted his resignation report to the Supervisory Committee of the Company. Pursuant to the relevant regulations of the Company, the employees of the Company unanimously elected Mr. Zhang Xiancheng as the Employee Representative Supervisor of the ninth session of the Supervisory Committee of the Company. Supervisor Zhang Xiancheng assumed office on the same day to ensure the legal and compliant operation of the Company's Supervisory Committee.

### 3. 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 special trainings and follow-up trainings for directors and supervisors organized by the SSE and the relevant regulators. In 2018, the Supervisors of the Company have attended a total of five 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.

### III. PARTICULARS OF DISCHARGING DUTIES OF SUPERVISION AND ISSUING INDEPENDENT OPINIONS

#### 1. Legality of the Company's operations

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

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 2018, and carefully audited the final financial reports of the Company for 2018, the profit distribution plan of the Company for 2018, the annual report of the Company for 2018 and the auditor's reports for 2018 issued by the domestic and international auditors respectively at the annual meeting held on 19 March 2019.

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 2018. The domestic and international auditors of the Company have issued their audit report for the Company for 2018 which is unqualified and stated that there are no false statement, misleading representation or material omission.

### 3.Examining the use of funds raised by the Company

In 2018, the Supervisory Committee attached great importance to the implementation process and changes of the Board's resolution regarding the fund-raising activities, and attended the meeting to review the Board's resolution regarding changes in use of proceeds. On 11 December, the Supervisory Committee of the Company considered and approved the Proposal on Changing Certain Proceeds Investment Projects and Implementation Methods, the Proposal on the Use of Proceeds to Replace Previously Invested Self-Raised Funds, and the Proposal on the Use of Certain Idle Proceeds to the Temporarily Replenish Working Capital. The Supervisory Committee strictly complies 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.

The Supervisory Committee is of the view that the Company strictly abided by the relevant provisions of the Guidelines for the Supervision and Administration on Listed Companies No. 2 – Supervision and Administration Requirements for Listed Companies on the Management and Use of Proceeds and the Measures for the Management of Proceeds of Listed Companies on the Shanghai Stock Exchange, and change raised funds, and there was no disguised change in the investment of proceeds and damage to the interests of shareholders.

### 4.Checking on particulars of major acquisitions, disposal of assets and connected transactions

During the reporting period, the Supervisory Committee considered and passed four proposals regarding major acquisition, disposal of assets and connected transactions, namely “the Proposal relating to Acceptance by Shandong Company of the Transfer of Laiwu Power Interests, Laiwu Thermal Interests, Liaocheng Thermal Interests, Liaocheng Co-generation Interests, and Laizhou Wind Power Interests, the Proposal relating to Continued Connected Transactions with Huaneng Group in 2018, the Proposal relating to Continued Connected Transactions with Hebei Hanfeng in 2018, and the Proposal relating to the Provision of the Guaranteed by Shandong Company to Its Subsidiary”.

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 the fairness and reasonableness of the acquisition and disposal of the Company's assets and the considerations paid for relevant connected transactions. 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.

5. 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 on 13 March 2018 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.

6. Reviewing the Board's self-assessment report on internal control

At the annual Board meetings held on 13 March 2018, 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.

In 2019, the Supervisory Committee will further implement the new development philosophy, impose high-quality development requirements, and step up efforts to improve its own performance, and faithfully and diligently discharge their duties. Focusing on the four performance objectives of "safety, operation, development, and party building", it will endeavor to promote corporate restructuring and achieve breakthroughs in disposal of inefficient and ineffective assets, adhere to bottom-line thinking, enhance awareness of risks, and improve prevention and control capabilities, so as to safeguard and protect the legitimate interests of the Company and its shareholders, provide necessary assistance to general meetings and Board meetings and help to standardize and improve the Company's corporate governance, thereby making greater contribution to accelerating the building of a world-class listed power generation company with internationally competitiveness.

Supervisory Committee  
Huaneng Power International Inc

Beijing, the PRC  
19 March 2019

PROFILES OF DIRECTORS,  
SUPERVISORS and SENIOR MANAGEMENT

PROFILES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

Directors

SHU Yinbiao, aged 60, is the Chairman and Secretary of the Party Committee of the Company, the Chairman and the Secretary of the Leading Party Members' Group of Huaneng Group. 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.

HUANG Jian, aged 56, 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 53, is a Director of the Company, 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 was the Chairman of Huaneng Lancangjiang Hydropower Co., Inc. and the President of Yunnan branch of Huaneng Group. He graduated from Tsinghua University where he majored in hydraulic engineering and holds a postgraduate degree of master in engineering. He is a professor-grade senior engineer.

MI Dabin, aged 50, is a Director of the Company, the Vice President and a Standing Committee Member of the Party Committee of Hebei Construction & Investment Group Co., Ltd., the Chairman of Hebei Construction & Energy Investment Co., Ltd., the Chairman of Hebei Xingtai Power Generation Limited, the Chairman of Huihai Financing and Leasing Co., Ltd., and the Chairman of CIC Hebei Heat Cogeneration Co., Ltd.. He was 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 50, is a Director of the Company, the Chairman and the Secretary of the Party Committee of Liaoning Energy Investment (Group) Limited Liability Company, the director of Shenyang Jinshan Energy Limited, and the vice chairman of Liaoning Haitong New Energy Low-Carbon Industrial Equity Investment Fund Limited. He was the president and vice chairman of Liaoning Energy Investment (Group) Limited Liability Company. 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 55, 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., the Vice Chairman of Jiangsu Ligang Power Generating 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.

LIN Chong, aged 55, is a Director of the Company, the Vice President and a Member of CPC Committee of Fujian Investment & Development Group Co., Ltd., the Chairman of Zhongmin Offshore Wind Power 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 44, 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, the Councilor of Accounting Society of China and the Deputy Editor-in-Chief of CJAS magazine of Accounting Society of China. He was the Associate Professor, Professor, Dean and Doctorate Mentor of Accounting Department of Guanghua Management School of Peking University. He graduated from Tulane University in the United States with a doctor's degree in accounting.

XU Mengzhou, aged 68, is an Independent Director of the Company, a professor of RUC Law School of Renmin University of China (RUC), an Independent Director of Shandong Hualu-Hengsheng Chemical Co., Ltd., ENN Ecological Holdings Co. Ltd., and an Independent Director of iHandy Group (non-listed company). He served as a professor of International Studies of Renmin University of China. He graduated from the RUC, with a doctor's degree in Economic Laws.

LIU Jizhen, aged 67, is an Independent Director of the Company, 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, the Vice President of the Chinese Society for Electrical Engineering, the Vice President of the Chinese Society of Power Engineering, 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 and the President of North China Electric Power University. He is a professor, a doctoral supervisor and an academician of the Chinese Academy of Engineering.

XU Haifeng, aged 63, 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.

ZHANG Xianzhi, aged 61, is an Independent Director of the Company, a professor and a doctoral supervisor of Dongbei University of Finance and Economics. He is serving concurrently as independent director at CGN Nuclear Technology Development Co., Ltd., Dalian Zhiyun Automation Co., Ltd., Yingkou Port Liability Co., Ltd. and Dalian Tianbao Green Foods 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 with a major in industrial economics and holds a doctorate degree.

Supervisors

YE Xiangdong, aged 51, is the Chairman of the Supervisory Committee of the Company and the Vice President and a Member of the Leading Party Members' Group of Huaneng Group. He was the Executive Director and President of Huaneng Hulun Buir Energy Development Company Ltd. and the Chief Engineer 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 43, 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 Director 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 54, is a Supervisor of the Company and the Deputy Chief Accountant of HIPDC. She was the Deputy Manager of the Finance Department of the Company 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 52, is a Supervisor of the Company, the Chairman of Nantong Investment & Management Limited Company, and the Vice President of Nantong City Construction Group Co., Ltd.. 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 52, 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 54, 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.

Biographies of Senior Management

ZHAO Keyu, aged 52, is the President and Deputy Party Secretary of the Company. He was the Chief of the Planning and Development Department, Chief of Office, and Director and Secretary of the Party Office of Huaneng Group. 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.

ZHAO Ping, aged 56, is the Vice President and the Deputy Party Secretary of the Company. He graduated from Tsinghua University, majoring in thermal engineering, is a postgraduate with a master's degree in science. He is a professor-grade senior engineer. He enjoyed special government allowance of the State Council.

WU Senrong, aged 57, is currently the Vice President and a Member of Party Committee of the Company. He was a Member of the Party Committee and the Secretary of the Discipline Inspection commission of the Company. He graduated from the Economic Management School of Tsinghua University with an EMBA degree. He is a professor-grade senior engineer.

SONG Zhiyi, aged 58, is the Vice President and a Member of Party Committee of the Company. He graduated from the Guanghua Management Institute of Peking University, with an MBA degree. He is a senior engineer.

LI Jianmin, aged 57, is a Member of Party Committee and Vice President 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 56, 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 52, 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 Director of the 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 53, is currently 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.

Resigned Directors, Supervisors and Senior Management

CAO Peixi, aged 63, was the Chairman and the secretary of the Party Committee of the Company and the Chairman and the Secretary of the Leading Party Members' Group of Huaneng Group 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.

LIU Guoyue, aged 55, was a Director, the President and the Deputy Secretary of the Party Committee of the Company, the Vice President and a Member of the Leading Party Members' Group of Huaneng Group, an Executive Director of Huaneng International Power Fuel Limited Liability Company, the Chairman of Shanghai Times Shipping Limited Company, a Director of SinoSing Power Pte. Ltd., and the Chairman of Tuas Power Ltd., Tuas Power Supply Pte Ltd., Tuas Power Utilities Pte Ltd., Huaneng Shidaowan Nuclear Power Co., Ltd. and Huaneng Shangdong Shidaowan Nuclear Power Co., Ltd. during the reporting period. He graduated from North China Electric Power University, majoring in thermal engineering. He holds a Doctor's degree in engineering. He is a senior engineer.

FAN Xiaxia, aged 56, was a Director, the Vice President and the Secretary of the Party Committee of the Company, and also Vice President and a member of Leading Party Members' Group of Huaneng Group during the reporting period. He graduated from the Economic Management School of Tsinghua University with an EMBA degree. He is a senior engineer.

ZHU Daqing, aged 46, was a Supervisor and the Manager of Auditing Department of the Company during the reporting period. He was Deputy Manager of Finance Department of the Company. He graduated from the School of Economics and Management of Beijing Jiaotong University, majoring in industrial economics. He holds a doctor degree in economics. He is a senior accountant.

ZHOU Hui, aged 55, was the Vice President and a Member of the Party Committee of the Company during the reporting period. She was the Vice President and Chief Accountant of the Company. She graduated from Renmin University of China, majoring in Financial Accounting, and is a postgraduate with a master's degree in Economics. She is a senior accountant.

HE Yong, aged 60, was the Chief Engineer of the Company during the reporting period. He was the Deputy Chief Engineer of the Company. He graduated from Wuhan University, majoring in corporate management, is a postgraduate with a master's degree in management. He is a professor-grade senior engineer.

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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	Shu Yinbiao 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 Investor Relations P.O. Box 11258 Church Street Station New York NY 10286-1258 USA

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. 20 F Annual Report Auditors	KPMG Huazhen LLP 8/F., East 2 Office Tower, Oriental Plaza 1 East Chang An Avenue, Beijing, PRC Postcode: 100738
Hong Kong Auditors	KPMG 8/F Prince's Building 10 Charter Road Central, Hong Kong

#### LISTING INFORMATION

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

ADSs: The New York Stock Exchange, Inc.  
Ticker Symbol: HNP

A Shares: Shanghai Stock Exchange  
Stock Code: 600011

#### PUBLICATIONS

The Company's interim reports and annual reports (A share version and H share version) was published in August 2018 and April 2019, 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 2019. As the Company's A shares have already been issued and listed, the Company shall, in compliance of the relevant regulations of the China Securities Regulatory Commission and the Shanghai Stock Exchange, prepare quarterly reports. Copies of the interim and annual reports as well as the Form 20-F, once filed, will be available at:

Beijing                      Huaneng Power International, Inc.  
                                 Huaneng Building  
                                 6 Fuxingmennei Street  
                                 Xicheng District  
                                 Beijing  
                                 The People's Republic of China  
  
                                 Tel: (8610)-6322 6999  
                                 Fax: (8610)-6322 6888  
                                 Website: <http://www.hpi.com.cn>

Hong Kong                Wonderful Sky Financial Group Limited  
                                 9/F, The Center,  
                                 99 Queen's Road Central,  
                                 Hong Kong  
  
                                 Tel: (852) 2851 1038  
                                 Fax: (852) 2815 1352

Websites of the Company   <http://www.hpi.com.cn>  
   <http://www.hpi-ir.com.hk>

## GLOSSARY

Equivalent Availability Factor (EAF):	Percentage on duration of usable hours on generating units in period hour, i.e.  $\text{EAF} = \frac{\text{Available Hours (AH)} - \text{Equivalent Unit Derated Hours (EUNDH)}}{\text{Period Hour (PH)}} \times 100\%$
Gross Capacity Factor (GCF):	$\text{GCF} = \frac{\text{Gross Actual Generation (GAAG)}}{\text{Period Hour (PH)} \times \text{Gross Maximum Capacity (GMC)}} \times 100\%$
Weighted Average Coal Consumption Rate for Power Sold:	The standard of measurement on average consumption of coal for the production of every one kWh of electricity from a coal-fired generating unit. Unit: gram/kWh or g/kWh.
Weighted Average Coal Consumption Rate for Power Generated:	The standard of measurement on average consumption of coal for the generation of every one kWh of electricity from a coal-fired generating unit. Unit: gram/kWh or g/kWh.
Weighted Average House Consumption:	The rate of electricity consumption during power production versus power generating unit: %.
Utilization Hour:	The operation hour coefficient converted from actual gross power generation of generating units to maximum gross capacity (or fixed capacity).
Capacity Rate:	Ratio between average capacity and maximum capacity which indicates the difference in capacity. The larger the ratio, the more balanced the power production, and the higher the utilization of facilities.
Power Generation:	Electricity generated by power plants (generating units) during the Reporting Period, or “power generation”. It refers to the consumed generated electricity produced by generating units with power energy being processed and transferred, or the product of actual consumed electricity generated by generating units and actual operation hours of generating units.
Electricity Sold:	Electricity for consumption or production sold by power producers to customers or power-producing counterparts.

GW: Unit of power generation, =  $10^9\text{W}$ , gigawatt

MW: =  $10^6\text{W}$ , megawatt

kW: =  $10^3\text{W}$ , kilowatt

kWh: Unit of power, kilowatt hour

## INDEPENDENT AUDITOR'S REPORT

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

### OPINION

We have audited the consolidated financial statements of Huaneng Power International, Inc. (the "Company") and its subsidiaries (the "Group") set out on pages 128 to 337, which comprise the consolidated statement of financial position as at 31 December 2018, 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 2018 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"). 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 International Ethics Standards Board for Accountants Code of Ethics for Professional Accountants ("the IESBA Code") together with the ethical requirements that are relevant to our audit of the consolidated financial statements in the People's Republic of China and we have fulfilled our other ethical responsibilities in accordance with these requirements and the IESBA 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.

## KEY AUDIT MATTERS (Cont'd)

### Impairment of non-current assets

Refer to Notes 7, 11, 12, 13, 15 and 16 to the consolidated financial statements and the accounting policies in Note 2(l).

#### The key audit matter

As at 31 December 2018, the Group's non-current assets principally comprised property, plant and equipment, goodwill, power generation licenses, land use rights and mining rights.

Impairment losses for non-current assets for the year ended 31 December 2018 are significant in the context of the Group's consolidated financial statements.

Management assessed whether there was any impairment of the carrying values of goodwill, power generation licenses with indefinite useful lives and other non-current assets as at 31 December 2018 using value-in-use ("VIU") calculations for each smallest identifiable group of assets that generate independent cash flows (a cash-generating unit). Preparing the VIU calculations requires management to exercise significant judgement, particularly in relation to estimating future sales volumes and the related revenue growth rates, future on-grid tariffs, future capital expenditure and future fuel prices as well as in the estimation of the discount rates applied.

We identified impairment of non-current assets as a key audit matter because the carrying values of these assets are material to the consolidated financial statements and also because of the significant management judgement and estimation required in assessing potential impairment which could be subject to error or potential management bias.

#### How the matter was addressed in our audit

Our audit procedures to assess potential impairment of non-current assets included the following:

- assessing management's identification of cash-generating units ("CGUs") and the allocation of assets to each CGU with reference to our understanding of the Group's business and the requirements of the prevailing accounting standards;
- assessing management's VIU calculation for each CGU by comparing the assumptions adopted by management with our understanding of the Group's business and the industry in which the Group operates, in particular, for the assumptions relating to future sales volumes and the related revenue growth rates, future on-grid tariffs, future capital expenditure, future fuel prices, future other operating costs and the discount rates applied;
- challenging management's rationale for adopting cash flow projections, if the projection over a period greater than five years;
- engaging our internal valuation specialists to assess whether the discount rates applied in the VIU calculations were within the range adopted by other companies in the same industry;
- performing sensitivity analyses on the discount rates applied and other key assumptions adopted by management to assess what changes thereto, either individually or collectively, would result in a different conclusion being reached and assessing whether there were any indicators of management bias in the selection of key assumptions;
- comparing the actual results for the current year with management's estimates in their VIU

calculations for the previous year in order to assess the historical accuracy of the management's forecasting process.

## KEY AUDIT MATTERS (Cont'd)

### Recognition of deferred tax assets

Refer to Note 33 to the consolidated financial statements and the accounting policies in Note 2(w)(iii).

#### The key audit matter

As at 31 December 2018, the Group had recognised significant deferred tax assets in respect of the future benefit of deductible temporary differences and accumulated tax losses which management considered would probably be utilised or recovered in the future through the generation of future taxable profits by the relevant group entities or by set-off against deferred tax liabilities.

In addition, a significant amount of deferred tax assets had not been recognised at the reporting date due to the uncertainty of the relevant group entities being able to generate future taxable profits against which the tax losses may be utilised before they expire.

The recognition of deferred tax assets relies on the exercise of significant judgement by management in respect of assessing the sufficiency of future taxable profits and the probability of such future taxable profit being generated and future reversals of existing taxable temporary differences.

We identified the recognition of deferred tax assets as a key audit matter because of its significance to the consolidated financial statements and because of the significant management judgement and estimation required in the forecasting future taxable profits which could be subject to error or potential management bias.

#### How the matter was addressed in our audit

Our audit procedures to assess the recognition of deferred tax assets included the following:

- assessing and challenging the assumptions and judgements exercised by management in respect of the forecasts of future taxable profits by comparing the assumptions adopted by management with our understanding of the Group's business and the industry in which the Group operates, in particular, for the assumptions relating to future sales volumes, future on-grid tariffs, future fuel prices and future other operating costs;
- considering the historical accuracy of forecasts of future taxable profits made by management by comparing the actual taxable profits for the current year with management's estimates in the forecasts made in the previous year and assessing whether there were any indicators of management bias in the selection of key assumptions;
- assessing whether the Group's disclosures in the consolidated financial statements of the application of judgement in estimating recognised and unrecognised deferred tax asset balances appropriately reflect the Group's deferred tax position with reference to the requirements of the prevailing accounting standards.

## KEY AUDIT MATTERS (CONT'D)

### Subsequent measurement of contingent consideration in relation to the acquisition of subsidiaries

Refer to Note 16 to the consolidated financial statements and the accounting policies in Note 2(c)(ii).

#### The key audit matter

#### How the matter was addressed in our audit

During the year ended 31 December 2017, the Group completed the acquisition of 80% equity interests in Huaneng Shandong Power Generation Co., Ltd. ("Shandong Power"), 100% equity interests in Huaneng Jilin Power Generation Co., Ltd. and Huaneng Heilongjiang Power Generation Co., Ltd., and 90% equity interests in Huaneng Henan Zhongyuan Gas Power Generation Co., Ltd. from China Huaneng Group Co., Ltd. (the "Acquisition") and paid a total consideration of RMB15,501 million (after certain adjustments). In addition, according to the profit compensation agreement associated with the Acquisition, China Huaneng Group Co., Ltd. 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, i.e. from year 2017 to 2019.

The amount of profit compensation from China Huaneng Group Co., Ltd. in relation to year 2019 was reassessed by the directors based on independent forecast prepared by external valuers which required the exercise of significant judgement and estimation, particularly in relation to the forecast of future performance of the subsidiaries concerned, and was remeasured as at 31 December 2018, which is subject to future adjustment.

We identified the subsequent measurement of such contingent consideration in relation to the Acquisition as a key audit matter because of the significant impact on the consolidated financial statements and because the forecast of profit compensation amount can be inherently subjective and requires significant judgement and estimation which increases the risk of error or potential management bias.

Our procedures to assess the subsequent measurement of contingent consideration in relation to the Acquisition included the following:

- inspecting the agreements related to the Acquisition and evaluating management's accounting treatment related to the profit compensation with reference to the terms set out in these agreements;
- obtaining and inspecting the forecast assessment prepared by the external valuers engaged by the directors and on which the directors' assessment of the profit compensation forecast were based;
- assessing the external valuers' qualifications experience and expertise and considering their objectivity and independence;
- challenging the key assumptions adopted in the assessment of the profit compensation forecast of year 2019, including the assumptions relating to sales volumes, on-grid tariffs, fuel prices and other operating costs by comparing with the actual results for the current year, and checking the consistency with those assumptions adopted in non-current assets impairment test.

**INFORMATION OTHER THAN THE CONSOLIDATED FINANCIAL STATEMENTS AND AUDITOR'S REPORT THEREON**

The directors are responsible for the other information. The other information comprises all 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 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 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 either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

The directors 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. This 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.

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.

AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS  
(CONT'D)

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 communicate with them all relationships and other matters that may reasonably be thought to bear on our independence and, where applicable, related safeguards.

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 Ho Ying Man Simon.

Certified Public Accountants

8<sup>th</sup> Floor, Prince's Building  
10 Chater Road  
Central, Hong Kong

19 March 2019

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## CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2018

(Prepared in accordance with International Financial Reporting Standards)

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

		For the year ended 31 December	
	Note	2018	2017 (Note i)
Operating revenue	5	169,550,624	152,459,444
Tax and levies on operations		(1,788,998 )	(1,376,312 )
Operating expenses			
Fuel	6	(105,736,173 )	(92,737,304 )
Maintenance		(4,393,335 )	(4,347,723 )
Depreciation		(20,466,423 )	(20,180,830 )
Labor		(11,845,280 )	(10,590,084 )
Service fees on transmission and transformer facilities of HIPDC		(96,721 )	(95,894 )
Purchase of electricity		(4,678,431 )	(3,787,032 )
Others	6	(10,430,998 )	(10,160,875 )
Total operating expenses		(157,647,361 )	(141,899,742 )
Profit from operations		10,114,265	9,183,390
Interest income		234,604	198,906
Financial expenses, net			
Interest expense	6	(10,486,412 )	(9,749,004 )
Exchange (loss)/gain and bank charges, net		(160,899 )	144,359
Total financial expenses, net		(10,647,311 )	(9,604,645 )
Share of profits less losses of associates and joint ventures	8	1,823,415	425,215
Gain on fair value changes of financial assets/liabilities	6	726,843	856,786
Other investment (loss)/income	6	(278,669 )	1,742,081
Profit before income tax expense	6	1,973,147	2,801,733
Income tax expense	35	(643,173 )	(1,217,526 )
Net profit		1,329,974	1,584,207

	For the year ended 31 December	
	2018	2017 (Note i)
Other comprehensive income/(loss), net of tax		
Items that will not be reclassified to profit or loss:		
Fair value changes of other equity instrument investments	1,036	—
Share of other comprehensive loss of investees accounted for under the equity method	(18,858 )	—
Items that may be reclassified subsequently to profit or loss:		
Fair value changes of available-for-sale financial assets (Note ii)	—	281,663
Gain on disposal of available-for-sale financial assets reclassified to profit or loss	—	(1,135,356)
Share of other comprehensive (loss)/income of investees accounted for under the equity method	(241,587)	121,208
Effective portion of cash flow hedges	(503,182)	62,853
Translation differences of the financial statements of foreign operations	343,702	84,418
Other comprehensive loss, net of tax	(418,889)	(585,214 )
Total comprehensive income	911,085	998,993

		For the year ended 31 December	
	Note	2018	2017 (Note i)
Net profit attributable to:			
– Equity holders of the Company		734,435	1,579,836
– Non-controlling interests		595,539	4,371
		1,329,974	1,584,207
Total comprehensive income/(loss) attributable to:			
– Equity holders of the Company		340,101	1,023,118
– Non-controlling interests		570,984	(24,125 )
		911,085	998,993
Earnings per share attributable to the shareholders of the Company (expressed in RMB per share)			
– Basic and diluted	36	0.03	0.10

Note:

(i) The Company and its subsidiaries have initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated. See Note 2(b).

This amount arose under the accounting policies applicable prior to 1 January 2018. As part of the opening balance (ii) adjustments as at 1 January 2018 the balance of this reserve has been reclassified to fair value reserve (non-recycling) and will not be reclassified to profit or loss in any future periods. See Note 2(b)(i).

The notes on pages 141 to 337 are an integral part of these financial statements.

## CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AS AT 31 DECEMBER 2018

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

		As at 31 December	
	Note	2018	2017
			(Note)
<b>ASSETS</b>			
Non-current assets			
Property, plant and equipment	7	282,061,272	284,328,093
Investments in associates and joint ventures	8	19,553,964	19,517,623
Investment property		232,554	217,406
Available-for-sale financial assets	10	—	1,604,993
Other equity instrument investments	10	2,083,419	—
Land use rights	11	11,450,034	11,264,785
Power generation licenses	12	4,014,972	3,916,246
Mining rights	13	1,511,186	1,646,271
Deferred income tax assets	33	2,282,585	2,300,091
Derivative financial assets	14	5,970	75,328
Goodwill	15	15,572,227	15,484,120
Other non-current assets	16	19,336,059	7,696,845
Total non-current assets		358,104,242	348,051,801
Current assets			
Inventories	17	9,543,691	7,385,411
Other receivables and assets	18	6,455,911	6,081,517
Accounts receivable	19	29,278,938	25,447,595
Contract assets	5(c)	11,058	—
Derivative financial assets	14	28,735	258,364
Bank balances and cash	37	15,832,788	9,364,823
Assets held for sale	20	647,948	—
Total current assets		61,799,069	48,537,710
Total assets		419,903,311	396,589,511

	Note	As at 31 December 2018	2017 (Note)
EQUITY AND LIABILITIES			
Capital and reserves attributable to equity holders of the Company			
Share capital	22	15,698,093	15,200,383
Other equity instruments	23	10,077,396	5,068,550
Capital surplus		26,194,931	24,114,400
Surplus reserves	24	8,140,030	8,140,030
Currency translation differences		(340,337 )	(675,054 )
Retained earnings		34,665,305	35,793,257
		94,435,418	87,641,566
Non-controlling interests		21,686,252	19,973,038
Total equity		116,121,670	107,614,604
Non-current liabilities			
Long-term loans	26	129,548,161	107,030,958
Long-term bonds	27	25,984,663	15,993,833
Deferred income tax liabilities	33	3,866,159	4,566,680
Derivative financial liabilities	14	231,308	148,486
Other non-current liabilities	28	5,945,136	5,284,462
Total non-current liabilities		165,575,427	133,024,419

		As at 31 December	
	Note	2018	2017 (Note)
EQUITY AND LIABILITIES (Continued)			
Current liabilities			
Accounts payable and other liabilities	29	35,138,680	38,900,132
Contract liabilities	5(c)	1,976,647	—
Taxes payable	30	1,474,437	1,302,210
Dividends payable		1,267,833	1,735,426
Derivative financial liabilities	14	313,984	62,178
Short-term bonds	31	11,541,454	11,068,357
Short-term loans	32	61,038,772	80,251,348
Current portion of long-term loans	26	20,620,849	18,098,458
Current portion of long-term bonds	27	3,993,479	3,997,033
Current portion of other non-current liabilities	28	475,646	535,346
Liabilities held for sale	20	364,433	—
Total current liabilities		138,206,214	155,950,488
Total liabilities		303,781,641	288,974,907
Total equity and liabilities		419,903,311	396,589,511

Note: The Company and its subsidiaries have initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated. See Note 2(b).

These financial statements were approved for issue by the Board of Directors on 19 March 2019 and were signed on its behalf.

Shu Yinbiao    Huang Jian  
Director        Director

The notes on pages 141 to 337 are an integral part of these financial statements.

## CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

FOR THE YEAR ENDED 31 DECEMBER 2018

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	Attributable to equity holders of the Company					Available-for-sale financial assets revaluation reserve	Other capital reserve	Subtotal	Surplus reserve	Current transfe
	Share capital	Other equity instruments	Share premium	Hedging reserve	Capital surplus					
Balance as at 1 January 2017	15,200,383	—	22,226,889	(24,084 )	1,445,912	1,111,614	24,760,331	8,140,030	(78	
Profit for the year ended 31 December 2017	—	68,600	—	—	—	—	—	—	—	—
Other comprehensive income/(loss):										
Fair value changes of available-for-sale financial assets – gross	—	—	—	—	375,742	—	375,742	—	—	—
Gain on disposal of available-for-sale financial assets reclassified to profit or loss-gross	—	—	—	—	(1,581,994 )	—	(1,581,994 )	—	—	—
Fair value changes of and gain on disposal of available-for-sale financial assets – tax	—	—	—	—	352,646	—	352,646	—	—	—
Shares of other comprehensive income of investees – accounted for under the equity method – gross	—	—	—	—	162,858	—	162,858	—	—	—
Shares of other comprehensive income of	—	—	—	—	(41,650 )	—	(41,650 )	—	—	—

investees – accounted for under the equity method – tax										
Changes in fair value of effective portion of cash flow hedges – gross	–	–	–	85,558	–	–	85,558	–	–	–
Changes in fair value of effective portion of cash flow hedges – tax	–	–	–	(16,239 )	–	–	(16,239 )	–	–	–
Cash flow hedges recorded in shareholders’ equity reclassified to inventories – gross	–	–	–	(109,817)	–	–	(109,817 )	–	–	–
Cash flow hedges recorded in shareholders’ equity reclassified to inventories – tax	–	–	–	18,669	–	–	18,669	–	–	–
Cash flow hedges recorded in shareholders’ equity reclassified to exchange gain and bank charges, net – gross	–	–	–	(2,657 )	–	–	(2,657 )	–	–	–
Cash flow hedges recorded in shareholders’ equity reclassified to exchange gain and bank charges, net – tax	–	–	–	452	–	–	452	–	–	–
Cash flow hedges recorded in shareholders’ equity reclassified to interest expense – gross	–	–	–	107,233	–	–	107,233	–	–	–
Cash flow hedges recorded in shareholders’ equity reclassified to interest expense – tax	–	–	–	(20,346 )	–	–	(20,346 )	–	–	–
	–	–	–	–	–	–	–	–	–	112

Currency  
translation  
differences  
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	Attributable to equity holders of the Company							Subtotal	Surplus reserve	Current translation differences
	Capital surplus				Available-for-sale financial assets					
	Share capital	Other equity instruments	Share premium	Hedging reserve	revaluation reserve	Other capital reserve				
Total comprehensive income/(loss) for the year ended 31 December 2017	–	68,600	–	62,853	(732,398)	–	(669,545)	–	–	112,820
Business combination	–	–	–	–	–	–	–	–	–	–
Issue of perpetual corporate bonds	–	4,999,950	–	–	–	–	–	–	–	–
Dividends relating to 2016	–	–	–	–	–	–	–	–	–	–
Net capital injection from non-controlling interests of subsidiaries	–	–	–	–	–	–	–	–	–	–
Disposal of non-controlling interests of a subsidiary	–	–	28,054	–	–	–	28,054	–	–	–
Acquisition of non-controlling interests of a subsidiary	–	–	(4,440)	–	–	–	(4,440)	–	–	–
Disposal of subsidiaries	–	–	–	–	–	–	–	–	–	–
Balance as at 31 December 2017 (Note)	15,200,383	5,068,550	22,250,503	38,769	713,514	1,111,614	24,114,400	8,140,030	(675,000)	

Note: The Company and its subsidiaries have initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated. See Note 2(b).

	Attributable to equity holders of the Company							Subtotal	Surplus reserve
	Capital surplus				Fair value Reserve (non-recycling)	Other reserve in other comprehensive income	Other capital reserve		
	Share capital	Other equity instruments	Share premium	Hedging reserve					
Balance as at 31 December 2017	15,200,383	5,068,550	22,250,503	38,769	–	713,514	1,111,614	24,114,400	8,140,000
Impact on initial application of IFRS 9 (Note 2(b)(i))	–	–	–	–	944,603	(574,657)	–	369,946	–
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	8,140,000
Profit for the year ended 31 December 2018	–	342,349	–	–	–	–	–	–	–
Other comprehensive income/(loss):									
Fair value changes of other equity investment instruments – gross	–	–	–	–	1,412	–	–	1,412	–
Fair value changes of other equity investment instruments – tax –	–	–	–	–	(353)	–	–	(353)	–
Shares of other comprehensive income of investees – accounted for under the equity method – gross	–	–	–	–	(25,144)	(323,220)	–	(348,364)	–
Shares of other comprehensive income of investees – accounted for under the	–	–	–	–	6,286	81,633	–	87,919	–

equity method –								
tax								
Changes in fair								
value of								
effective								
portion of cash								
flow hedges –								
gross	–	–	–	(127,265)	–	–	–	(127,265 ) –
Changes in fair								
value of								
effective								
portion of cash								
flow hedges –								
tax	–	–	–	21,264	–	–	–	21,264 –
Cash flow								
hedges								
recorded in								
shareholders’								
equity								
reclassified to								
inventories –								
gross	–	–	–	(524,228)	–	–	–	(524,228 ) –
Cash flow								
hedges								
recorded in								
shareholders’								
equity								
reclassified to								
inventories – tax	–	–	–	89,119	–	–	–	89,119 –
Cash flow								
hedges								
recorded in								
shareholders’								
equity								
reclassified to								
exchange gain								
and bank								
charges, net –								
gross	–	–	–	18,778	–	–	–	18,778 –
Cash flow								
hedges								
recorded in								
shareholders’								
equity								
reclassified to								
exchange gain								
and bank								
charges, net –								
tax	–	–	–	(3,192 )	–	–	–	(3,192 ) –
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	Attributable to equity holders of the Company								
	Capital surplus								
	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
Cash flow hedges recorded in shareholders' equity reclassified to interest expense – gross	–	–	–	68,604	–	–	–	68,604	–
Cash flow hedges recorded in shareholders' equity reclassified to interest expense – tax	–	–	–	(12,745 )	–	–	–	(12,745 )	–
Currency translation differences	–	–	–	–	–	–	–	–	–
Total comprehensive income/(loss) for the year ended 31 December 2018	–	342,349	–	(469,665 )	(17,799 )	(241,587 )	–	(729,051 )	–
Business combination (Note 42)	–	–	–	–	–	–	–	–	–
Issue of new A shares, net of issue expenses (Note 22)	497,710	–	2,747,620	–	–	–	–	2,747,620	–
Issue of other equity instruments (Note 23)	–	5,000,000	–	–	–	–	–	–	–
Dividends relating to 2017 (Note 25)	–	–	–	–	–	–	–	–	–
Cumulative distribution of other equity instruments (Note 25)	–	(333,503 )	–	–	–	–	–	–	–

Net capital injection from non-controlling interests of subsidiaries	–	–	–	–	–	–	–	–	–
Acquisition of non-controlling interests of subsidiaries	–	–	(227,441 )	–	–	–	–	(227,441 )	–
Share of other capital reserve of investees accounted for under the equity method	–	–	–	–	–	–	(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	8,14

The notes on pages 141 to 337 are an integral part of these financial statements.

## CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED 31 DECEMBER 2018

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB)

	For the year ended 31 December	
	2018	2017 (Note)
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>		
Profit before income tax expense	1,973,147	2,801,733
Adjustments to reconcile profit before income tax expense to net cash provided by operating activities:		
Depreciation	20,466,423	20,180,830
Provision for impairment loss on property, plant and equipment	989,778	1,046,195
Provision for impairment on goodwill	409,371	—
Provision for impairment on mining rights	135,085	—
Provision for impairment on land use rights	—	108,590
Provision for other non-current assets	8,432	5,008
Amortization of land use rights	344,068	341,125
Amortization of other non-current assets	105,623	113,878
Amortization of employee housing subsidies	653	653
Recognition of provision for loss allowance	40,967	27,682
Recognition/(reversal) of provision for inventory obsolescence	253,816	(263 )
Gain on fair value changes of financial assets/liabilities	(726,843 )	(856,786 )
Other investment loss/(income)	278,669	(1,742,081 )
Net (gain)/loss on disposals of non-current assets	(47,005 )	616,456
Unrealised exchange loss/(gain), net	103,888	(157,056 )
Share of profits less losses of associates and joint ventures	(1,823,415 )	(425,215 )
Interest income	(234,604 )	(198,906 )
Interest expense	10,486,412	9,749,004
Others	(198,046 )	171,611
Changes in working capital:		
Inventories	(1,996,075 )	714,045
Other receivables and assets	(150,782 )	(199,023 )
Accounts receivable	(3,273,058 )	(6,201,149 )
Contract assets	(11,058 )	—
Restricted cash	(347,777 )	9,670
Accounts payable and other liabilities	349,703	2,414,376
Contract liabilities	471,721	—
Taxes payable	2,565,786	2,543,863
Interest received	173,986	136,134
Income tax paid	(1,620,887 )	(2,003,011 )
Net cash provided by operating activities	28,727,978	29,197,363

		For the year ended 31	
		December	
	Note	2018	2017 (Note)
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>			
Payment for the purchase of property, plant and equipment		(20,613,314)	(25,798,009)
Proceeds from disposal of property, plant and equipment, land use rights and other non-current assets		127,182	286,609
Prepayments of land use rights		(94,684)	(213,928)
Payment for the purchase of other non-current assets		30,107	(33,498)
Cash dividends received		618,592	1,419,380
Payment for investment in associates and joint ventures		(463,259)	(301,916)
Cash paid for acquiring available-for-sale financial assets		—	(5,600)
Cash paid for acquiring other equity instrument investments		(450)	—
Cash paid for acquiring subsidiaries, net of cash acquired	42	(674,845)	(10,817,107)
Cash received from disposal of a subsidiary		—	530,437
Cash received from disposal of available-for-sale financial assets		—	2,186,758
Others		694,789	998,049
Net cash used in investing activities		(20,375,882)	(31,748,825)

	For the year ended 31 December	
Note	2018	2017 (Note)
<b>CASH FLOWS FROM FINANCING ACTIVITIES</b>		
Issuance of short-term bonds	40,000,000	30,988,679
Repayments of short-term bonds	(39,500,000)	(47,000,000 )
Proceeds from short-term loans	77,005,025	107,564,128
Repayments of short-term loans	(98,345,708)	(96,378,054 )
Proceeds from long-term loans	48,859,376	32,706,327
Repayments of long-term loans	(34,269,623)	(17,390,982 )
Issuance of long-term bonds	13,999,807	7,800,000
Repayments of long-term bonds	(4,000,000 )	(3,300,000 )
Interest paid	(10,987,871)	(10,080,102 )
Net proceeds from the issuance of other equity instruments	5,000,000	4,999,950
Net proceeds from the issuance of new shares	3,245,330	—
Net capital injection from non-controlling interests of subsidiaries	725,683	838,084
Dividends paid to shareholders of the Company	(1,520,038 )	(4,352,973 )
Dividends paid to non-controlling interests of subsidiaries	(1,265,451 )	(2,184,145 )
Government grants	—	590,629
Payment for finance leasing	(637,026 )	(695,019 )
Others	(552,574 )	(93,342 )
Net cash (used in)/generated from financing activities	(2,243,070 )	4,013,180
Effect of exchange rate fluctuations on cash held	26,266	10,171
<b>NET INCREASE IN CASH AND CASH EQUIVALENTS</b>	<b>6,135,292</b>	<b>1,471,889</b>
Cash and cash equivalents as at beginning of the year	9,282,390	7,810,501
<b>CASH AND CASH EQUIVALENTS AS AT END OF THE YEAR</b>	<b>37 15,417,682</b>	<b>9,282,390</b>

Note: The Company and its subsidiaries have initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated. See Note 2(b).

The notes on pages 141 to 337 are an integral part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED 31 DECEMBER 2018

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

1 COMPANY ORGANIZATION 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 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 the parent company and 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, as modified by the revaluation of equity instrument investments designated 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 judgment in the process of applying the Company and its subsidiaries’ accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the financial statements are disclosed in Note 4.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

As at 31 December 2018, the Company and its subsidiaries have net current liabilities of approximately RMB76.4 billion, and a portion of the Company and its subsidiaries' funding requirements for capital expenditures were satisfied by short-term financing. Taking into consideration of the expected operating cash flows of the Company and its subsidiaries and the undrawn available banking facilities of approximately RMB268.8 billion as at 31 December 2018, the Company and its subsidiaries are 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 Company and its subsidiaries 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 Company and its subsidiaries. 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 Company and its subsidiaries for the current and prior accounting periods reflected in these financial statements.

### (b) Changes in accounting policies

The IASB has issued a number of new IFRSs and amendments to IFRSs that are first effective for the current accounting period of the Company and its subsidiaries. Of these, the following developments are relevant to the Company and its subsidiaries' financial statements:

#### (i) IFRS 9, Financial instruments

#### (ii) IFRS 15, Revenue from contracts with customers

#### (iii) IFRIC 22, Foreign currency transactions and advance consideration

The Company and its subsidiaries have not applied any new standard or interpretation that is not yet effective for current accounting period.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (i) IFRS 9, Financial instruments

IFRS 9 replaces IAS 39, Financial instruments: recognition and measurement. It sets out the requirements for recognising and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items.

The Company and its subsidiaries have applied IFRS 9 retrospectively to items that existed at 1 January 2018 in accordance with the transition requirements. The Company and its subsidiaries have recognised the cumulative effect of initial application as an adjustment to the opening equity at 1 January 2018. Therefore, comparative information continues to be reported under IAS 39.

The following table summarises the impact of transition to IFRS 9 on reserves at 1 January 2018.

Other reserve in other comprehensive income	
Transferred to fair value reserve (non-recycling) relating to equity instrument investments now measured at fair value through other comprehensive income	(574,657)
Fair value reserve (non-recycling)	
Transferred from other reserve in other comprehensive income relating to equity instrument investments now measured at fair value through other comprehensive income and increase in fair value reserve (non-recycling) at 1 January 2018	944,603

Further details of the nature and effect of the changes to previous accounting policies and the transition approach are set out below:

#### A Classification of financial assets and financial liabilities

IFRS 9 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). These supersede IAS 39's categories of held-to-maturity investments, loans and receivables, available-for-sale financial assets and financial assets measured at FVTPL. The classification of financial assets under IFRS 9 is based on the business model under which the financial asset is managed and its contractual cash flow characteristics.

Under IFRS 9, derivatives embedded in contracts where the host is a financial asset in the scope of the standard are not separated from the host. Instead, the hybrid instrument as a whole is assessed for classification.

The following table shows the original measurement categories for available-for-sale financial assets of the Company and its subsidiaries under IAS 39 and reconciles the carrying amounts of those financial assets determined in accordance with IAS 39 to those determined in accordance with IFRS 9.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

## (i) IFRS 9, Financial instruments (Cont'd)

## A Classification of financial assets and financial liabilities (Cont'd)

	IAS 39 Carrying amount at 31 December 2017	Reclassification	Remeasurement	IFRS 9 Carrying amount at 1 January 2018
Financial assets measured at FVOCI (non-recyclable)				
Other equity instrument investments (i)	–	1,604,993	476,595	2,081,588
Financial assets classified as available-for-sale under IAS 39(i)	1,604,993	(1,604,993)	–	–

Under IAS 39, equity securities not held for trading were classified as available-for-sale financial assets. These equity securities are classified as at FVTPL under IFRS 9, unless they are eligible for and designated at FVOCI (i): by the Company and its subsidiaries. At 1 January 2018, the Company and its subsidiaries designated its equity securities at FVOCI, as the investments are held for strategic purposes (see Note 10).

With respect to the financial assets classified as “loans and receivables” (which were measured at amortised cost) and “financial assets measured at FVTPL” under IAS 39, the Company and its subsidiaries have assessed the business model under which the financial assets are managed and its contractual cash flow characteristics, and these financial assets continue with their respective classification and measurements upon the adoption of IFRS 9, and the carrying amounts of these financial assets as at 1 January 2018 have not been impacted by the initial application of IFRS 9.

For an explanation of how the Company and its subsidiaries classify and measure financial assets and recognise related gains and losses under IFRS 9, see respective accounting policy notes in Note 2(m)A.

The measurement categories for all financial liabilities of the Company and its subsidiaries remain the same. The carrying amounts for all financial liabilities of the Company and its subsidiaries as at 1 January 2018 have not been significantly impacted by the initial application of IFRS 9.

The Company and its subsidiaries did not designate or de-designate any financial asset or financial liability at FVTPL as at 1 January 2018.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (i) IFRS 9, Financial instruments (Cont'd)

##### B Credit losses

IFRS 9 replaces the “incurred loss” model in IAS 39 with the “expected credit loss” (“ECL”) model. The ECL model requires an ongoing measurement of credit risk associated with a financial asset and therefore recognises ECLs earlier than under the “incurred loss” accounting model in IAS 39.

The Company and its subsidiaries applies the new ECL model to the following items:

financial assets measured at amortised cost;

contract assets as defined in IFRS 15 (Note 2(z));

debt investments measured at FVOCI (recycling);

lease receivables; and

financial guarantee contracts issued (Note 2(m)A).

The Company and its subsidiaries assessed the ECLs of financial assets measured at amortised cost and lease receivables as at 1 January 2018. There was not significant change to the loss allowance for these financial assets of the Company and its subsidiaries as at 1 January 2018.

For further details on the Company and its subsidiaries’ accounting policy for accounting for credit losses, see Note 2(m)A(vi).

##### C Hedge accounting

The Company and its subsidiaries have elected to adopt the new general hedge accounting model in IFRS 9. Depending on the complexity of the hedge, this new accounting model allows a more qualitative approach to assessing hedge effectiveness compared to IAS 39 to be applied, and the assessment is always forward-looking. The adoption of IFRS 9 has not had a significant impact on the Company and its subsidiaries’ financial statements in this regard.

For an explanation of how the Company and its subsidiaries apply hedge accounting, see Note 2(m)A(vii).

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (i) IFRS 9, Financial instruments (Cont'd)

##### D Transition

Changes in accounting policies resulting from the adoption of IFRS 9 have been applied retrospectively, except as described below:

Information relating to comparative periods has not been restated. Differences in the carrying amounts of financial assets resulting from the adoption of IFRS 9 are recognised in reserves as at 1 January 2018. Accordingly, the information presented for 2017 continues to be reported under IAS 39 and thus may not be comparable with the current period.

The following assessments have been made on the basis of the facts and circumstances that existed as at 1 January 2018:

the determination of the business model within which a financial asset is held; and

the designation of investments in equity instruments not held for trading to be classified as at FVOCI (non-recycling).

If, at the date of initial application, the assessment of whether there has been a significant increase in credit risk since initial recognition would have involved undue cost or effort, a lifetime ECL has been recognised for that financial instrument.

All hedging relationships designated under IAS 39 as at 31 December 2017 met the criteria for hedge accounting under IFRS 9 as at 1 January 2018 and are therefore regarded as continuing hedging relationships. Changes to hedge accounting policies have been applied prospectively.

#### (ii) IFRS 15, Revenue from contracts with customers

IFRS 15 establishes a comprehensive framework for recognising revenue and some costs from contracts with customers. IFRS 15 replaces IAS 18, Revenue, which covered revenue arising from sale of goods and rendering of services, and IAS 11, Construction contracts, which specified the accounting for construction contracts.

IFRS 15 also introduces additional qualitative and quantitative disclosure requirements which aim to enable users of the financial statements to understand the nature, amount, timing and uncertainty of revenue and cash flows arising from contracts with customers.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (ii) IFRS 15, Revenue from contracts with customers (Cont'd)

The Company and its subsidiaries have elected to use the cumulative effect transition method and have recognised the cumulative effect of initial application as an adjustment to the opening balance of equity as at 1 January 2018.

Therefore, comparative information has not been restated and continues to be reported under IAS 18 and IAS 11. As allowed by IFRS 15, the Company and its subsidiaries have applied the new requirements only to contracts that were not completed before 1 January 2018, referred to as open contracts.

Since more than 95% of the Company and its subsidiaries' revenue comprised of contracts with customers from rate-regulated sales of electricity and heat, where revenue continue to be recognised upon transmission to the customers. The adoption of IFRS 15 did not have a material impact on the consolidated financial statements.

Further details of the nature and effect of the changes on previous accounting policies are set out below:

#### A Timing of revenue recognition

Previously, revenue from sale of goods was generally recognised at a point in time when the risks and rewards of ownership of the goods had passed to the customers, whereas revenue arising from construction contracts and provision of services was recognised over time.

Under IFRS 15, revenue is recognised when the customer obtains control of the promised good or service in the contract. This may be at a single point in time or over time. IFRS 15 identifies the following three situations in which control of the promised good or service is regarded as being transferred over time:

When the customer simultaneously receives and consumes the benefits provided by the entity's performance, as the entity performs;

When the entity's performance creates or enhances an asset (for example work in progress) that the customer controls as the asset is created or enhanced;

When the entity's performance does not create an asset with an alternative use to the entity and the entity has an enforceable right to payment for performance completed to date.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (ii) IFRS 15, Revenue from contracts with customers (Cont'd)

##### A Timing of revenue recognition (Cont'd)

If the contract terms and the entity's activities do not fall into any of these 3 situations, then under IFRS 15 the entity recognises revenue for the sale of that good or service at a single point in time, being when control has passed.

Transfer of risks and rewards of ownership is only one of the indicators that is considered in determining when the transfer of control occurs.

Since more than 95% of the Company and its subsidiaries' revenue comprised of contracts with customers from rate-regulated sales of electricity and heat, where revenue continue to be recognised upon transmission to the customers. The adoption of IFRS 15 did not have a significant impact on timing of revenue recognition.

##### B Presentation of contract assets and liabilities

Under IFRS 15, accounts receivable is recognised only if the Company and its subsidiaries have an unconditional right to consideration. If the Company and its subsidiaries recognise the related revenue (see Note 2(z)) before being unconditionally entitled to the consideration, then the entitlement to consideration is classified as a contract asset. Similarly, a contract liability, rather than a payable, is recognised when a customer pays non-refundable consideration, or is contractually required to pay non-refundable consideration and the amount is already due, before the Company and its subsidiaries recognise the related revenue. For a single contract with the customer, either a net contract asset or a net contract liability is presented. For multiple contracts, contract assets and contract liabilities of unrelated contracts are not presented on a net basis.

Previously, contract balances relating to "amounts received in advance" and "other deferred income" were presented in the statement of financial position under "accounts payable and other liabilities" and "other non-current liabilities", respectively.

To reflect these changes in presentation, the Company and its subsidiaries have made the following adjustments as at 1 January 2018, as a result of the adoption of IFRS 15:

"Accounts payable and other liabilities – amounts received in advance" amounting to RMB1,505 million as at 1 January 2018 is now presented as "contract liabilities".

"Other non-current liabilities – other deferred income" amounting to RMB1,750 million as at 1 January 2018 is now presented as "Other non-current liabilities – contract liabilities".

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

## (ii) IFRS 15, Revenue from contracts with customers (Cont'd)

C Disclosure of the estimated impact on the amounts reported in respect of the year ended 31 December 2018 as a result of the adoption of IFRS 15 on 1 January 2018

The following tables summarise the estimated impact of adoption of IFRS 15 on the Company and its subsidiaries' consolidated financial statements for the year ended 31 December 2018, by comparing the amounts reported under IFRS 15 in these consolidated financial statements with estimates of the hypothetical amounts that would have been recognised under IAS 18 and IAS 11 if those superseded standards had continued to apply to 2018 instead of IFRS 15. These tables show only those line items impacted by the adoption of IFRS 15:

	Amounts reported in accordance with IFRS 15 (A)	Hypothetical amounts under IASs 18 and 11 (B)	Difference Estimated impact of adoption of IFRS 15 on 2018 (A)-(B)
Line items in the consolidated statement of financial position as at 31 December 2018 impacted by the adoption of IFRS 15			
Accounts receivable	29,278,938	29,289,996	(11,058 )
Contract assets	11,058	–	11,058
Total current assets	61,799,069	61,799,069	–
Total assets	419,903,311	419,903,311	–
Accounts payable and other liabilities	35,138,680	37,115,327	(1,976,647)
Contract liabilities	1,976,647	–	1,976,647
Total current liabilities	138,206,214	138,206,214	–
Total liabilities	303,781,641	303,781,641	–

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (iii) IFRIC 22, Foreign currency transactions and advance consideration

This interpretation provides guidance on determining “the date of the transaction” for the purpose of determining the exchange rate to use on initial recognition of the related asset, expense or income (or part of it) arising from a transaction in which an entity receives or pays advance consideration in a foreign currency.

The Interpretation clarifies that “the date of the transaction” is the date on initial recognition of the non-monetary asset or liability arising from the payment or receipt of advance consideration. If there are multiple payments or receipts in advance of recognising the related item, the date of the transaction for each payment or receipt should be determined in this way. The adoption of IFRIC 22 does not have any material impact on the financial position and the financial result of the Company and its subsidiaries.

### (c) Consolidation

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

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

Subsidiaries are consolidated from the date when control is transferred to the Company and its subsidiaries. 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 Company and its subsidiaries' 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.

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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (i) Business combinations

The acquisition method is used to account for the business combinations of the Company and its subsidiaries (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 Company and its subsidiaries. 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 Company and its subsidiaries recognise 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.

#### (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 Company and its subsidiaries lose 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)).

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (iii) Associates and joint ventures

Associates are investees over which the Company and its subsidiaries have significant influence on the financial and operating decisions. A joint venture is an arrangement whereby the Company and its subsidiaries 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 current period profit or loss and long-term investment cost is adjusted accordingly.

When applying equity method, the Company and its subsidiaries adjust 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. Current period investment income is then recognised based on the proportionate share of the Company and its subsidiaries 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 Company and its subsidiaries continue to recognise investment losses and provision if they bear additional obligations which meet the recognition criteria.

The Company and its subsidiaries adjust 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 Company and its subsidiaries determine 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 Company and its subsidiaries calculate the amount of impairment as the difference between the recoverable amount of the associate or the joint venture and its carrying value and recognise the amount in the consolidated statement of comprehensive income.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

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

Profits or losses resulting from transactions between the Company and its subsidiaries and the associates and joint ventures are recognised in the Company and its subsidiaries' 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 Company and its subsidiaries 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 Company and its subsidiaries cease to have significant influence over an associate or joint control over a joint venture, it is accounted for as a disposal of the entire interest in that investee, with a resulting gain or loss being recognised in profit or loss. Any interest retained in that former investee at the date when significant influence or joint control is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (Note 2(m)).

### (d) Separate financial statements of the Company

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

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (e) Segment reporting

The Company and its subsidiaries determine the operating segment based on the internal organization structure, management requirement and internal reporting system for purposes of presenting reportable segment information.

An operating segment represents a component of the Company and its subsidiaries 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 Company and its subsidiaries 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 the two or more operating segments exhibit similar economic characteristics and meet certain conditions, the Company and its subsidiaries combine them as one reportable segment.

### (f) Foreign currency translation

#### (i) Functional and presentation currency

Items included in the financial statements of each of the Company and its subsidiaries 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 capitalization 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 Company and its subsidiaries' 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 Company and its subsidiaries 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 Company and its subsidiaries' ownership interest in associates or joint venture that includes a foreign operation that do not result in the Company and its subsidiaries losing significant influence or joint control), the proportionate share of the accumulated exchange difference is reclassified to profit or loss.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

## (g) Property, plant and equipment

Property, plant and equipment consists of dam, 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 capitalization. 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 Company and its subsidiaries 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 capitalization 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
Dam	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 Company and its subsidiaries review 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)) 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 fair value, unless they are still in the course of construction or development at the end of the reporting period and their fair value cannot be reliably measured at that time. Any gain or loss arising from a change in fair value or from the retirement or disposal of an investment property is recognised in profit or loss. Rental income from investment properties is accounted for as described in Note 2(z)(vi).

### (i) Power generation license

The Company and its subsidiaries acquired the power generation license 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 license has an indefinite useful life and is not amortized. The assessment that the license has an indefinite useful life is based on the expected renewal of power generation license 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. Useful life of the power generation license is reviewed by the Company and its subsidiaries each financial period to determine whether events and circumstances continue to support the indefinite useful life assessment.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (j) Mining rights

Mining rights are stated at cost less accumulated amortization and impairment losses (Note 2(l)) and are amortized based on the units of production method utilizing only recoverable coal reserves as the depletion base, unless the mining rights are classified as held for sale (or included in a disposal group that is classified as held for sale).

### (k) Goodwill

Goodwill 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 Company and its subsidiaries' share of the net fair value of the net identifiable assets, liabilities and contingent liabilities of the acquiree at the date of acquisition.

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, land use rights 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

The recoverable amount of an asset or CGU is the greater of its value in use and its fair value less cost to sell. For impairment testing, assets are grouped together into the smallest group of assets that generates cash inflows from continuing use that are largely independent of the cash inflows of other assets or CGUs.

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

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

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

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

### (m) Financial instruments

A Policy applicable from 1 January 2018

#### (i) Recognition and initial measurement

All financial assets and financial liabilities are initially recognised when the Company and its subsidiaries 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### A Policy applicable from 1 January 2018 (Cont'd)

##### (ii) Classification and subsequent measurement of financial assets

###### (1) Classification of financial assets

On initial recognition, the Company and its subsidiaries categorise 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 Company and its subsidiaries change 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.

A financial asset is measured at amortised cost if it meets both of the following conditions and is not designated as at FVTPL:

it is held within a business model whose objective is to hold assets to collect contractual cash flows; and

its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

A financial assets is measured at FVOCI if it meets both of the following conditions and is not designated as at FVTPL:

it is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets; and

its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

On initial recognition of an equity investment that is not held for trading, the Company and its subsidiaries 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.

All financial assets not classified as measured at amortised cost or FVOCI as described 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 as 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)

#### A Policy applicable from 1 January 2018 (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 Company and its subsidiaries determine the business model for managing the financial assets according to the facts and based on the specific business objective determined by the Company and its subsidiaries' key management personnel.

The Company and its subsidiaries assess the contractual cash flow characteristics of the financial asset whether contractual cash flows are solely payments of principal and interest. 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 Company and its subsidiaries assess whether the financial asset contains a contractual term that could change the timing or amount of contractual cash flows such that it would not meet this condition.

##### (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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

A Policy applicable from 1 January 2018 (Cont'd)

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

##### (2) Subsequent measurement of financial assets (Cont'd)

##### ~~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 OCI 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.

##### ~~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)A(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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### A Policy applicable from 1 January 2018 (Cont'd)

##### (iv) Offsetting

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

~~currently~~ have a legally enforceable right to set off the amounts;

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

##### (v) Derecognition

The Company and its subsidiaries derecognise a financial asset when one of the following conditions is met:

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

~~the~~ Company and its subsidiaries transfer 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~~ Company and its subsidiaries transfer the rights to receive the contractual cash flows in a transaction in which the ~~the~~ Company and its subsidiaries neither transfer nor retain substantially all of the risks and rewards of ownership and do not retain control of the financial asset.

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 Company and its subsidiaries derecognise a financial liability (or part of it) when, and only when, its contractual obligation (or part of it) is discharged, cancelled or expired.

2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(m) Financial instruments (Cont'd)

A Policy applicable from 1 January 2018 (Cont'd)

(vi) Credit losses

The Company and its subsidiaries recognise loss allowance for ECL on the following items:

~~financial assets measured at amortised cost;~~

~~contract assets as defined in IFRS 15 (see Note 2(z));~~

~~debt investments measured at FVOCI;~~

~~lease receivables; and~~

~~financial guarantee contracts issued, which are not measured at FVTPL.~~

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 Company and its subsidiaries in accordance with the contract and the cash flows that the Company and its subsidiaries expect to receive).

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### A Policy applicable from 1 January 2018 (Cont'd)

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

##### Measurement of ECLs (Cont'd)

The maximum period considered when estimating ECLs is the maximum contractual period over which the Company and its subsidiaries are exposed to credit risk.

In measuring ECLs, the Company and its subsidiaries take 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 Company and its subsidiaries' 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 Company and its subsidiaries recognise a loss allowance equal to 12-month ECLs unless there has been a significant increase in credit risk of the financial instrument since initial recognition or the financial instrument is not determined to have low credit risk at the reporting date, in which cases the loss allowance is measured at an amount equal to lifetime ECLs.

##### Low credit risk

If the financial instrument has a low risk of default, the borrower has a strong capacity to meet its contractual cash flow obligations in the near term and adverse changes in economic and business conditions in the longer term may, but will not necessarily, reduce the ability of the borrower to fulfil its contractual cash flow obligations, the credit risk on a financial instrument is considered low.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### A Policy applicable from 1 January 2018 (Cont'd)

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

##### Significant increases in credit risk

In assessing whether the credit risk of a financial instrument has increased significantly since initial recognition, the Company and its subsidiaries compare the risk of default occurring on the financial instrument assessed at the reporting date with that assessed at the date of initial recognition. The Company and its subsidiaries consider 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 Company and its subsidiaries.

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 Company and its subsidiaries assume that the credit risk on a financial asset has increased significantly if it is more than 30 days past due, unless the Company and its subsidiaries have 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 30 days past due.

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

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### A Policy applicable from 1 January 2018 (Cont'd)

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

##### Credit-impaired financial assets

At each reporting date, the Company and its subsidiaries assess 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 Company and its subsidiaries 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 ECL

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 Company and its subsidiaries 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)

#### A Policy applicable from 1 January 2018 (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 Company and its subsidiaries determine 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 the Company and its subsidiaries' 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 Company and its subsidiaries 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 Company and its subsidiaries shall adjust the hedge ratio of the hedging relationship, so that it meets the qualifying criteria again, which is referred as rebalancing.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### A Policy applicable from 1 January 2018 (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. 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 Company and its subsidiaries adjust 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 Company and its subsidiaries expect that all or a portion of that loss will not be recovered in one or more future periods, the Company and its subsidiaries immediately reclassify the amount that is not expected to be recovered into profit or loss.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### A Policy applicable from 1 January 2018 (Cont'd)

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

When the Company and its subsidiaries discontinue hedge accounting for a cash flow hedge, the Company and its subsidiaries account 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.

#### B Policy applicable prior to 1 January 2018

Financial assets are classified in the following categories at initial recognition: at fair value through profit or loss, loans and receivables and available-for-sale. The classification depends on the intention and ability of the Company and its subsidiaries to hold the financial assets.

##### (i) Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss include financial assets held for trading and designated upon initial recognition as at fair value through profit or loss, and contingent consideration of the acquirer in a business combination. A financial asset is classified in this category if acquired principally for the purpose of selling in the short-term. Derivatives are classified as held for trading unless they are designated as hedges.

Assets in this category are classified as current assets if expected to be settled within 12 months; otherwise, they are classified as non-current.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### B Policy applicable prior to 1 January 2018 (Cont'd)

##### (ii) Loans and receivables

Loans and receivables refer to the non-derivative financial assets for which there is no quotation in the active market with fixed or determinable amount. They are included in current assets, except for maturities greater than 12 months after the end of reporting period which are classified as non-current assets. Loans and receivables are primarily included in as 'accounts receivable', 'other receivables and assets', 'loans to subsidiaries' and 'other non-current assets' in the statement of financial position.

##### (iii) Available-for-sale financial assets

Available-for-sale financial assets are non-derivative financial assets that are either designated in this category or not classified in any of the other categories. They are included in current assets when management intends to dispose of the available-for-sale financial assets within 12 months of the end of reporting period, otherwise, they are classified as non-current assets.

##### (iv) Recognition and measurement

Regular purchases and sales of financial assets are recognised at fair value initially on trade-date – the date on which the Company and its subsidiaries commit to purchase or sell the asset. Transaction costs relating to financial assets at fair value through profit or loss are directly expensed in the profit or loss as incurred. Transaction costs for other financial assets are included in the carrying amount of the asset at initial recognition. Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and all risks and rewards related to the ownership of the financial assets have been transferred to the transferee.

Financial assets at fair value through profit or loss and available-for-sale are subsequently measured at fair value. When an active market exists for a financial instrument, fair value is determined based on quoted prices in the active market. When no active market exists, fair value is determined by using valuation techniques. When applying valuation techniques, the Company and its subsidiaries maximize the use of relevant observable inputs and minimize the use of unobservable inputs.

Changes in the fair value of financial assets at fair value through profit or loss are recorded in 'gain/(loss) on fair value changes of financial assets/liabilities'.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### B Policy applicable prior to 1 January 2018 (Cont'd)

#### (iv) Recognition and measurement (Cont'd)

Investments in equity instruments that do not have a quoted market price in an active market and whose fair value cannot be reliably measured are measured at cost. Loans and receivables are carried at amortized cost using the effective interest method.

Except for impairment loss and translation differences on monetary financial assets, changes in the fair value of available-for-sale financial assets are recognised in other comprehensive income. When these financial assets are derecognised, the accumulated fair value adjustments recognised in equity are included in the statement of comprehensive income as 'other investment income'. Dividends on available-for-sale financial assets are recorded in 'other investment income' when the right of the Company and its subsidiaries to receive payments is established.

#### (v) Impairment of financial assets

Except for financial assets at fair value through profit or loss, the Company and its subsidiaries perform assessment on the book value of financial assets at the end of reporting period. Provision for impairment is made when there is objective evidence showing that a financial asset is impaired.

For investments in subsidiaries, associates and joint ventures, the impairment loss is measured by comparing the recoverable amount of the investment with its carrying amount. The impairment loss is reversed if there has been a favourable change in the estimates used to determine the recoverable amount.

In the case of equity investments classified as available for sale, a significant or prolonged decline in the fair value of the investment below its cost is evidence that the assets are impaired. If any such evidence exists for available-for-sale financial assets, the cumulative loss, measured as the difference between the acquisition cost and the current fair value, less any impairment loss on that financial asset previously recognised in profit or loss, is removed from equity and recognised in profit or loss. Impairment losses recognised in the profit or loss on equity instruments are not reversed through the profit or loss.

When financial assets carried at amortized cost are impaired, the carrying amount of the financial assets is reduced to the present value of estimated future cash flows (excluding future credit losses that have not been incurred) discounted at the financial asset's original effective interest rate. The impaired amount is recognised as assets impairment loss in the current period. If there is objective evidence that the value of the financial assets has recovered as a result of objective changes in circumstances occurring after the impairment loss was originally recognised, the originally recognised impairment loss is reversed through profit or loss. For the impairment test of receivables, please refer to Note 2(n).

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### B Policy applicable prior to 1 January 2018 (Cont'd)

##### (vi) Derivative financial instruments and hedging activities

Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently remeasured at their fair value. Gain or loss arising from subsequent change in the fair value of derivative financial instruments is recognised in profit or loss except for the effective portions of gain or loss on the derivative financial instruments designated as cash flow hedges which are recognised directly in other comprehensive income. Cash flow hedge represents a hedge against the exposure to variability in cash flows, which such cash flow is originated from a particular risk associated with highly probable forecast transactions and variable rate borrowings and which could affect the statement of comprehensive income.

The hedged items of cash flow hedge are the designated items with respect to the risks associated with future cash flow change resulting from variability in cash flows of a recognised asset or liability or a highly probable forecast transaction or the foreign currency risk of a committed future transaction. Hedging instruments are designated derivative for cash flow hedge whose cash flows are expected to offset changes in the cash flows of a hedged item.

The full fair value of a hedging derivative is classified as a non-current asset or liability when the remaining maturity of the hedge item is more than 12 months.

The Company and its subsidiaries document their assessments, both at hedge inception and on an ongoing basis, of whether the derivatives that are used in hedging transactions are highly effective in offsetting changes in cash flows of hedged items. The Company and its subsidiaries apply ratio analysis method to evaluate the ongoing effectiveness of the cash flow hedge.

The effective portion of changes in the fair value of derivatives that are designated and qualify as cash flow hedges are recognised in other comprehensive income. The gain or loss relating to the ineffective portion is recognised immediately in the statement of comprehensive income within 'gain/(loss) on fair value changes of financial assets/liabilities'.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### B Policy applicable prior to 1 January 2018 (Cont'd)

##### (vi) Derivative financial instruments and hedging activities (Cont'd)

Amounts accumulated in equity are reclassified to the profit or loss in the periods when the hedged item affects profit or loss. The gain or loss relating to the effective portion of interest rate swaps hedging variable rate borrowings is recognised in the statement of comprehensive income within 'interest expense'. The gain or loss relating to the effective portion of exchange forward hedging foreign currency denominated payables is recognised in the statement of comprehensive income within 'exchange gain/(loss) and bank charges, net'. However, when the forecast transaction that is hedged results in the recognition of a non-financial asset, the gains and losses previously deferred in equity are transferred from equity and included in the initial measurement of the cost of the asset. In the case where the Company and its subsidiaries expect all or a portion of net loss previously recognised directly in other comprehensive income will not be recovered in future financial periods, the irrecoverable portion will be reclassified into profit or loss.

When a hedging instrument expires or is sold, terminated or exercised or when a hedge no longer meets the criteria for hedge accounting, the Company and its subsidiaries will discontinue hedge accounting. Any cumulative gain or loss existing in equity at that time remains in equity and is subsequently recognised when the forecast transaction is ultimately recognised in the profit or loss. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately transferred to the statement of comprehensive income within 'gain/(loss) on fair value changes of financial assets/liabilities'.

##### (n) Loans and receivables

The Company and its subsidiaries have assessed the business model under which the loans and receivables are managed and its contractual cash flow characteristics, and these financial assets continue with their respective classification and measurements upon the adoption of IFRS 9, please refer to Note 2(m)A(ii). For the impairment test of receivables, please refer to Note 2(m)A(vi).

## 2PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (n)Loans and receivables (Cont'd)

Policy applicable prior to 1 January 2018

Loans and receivables, which primarily include accounts receivable, other receivables, loan to subsidiaries and other non-current assets, are recognised initially at fair value. Loans and receivables are subsequently measured at amortized cost less provision for doubtful debts using the effective interest method.

The Company and its subsidiaries establish an allowance for impairment that represents its estimate of incurred losses in respect of receivables. The main components of this allowance are a specific loss component that relates to individually significant exposures, and a collective loss component established for groups of similar assets in respect of losses that have been incurred but not yet identified. The collective loss allowance is determined based on historical data of payment statistics for similar financial assets.

When there is objective evidence that the Company and its subsidiaries will not be able to collect all amounts due according to the original terms of the receivables, impairment test is performed and related provision for doubtful accounts is made based on the shortfall between carrying amounts and respective present value of estimated future cash flows. The carrying amounts of the receivables are reduced through the use of allowance accounts, and the amount of the provision is recognised in the statement of comprehensive income within 'operating expenses – others'. When a receivable is uncollectible, it is written off against the allowance account for the receivable. Subsequent recoveries of amounts previously written off are credited against 'operating expenses – others' in the statement of comprehensive income.

### (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.

Provision for inventory obsolescence is determined by the excess of cost over net realizable value. Net realizable values are determined based on the estimated selling price less estimated conversion costs during power generation, selling expenses and related taxes in the ordinary course of business.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (p) Related parties

Parties are considered to be related if one party has the ability, directly or indirectly, to control the other party or exercise significant influence over the other party in making financial and operating decisions. Parties are also considered to be related if they are subject to common control or jointly control of the same third party; one party is controlled or jointly controlled by a third party and the other party is an associate or a joint venture of the same third party.

### (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 flow. Cash and cash equivalents are assessed for expected credit losses in accordance with the policy set out in Note 2(m)A(vi).

### (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 Company and its subsidiaries have an unconditional right to defer settlement of the liability for at least 12 months after the end of 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 capitalization 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 capitalized 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (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.

### (u) Other equity instruments

Perpetual corporate bond 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 amortized cost using the effective interest method.

### (w) Taxation

#### (i) Value-added tax ("VAT")

The domestic power, heat and goods sales of the Company and its subsidiaries are subject to VAT. VAT payable is determined by applying 17% or 16% (11% or 10% on heat) on the taxable revenue after offsetting deductible input VAT of the period.

The applicable tax rate of VAT in respect of the lease of tangible movable properties, transportation industry and other modern services industry are 17% or 16%, 11% or 10% and 6%, respectively.

According to the relevant regulations of Ministry of Finance of PRC and State Administration of Taxation, the transformation from Business Tax to VAT launched nation-wide from 1 May 2016 and all business tax taxpayers in the construction industry, real estate industry, financial industry, living services were included. The applicable tax rate of VAT in respect of sectors including construction services, lease of immovables, sale of immovables and transfer of land use rights is 11%, and in respect of financial and living services is 6%.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (ii) Goods and service tax ("GST")

The power sales of the subsidiaries in Singapore are subject to goods and service tax of the country where they operate. GST payable is determined by applying 7% on the taxable revenue after offsetting deductible GST of the period.

The subsidiaries in Pakistan are subject to goods and service tax of the country where they operate, 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.

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 difference 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 Company and its subsidiaries control 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 Company and its subsidiaries recognise 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 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

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

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 meeting all the conditions below:

- (1) The Company and its subsidiaries have 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 Company and its subsidiaries.

### (x) Employee benefits

Employee benefits include all expenditures relating to the employees for their services. The Company and its subsidiaries recognise 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 Company and its subsidiaries operate various defined contribution plans in accordance with the local conditions and practices in the countries and provinces in which they operate. A defined contribution plan is a pension plan under which the Company and its subsidiaries pay fixed contributions into a separate publicly administered pension insurance plan on mandatory and voluntary bases. The Company and its subsidiaries have 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 benefit when incurred. Prepaid contributions are recognised as assets to the extent that a cash refund or a reduction in the future payment is available.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (y) Government grants

Government grants are recognised when the Company and its subsidiaries fulfill 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, nominal amount is assigned.

Asset-related government grant is recognised as deferred income and is amortized 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 Company and its subsidiaries are recognised as deferred income and recorded in the profit or loss when related expenses or losses incurred. When the grant is used to compensate expenses or losses that were already incurred, they are directly recognised in 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 Company and its subsidiaries satisfy a performance obligation in the contract by transferring the control over promised good or service to a customer.

When two or more performance obligations identified, the Company and its subsidiaries allocate the transaction price to each performance obligation identified in the contract on a relative stand-alone selling price basis at contract inception and recognise 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 Company and its subsidiaries expect 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 Company and its subsidiaries recognise 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 Company and its subsidiaries recognise 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 effective interest rate. The Company and its subsidiaries will not adjust the promised amount of consideration for the effects of a significant financing component if the Company and its subsidiaries expect, at contract inception, that the period between when the Company and its subsidiaries transfer 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 Company and its subsidiaries' performance, as the Company and its subsidiaries perform;

When the Company and its subsidiaries' performance creates or enhances an asset that the customer controls as the asset is created or enhanced;

When the Company and its subsidiaries' performance does not create an asset with an alternative use to the entity and the Company and its subsidiaries have 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.

## 2PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

For performance obligations satisfied at a point in time, revenue is recognised when the customer obtains control of the promised good or service in the contract. The Company and its subsidiaries consider indicators of the transfer of control, which include, but are not limited to, the following:

The Company and its subsidiaries have a present right to payment for the asset;

The Company and its subsidiaries have 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.

A contract asset is the Company and its subsidiaries' right to consideration in exchange for goods or services that the Company and its subsidiaries have 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 ECL model (Note 2(m)A(vi)). The Company and its subsidiaries present any unconditional rights to consideration separately as a receivable. The Company and its subsidiaries' obligation to transfer goods or services to a customer for which the Company and its subsidiaries have 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 follow:

#### (i) Sales of power

Revenue is recognised upon transmission of electricity to the power grid where 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 where the control of the heat is transferred at the same time.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

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

#### (iii) Service revenue

Service revenue refers to amounts received from service of port loading, conveying, transportation and maintenance. The Company and its subsidiaries recognise revenue when the relevant service is provided.

#### (iv) Coal and raw materials sales revenue

Revenue is recognised when the control of the fuel and materials is transferred to the customers.

#### (v) Heating pipeline upfront fees

Revenue from upfront fees received from heat customers related to the heating pipeline is recognised during the period in which the heat supply service is provided.

#### (vi) 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.

#### (vii) Dividend income

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

#### (ix) Interest income

Interest income from deposits is recognised on a time proportion basis using effective interest method. Interest income from the finance lease is recognised on a basis that reflects a constant periodic rate of return on the net investment in the finance lease.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (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 Company and its subsidiaries incur 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 Company and its subsidiaries recognise 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 labor, direct materials, allocations of costs, costs that are explicitly chargeable to the customer and other costs that are incurred only because the Company and its subsidiaries 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 Company and its subsidiaries otherwise would have recognised is one year or less.

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 Company and its subsidiaries expect 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (ab) Leases

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 capitalized or expensed on a straight-line basis over the lease term.

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

#### (ii) Finance lease

The Company and its subsidiaries recognise 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 Company and its subsidiaries adopt the effective interest method to allocate such unrealised finance income over the lease term. At the end of reporting period, the Company and its subsidiaries present 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)A(vi) for impairment test on finance lease receivables.

Where the Company and its subsidiaries acquire 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 or valuation of the assets over the term of the relevant lease or, where it is likely the Company and its subsidiaries will obtain ownership of the asset, the life of the asset, as set out in Note 2(g). 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.

#### (ac) Purchase of electricity

The overseas subsidiary of the Company recognises electricity purchase cost when it purchases the electricity and transmits to its customers.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

### (ad) 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 Company and its subsidiaries' 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 amortized or depreciated, and any equity-accounted investee is no longer equity accounted.

### (ae) Dividend distribution

Dividend distribution to the shareholders of the Company and its subsidiaries is recognised as a liability in the period when the dividend is approved in the shareholders' meeting.

### (af) 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.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(ag) Standards and amendments to published standards that are not yet effective but relevant to the Company and its subsidiaries

Up to the date of issue of these financial statements, a number of amendments, new standards and interpretations have been issued which are not yet effective for the year ended 31 December 2018 and which have not been adopted in these financial statements. These include the following which may be relevant to the Company and its subsidiaries.

IFRS 16, "Leases", which will be effective for accounting periods beginning on or after 1 January 2019.

IFRIC 23, "Uncertainty over income tax treatments", which will be effective for accounting periods beginning on or after 1 January 2019.

Annual improvements to IFRSs 2015-2017 Cycle, which will be effective for accounting periods beginning on or after 1 January 2019.

Amendments to IFRS 28, "Long-term interests in associates and joint ventures", which will be effective for accounting periods beginning on or after 1 January 2019.

The Company and its subsidiaries are in the process of making an assessment of what the impact of these amendments, new standards and interpretations is expected to be in the period of initial application. So far the Company and its subsidiaries have identified some aspects of IFRS 16 which may have a significant impact on the consolidated financial statements. Further details of the expected impacts are discussed below. While the assessment has been substantially completed for IFRS 16, the actual impact upon the initial adoption of this standard may differ as the assessment completed to date is based on the information currently available to the Company and its subsidiaries, and further impacts may be identified before the standard is initially applied in the Company and its subsidiaries' interim financial report for the six months ended 30 June 2019. The Company and its subsidiaries may also change its accounting policy elections, including the transition options, until the standard is initially applied in that financial report.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(ag) Standards and amendments to published standards that are not yet effective but relevant to the Company and its subsidiaries (Cont'd)

### IFRS 16, Lease

As disclosed in Note 2(ab), currently the Company and its subsidiaries classify leases into finance leases and operating leases and account for the lease arrangements differently, depending on the classification of the lease. The Company and its subsidiaries enter into some leases as the lessor and others as the lessee.

IFRS 16 is not expected to impact significantly on the way that lessors account for their rights and obligations under a lease. However, once IFRS 16 is adopted, lessees will no longer distinguish between finance leases and operating leases. Instead, subject to practical expedients, lessees will account for all leases in a similar way to current finance lease accounting, i.e. at the commencement date of the lease the lessee will recognise and measure a lease liability at the present value of the minimum future lease payments and will recognise a corresponding “right-of-use” asset. After initial recognition of this asset and liability, the lessee will recognise interest expense accrued on the outstanding balance of the lease liability, and the depreciation of the right-of-use asset, instead of the current policy of recognising rental expenses incurred under operating leases on a systematic basis over the lease term. As a practical expedient, the lessee can elect not to apply this accounting model to short-term leases (i.e. where the lease term is 12 months or less) and to leases of low-value assets, in which case the rental expenses would continue to be recognised on a systematic basis over the lease term.

IFRS 16 will primarily affect the Company and its subsidiaries’ accounting as a lessee of leases for properties, plant and equipment which are currently classified as operating leases. The application of the new accounting model is expected to lead to an increase in both assets and liabilities and to impact on the timing of the expense recognition in the statement of comprehensive income over the period of the lease.

IFRS 16 is effective for annual periods beginning on or after 1 January 2019. As allowed by IFRS 16, the Company and its subsidiaries plan to use the practical expedient to grandfather the previous assessment of which existing arrangements are, or contain, leases. The Company and its subsidiaries will therefore apply the new definition of a lease in IFRS 16 only to contracts that are entered into on or after the date of initial application. In addition, the Company and its subsidiaries plan to elect the practical expedient for not applying the new accounting model to short-term leases and leases of low-value assets.

## 2 PRINCIPAL ACCOUNTING POLICIES (Cont'd)

(ag) Standards and amendments to published standards that are not yet effective but relevant to the Company and its subsidiaries (Cont'd)

### IFRS 16, Lease (Cont'd)

The Company and its subsidiaries plan to elect to use the modified retrospective approach for the adoption of IFRS 16 and will recognise the cumulative effect of initial application as an adjustment to the opening balance of equity at 1 January 2019 and will not restate the comparative information. As disclosed in Note 41(b), at 31 December 2018 the Company and its subsidiaries' future minimum lease payments under non-cancellable operating leases amount to RMB1,647 million for property, plant and equipment and land use rights, the majority of which is payable either between 1 and 5 years after the reporting date or in more than 5 years. Upon the initial adoption of IFRS 16, the opening balances of lease liabilities and the corresponding right-of-use assets will be adjusted accordingly, after taking into account the effects of discounting, as at 1 January 2019. The Company and its subsidiaries are still in the process to determine the amounts of new assets and liabilities arising from operating lease commitments on adoption of IFRS 16.

There are no other amendments and new standards that are not yet effective that would be expected to have a material impact on the Company and its subsidiaries' consolidated financial statements.

## 3 FINANCIAL AND CAPITAL RISKS MANAGEMENT

### (a) Financial risk management

Risk management, including the management on the financial risks, is carried out under the instructions of the Strategic Committee of Board of Directors and the Risk Management Team. The Company works out general principles for overall management as well as management policies covering specific areas. In considering the importance of risks, the Company 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"), the subsidiary 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 authorization 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 Company and its subsidiaries. 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, 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 and 37 for details. The Company and its subsidiaries manage exchange risk through closely monitoring interest and exchange market.

As at 31 December 2018, if RMB had weakened/strengthened by 5% (2017: 5%) against US\$ and 3% (2017: 3%) against EUR ("€") with all other variables constant, the Company and its subsidiaries would further recognise exchange loss/gain amounted RMB98 million (2017: RMB112 million) and RMB5 million (2017: RMB7 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 2018, if S\$ had weakened/strengthened by 10% (2017:10%) against US\$ with all other variables constant, SinoSing Power and its subsidiaries would further recognise exchange gain/loss amounted RMB6 million (2017:RMB30 million). The ranges of such sensitivity disclosed above were 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 following three months using primarily foreign currency contracts.

As at 31 December 2018, if PKR had weakened/strengthened by 5% (2017:Nil) against US\$ with all other variables constant, Ruyi Pakistan Energy would further recognise exchange gain/loss amounted RMB47 million (2017:Nil). The ranges of such sensitivity disclosed above were based on the management's experience and forecast.

Ruyi Pakistan Energy is exposed to foreign exchange risk on long-term loans payment that are denominated primarily in US\$. Ruyi Pakistan Energy entered into an agreement on tariff adjustment mechanism with Central Power Purchasing Agency (Guarantee) Limited ("CPPA-G") and the tariff adjustment mechanism was approved by 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\$.

### 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 Company and its subsidiaries 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 Company closely monitors the pricing trends in the open market in determining its long-term strategic stakeholding decisions.

The Company and its subsidiaries are exposed to fuel price risk on fuel purchases. In particular, SinoSing Power and its subsidiaries use fuel oil swap 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 Company and its subsidiaries primarily arises from long-term loans. Loans borrowed at variable rates expose the Company and its subsidiaries to cash flow interest rate risk. The exposures of these risks are disclosed in Note 26 to the financial statements. The Company and its subsidiaries have entered into interest rate swap agreements with banks to hedge against a portion of cash flow interest rate risk.

As at 31 December 2018, 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 RMB786 million (2017: RMB789 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 RMB54 million (2017: RMB6 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 RMB74 million (2017: RMB72 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 RMB2 million (2017: Nil) 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.

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

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

##### (i) Market risk (Cont'd)

##### (3) Cash flow interest rate risk (Cont'd)

The Company has entered into a floating-to-fixed interest rate swap agreement to hedge against cash flow interest rate risk of a loan. According to the interest rate swap agreement, the Company agrees with the counterparty to settle the difference between fixed contract rates and floating-rate interest amounts calculated by reference to the agreed notional amounts quarterly until 2019. 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.

##### (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 Company. The Company 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.

Most of the power plants of the Company and its subsidiaries 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.

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

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

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

Singapore subsidiaries derive revenue mainly from 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. However, since 1 April 2018, Energy Market Authority commenced the soft launch of Open Electricity Market, where households and business can choose to buy electricity from a retailer with a price plan that meets their needs. Singapore subsidiaries hold cash deposits of RMB164.85 million (2017: RMB161.37 million) and guarantees from creditworthy financial institutions as a security from these customers.

Ruyi Pakistan Energy derives revenue from sale of electricity to CPPA-G, which does not have high credit risk.

Finance lease receivables are mainly from domestic related parties, business enterprises in Singapore and CPPA-G in Pakistan. As these related parties and local enterprises and government authority have a good track of records and no historical losses have incurred, the Company and its subsidiaries conclude these receivables have low credit risk and remote possibility of default. The ECL of the finance lease receivables are measured on the basis of lifetime ECLs.

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

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

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

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

	Gross carrying amount	Loss allowance
Accounts receivable		
Current (not past due)	28,101,923	30,616
Within 1 year past due	1,188,215	901
1 – 3 years past due	31,138	10,821
More than 3 years past due	104,575	104,575
	29,425,851	146,913

	Gross carrying amount	Loss allowance
Other receivables		
Current (not past due)	1,486,979	2,076
Within 1 year past due	–	–
1 – 3 years past due	2,876	2,825
More than 3 years past due	35,421	33,630
	1,525,276	38,531

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, current conditions and the Company and its subsidiaries' 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 Company and its subsidiaries 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 Company and its subsidiaries maintain 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 and long-term bonds are disclosed in Note 14, 26 and 27, respectively.

#### (b) Fair value estimation

##### (i) Fair value measurements

The table below analyses financial instruments carried at fair value, by valuation method. The different levels have been defined as follows:

Level 1- Quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2- Inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly (that is, as prices) or indirectly (that is, derived from prices).

Level 3- Inputs for the asset or liability that are not based on observable market data (that is, unobservable inputs).

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

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

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

The following table presents the assets and liabilities that are measured at fair value at 31 December 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 (Note 14)	–	14	–	14
– Contingent consideration	–	–	991,383	991,383
Derivatives used for hedging (Note 14)	–	34,691	–	34,691
Other equity instrument investments (Note 10)	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 (Note 14)	–	17,752	–	17,752
Derivatives used for hedging (Note 14)	–	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 following table presents the assets and liabilities that are measured at fair value at 31 December 2017 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)	–	2,726	–	2,726
– Contingent consideration	–	–	859,547	859,547
Derivatives used for hedging (Note 14)	–	330,966	–	330,966
Available-for-sale financial assets				
– Equity securities (Note 10) (Note i)	9,223	–	–	9,223
Total assets	9,223	333,692	859,547	1,202,462
Liabilities				
Financial liabilities at fair value through profit or loss				
– Trading derivatives (Note 14)	–	125	–	125
Derivatives used for hedging (Note 14)	–	210,539	–	210,539
Total liabilities	–	210,664	–	210,664

## Note i:

Available-for-sale financial assets were reclassified to financial assets designated at FVOCI (non-recycling) upon the adoption of IFRS 9 at 1 January 2018 (see Note 2(b)(i)).

### 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 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 Company and its subsidiaries is the current bid price. These instruments are included in level 1. As at 31 December 2018, instruments included in level 1 are 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 maximize the use of relevant observable inputs and minimize 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 contingent consideration is valued using discounted cash flow. The valuation model considers the present value of the expected future receivables discounted using a risk-adjusted discounted rate. The expected future contingent considerations are determined by considering the expected performance of acquired entities through 31 December 2019, representing the measurement period for contingent consideration.

• The material other equity instrument investments in unlisted securities are valued using discounted cash flow or market comparable companies. The inputs of the valuation model mainly consist of the expected performance, period of the expected performance, weighted average capital cost and discount for lack of marketability. Discount rate of 12.48% was used for the calculations of discounted cash flow model.

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

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

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

Instruments included in level 2 comprise forward exchange contracts, fuel oil swaps and interest rate swaps.

During the year ended 31 December 2018, 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 period in the balance of the Level 3 fair value measurements are as follows:

	As at 31 December	
	2018	2017
Contingent consideration		
Beginning of the year	859,547	–
Movement:		
Gains on fair value changes	746,850	859,547
Profit compensation received from Huaneng Group	(615,014)	–
End of the year	991,383	859,547
Total gains for the year included in profit or loss for assets held at the end of the reporting period	746,850	859,547

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

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

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

	As at 31 December 2018
Other equity instrument investments	
Beginning of the year	—
Adjustment on initial application of IFRS 9 (Note 2(b)(i))	2,072,365
Adjusted balance at the beginning of the year	2,072,365
Addition	450
Fair value changes	2,046
End of the year	2,074,861
Changes in fair value recognised in other comprehensive income for the year	2,046

From 1 January 2018, any gains or losses arising from the remeasurement of the Company and its subsidiaries' other equity instrument investments held for strategic purposes are recognised in the fair value reserve (non-recycling) in other comprehensive income. Upon disposal of the other equity instrument investments, the amount accumulated in other comprehensive income is transferred directly to retained earnings. Prior to 1 January 2018, any gains arising from the disposal of the other equity instrument investments were presented in the "Other investment income" line item in the consolidated statement of comprehensive income.

### 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 allowance 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 Company and its subsidiaries for similar financial instruments.

The estimated fair value of long-term loans and long-term bonds (both including current maturities) was approximately RMB149.76 billion and RMB30.08 billion as at 31 December 2018 (2017: RMB125.00 billion and RMB19.81 billion), respectively. The aggregate book value of these liabilities was approximately RMB150.17 billion and RMB29.98 billion as at 31 December 2018 (2017: RMB125.13 billion and RMB19.99 billion), respectively

#### (c) Capital risk management

The objectives of the Company and its subsidiaries when managing capital are to safeguard the ability of the Company and its subsidiaries 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 Company and its subsidiaries 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 2018, the strategy of the Company and its subsidiaries remained unchanged from 2017. The debt ratio of the Company and its subsidiaries as at 31 December 2018 was 72.35% (2017: 72.86%).

### 4 CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

Estimates and judgments 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 Company and its subsidiaries make 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.

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

##### (a) Accounting estimates on impairment of goodwill and power generation license

The Company and its subsidiaries perform test annually whether goodwill and power generation license have suffered any impairment in accordance with the accounting policies stated in Note 2(l), respectively. The recoverable amounts of CGU or CGUs to which goodwill and the power generation license have been allocated are determined based on value-in-use calculations. These calculations require the use of estimates (Note 12 and 15). It is reasonably possible, based on existing knowledge, that outcomes within the next financial period that are different from assumptions could require a material adjustment to the carrying amounts of goodwill and power generation license.

For goodwill allocated to CGUs in the PRC, changes of assumptions in tariff and fuel price could have affected the results of goodwill impairment assessment. As at 31 December 2018, if tariff had decreased by 1% or 5% from management's estimates with other variables constant with the expectations, the Company and its subsidiaries would have to further recognise impairment against goodwill by approximately RMB900 million and RMB3,915 million, respectively. If fuel price had increased by 1% or 5% from the management's estimates with other variables constant with the expectations, the Company and its subsidiaries would have to further recognise impairment against goodwill by approximately RMB421 million and RMB3,185 million, respectively.

For the sensitivity analysis of power generation license and goodwill of Tuas Power, please refer to Note 12 and 15.

##### (b) Useful life of power generation license

As at year end, management of the Company and its subsidiaries assess whether the estimated useful life for its power generation license is indefinite. This assessment is based on the expected renewal of power generation license 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 power generation license.

##### (c) Useful lives of property, plant and equipment

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

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

##### (d) Estimated impairment of other non-current assets

The Company and its subsidiaries test whether property, plant and equipment, land use rights and mining rights suffered from impairment whenever an impairment indication exists. In accordance with Note 2(l), an impairment loss is recognised for the amount by which the carrying amount of the asset exceeds its recoverable amount. It is reasonably possible, based on existing knowledge, that outcomes within the next financial period that are different from assumptions could require a material adjustment to the carrying amount of property, plant and equipment, land use rights and mining rights.

Changes of assumptions in tariff and fuel price will affect the result of property, plant and equipment, land use rights and mining rights impairment assessment. For power plants assets that are subject to impairment testing, as at 31 December 2018, if tariff had decreased by 1% or 5% from management's estimates with other variables constant with the expectations, the Company and its subsidiaries would have to further recognise impairment against property, plant and equipment, land use rights and mining rights by approximately RMB460 million and RMB5,599 million, respectively. If fuel price had increased by 1% or 5% from the management's estimates with other variables constant with the expectations, the impairment against property, plant and equipment, land use rights and mining rights of the Company and its subsidiaries would increase totaling by approximately RMB46 million and RMB1,598 million, respectively.

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

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

##### (f) Deferred tax assets

The Company and its subsidiaries recognised the deferred tax assets to the extent that it is probable that future taxable profit will be available against which the asset can be utilized, using tax rates that are expected to be applied in the period when the asset is recovered. The management assesses the deferred tax assets based on the expected amount and timing of future taxable profit, the enacted tax laws and applicable tax rates. It is reasonably possible, based on existing knowledge, the outcomes within the next financial period that are different from assumptions could require a material adjustment to the carrying amount of deferred tax assets.

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

##### (g) Business combination

For the business combinations undertaken by the Company and its subsidiaries, the Company recognises assets acquired and the liabilities assumed based on their estimated fair value on the date of acquisition. Any excess of purchase consideration over the estimated fair values of acquired identifiable net assets is recorded goodwill (Note 2(k)). The contingent consideration of the Company in the business combination is recognised as a financial asset at fair value through profit or loss (included in other non-current assets and other receivables and assets).

The Company makes judgements and estimates in relation to the fair value allocation of the purchase price and the contingent consideration from business combination. The fair value of acquired assets and assumed liabilities and the contingent consideration are determined using valuation techniques. Estimating the fair value assigned to each class of acquired assets and assumed liabilities and the contingent consideration are based on expectations and assumptions, in particular in relation to the future sales volumes and the related revenue growth rate, future on-grid tariffs, future capital expenditure, future fuel prices, future other operating costs and the discount rates applied.

A change in the amount allocated to identifiable net assets would have an offsetting effect on the amount of goodwill recognised from the acquisition and would change the amount of depreciation and amortisation expense recognised related to those identifiable net assets. And outcomes within the next financial period that are different from assumptions could require a material adjustment to the carrying amounts of contingent consideration.

## 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 with the Company and its subsidiaries' reportable segments (Note 5(b)).

For the year ended 31 December 2018	PRC power segment	Overseas segment Note ii	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 material	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	157,326,267	12,002,860	693,399	(471,902)	169,550,624
Revenue:					
– From contracts with customers within the scope of IFRS15					169,467,647
– From other sources					82,977

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

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

	PRC power segment	Overseas segment	All other segments	Inter- segment revenue	Total
For the year ended 31 December 2017 (Note i)					
– Sales of power and heat	138,950,879	9,974,563	–	–	148,925,442
– Sales of coal and raw material	1,143,299	–	–	–	1,143,299
– Port service	–	–	470,498	(238,138)	232,360
– Transportation service	–	–	181,117	(107,287)	73,830
– Others	1,973,452	103,468	42,790	(35,197)	2,084,513
Total	142,067,630	10,078,031	694,405	(380,622)	152,459,444
Revenue:					
– From contracts with customer s within the scope of IFRS15					152,363,979
– From other source					95,465

Note The Company and its subsidiaries have initially applied IFRS 15 using the cumulative effect method. Under this method, the comparative information is not restated and was prepared in accordance with IAS 18 and IAS 11.

Note Overseas segment mainly consists of the operations in Singapore and the operation in Pakistan (consolidated since December 2018, see note 42(b)).

The revenue from sales of power and heat and sales of coal and raw materials are recognised at a point in time upon the transfer of products, whereas the revenue from port service, transportation service and maintenance service are recognised over time during the provision of service. The upfront fees of heating pipeline are recognised as revenue over the period of heat supply.

## 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 Company and its subsidiaries in order to assess performance and allocate resources. The Company has determined the operating segments based on these reports. The reportable segments of the Company 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 investment, gains on disposal of other equity instrument investment and operating results of the centrally managed and resource allocation functions of headquarters (“Segment results”). Other information provided, except as noted below, to the senior management of the Company is measured under PRC GAAP.

Segment assets exclude prepaid income tax, deferred income tax assets, other equity instrument investments 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 current income tax liabilities, deferred income tax liabilities and 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 liabilities of consolidated statement of financial position.

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

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

All sales among the operating segments have been eliminated as internal transactions when preparing consolidated financial statements.

(Under PRC GAAP)

	PRC power segment	Overseas segment	All other segments	Total
For the year ended 31 December 2018				
Total revenue	157,636,808	12,002,860	693,399	170,333,067
Inter-segment 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 amortization	(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 )

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

(b) Segment information (Cont'd)

(Under PRC GAAP)

	PRC power segment	Overseas segment	All other segments	Total
For the year ended 31 December 2017 (Restated*)				
Total revenue	142,578,381	10,078,031	694,405	153,350,817
Inter-segment revenue	—	—	(380,622)	(380,622)
External revenue	142,578,381	10,078,031	313,783	152,970,195
Segment results	2,307,505	(613,572)	302,191	1,996,124
Interest income	128,564	70,756	1,223	200,543
Interest expense	(9,128,621)	(450,928)	(145,112)	(9,724,661)
Impairment loss	(1,202,064)	(994)	(19,742)	(1,222,800)
Depreciation and amortization	(18,361,594)	(856,979)	(189,764)	(19,408,337)
Net loss on disposal of non-current assets	(580,325)	(995)	(3)	(581,323)
Share of profits less losses of associates and joint ventures	28,796	(36,114)	307,923	300,605
Income tax expense	(1,675,083)	99,150	(5,386)	(1,581,319)

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

(b) Segment information (Cont'd)

(Under PRC GAAP)

	PRC power segment	Overseas segment	All other segments	Total
31 December 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)
31 December 2017 (Restated*)				
Segment assets	337,297,224	28,526,428	9,978,885	375,802,537
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	25,930,607	260,240	328,061	26,518,908
Investments in associates	12,577,836	—	2,919,860	15,497,696
Investments in joint ventures	748,499	708,748	1,025,534	2,482,781
Segment liabilities	(266,816,265)	(14,000,442)	(3,026,229)	(283,842,936)

## 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	
	2018	2017 (Restated*)
External revenue (PRC GAAP)	169,861,165	152,970,195
Reconciling item:		
Impact of restatement under PRC GAAP in relation to business combination under common control* (Note 42)	(310,541 )	(510,751 )
Operating revenue per IFRS consolidated statement of comprehensive income	169,550,624	152,459,444

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

	For the year ended 31 December	
	2018	2017 (Restated*)
Segment results (PRC GAAP)	3,622,485	1,996,124
Reconciling items:		
Loss related to the headquarter	(354,162 )	(170,210 )
Investment income from China Huaneng Finance Co., Ltd. ("Huaneng Finance")	166,864	143,794
Dividend income of available-for-sale financial assets	–	124,918
Dividend income of other equity instrument investments	1,168	–
Gains on disposal of available-for-sale financial assets	–	1,479,732
Impact of restatement under PRC GAAP in relation to business combination under common control* (Note 42)	7,121	145,682
Impact of other IFRS adjustments**	(1,470,329)	(918,307 )
Profit before income tax expense per IFRS consolidated statement of comprehensive income	1,973,147	2,801,733

## 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	
	2018	2017 (Restated*)
Total segment assets (PRC GAAP)	396,350,552	375,802,537
Reconciling items:		
Investment in Huaneng Finance	1,391,431	1,336,777
Deferred income tax assets	3,143,465	3,010,787
Prepaid income tax	134,477	150,838
Available-for-sale financial assets	—	1,654,993
Other equity instrument investments	2,083,419	—
Corporate assets	338,113	395,148
Impact of restatement under PRC GAAP in relation to business combination under common control * (Note 42)	—	(3,657,352 )
Impact of other IFRS adjustments**	16,461,854	17,895,783
Total assets per IFRS consolidated statement of financial position	419,903,311	396,589,511

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

	As at 31 December	
	2018	2017 (Restated*)
Total segment liabilities (PRC GAAP)	(297,508,896)	(283,842,936)
Reconciling items:		
Current income tax liabilities	(231,299 )	(441,225 )
Deferred income tax liabilities	(1,050,326 )	(1,288,167 )
Corporate liabilities	(2,864,737 )	(3,632,847 )
Impact of restatement under PRC GAAP in relation to business combination under common control * (Note 42)	—	2,715,117
Impact of other IFRS adjustments**	(2,126,383 )	(2,484,849 )
Total liabilities per IFRS consolidated statement of financial position	(303,781,641)	(288,974,907)

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

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

Other material items:

	Reportable segment total	Headquarters	Investment income from Huaneng Finance	Impact of restatement under PRC GAAP in relation to business combination under common control* (Note 42)	Impact of other IFRS adjustments**	Total
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 amortization	(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 )
For the year ended 31 December 2017 (Restated*)						
Total revenue	152,970,195	—	—	(510,751 )	—	152,459,444
Interest expense	(9,724,661 )	(126,900 )	—	102,557	—	(9,749,004 )
Depreciation and amortization	(19,408,337 )	(38,819 )	—	280,295	(1,468,972 )	(20,635,833 )
Impairment loss	(1,222,800 )	—	—	34,313	1,275	(1,187,212 )
Share of profits less losses of associates and joint ventures	300,605	—	143,794	—	(19,184 )	425,215
Net (loss)/gain on disposal of non-current assets	(581,323 )	3,174	—	(20 )	(38,287 )	(616,456 )
Income tax expense	(1,581,319 )	—	—	7,851	355,942	(1,217,526 )

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

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

Huaneng Shandong Power Generation Co., Ltd. (“Shandong Power”) completed the acquisition of equity interests of certain companies from Taishan Power Limited Company (“Taishan Power”), see Note 42 for details. As the acquisition is a business combination under common control, the transaction is accounted for under merger accounting method under PRC GAAP. 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 operating results for all periods presented are retrospectively restated as if the current structure and operations resulting from the acquisition had been in existence from the date when the acquirees first became under the control of the same ultimate controlling party. Therefore the relevant comparative figures in the segment information were restated under PRC GAAP while the acquisition is accounted for using acquisition method under IFRS.

Other GAAP adjustments above primarily represented the classification adjustments and other adjustments of the \*\* prior year transactions. Other than the classification adjustments, the differences will be gradually eliminated following subsequent depreciation and amortization of related assets or the extinguishment of liabilities.

## Geographical information (Under IFRS):

## (i) External revenue generated from the following countries:

	For the year ended 31 December	
	2018	2017
PRC	157,547,764	142,381,413
Overseas	12,002,860	10,078,031
Total	169,550,624	152,459,444

The geographical location of customers is based on the location at which the electricity was transferred, goods were delivered and services provided.

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

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

(ii) Non-current assets (excluding financial assets and deferred income tax assets) are located in the following countries:

	As at 31 December	
	2018	2017
PRC	317,850,476	319,534,533
Overseas	23,302,942	23,035,758
Total	341,153,418	342,570,291

The information on sales to major customers of the Company and its subsidiaries at amount equal to or more than 10% of external revenue is as follows:

In 2018, the revenue from grid companies under common control of State Grid Corporation of China within PRC power segment in total accounted for 76% of external revenue (2017: 76%). The sales from a subsidiary of State Grid Corporation of China at amount more than 10% of external revenue is as follow:

	For the year ended 31 December			
	2018		2017	
	Amount	Proportion	Amount	Proportion
State Grid Shandong Electric Power Company	31,156,948	18 %	28,659,891	19 %

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

### (c) Contract balances

The contract assets primarily relate to the Company and its subsidiaries' rights to consideration for service completed but not billed at the reporting date. There was no impact on contract assets as a result of the acquisition of subsidiaries (see Note 42). 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. As at 31 December 2018, the carrying amount of contract liabilities is RMB4,225 million. The contract liabilities of RMB1,375 million at the beginning of the year has been recognised as revenue of heat in 2018 and RMB187 million heat pipeline upfront fees recognised as revenue in year 2018.

No information is provided about remaining performance obligations at 31 December 2018 that have an original expected duration of one year or less, as allowed by IFRS 15.

## 6PROFIT BEFORE INCOME TAX EXPENSE

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

	For the year ended 31 December	
	2018	2017
Total interest expense on borrowing	10,982,230	10,225,069
Less: amounts capitalized in property, plant and equipment	495,818	476,065
Interest expenses charged in consolidated statement of comprehensive income	10,486,412	9,749,004
Auditors' remuneration-audit services	68,750	64,160
Operating leases charge	377,162	364,756
Fuel	105,736,173	92,737,304
Depreciation of property, plant and equipment	20,466,423	20,180,830
Amortization of land use rights	344,068	341,125
Amortization of other non-current assets	105,623	113,878
Impairment loss of property, plant and equipment (Note 7)	989,778	1,046,195
Impairment loss of goodwill (Note 15)	409,371	—
Impairment loss of land use rights (Note 11)	—	108,590
Impairment loss of mining rights (Note 13)	135,085	—
Impairment loss of other non-current assets	8,432	5,008
Recognition of loss allowance for receivables	40,967	27,682
Recognition/(reversal) of provision for inventory obsolescence (Note 17)	253,816	(263 )
Net (gain)/loss on disposals of non-current assets	(42,506 )	616,456
Government grants	(521,380 )	(421,912 )
Included in other investment income		
– Gains on disposal of available-for-sale financial assets	—	(1,479,732 )
– Dividends on available-for-sale financial assets	—	(124,918 )
– Dividends on other equity instrument investments	(1,168 )	—
– Gains on disposal of subsidiaries	—	(52,330 )
– Loss on disposal of a joint venture (Note 42(b))	270,741	—
Included in (gain)/loss on fair value changes of financial assets/liabilities		
– Contingent consideration of the business combination	(746,850 )	(859,547 )
– Loss on fair value changes of trading derivatives	20,007	2,761

Other operating expenses consist of impairment loss of property, plant and equipment, goodwill, mining rights and impairment loss of other non-current assets, loss on disposal of a joint venture, substituted power arrangement expenses, insurance, government grants and other miscellaneous expenses.

## 7 PROPERTY, PLANT AND EQUIPMENT

	Dam	Port facilities	Buildings	Electric utility plant in service	Transportation facilities	Others	CIP	Total
As at 1 January 2017								
Cost	1,876,314	4,116,914	9,056,858	341,195,395	875,630	6,041,783	28,022,858	391,183,000
Accumulated depreciation	(186,312 )	(556,677 )	(2,749,300 )	(152,408,524 )	(320,971 )	(3,596,546 )	–	(159,811,000 )
Accumulated impairment loss	(310,404 )	–	(71,234 )	(7,085,994 )	–	(88,228 )	(749,753 )	(8,305,410 )
Net book value	1,379,598	3,560,237	6,236,324	181,700,877	554,659	2,357,009	27,273,105	223,066,590
Year ended 31 December 2017								
Beginning of the year	1,379,598	3,560,237	6,236,324	181,700,877	554,659	2,357,009	27,273,105	223,066,590
Reclassification	49,386	(404 )	52,047	(157,759 )	(4,357 )	61,087	–	–
Business combination	279,169	–	1,944,531	58,379,270	17,243	443,052	2,717,544	63,780,000
Additions	–	–	184	840,991	–	88,160	21,225,980	22,155,125
Transfer from CIP	15,355	114,688	342,285	20,283,508	288,554	145,705	(21,190,095 )	–
Disposals/write-off	–	(14,731 )	(30,837 )	(1,252,829 )	(3,907 )	(28,562 )	–	(1,330,866 )
Disposal of subsidiaries	–	(632,709 )	(101,169 )	(114,542 )	–	(153,096 )	(1,242,210 )	(2,243,726 )
Depreciation charge	(40,200 )	(111,529 )	(339,630 )	(19,155,852 )	(59,022 )	(494,932 )	–	(20,201,165 )
Impairment charge	(45,619 )	–	(1,651 )	(754,753 )	–	(2,503 )	(241,669 )	(1,046,525 )
Currency translation differences	–	–	–	151,249	–	263	600	152,112
End of the year	1,637,689	2,915,552	8,102,084	239,920,160	793,170	2,416,183	28,543,255	284,328,003
As at 31 December 2017								
Cost	2,220,224	3,358,811	11,173,669	418,360,698	1,155,392	5,972,688	29,534,677	471,776,151
Accumulated depreciation	(226,512 )	(443,259 )	(3,019,198 )	(170,525,898 )	(362,222 )	(3,523,292 )	–	(178,109,569 )
Accumulated impairment loss	(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	284,328,003

	Dam	Port facilities	Buildings	Electric utility plant in service	Transportation facilities	Others	CIP	Total
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	284,320,000
Reclassification	–	–	90,791	(108,874)	–	18,083	–	–
Business combination (Note 42)	–	–	38,845	3,128,388	1,683	294,629	5,120	3,468,625
Additions	–	195	18,996	543,660	–	71,414	15,981,274	16,615,529
Transfer from CIP	5,867	50,824	514,167	17,726,156	460	108,477	(18,405,951)	–
Reclassification to assets held for sale (Note 20)	–	–	–	(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)	–	(20,493,268)
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	282,061,302
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)	–	(231,921,102)
Accumulated impairment loss	(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	282,061,302

## Interest capitalization

Interest expense of approximately RMB496 million (2017: RMB476 million) arising on borrowings for the construction of property, plant and equipment was capitalized during the year and was included in 'Additions' in property, plant and equipment. The weighted average capitalization rate was approximately 4.57% (2017: 4.54%) per annum.

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

### Impairment

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. Discount rates of 7.74%, 7.80%, 8.26%, 8.63%, 9.25%, 9.79%, and 12.84% were adopted in the value in use model in the determination of the recoverable amounts for the power plants respectively. 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; Therefore the projects under construction with a carrying value of RMB14 million and 8 million were fully impaired in 2018.

In 2017, impairment losses for certain property, plant and equipment and land use rights of approximately RMB1,046 million and RMB109 million have been recognised, respectively. Factors leading to the impairment include lower than expected utilization hours of a subsidiary due to long idle hours of its power generating units and the coal-fire projects in progress was aborted; lower than expected operating results of three subsidiaries in 2017 due to oversupply and fierce competition within the electricity market in the provinces, as well as low profitability of a hydropower plant, a coal-fire project in progress of a subsidiary was aborted as a result of relevant regulation. Discount rates of 9.50%, 9.98%, 9.89%, 14.74% and 9.14% were adopted in the value in use model in the determination of the recoverable amounts for the four coal-fired power plants and the hydropower plant respectively. In addition, as a result of the low demand of coal-fired power in local market, management estimated the possibility of further development of a coal-fired power project was remote, therefore the project under construction with a carrying value of RMB242 million was fully impaired in 2017.

### Property, plant and equipment held under finance leases

As at 31 December 2018, certain property, plant and equipment with original cost of RMB2,376 million (2017: RMB3,312 million) were held under finance leases, which mainly included power generation assets, ships and pipeline assets.

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

## Security

As at 31 December 2018, certain property, plant and equipment were secured to a bank as collateral against a long-term loan (Note 26).

## Buildings without ownership certificate

At 31 December 2018, the Company and its subsidiaries were in the process of applying for the ownership certificate for certain buildings (buildings for power generation process were included in electric utility plant in service) with an aggregate net book value of RMB8,386 million (2017: RMB10,800 million). The management are of the opinion that the Company and its subsidiaries are entitled to lawfully and validly occupy and use of the above mentioned buildings.

## 8 INVESTMENTS IN ASSOCIATES AND JOINT VENTURES

	2018	2017
Beginning of the year	19,517,623	19,632,113
Capital injections in associates and joint ventures	463,258	301,916
Business combination	—	1,021,566
Transfer from available-for-sale	—	91,800
Transfer to subsidiaries (Note 42(b))	(1,314,040 )	(736,725 )
Share of net profit less loss	1,823,415	425,215
Share of other comprehensive (loss)/income	(531,186 )	121,208
Currency translation differences	45,762	(142,226 )
Share of other capital reserve of equity-method investees	(80,543 )	—
Dividends	(370,325 )	(835,279 )
Elimination of unrealised profits on transactions with equity-method investees	—	(361,965 )
End of the year	19,553,964	19,517,623

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

As at 31 December 2018, investments in associates and joint ventures of the Company and its subsidiaries 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:

				Percentage of equity interest held		
Name	Country of incorporation	Registered capital	Business nature and scope of operation	Direct	Indirect <sup>1</sup>	
Associates:						
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 for financial service including fund deposit services, lending, finance lease arrangements, notes discounting and entrusted loans and investment arrangement within Huaneng Group	20 %	—	
Huaneng Sichuan Hydropower Co., Ltd. (“Sichuan Hydropower”)	PRC	RMB1,469,800,000	Development, investment, construction, operation and management of hydropower	49 %	—	
China Huaneng Group Fuel Co., Ltd. (“Huaneng Group Fuel Company”) **	PRC	RMB3,000,000,000	Wholesale of coal, import and export of coal	50 %	—	
Hainan Nuclear Power Limited Liability Company (“Hainan Nuclear”)	PRC	RMB4,831,460,000	Construction and operation of nuclear power plants; production and sales of electricity and related products	30 %	—	

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				Percentage of equity interest held	
Name	Country of incorporation	Registered capital	Business nature and scope of operation	Direct	Indirect <sup>1</sup>
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 %

<sup>1</sup> The indirect percentage of equity interest held represents the effective ownership interest of the Company and its subsidiaries.

\* As at 31 December 2018, the fair value of the Company's shares in SECL was RMB5,207 million (2017: RMB6,010 million).

\*\* In accordance with the articles of the association of the investee, the Company 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	
	2018	2017	2018	2017	2018	2017	2018	2017
Gross amounts of the associates'								
Current assets	1,064,837	1,113,579	24,066,320	16,444,934	31,484,547	25,535,504	934,257	650,050
Non-current assets	14,472,981	14,590,921	62,798,620	56,079,321	20,106,246	20,786,497	1,810,145	2,246,400
Current liabilities	(3,903,679 )	(2,477,362 )	(24,141,930)	(20,447,190)	(44,560,156)	(39,588,213)	(642,355 )	(795,800)
Non-current liabilities	(7,060,740 )	(8,661,852 )	(35,193,400)	(28,491,540)	(73,483 )	(49,904 )	(35,503 )	(27,440)
Equity	4,573,399	4,565,286	27,529,610	23,585,525	6,957,154	6,683,884	2,066,544	2,073,200
– Equity attributable to shareholders	3,409,111	3,400,953	21,118,225	22,285,077	6,957,154	6,683,884	2,066,544	2,073,200
– Non-controlling interests	1,164,288	1,164,333	6,411,385	1,300,448	–	–	–	–
Revenue	2,242,269	2,247,781	18,518,430	13,908,949	1,610,768	1,393,211	2,232,700	2,073,200
Profit/(loss) from continuing operations attributable to shareholders	225,705	222,403	589,821	747,657	834,318	718,970	(6,665 )	52,361
Other comprehensive (loss)/income attributable to shareholders	–	–	(1,117,524 )	521,965	78,951	(28,099 )	–	–
Total comprehensive income/(loss) attributable to shareholders	225,705	222,403	(527,703 )	1,269,622	913,269	690,871	(6,665 )	52,361
Dividend received from the associates	106,598	132,923	79,339	148,761	128,000	116,000	–	127,690

	Sichuan Hydropower		SECL		Huaneng Finance		Hanfeng Power	
	2018	2017	2018	2017	2018	2017	2018	2017
Reconciled to the interests in the associates								
Gross amounts of net assets attributable to shareholders of the associate	3,409,111	3,400,953	21,118,225	22,285,077	6,957,154	6,683,884	2,066,544	2,073,209
The Company's effective interest	49	% 49	% 25.02	% 25.02	% 20	% 20	% 40	% 40
The Company's share of net assets attributable to shareholders of the associate	1,670,464	1,666,467	5,282,723	5,574,612	1,391,431	1,336,777	826,618	829,284
Impact of adjustments	207,586	207,586	1,161,810	1,161,810	—	—	293,082	293,082
Carrying amount in the consolidated financial statements	1,878,050	1,874,053	6,444,533	6,736,422	1,391,431	1,336,777	1,119,700	1,122,366

## 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	
	2018	2017	2018	2017
Gross amounts of joint ventures'				
Current assets	345,658	665,410	763,572	656,720
Non-current assets	4,335,923	4,663,530	5,399,783	5,739,860
Current liabilities	(2,151,722)	(3,316,709)	(2,826,652)	(2,939,371)
Non-current liabilities	(709,165 )	(617,437 )	(1,128,274)	(1,374,656)
Equity	1,820,694	1,394,794	2,208,429	2,082,553
Included in the above assets and liabilities:				
Cash and cash equivalents	137,444	96,528	312,783	362,214
Current financial liabilities (excluding trade and other payables and provisions)	(1,953,156)	(2,987,937)	(2,158,919)	(2,404,331)
Non-current financial liabilities (excluding trade and other payables and provisions)	(709,164 )	(617,437 )	(1,128,274)	(1,352,000)
Revenue	2,423,130	3,532,065	3,287,872	3,451,983
Profit/(Loss) from continuing operations	425,900	(139,780 )	174,652	271,364
Other comprehensive income	—	—	—	—
Total comprehensive income/(loss)	425,900	(139,780 )	174,652	271,364
Dividend received in cash from the joint ventures	—	—	24,387	724,453

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

	Shanghai Time Shipping		Jiangsu Nantong Power	
	2018	2017	2018	2017
Included in the above profit/(loss):				
Depreciation and amortization	269,438	317,133	374,683	396,500
Interest income	1,456	1,406	1,485	1,810
Interest expense	139,180	157,851	163,914	130,028
Income tax expense	141,667	(45,741 )	60,379	92,294
Reconciled to the interest in the joint ventures:				
Gross amounts of net assets	1,820,694	1,394,794	2,208,429	2,082,553
The Company and its subsidiaries' effective interest	50 %	50 %	50 %	50 %
The Company and its subsidiaries' share of net assets	910,347	697,397	1,104,215	1,041,277
Impact of adjustments	18,324	18,324	—	—
Carrying amount in the consolidated financial statements	928,671	715,721	1,104,215	1,041,277
Aggregate information of associates and joint ventures that are not individually material:				
			2018	2017
Aggregate carrying amount of individually immaterial associates and joint ventures in the consolidated financial statements			3,654,282	2,948,510
Aggregate amounts of the Company and its subsidiaries' share of those associates and joint ventures				
Profit from continuing operations			52,935	70,965
Total comprehensive income			53,197	70,965

As at 31 December 2018, the Company's share of losses of an associates and a joint venture exceeded its interest in the associate and the joint venture and the unrecognised further losses amounted to RMB505 million (2017: RMB185 million).

## 9 INVESTMENTS IN SUBSIDIARIES

As at 31 December 2018, the investments in subsidiaries of the Company and its subsidiaries, 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	RMB 200,000,000	Wholesale of coal	100%	100	%
Huaneng Shanghai Shidongkou Power Generation Limited Liability Company (“Shidongkou Power”)(i)	PRC	held directly	RMB 1,179,000,000	Power generation	50 %	100	%
Huaneng Nantong Power Generation Limited Liability Company	PRC	held directly	RMB 798,000,000	Power generation	70 %	70	%
Huaneng Yingkou Co-generation Limited Liability Company	PRC	held directly	RMB 844,030,000	Production and sales of electricity and heat sale of coal ash and lime	100%	100	%
Huaneng Hunan Xiangqi Hydropower Co.Ltd.	PRC	held directly	RMB 328,000,000	Construction, operation and management of hydropower plants and related projects	100%	100	%
Huaneng Zuoquan Coal-fired Power Generation Limited Liability Company	PRC	held directly	RMB 960,000,000	Construction, operation and management of electricity projects; development and utilization of clean energy resources	80 %	80	%
Huaneng Kangbao Wind Power Utilization Limited Liability Company	PRC	held directly	RMB 407,200,000	Construction, operation and management of wind power plants and related projects; solar power generation	100%	100	%

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 Jiuquan Wind Power Generation Co., Ltd. ("Jiuquan Wind Power")	PRC	held directly	RMB 2,610,000,000	Construction, operation and management of wind power generation and related projects	100 %	100 %		
Huaneng Rudong Wind Power Generation Co., Ltd.	PRC	held directly	RMB 90,380,000	Operation, management of wind power generation projects	90 %	90 %		
Huaneng Guangdong Haimen Port Limited Liability Company	PRC	held directly	RMB 331,400,000	Loading, warehousing and conveying services, providing facility services and water transportation services	100 %	100 %		
Huaneng Taicang Port Limited Liability Company	PRC	held directly	RMB 600,000,000	Port provision, cargo loading and storage	85 %	85 %		
Huaneng Taicang Power Generation Co., Ltd.	PRC	held directly	RMB 867,996,200	Power generation	75 %	75 %		
Huaneng Huaiyin II Power Generation Limited Company	PRC	held directly	RMB 930,870,000	Power generation	63.64 %	63.64 %		
Huaneng Xindian Power Generation Co., Ltd.	PRC	held directly	RMB 465,600,000	Power generation	95 %	95 %		
Huaneng Shanghai Combined Cycle Power Limited Liability Company	PRC	held directly	RMB 699,700,000	Power generation	70 %	70 %		
Huaneng Yumen Wind Power Generation Co., Ltd.	PRC	held directly	RMB 719,170,000	Construction, operation and management of wind power generation and related projects	100 %	100 %		

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 Qingdao Co-generation Limited Company	PRC	held directly	RMB 214,879,000	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	RMB 300,000,000	Production and sales of electricity and heat; investment in combined cycle co-generation industries	95 %	95	%
Huaneng Shantou Haimen Power Generation Limited Liability Company	PRC	held directly	RMB 1,508,000,000	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	RMB 726,600,000	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	RMB 44,420,000	Providing thermal energy and cold energy services; supplying electricity	54 %	60	%
Huaneng Yunnan Fuyuan Wind Power Generation Co., Ltd.	PRC	held directly	RMB 157,290,000	Wind power project investment, management and sales	100%	100	%
Huaneng Guizhou Panzhou State City Wind Power Co., Ltd.	PRC	held directly	RMB 188,180,000	Construction and management of wind power plants and related projects	100%	100	%
Huaneng Jiangxi Clean Energy Limited Liability Company	PRC	held directly	RMB 5,000,000	Power generation and supply, development, management and construction of clean	100%	100	%

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held	
					Interest	Voting
Huaneng Nanjing Combined Cycle Co-generation Co., Ltd. (“Nanjing Combined Cycle Co-generation”) (iii)	PRC	held directly	RMB 938,350,000	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	RMB 266,000,000	Construction, operation and management of wind power plants and related projects	100 %	100 %
Huaneng Suixian Jieshan Wind Power Generation Co., Ltd.	PRC	held directly	RMB 182,500,000	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	RMB 600,000,000	Construction and operation of thermal heating network, development and utilization of clean energy resources	100 %	100 %
Huaneng Xuzhou Tongshan Wind Power Generation Co., Ltd. (“Tongshan Wind Power”)	PRC	held directly	RMB 287,951,400	Wind power generation, electricity engineering design services, maintenance of power supply and control facilities, solar energy power generation	70 %	70 %
Huaneng Nanjing Co-generation Co., Ltd.	PRC	held directly	RMB 300,000,000	Construction and operation of power plants, thermal heating services	70 %	70 %
Huaneng Hunan Guidong Wind Power Generation Co., Ltd.	PRC	held directly	RMB 140,000,000	Investment, construction, operation and management of electricity projects; development and utilization of clean energy resources	100 %	100 %

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held		
					Interest	Voting	
Huaneng Nanjing Luhe Wind Power Generation Co., Ltd.	PRC	held directly	RMB 63,800,000	Investment, construction, operation, management of electricity projects	100%	100	%
Huaneng Luoyuan Power Generation Limited Liability Company	PRC	held directly	RMB 1,000,000,000	Construction, operation and management of power plants and related projects	100%	100	%
Huaneng Lingang (Tianjin) Gas Co-generation Co., Ltd.	PRC	held directly	RMB 332,000,000	Power generation and supply	100%	100	%
Huaneng Lingang (Tianjin) Heat Co-generation Co., Ltd.	PRC	held indirectly	RMB 5,000,000	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	RMB 122,000,000	Investment, construction and operation of electricity projects, development and utilization of clean energy resources	100%	100	%
Huaneng Mianchi Co-generation Limited Liability Company	PRC	held directly	RMB 570,000,000	Construction, operation and management of coal-fired plants and related projects	60 %	60	%
Huaneng Yingkou Xianrendao Co-generation Co., Ltd.	PRC	held directly	RMB 352,020,000	Power generation and supply, development and utilization of clean energy resources	100%	100	%
Huaneng Nanjing Xingang Comprehensive Energy Co., Ltd.	PRC	held directly	RMB 10,000,000	Thermal generation and supply, power distribution and sales	65 %	65	%

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 Changxing Photovoltaic Power Generation Limited Liability Company (“Changxing Photovoltaic Power”)	PRC	held directly	RMB 26,000,000	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	RMB 1,629,338,700	Infrastructure construction of wind power plants	70 %	70	%
Huaneng Guilin Gas Distributed Energy Co., Ltd.	PRC	held directly	RMB 267,450,000	Construction, operation and management of power plants thermal management	80 %	80	%
Huaneng (Dalian) Co-generation Co., Ltd.	PRC	held directly	RMB 575,291,769	Construction, operation and management of co-generation power plants and related projects	100%	100	%
Huaneng Zhongxiang Wind Power Generation Co., Ltd.	PRC	held directly	RMB 240,000,000	Construction, operation and management of wind power plants and related projects	100%	100	%
Huaneng Guanyun Co-generation Co., Ltd.	PRC	held directly	RMB 15,000,000	Construction, operation and management of co-generation power plants, heating network and expansion engineering	100%	100	%
Huaneng International Power Hong Kong Limited Company	Hong Kong	held directly	100,000 Shares	Development, construction management and operation of power supply, coal projects; related investment and financing businesses	100%	100	%

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 Generation Pte.Ltd. ("TPG")	Singapore	held indirectly	\$S1,183,000,001	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	\$S255,500,001	Provision of energy, power supply, thermal supply, management of industrial water and waste	100%	100	%
TP-STM Water Resources Pte.Ltd.	Singapore	held indirectly	\$S4,500,000	Providing desalinated water	60 %	60	%
TP-STM Water Services Pte.Ltd.*	Singapore	held indirectly	\$S21,000	Providing desalinated water	60 %	60	%
Huaneng Shanxi Taihang Power Generation Limited Liability Company	PRC	held directly	RMB 1,086,440,000	Pre-services related to coal-fired generation	60 %	60	%
Huaneng Mianchi Clean Energy Limited Liability Company	PRC	held directly	RMB 10,000,000	Wind Power generation, new energy development and utilization	100%	100	%
Huaneng Zhuolu Clean Energy Limited Liability Company	PRC	held directly	RMB 78,878,100	Construction, operation and management of power plants and related projects	100%	100	%
Huaneng Tongwei Wind Power Generation Limited Liability Company	PRC	held directly	RMB 248,000,000	Construction, operation and management of wind power plants and related projects	100%	100	%

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	RMB 200,000,000	Wind power plants design, construction, management and maintenance	100%	100	%
Huaneng Yancheng Dafeng New Energy Power Generation Limited Liability Company	PRC	held directly	RMB 5,000,000	Construction, operation and management of wind power, photovoltaic power plant	100%	100	%
Huaneng Shanyin Power Generation Limited Liability Company	PRC	held directly	RMB 1,573,000,000	Construction, operation and management of power plants and related projects	51 %	51	%
Huaneng Wafangdian Wind Power Generation Co., Ltd.	PRC	held directly	RMB 50,000,000	Construction, operation and management of wind power generation and related projects	100%	100	%
Huaneng Jiangsu Energy Sales Limited Liability Company	PRC	held directly	RMB 200,000,000	Purchase and sales of electricity and thermal energy, water supply services, construction and operation of electricity distribution network and heating pipe network	100%	100	%
Huaneng Liaoning Energy Sales Limited Liability Company	PRC	held directly	RMB 200,000,000	Sales of electricity, thermal energy and circulating hot water	100%	100	%
Huaneng Guangdong Energy Sales Limited Liability Company	PRC	held directly	RMB 200,000,000	Power and thermal energy supply, energy conservation technology service, transmission and substation projects contracting	100%	100	%
Huaneng Suizhou Power Generation Limited Liability Company	PRC	held directly	RMB 96,020,000	Construction, operation and management of power plants, production and sales of electricity and heating	100%	100	%



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	RMB 10,000,000	Construction, operation and management of photovoltaic power plants and related projects	100%	100	%
Huaneng Longyan Wind Power Generation Limited Liability Company	PRC	held directly	RMB 10,000,000	Construction, operation and management of wind power plants and related projects	100%	100	%
Huaneng Dandong Photovoltaic Power Generation Limited Liability Company	PRC	held directly	RMB 17,720,000	Investment, construction operation and management of electricity projects, development and utilization of clean energy resources	100%	100	%
Huaneng Dongguan Combined Cycle Co-generation Limited Liability Company	PRC	held directly	RMB 50,000,000	Investment of electricity projects, thermal power generation and supply, investment in heating pipe network, development and utilization of clean energy resources	100%	100	%
Huaneng Chongqing Fengjie Wind Power Generation Limited Liability Company	PRC	held directly	RMB 183,900,000	Electricity production and supply; development and utilization of clean energy resources	100%	100	%
Huaneng Jingxing Photovoltaic Power Generation Limited Liability Company	PRC	held directly	RMB 100,000	Investment, construction and management of photovoltaic power plants	100%	100	%
Huaneng Shanxi Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	Electricity supply and sales, investment, construction, operation and repair of regional transmission and distribution network	100%	100	%

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	RMB 210,000,000	Operation of natural gas, electric energy and thermal energy products sales	100%	100	%
Huaneng Chongqing Luohuang Energy Sales Limited Liability Company	PRC	held indirectly	RMB 210,000,000	Sales and supply of electricity, sales of thermal products	90 %	90	%
Huaneng Chongqing Tongliang Energy Sales Limited Liability Company	PRC	held indirectly	RMB 210,000,000	Operation of natural gas, sales of electricity supply, sales of thermal products	51 %	51	%
Huaneng Hunan Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	Electricity and thermal energy products sales	100%	100	%
Huaneng Jiangxi Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	Construction, operation and management of heating and power supply facilities	100%	100	%
Huaneng Hebei Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	Construction, installation, maintenance and repair of heating and power supply facilities	100%	100	%
Huaneng Henan Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	Sales of electricity, heating, gas and other energy products	100%	100	%
Huaneng Handan Heating Limited Liability Company	PRC	held directly	RMB 100,000,000	Construction, operation and maintenance of heating sources and pipe network	100%	100	%

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held		
					Interest	Voting	
Huaneng (Huzhou Development Zone) Photovoltaic Power Generation Limited Liability Company	PRC	held directly	RMB 10,000,000	Photovoltaic power generation; power supply, purchase and sales	100%	100	%
Huaneng Fujian Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	Sales of electricity, heating, gas and other energy products	100%	100	%
Huaneng Hubei Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	Sales of electricity, heating, gas and other energy products	100%	100	%
Huaneng (Sanming) Clean Energy Limited Liability Company	PRC	held directly	RMB 500,000	Construction, operation and management of wind power, photovoltaic power station and related projects	100%	100	%
Huaneng Yueyang Xingang Photovoltaic Power Generation Limited Liability Company	PRC	held directly	RMB 16,000,000	Construction, operation and management of electricity projects, development and utilization of clean energy	60 %	60	%
Huaneng Shanghai Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	Power supply (except construction and operation of electricity network), technology services in energy conservation and environmental protection	100%	100	%
Huaneng Anhui Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	Sales of electricity, heating gas and other energy products	100%	100	%

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held			
					Interest	Voting		
Huaneng (Shanghai) Power Maintenance Limited Liability Company	PRC	held directly	RMB 200,000,000	Contracting installation and repair of electricity facilities	100 %	100 %		
Huaneng Guanyun Clean Energy Power Limited Liability Company	PRC	held directly	RMB 26,000,000	Sales of electricity	100 %	100 %		
Huaneng Jianchang Photovoltaic Power Generation Limited Liability Company	PRC	held directly	RMB 10,000,000	Production and supply of electricity, development and utilization of clean energy resources	100 %	100 %		
Huaneng Chaoyang Photovoltaic Power Generation Limited Liability Company	PRC	held directly	RMB 10,000,000	Production and supply of electricity, development and utilization of clean energy resources	100 %	100 %		
Huaneng (Luoyuan) Port Limited Company	PRC	held directly	RMB 169,710,000	Port management, investment and development	100 %	100 %		
Huaneng Shijiazhuang Energy Limited Liability Company	PRC	held directly	RMB 60,000,000	Production and supply of heating, purchase and sales of electricity	66.60 %	66.60 %		
Huaneng Jiangyin Combined Cycle Co-generation Limited Liability Company	PRC	held directly	RMB 600,000,000	Production and supply of electricity, production and supply of heating	51 %	51 %		
Huaneng Anyang Energy Limited Liability Company	PRC	held directly	RMB 10,000,000	Production and supply of electricity, production and supply of heating	100 %	100 %		

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held			
					Interest		Voting	
Huaneng Shanxi Comprehensive Energy Limited Liability Company (“Shanxi Comprehensive Energy”)	PRC	held directly	RMB 120,000,000	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	RMB 145,790,000	Photovoltaic power generation	46.40	%	58	%
Huaneng Weishan New Energy Limited Company (“Weishan New Energy”) (iv)	PRC	held indirectly	RMB 167,000,000	Investment, production and sales of new energy power generation projects	40	%	100	%
Huaneng Ruyi (Helan) New Energy Limited Company (“Helan New Energy”) (iv)	PRC	held indirectly	RMB 19,000,000	Photovoltaic power generation	40	%	100	%
Huaneng Dezhou New Energy Limited Company (iv)	PRC	held indirectly	RMB 3,100,000	Photovoltaic power generation, wind power generation, biomass power generation	80	%	100	%
Zhaodong Huaneng Dechang Solar Power Generation Limited Company	PRC	held indirectly	RMB 30,810,000	Solar energy generation and technology promotion, repair electricity facilities	100	%	100	%
Daqing Huaneng Shuangyu Solar Power Generation Limited Company	PRC	held indirectly	RMB 80,796,000	Solar energy generation	100	%	100	%
Huaneng Mingguang Wind Power Generation Limited Liability Company	PRC	held directly	RMB 10,000,000	Production and supply of electricity; investment, construction, operation and management of electricity projects	100	%	100	%

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 Guangxi Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	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	RMB 80,000,000	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 directly	RMB 173,920,000	Production and supply of electricity	80 %	80	%
Huaneng Abagaqi Clean Energy Limited Liability Company	PRC	held directly	RMB 100,000,000	Production, supply and sales of electricity and thermal energy	100%	100	%
Huaneng Jiashan Photovoltaic Power Generation Limited Liability Company	PRC	held directly	RMB 10,000,000	Production and supply of electricity	100%	100	%
Huaneng Zhejiang Energy Sales Limited Liability Company	PRC	held directly	RMB 210,000,000	New energy technology development, technology consulting, transferring of results	100%	100	%
Huaneng Guangdong Shantou Power Generation Limited Liability Company	PRC	held directly	RMB 10,000,000	Production and supply of electricity and thermal energy	100%	100	%
Huaneng Shantou Photovoltaic Power Generation Limited Liability Company	PRC	held directly	RMB 100,000,000	Production and supply of electricity	100%	100	%

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 Guigang Clean Energy Limited Liability Company	PRC	held directly	RMB 10,000,000	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	RMB 10,000,000	Production and supply of electricity, investment in electricity projects	100 %	100 %		
Huaneng Hainan Energy Sales Limited Liability Company	PRC	held indirectly	RMB 210,000,000	Construction and operation of heat and power supply facilities, operation of heat resources, heat network and power supply facilities	91.80 %	91.80 %		
Huaneng Yangpu Co-generation Limited Company	PRC	held indirectly	RMB 802,222,000	Investment, construction, operation and management of electricity projects and heat pipe network	82.62 %	82.62 %		
Huaneng Zhejiang Pinghu Offshore Wind Power Generation Co., Ltd.*	PRC	held directly	RMB 2,200,000,000	Production and supply of electricity, investment, construction	100 %	100 %		
Huaneng Liaoning Clean Energy Limited Liability Company* (“Liaoning Clean Energy”)PRC		held directly	RMB 170,000,000	Technology development technical advice services for clean energy	100 %	100 %		
Jiangsu Huaneng Zhongyang New Energy Power Generation Co., Ltd.*	PRC	held directly	RMB 28,000,000	Production and supply of electricity, investment, construction and operation of electricity projects	75 %	75 %		

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 Henan Puyang Clean Energy Limited Liability Company*	PRC	held directly	RMB 10,000,000	Production and supply of electricity, investment, construction and operation of electricity projects	100%	100	%
Huaneng Guizhou Energy Sales Co., Ltd.*	PRC	held directly	RMB 210,000,000	Sales of electricity, heat and gas	100%	100	%
Huaneng Guangdong Shantou Offshore Wind Power Generation Co., Ltd.*	PRC	held directly	RMB 10,000,000	Investment and development of wind energy and new energy	100%	100	%
Jiyuan Huaneng Energy Sales Co., Ltd.*	PRC	held indirectly	RMB 20,000,000	Sales of electricity, heat and gas	51	%	51 %
Huaneng Zhenlai Photovoltaic Power Generation Co., Ltd.* (“Zhenlai Photovoltaic Power”) (vi)	PRC	held indirectly	RMB 29,958,660	Investment, construction, production, operation and overhaul of photovoltaic power generation projects	50	%	100 %
Huaneng Yushe Poverty Relief Energy Co., Ltd.*	PRC	held indirectly	RMB 14,760,000	Construction, operation and management of photovoltaic power generation and new energy projects	90	%	90 %
Huaneng Anhui Mengcheng Wind Power Co., Ltd.*	PRC	held directly	RMB 1,000,000	Production and supply of electricity, investment, construction and operation of electricity projects	100%	100	%
Huaneng Anshun Comprehensive Energy Co., Ltd.*	PRC	held directly	RMB 100,000	Production and supply of electricity, investment, construction and operation of electricity projects	100%	100	%

Name of subsidiary	Country of incorporation	Type of interest held	Registered capital	Business nature and scope of operations	Percentage of equity interest held			
					Interest		Voting	
Huaneng Shengdong Rudong Offshore Wind Power Co., Ltd.* (“Huaneng Shengdong Rudong”)	PRC	held directly	RMB 1,000,000,000	Production and sales of electric power; investment in wind power generation	79	%	79	%
Huaneng Zhejiang Cangnan Offshore Wind Power Co., Ltd.*	PRC	held directly	RMB 10,000,000	Production and sales of electric power; investment in wind power generation	100	%	100	%
Huaneng Zhejiang Ruian Offshore Wind Power Co., Ltd.*	PRC	held directly	RMB 10,000,000	Production and sales of electric power; investment in wind power generation	100	%	100	%
Shengdong Rudong Offshore Wind Power Co., Ltd. (“Shengdong Rudong Offshore Wind Power”)	PRC	held indirectly	RMB 5,000,000	Ancillary project construction of wind farm, wind farm maintenance	79	%	100	%

\*These companies were newly established in 2018.

## 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	RMB 632,840,000	Power generation	75 %	75 %	%
Huaneng Qinbei Power Generation Co., Ltd. ("Qinbei Power")	PRC	held directly	RMB 1,540,000,000	Power generation	60 %	60 %	%
Huaneng Yushe Power Generation Co., Ltd.	PRC	held directly	RMB 615,760,000	Power generation, power distribution, sales of power	60 %	60 %	%
Huaneng Hunan Yueyang Power Generation Limited Liability Company	PRC	held directly	RMB 1,935,000,000	Power generation	55 %	55 %	%
Huaneng Chongqing Luohuang Power Generation Limited Liability Company ("Luohuang Power")	PRC	held directly	RMB 1,748,310,000	Power generation	60 %	60 %	%
Huaneng Pingliang Power Generation Co., Ltd.	PRC	held directly	RMB 924,050,000	Power generation	65 %	65 %	%
Huaneng Nanjing Jinling Power Generation Co., Ltd.	PRC	held directly	RMB 1,513,136,000	Power generation	60 %	60 %	%
Huaneng Qidong Wind Power Generation Co., Ltd.	PRC	held directly	RMB 391,738,500	Development of wind power projects, production and sales of electricity	65 %	65 %	%
Tianjin Huaneng Yangliuqing Co-generation Limited Liability Company ("Yangliuqing Co-generation")	PRC	held directly	RMB 1,537,130,909	Power generation, heat supply, facilities installation, maintenance and related services	55 %	55 %	%

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	RMB 3,702,090,000	Construction and operation of power plants and related construction projects	41	%	66	%
Huaneng Wuhan Power Generation Co., Ltd. (“Wuhan Power”)	PRC	held directly	RMB 1,478,461,500	Investment, construction, operation and management of electricity projects, development and utilization of clean energy resources	75	%	75	%
Huaneng Anyuan Power Generation Co., Ltd. (“Anyuan Power”)	PRC	held directly	RMB 1,175,117,300	Construction and operation of power plants and related construction projects, production of electricity	100	%	100	%
Huaneng Hualiangting Hydropower Co., Ltd. (“Hualiangting Hydropower”)	PRC	held directly	RMB 50,000,000	Generation and transfer of power supply, water supply (irrigation)	100	%	100	%
Huaneng Chaohu Power Generation Co., Ltd. (“Chaohu Power”) (viii)	PRC	held directly	RMB 840,000,000	Construction, operation, management of electricity projects, development and utilization of clean energy resources	60	%	70	%
Huaneng Jingmen Thermal Power Co., Ltd. (“Jingmen Thermal Power”)	PRC	held directly	RMB 780,000,000	Thermal power, power development and other service	100	%	100	%
Enshi Qingjiang Dalongtan Hydropower Development Co., Ltd. (“Dalongtan Hydropower”) (ix)	PRC	held directly	RMB 177,080,000	Hydropower development, production and management of electric power, urban water supply	98.01	%	98.01	%

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	RMB 600,000,000	Construction, operation and management of electricity projects, development and utilization of clean energy	53.45 %	100	%	
Huaneng Hainan Power Generation Limited Company (“Hainan Power”)	PRC	held directly	RMB 1,326,419,587	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”)	PRC	held directly	RMB 606,923,299	Construction, operation, management of electricity projects, development and utilization of clean energy	100 %	100	%	
Huaneng Yingcheng Thermal Power Co., Ltd. (“Yingcheng Thermal Power”)	PRC	held directly	RMB 650,000,000	Construction and operation of power plants and production, sales of power and heat	100 %	100	%	
Huaneng Heilongjiang Power Generation Limited Company (“Heilongjiang Power”)	PRC	held directly	RMB 945,350,000	Development, investment, construction, production and management of power (thermal) projects	100 %	100	%	
Huaneng Hegang Power Generation Limited Company (“Hegang Power”)	PRC	held indirectly	RMB 1,092,550,000	The 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	RMB 284,880,000	Power generation, power equipment repair, coal sales	70 %	70	%	

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	RMB 330,000,000	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	RMB 630,000,000	Power generation, thermal production and supply	100 %	100 %
Daqing Lvyuan Wind Power Generation Limited Company (“Lvyuan Wind Power”)	PRC	held indirectly	RMB 497,000,000	Wind power generation	100 %	100 %
Huaneng Yichun Thermal Power Limited Company (“Yichun Thermal Power”)	PRC	held indirectly	RMB 581,000,000	Power construction, production and sales, thermal production and sales	100 %	100 %
Huaneng Heilongjiang Energy Sales Limited Company (“Heilongjiang Energy Sales”)	PRC	held indirectly	RMB 210,000,000	Power supply, the production of heat and hot water	100 %	100 %
Zhaodong Huaneng Thermal Power Limited Company (“Zhaodong Thermal Power”)	PRC	held indirectly	RMB 10,000,000	Heating production and supply	100 %	100 %
Huaneng Jilin Power Generation Limited Company (“Jilin Power”)	PRC	held directly	RMB 2,879,340,000	Power (thermal) projects, development of new energy projects investment, construction, production, operation and sales	100 %	100 %

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	RMB 45,624,000	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	RMB 210,000,000	Thermal (cold) production and supply, power supply	100%	100	%
Shandong Power	PRC	held directly	RMB 4,241,460,000	Power (thermal) project development, investment, construction and management	80 %	80	%
Huaneng Jining New Energy Limited Company (“Jining New Energy”) (iv)	PRC	held indirectly	RMB 38,000,000	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	RMB 22,000,000	Solar power generation, sales	80 %	100	%
Huaneng Rizhao Thermal Power Limited Company (“Rizhao Thermal Power”) (iv)	PRC	held indirectly	RMB 52,000,000	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	RMB 68,000,000	Photovoltaic power and wind power generation	80 %	100	%
Huaneng Shandong Sishui New Energy Limited Company (“Sishui New Energy”) (iv)	PRC	held indirectly	RMB 36,000,000	Solar energy grid connected generation	80 %	100	%

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	RMB 200,000,000	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	RMB 80,000,000	Information technology and management consulting services	80%	100	%
Huaneng Zhanhua New Energy Limited Company (“Zhanhua New Energy”) (iv)	PRC	held indirectly	RMB 235,298,200	Wind power, photovoltaic power generation	80%	100	%
Huaneng Weihai Port Photovoltaic Power Generation Limited Company (“Port Photovoltaic”) (iv)	PRC	held indirectly	RMB 30,760,000	Photovoltaic power generation projects development and construction, electricity sales	80%	100	%
Huaneng Jinan Huangtai Power Limited Company (“Huangtai Power”) (iv)	PRC	held indirectly	RMB 1,391,878,400	Electricity power production, heat management	72%	90	%
Huaneng Dezhou Thermal Power Limited Company (“Dezhou Thermal Power”) (iv)	PRC	held indirectly	RMB 40,000,000	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	RMB 92,601,483	Wind power projects development, wind power generation and sales of electricity	56%	70	%

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	RMB 50,000,000	Power engineering design, construction	76.55 %	100	%
Huaneng Shandong Electric Power Fuel Limited Company (“Shandong Fuel Company”) (iv)	PRC	held indirectly	RMB 100,000,000	Wholesale operation of coal	76.55 %	100	%
Shandong Rizhao Power Generation Limited Company (“Rizhao Power”) (iv)	PRC	held indirectly	RMB 1,245,587,900	Heat, engaged in power business	88.80 %	100	%
Huaneng Laiwu Power Generation Limited Company (“Laiwu Power”) (iv)	PRC	held indirectly	RMB 1,800,000,000	Power production	76	%	100 %
Huaneng Shandong Ruyi Coal Power Limited Company (“Ruyi Coal Power”) (iv)	PRC	held indirectly	RMB 1,294,680,000	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	RMB 646,680,000	Power generation, electrical equipment maintenance	40	%	100 %
Huaneng Qufu Co-generation Limited Company (“Qufu Co-generation”) (iv)	PRC	held indirectly	RMB 300,932,990	Sales and production of electric power, thermal power	40	%	100 %

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	RMB 118,699,760	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	RMB 35,000,000	Contracting overseas projects and domestic international bidding projects, construction and operation of power projects	80 %	100 %		
Shandong Changdao Wind Power Generation Limited Liability Company (“Changdao Wind Power”) (iv)	PRC	held indirectly	RMB 33,500,000	Wind power, on-grid sales	48 %	60 %		
Huaneng Rongcheng New Energy Co., Ltd. (“Rongcheng New Energy”) (iv)	PRC	held indirectly	RMB 36,540,000	Wind power generation	48 %	100 %		
Huaneng Jining Yunhe Power Generation Co., Ltd. (“Yunhe Power”) (iv)	PRC	held indirectly	RMB 696,355,300	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	RMB 1,093,313,400	Power generation	60 %	75 %		

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	RMB 130,000,000	Heat operation, installation and repair of water, electricity, heating	60	%	75	%
Linyi Lantian Thermal Power Limited Company (“Lantian Thermal Power”) (iv)	PRC	held indirectly	RMB 36,000,000	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	RMB 20,500,000	Central heat services, plumbing and pipe installation services	64	%	80	%
Huaneng Liaocheng Co-generation Limited Company (“Liaocheng Co-generation”) (iv)	PRC	held indirectly	RMB 610,670,000	Power, heat production and sales	60	%	100	%
Huaneng Henan Zhongyuan Gas Power Generation Co., Ltd. (“Zhongyuan Gas”)	PRC	held directly	RMB 400,000,000	Investment, construction, operation and management of power projects, thermal supply, development and utilization of clean	90	%	90	%

				energy resources				
Shandong Huaneng Liaocheng Thermal Power Co., Ltd. ("Shandong Liaocheng Thermal Power") (iv)	PRC	held indirectly	RMB 427,740,000	Electric power, thermal production and sales	60	%	75	%

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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	
Shandong Huaneng Laiwu Thermal Power Co., Ltd. (“Shandong Laiwu Thermal Power”) (iv)	PRC	held indirectly	RMB 540,000,000	Electric power, thermal production and sales	64 %	80 %	%
Shandong Huaneng Laizhou Wind Power Generation Co., Ltd. (“Laizhou Wind Power”) (iv)	PRC	held indirectly	RMB 90,000,000	Wind power generation	64 %	80 %	%

The subsidiaries above and the Company 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	RMB 1,822,176,621	Power generation	60 %	60 %		
Huaneng Huaiyin Power Generation Limited Company	PRC	held directly	RMB 265,000,000	Power generation	100 %	100 %		
Huade County Daditaihong Wind Power Utilization Limited Liability Company	PRC	held directly	RMB 196,400,000	Wind power development and utilization	100 %	100 %		
Huaneng Zhanhua Co-generation Limited Company	PRC	held directly	RMB 190,000,000	Production and sales of electricity and thermal energy	100 %	100 %		
Shandong Hualu Sea Transportation Limited Company	PRC	held directly	RMB 100,000,000	Cargo transportation along domestic coastal areas, goods storage	53 %	53 %		
Huaneng Qingdao Port Limited Company	PRC	held directly	RMB 219,845,000	Loading and conveying warehousing, conveying, water carriage materials supply	51 %	51 %		
Huaneng Yunnan Diandong Energy Limited Liability Company (“Diandong Energy”)	PRC	held directly	RMB 3,769,140,000	Electricity projects investment, power generation and sales, coal exploitation and investment	100 %	100 %		
Yunnan Diandong Yuwang Energy Limited Company (“Diandong Yuwang”)	PRC	held directly	RMB 1,700,740,000	Electricity projects investment, power generation and sales, coal exploitation and investment	100 %	100 %		

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 Luoyang Co-generation Limited Liability Company	PRC	held directly	RMB 600,000,000	Production and sales of electricity and heating	80 %	80 %	%
Huaneng Zhumadian Wind Power Generation Co., Ltd.	PRC	held directly	RMB 30,000,000	Wind power generation, new energy development and utilization	90 %	90 %	%
SinoSing Power	Singapore	held directly	US\$ 1,476,420,585	Investment holding	100 %	100 %	%
Tuas Power	Singapore	held indirectly	\$S1,433,550,000	Investment holding	100 %	100 %	%
Tuas Power Supply Pte. Ltd.	Singapore	held indirectly	\$S500,000	Power sales	100 %	100 %	%
TP Asset Management Pte. Ltd.	Singapore	held indirectly	\$S2	Render of environment engineering services	100 %	100 %	%
TPGS Green Energy Pte. Ltd.	Singapore	held indirectly	\$S1,000,000	Provision of utility services	75 %	75 %	%
Luoyang Yangguang Co-generation Limited Liability Company (“Yangguang Co-generation”)	PRC	held indirectly	RMB 250,000,000	Production and supply of electricity and heat power	100 %	100 %	%
Shanxi Xiaoyi Economic Development Zone Huaneng Energy Service Co., Ltd. (“Shanxi Xiaoyi Energy”) (x)	PRC	held indirectly	RMB 100,000,000	Electricity sales, sales of raw coal and processed coal	51 %	100 %	%

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	
Ruzhou Xuji Wind Power Generation Co., Ltd.	PRC	held indirectly	RMB 4,000,000	Wind power and photovoltaic power generation	95 %	100 %	%
Hong Kong Energy (iv) (Note 42)	Hong Kong	held indirectly	US\$ 360,000,000	Investment	40 %	100 %	%
Ruyi Pakistan Energy (iv) (Note 42)	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) (Note 42)	Pakistan	held indirectly	100,000 shares	Power generation operation and maintenance	40 %	100 %	%

## Note:

According to its article of association, the other shareholder who holds the remaining equity interests of (i) Shidongkou Power entrusts the Company to exercise all its voting rights in relation to the operation and financial policies of Shidongkou Power. Accordingly, the Company has control over Shidongkou Power.

(ii) The Company holds 90% interests in Liangjiang Power, and Liangjiang Power holds 60% interests in Huaqing Energy. Therefore, the Company indirectly holds 54% equity interests in Huaqing Energy.

According to the voting in concert agreement entered into between the Company 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 (iii) entered into between the Company 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 Company under the circumstances that their legitimate entitlements are guaranteed. As a result the Company has control over Nanjing Combined Cycle Co-generation.

9 INVESTMENTS IN SUBSIDIARIES (Cont'd)

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

Note: (Cont'd)

(iv) These companies are subsidiaries of Shandong Power. The Company holds 80% interests in Shandong Power. Thus, the Company 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 Company 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 Company 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 Company indirectly holds 76.55% interests in Shandong Maintenance Company and Shandong Fuel Company respectively.

The Company directly holds 44% equity interests in Rizhao Power and Shandong Power directly holds 56% interests in Rizhao Power; Thus, the Company holds 88.8% interests in Rizhao Power.

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

Shandong Power acquired 15% equity from another shareholder of Laiwu power. As a result, the Company indirectly holds 76% interests in Laiwu power.

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 Company has control over these companies.

According to the voting in concert agreement entered into between Hong Kong Investment and the other shareholder in December 2018, the other shareholder agreed to vote the same in respect of significant financial and operating decisions made by Hong Kong Investment. As a result, the Company has control over Hong Kong Energy and its subsidiaries including Huatai Power and Ruyi Pakistan Energy since 31 December 2018. See Note 42.

9 INVESTMENTS IN SUBSIDIARIES (Cont'd)

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

Note: (Cont'd)

- (v) According to the investment cooperation agreement between the Company 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 Company 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 Company has control over Zhenlai Photovoltaic Power.

- (vii) Pursuant to an agreement entered into between the Company and another shareholder, the Company is entrusted to vote the 25% voting rights held by the other shareholder as long as the Company remains as the largest shareholder of Beijing Co-generation. Thus, the Company has majority voting rights required by the article of association to control the operation and financial policies of Beijing Co-generation. Accordingly, the Company has control over Beijing Co-generation.

- (viii) According to the voting in concert agreement entered into between the Company 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 Company. As a result, the Company has control over Chaohu Power.

- (ix) According to the voting in concert agreement entered into between the Company 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 Company. As a result, the Company has control over Suzhou Thermal Power.

- (x) In 2016, the Company accounted for the investment in Shanxi Xiaoyi Energy as a joint venture. On 15 February 2017, the Company 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 Company. As a result, the Company has control over Shanxi Xiaoyi Energy since February 2017.

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

## 10 OTHER EQUITY INSTRUMENT INVESTMENTS

	Note	31 December 2018	1 January 2018	31 December 2017
Equity securities designated at FVOCI (non-recycling)	(i)			
Listed security		8,558	9,223	–
Unlisted securities				
10% of Shanxi Xishan Jinxing Energy Co., Ltd.		1,085,462	1,004,860	–
9.09% of Ganlong Double-track Railway Co., Ltd.		924,453	1,003,009	–
Others		64,946	64,496	–
Subtotal		2,074,861	2,072,365	–
Total		2,083,419	2,081,588	–
Available-for-sale financial assets	(i)			
Listed security (Fair value measurement)		–	–	9,223
Unlisted securities (Cost measurement)				
10% of Shanxi Xishan Jinxing Energy Co., Ltd.		–	–	531,274
9.09% of Ganlong Double-track Railway Co., Ltd.		–	–	1,000,000
Others		–	–	64,496
Subtotal		–	–	1,595,770
Total		–	–	1,604,993

Note:

(i) Available-for-sale financial assets were reclassified to equity securities designated at FVOCI (non-recycling) upon the initial application of IFRS 9 at 1 January 2018 as the investment is held for strategic purposes.

There was no impairment provision provided on available-for-sale financial assets in 2017.

## 11 LAND USE RIGHTS

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

	2018	2017
Beginning of the year		
Cost	13,775,976	10,525,537
Accumulated amortization	(2,128,752 )	(1,792,367 )
Accumulated impairment losses	(382,439 )	(276,823 )
Net book value	11,264,785	8,456,347
Movement:		
Business combination (Note 42)	398,591	3,182,914
Addition	260,971	331,683
Amortization charge for the year	(368,025 )	(368,898 )
Impairment charge for the year	–	(108,590 )
Reclassification to assets held for sale (Note 20)	(29,924 )	–
Disposals	(81,788 )	(86,631 )
Disposal of subsidiaries	–	(146,922 )
Currency translation differences	5,424	4,882
End of the year	11,450,034	11,264,785
Cost	14,324,288	13,775,976
Accumulated amortization	(2,486,181 )	(2,128,752 )
Accumulated impairment losses	(388,073 )	(382,439 )
Net book value	11,450,034	11,264,785

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

## Land use rights without ownership certificate

As at 31 December 2018, the Company and its subsidiaries were in the process of applying for the ownership certificate for certain land use right with an aggregate net book value of RMB543 million (2017: RMB1,246 million). The management are of the opinion that the Company and its subsidiaries are entitled to the lawful and valid occupation and use of the above mentioned land.

## 12 POWER GENERATION LICENSES

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

	2018	2017
Beginning of the year	3,916,246	3,849,199
Movement:		
Currency translation differences	98,726	67,047
End of the year	4,014,972	3,916,246

The Company and its subsidiaries acquired the power generation license in connection with the acquisition of Tuas Power. The power generation license was initially recognised at fair value at the acquisition date. Tuas Power operates power plants in Singapore pursuant to the license granted by the Energy Market Authority for a period of 30 years from 2003 until 2032. The license was extended to 2044 during 2011 with minimal costs and is subject to further renewal. The Company and its subsidiaries expect that the applicable rules and regulations surrounding the renewal can be complied with based on the current market framework. The Company and its subsidiaries assessed the useful life of the power generation license at 31 December 2018 as indefinite and therefore the license is not amortized.

## Impairment test of power generation license

Power generation license 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.

## Key assumptions used for value-in-use calculation:

Management has assessed that one of the most sensitive key assumptions is the discount rate which was arrived at based on weighted average cost of capital. The discount rate applied in determining the recoverable amounts of the CGU was 8.02% (31 December 2017: 7.30%). An absolute increase in the discount rate of 0.5% (31 December 2017: 0.5%) would result in approximately RMB1,715 million (31 December 2017: RMB2,043 million) decrease in the recoverable amount of the CGU.

## 12 POWER GENERATION LICENSES (Cont'd)

Impairment test of power generation licenses (Cont'd)

Key assumptions used for value-in-use calculation: (Cont'd)

Other key assumptions include projection of its business performance based on estimation of gross margin from electricity sold, 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 3.5% 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%.

Based on the assessments, no impairment was provided for the power generation license.

## 13 MINING RIGHTS

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

	2018	2017
Beginning of the year		
Cost	2,406,567	2,406,567
Accumulated impairment losses	(760,296 )	(760,296 )
Net book value	1,646,271	1,646,271
Movement:		
Addition	—	—
Impairment charge for the year	(135,085 )	—
End of the year	1,511,186	1,646,271
Cost	2,406,567	2,406,567
Accumulated impairment losses	(895,381 )	(760,296 )
Net book value	1,511,186	1,646,271

In 2018, due to the slow construction progress and anticipated increasing construction cost input for the coal mine, impairment losses for mining rights of approximately RMB135 million have been recognised. The discount rate applied in determining the recoverable amounts of the mining rights in the value in use model was 9.55%.

## 14 DERIVATIVE FINANCIAL INSTRUMENTS

Details of derivative financial instruments are as follows:

	As at 31 December	
	2018	2017
Derivative financial assets		
– Hedging instruments for cash flow hedge (fuel swap contracts)	25,629	330,966
– Hedging instruments for cash flow hedge (exchange forward contracts)	9,062	–
– Financial instruments at fair value through profit or loss (fuel swap contracts)	–	2,726
– Financial instruments at fair value through profit or loss (exchange forward swap contracts)	14	–
Total	34,705	333,692
Less: non-current portion		
– Hedging instruments for cash flow hedge (fuel swap contracts)	2,543	75,328
– Hedging instruments for cash flow hedge (exchange forward contracts)	3,427	–
Total non-current portion	5,970	75,328
Current portion	28,735	258,364
Derivative financial liabilities		
– Hedging instruments for cash flow hedge (fuel swap contracts)	357,088	11,794
– Hedging instruments for cash flow hedge (exchange forward contracts)	21,335	68,102
– Hedging instruments for cash flow hedge (interest rate swap contracts)	149,117	130,643
– Financial instruments at fair value through profit or loss (fuel swap contracts)	17,705	125
– Financial instruments at fair value through profit or loss (exchange forward swap contracts)	47	–
Total	545,292	210,664
Less: non-current portion		
– Hedging instruments for cash flow hedge (fuel swap contracts)	78,587	2,026
– Hedging instruments for cash flow hedge (exchange forward contracts)	4,384	21,745
– Hedging instruments for cash flow hedge (interest rate swap contracts)	144,999	124,715
– Financial instruments at fair value through profit or loss (fuel swap contracts)	3,338	–
Total non-current portion	231,308	148,486
Total current portion	313,984	62,178
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#### 14 DERIVATIVE FINANCIAL INSTRUMENTS (Cont'd)

For the years ended 31 December 2017 and 2018, no material ineffective portion was recognised in the profit or loss arising from cash flow hedges.

The Company uses an interest rate swap contract to hedge its interest rate risk against one of its variable rate loans. The notional principal amount of the outstanding interest rate swap contract at 31 December 2018 was US\$144 million (RMB equivalents of RMB988 million) (2017: US\$176 million (RMB equivalents of RMB1,150 million)). Through this arrangement, the Company pays an annual fixed interest of 4.40% while the original annual floating interest expense (6-month LIBOR+1%) attached in the loan is offset by the receivable leg of the interest rate swap. Such a swap is settled on a quarterly basis from September 2009 to September 2019.

TPG uses exchange forward contracts to hedge its foreign exchange risk arising from highly probable forecast purchase transactions. 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 2018 was S\$992 million (RMB equivalents of RMB4,968 million) (2017: S\$1,069 million (RMB equivalents of RMB5,220 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 2018 to June 2044. As at 31 December 2018, these interest rate swap contracts are carried on the consolidated statements of financial position as financial liability of RMB145 million (2017: financial liability of RMB108 million).

## 14 DERIVATIVE FINANCIAL INSTRUMENTS (Cont'd)

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

	Cash flows				
	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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## 14 DERIVATIVE FINANCIAL INSTRUMENTS (Cont'd)

	Cash flows				
	Carrying amounts	Contractual cash flows	Within 1 year	Between 1 and 5 years	After 5 years
As at 31 December 2017					
Derivative financial assets					
Fuel derivatives used for hedging (net settlement)	330,966	330,966	255,638	75,328	—
Fuel derivatives that do not qualify as hedges (net settlement)	2,726	2,726	2,726	—	—
Derivative financial liabilities					
Fuel derivatives used for hedging (net settlement)	11,794	(11,794 )	(9,768 )	(2,026 )	—
Forward exchange contracts used for hedging					
– inflows		2,509,363	2,041,812	467,551	—
– outflows		(2,568,034)	(2,083,441)	(484,593)	—
	68,102	(58,671 )	(41,629 )	(17,042 )	—
Net-settled interest rate swaps used for hedging					
– net cash inflows/(outflows)	130,643	(154,367 )	(82,533 )	(71,834 )	—
Fuel derivatives that do not qualify as hedges (net settlement)	125	(125 )	(125 )	—	—

## 15GOODWILL

The movements of goodwill during the years are as follows:

	2018	2017
Beginning of the year		
Cost	18,435,954	15,391,642
Accumulated impairment losses	(2,951,834 )	(3,255,913 )
Net book value	15,484,120	12,135,729
Movement:		
Business combination (Note 42)	231,218	3,167,566
Impairment charge for the year	(409,371 )	—
Disposal of subsidiary-cost	—	(309,269 )
Disposal of subsidiary-impairment	—	309,269
Currency translation differences-cost	273,906	186,015
Currency translation differences- impairment	(7,646 )	(5,190 )
End of the year	15,572,227	15,484,120
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

## 15 GOODWILL (Cont'd)

## Impairment tests for goodwill

Goodwill is allocated to the CGUs of the Company and its subsidiaries.

The carrying amounts of major goodwill allocated to individual CGUs are as follows:

	2018	2017
PRC Power segment:		
Shandong Power	2,643,990	2,739,818
Wuhan Power	518,484	518,484
Hainan Power	506,336	506,336
Heilongjiang Power	182,994	265,319
Yangliuqing Cogeneration	151,459	151,459
Qinbei Power	109,913	109,913
Jilin Power	109,826	109,826
Yueyang Power Company	100,907	100,907
Beijing Cogeneration	95,088	95,088
Singapore segment:		
Tuas Power	10,828,216	10,561,956

## 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 Company expects cash flows beyond such periods will be similar to that of the respective final forecast years on existing production capacity.

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 budget approved and various factors, such as inflation, power demand and other factors as well as the terminal value. On average, the growth rates of 3.5% 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%.

Discount rates used for value-in-use calculations:

PRC Power segment 7.35%-9.63%

Singapore segment 8.02%

Key assumptions used for value-in-use calculations:

Key assumptions applied in the impairment tests include the expected tariff rates, demands of electricity in specific regions where these power plants are located and fuel cost. Management determined these key assumptions based on past performance and its expectations on market development. The discount rates 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. Please refer to Note 4 and 12 for details of respective sensitivity analysis on domestic and oversea CGU impairment testing.

In 2018, due to lower performance of 3 coal-fired plant assets, which did not reach the anticipation of the management as a result of oversupply of local power market and intense competition which led to lower utilization hours and tariff. Impairment losses for goodwill approximately amounting to RMB409 million in total have been recognised.

In 2018 and 2017, the increase of goodwill in respect of Tuas Power was due to currency translation differences.

## 16 OTHER NON-CURRENT ASSETS

Details of other non-current assets are as follows:

	As at 31 December	
	2018	2017
Finance lease receivables*	10,811,603	617,187
VAT recoverable	3,282,075	2,741,604
Prepayments for pre-construction cost	987,469	937,161
Intangible assets **	698,541	697,884
Profit compensation from Huaneng Group***	440,551	244,533
Prepaid territorial water use right ****	370,307	374,743
Prepayments for capacity quota	303,399	303,399
Prepaid connection fees	113,587	120,486
Others	2,328,527	1,659,848
Total	19,336,059	7,696,845

Ruyi Pakistan Energy entered into a power purchase agreement with CPPA-G to sell all of the electricity produced with regulated tariff mechanism approved by 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.

\*\* The intangible assets primarily consist of software, patented technologies and etc. In 2018, there is no impairment provided for the intangible assets (2017: RMB Nil).

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 2018, the fair value of above mentioned contingent consideration from Huaneng Group amounted to RMB991 million was recognised (31 December 2017: RMB860 million), which was recorded in other receivables and assets of RMB551 million, and other non-current assets of RMB440 million, respectively. The profit compensation related to year 2018 of RMB551 million was recorded in "other receivables and assets".

\*\*\*\* The prepaid territorial water use right are amortized over the contractual period of 50 years.

## 17 INVENTORIES

Inventories comprised:

	As at 31 December	
	2018	2017
Fuel (coal and oil) for power generation	8,150,398	5,684,824
Material and supplies	1,824,000	1,869,462
	9,974,398	7,554,286
Less: provision for inventory obsolescence	430,707	168,875
Total	9,543,691	7,385,411

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

	2018	2017
Beginning of the year	(168,875)	(167,282)
Provision*	(255,181)	(1,520 )
Reversal	1,365	1,782
Disposal of subsidiaries	–	162
Currency translation differences	(8,016 )	(2,017 )
End of the year	(430,707)	(168,875)

\* In 2018, approximately RMB255 million provision was provided for the fuel oil, which was recognised based on the net realisable value.

## 18 OTHER RECEIVABLES AND ASSETS

Other receivables and assets comprised the following:

	As at 31 December	
	2018	2017
Prepayments for inventories	990,742	387,335
Prepaid income tax	134,477	150,838
Others	270,330	181,913
Total prepayments	1,395,549	720,086
Less: loss allowance	4,638	4,638
Total prepayments, net	1,390,911	715,448
Dividends receivable	30,000	273,897
Receivables from sales of fuel	74,578	290,040
Others	1,569,181	1,483,331
Subtotal other receivables	1,673,759	2,047,268
Less: loss allowance	38,531	29,241
Total other receivables, net	1,635,228	2,018,027
Profit compensation from Huaneng Group (Note 16)	550,832	615,013
VAT recoverable	1,927,638	2,607,505
Financial lease receivables	871,302	45,524
Designated loan to a joint venture	80,000	80,000
Gross total	6,499,080	6,115,396
Net total	6,455,911	6,081,517

Please refer to Note 38 for details of other receivables and assets due from the related parties.

18 OTHER RECEIVABLES AND ASSETS (Cont'd)

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

	As at 31 December	
	2018	2017
RMB	1,572,651	1,944,570
S\$ (RMB equivalent)	68,390	53,406
US\$ (RMB equivalent)	7,401	49,292
PKR (RMB equivalent)	25,317	—
Total	1,673,759	2,047,268

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

	2018	2017
Beginning of the year	(33,879)	(28,961)
Provision	(24,924)	(5,890 )
Reversal/write-off	15,634	972
End of the year	(43,169)	(33,879)

## 19 ACCOUNTS RECEIVABLE

Accounts receivable comprised the following:

	As at 31 December	
	2018	2017
Accounts receivable	24,804,671	21,948,753
Notes receivable	4,621,180	3,610,928
	29,425,851	25,559,681
Less: loss allowance	146,913	112,086
Total	29,278,938	25,447,595

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

	As at 31 December	
	2018	2017
RMB	26,879,470	24,633,465
S\$ (RMB equivalent)	1,016,299	922,993
US\$ (RMB equivalent)	6,673	3,223
PKR (RMB equivalent)	1,523,409	—
Total	29,425,851	25,559,681

## 19 ACCOUNTS RECEIVABLE (Cont'd)

The Company and its subsidiaries usually grant about one month's credit period to domestic local power grid customers from the end of the month in which the sales are made. SinoSing Power provides credit period that ranges 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. Ruyi Pakistan Energy entered into the agreement with CPPA-G with one month's credit period. It is not practicable to determine the fair value of the collaterals that correspond to these accounts receivable. Ruyi Pakistan Energy entered into the power purchase agreement with CPPA-G with one month's credit period.

As at 31 December 2018, no accounts receivable were secured to banks as collateral against loans (2017: Nil).

For the collateral of notes receivable, please refer to Note 29 for details.

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

	2018	2017
Beginning of the year	(112,086)	(88,889 )
Provision	(40,064 )	(23,363 )
Reversal	4,728	—
Write-off	607	167
Currency translation differences	(98 )	(1 )
End of the year	(146,913)	(112,086)

Ageing analysis of accounts receivable was as follows:

	As at 31 December	
	2018	2017
Within 1 year	28,379,742	24,787,284
Between 1 to 2 years	833,358	576,564
Between 2 to 3 years	29,517	155,360
Over 3 years	183,234	40,473
Total	29,425,851	25,559,681

As at 31 December 2018, the maturity period of the notes receivable ranged from 1 to 12 months (2017: from 1 to 12 months).

**20DISPOSAL 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 (Note 42). According to the acquisition agreement, part or all of the wind power generators of Laizhou Wind Power could be dismantled upon the requirement of 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 have been dismantled, which is the case in the acquisition agreement, Shandong Power intends to sell 80% equity interests of Laizhou Wind Power back to Taishan Power. The assets and liabilities of Laizhou Wind Power are presented as disposal group held for sale in the consolidated financial statements.

As at 31 December 2018, the disposal group comprised the following assets and liabilities.

	As at 31 December 2018
Property, plant and equipment and other non-current assets	554,033
Land use rights	29,924
Other non-current assets	1,932
Inventories	4
Other receivables and assets	1,655
Accounts receivable	45,296
Bank balances and cash	15,104
Assets held for sale	647,948
Long-term loans	100,000
Accounts payable and other liabilities	66,827
Taxes payable	206
Short-term loans	466,000
Current portion of long-term loans	31,400
Liabilities held for sale	664,433
Less: short-term loans from Shandong Power	300,000
Liabilities held for sale	364,433

The non-recurring fair value measurement for the disposal group was based on the consideration in the equity transfer agreement, which has been categorised as Level 3 fair value.

There is no cumulative income or expenses included in other comprehensive income relating to the disposal group.

## 21 COMPANY'S STATEMENT OF CHANGES IN EQUITY

	Capital surplus								
	Share capital	Other equity instruments	Share premium	Hedging reserve	Available-for-sale asset revaluation reserve	Other capital reserve	Subtotal	Surplus reserves	Retained earnings
Balance as at 1 January 2017	15,200,383	—	22,239,399	(52,425)	886,383	1,093,892	24,167,249	8,140,030	32,340,000
Profit for the year ended 31 December 2017	—	68,600	—	—	—	—	—	—	7,094,000
Other comprehensive income/(loss):									
Fair value changes of available-for-sale financial assets – gross	—	—	—	—	375,172	—	375,172	—	—
Gain on disposal of available-for-sale financial assets reclassified to profit or loss – gross	—	—	—	—	(1,581,994)	—	(1,581,994)	—	—
Fair value changes of and gain on disposal of available-for-sale financial assets – tax	—	—	—	—	352,845	—	352,845	—	—
Changes in fair value of effective portion of cash flow hedges – gross	—	—	—	21,168	—	—	21,168	—	—
Changes in fair value of effective portion of cash flow hedges – tax	—	—	—	(5,292)	—	—	(5,292)	—	—
Cash flow hedges recorded in shareholders' equity reclassified to interest	—	—	—	26,453	—	—	26,453	—	—

expenses – gross

Cash flow hedges

recorded in

shareholders'

equity reclassified

to interest

expenses – tax	–	–	–	(6,613 )	–	–	(6,613 )	–	–
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	Capital surplus						Subtotal	Surplus reserves	Retained earnings
	Share capital	Other equity instruments	Share premium	Hedging reserve	Available-for-sale financial asset revaluation reserve	Other capital reserve			
Total comprehensive income/(loss) for the year ended 31 December 2017	–	68,600	–	35,716	(853,977)	–	(818,261)	–	7,094,000
Issue of perpetual corporate bonds	–	4,999,950	–	–	–	–	–	–	–
Dividends relating to 2016	–	–	–	–	–	–	–	–	(4,408,000)
Balance as at 31 December 2017 (Note)	15,200,383	5,068,550	22,239,399	(16,709)	32,406	1,093,892	23,348,988	8,140,030	35,030,000

Note: The Company has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated. See Note 2(b).

## 21 COMPANY'S STATEMENT OF CHANGES IN EQUITY (Cont'd)

	Capital surplus					Fair value Reserve (non- recycling)	Other reserve in other comprehensive income	Other capital reserve	Subtotal	Surplus reserves
	Share capital	Other equity Instruments	Share premium	Hedging reserve						
Balance as at 31 December 2017	15,200,383	5,068,550	22,239,399	(16,709)	—	—	32,406	1,093,892	23,348,988	8,140,030
Impact on initial application of IFRS 9 (Note 2(b)(i))	—	—	—	—	402,352	(32,406)	—	—	369,946	—
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
Profit for the year ended 31 December 2018	—	342,349	—	—	—	—	—	—	—	—
Other comprehensive income/(loss):										
Fair value changes of other equity investment instruments — gross	—	—	—	—	2,047	—	—	—	2,047	—
Fair value changes of other equity investment instruments — tax	—	—	—	—	(512)	—	—	—	(512)	—
Changes in fair value of effective portion of cash flow hedges — gross	—	—	—	4,638	—	—	—	—	4,638	—
Changes in fair value of effective portion of cash flow hedges — tax	—	—	—	(1,160)	—	—	—	—	(1,160)	—
Cash flow hedges recorded in	—	—	—	13,527	—	—	—	—	13,527	—

shareholders' equity reclassified to interest expenses – gross Cash flow hedges recorded in' shareholders equity reclassified to interest expenses – tax

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— — — (3,382 ) — — — (3,382 ) —

	Share capital	Other equity Instruments	Share premium	Hedging reserve	Capital surplus			Subtotal	Surplus reserves	Retained earnings
					Fair value Reserve (non-recycling)	Other reserve in comprehensive income	Other reserve			
Total comprehensive income for the year ended 31 December 2018	—	342,349	—	13,623	1,535	—	—	15,158	—	204,000
Issue of other equity instruments (Note 23)	—	5,000,000	—	—	—	—	—	—	—	—
Issuance of new A shares, net of issuance expenses	497,710	—	2,747,620	—	—	—	—	2,747,620	—	—
Cumulative distribution of other equity instruments (Note 25)	—	(333,503 )	—	—	—	—	—	—	—	—
Dividends relating to 2017 (Note 25)	—	—	—	—	—	—	—	—	—	(1,500,000)
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	33,700,000

## 22 SHARE CAPITAL

	2018 Number of shares	Share capital RMB'000	2017 Number of shares	Share capital RMB'000
As at 1 January				
A shares	10,500,000,000	10,500,000	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	15,200,383,440	15,200,383	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	10,500,000,000	10,500,000
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	15,200,383,440	15,200,383

In October 2018, the Company issued 497,709,919 A shares with a par value of RMB1.00, at a price of RMB6.55 per A share. Net proceeds from the issuance amounted to RMB3.25 billion after deducting issuance costs. The difference between the net proceeds and the addition to share capital is recorded in capital surplus.

## 23 OTHER EQUITY INSTRUMENTS

(a) Other equity instruments as at 31 December 2018

Type of Instruments	Issuance Date	Category	Initial Distribution Rate	Issue Price	Number	Par Value	Initial Period	Conversion Condition	Conversion Result
				RMB'000		RMB'000			
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	perpetual	None	None
Yingda Insurance Financing Plan (2nd)	September 2018	Equity Instrument	5.79%	—	—	827,000	perpetual	None	None
Yingda Insurance Financing Plan (3rd)	September 2018	Equity Instrument	5.79%	—	—	890,000	perpetual	None	None
Total						10,000,000			

## 23 OTHER EQUITY INSTRUMENTS (Cont'd)

### (b) Major Provisions

In 2017, the Company issued perpetual corporate bonds with the aggregate net proceeds of approximate RMB5,000 million. The perpetual corporate bonds are issued at par value with 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 (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occurred.

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 financing plan") with the aggregate proceeds of RMB5,000 million. The financing 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 (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occurred.

The financing 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.

The perpetual corporate bonds and financing plan were recorded as equity in the consolidated financial statements. During the year ended 31 December 2018, the profit attributable to holders of other equity instruments, based on the applicable distribution rate, was RMB342 million.

23 OTHER EQUITY INSTRUMENTS (Cont'd)  
(c) Changes of other equity instruments during 2018

Type of Instruments	As at 1 January 2018		issuance		Cumulative distributions		As at 31 December 2018	
	Number	Amount RMB'000	Number	Amount RMB'000	Accrual distribution RMB'000	Distributional payment RMB'000	Number	Amount RMB'000
Bond A	25,000,000	2,533,872	—	—	126,250	(126,250)	25,000,000	2,533,872
Bond B	25,000,000	2,534,678	—	—	129,250	(129,250)	25,000,000	2,534,678
Yingda Insurance Financing Plan (1st)	—	—	—	3,283,000	58,609	(52,801)	—	3,288,808
Yingda Insurance Financing Plan (2nd)	—	—	—	827,000	14,498	(13,035)	—	828,463
Yingda Insurance Financing Plan (3rd)	—	—	—	890,000	13,742	(12,167)	—	891,575
Total		5,068,550		5,000,000	342,349	(333,503)		10,077,396

24 SURPLUS RESERVES

As at 1 January 2018 and 31 December 2018	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 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 2018, 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 2018 and 2017, no provision was made to the discretionary surplus reserve.

## 24 SURPLUS RESERVES (Cont'd)

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 2018, in accordance with PRC GAAP and IFRS, the balance of retained earnings for the Company and its subsidiaries amounted to approximately RMB30.802 billion and RMB34.665 billion, respectively; and the balance of retained earnings for the Company amounted RMB35.231 billion and RMB33.719 billion, respectively.

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

## (a) Dividends of ordinary shares

On 19 March 2019 the Board of Directors proposed a cash dividend of RMB0.1 per share, totaling approximately RMB1,570 million. This proposal is subject to the approval of the shareholders at the annual general meeting.

On 3 May 2018, upon the approval from the annual general meeting of the shareholders, the Company declared 2017 final dividend RMB0.1 (2016: RMB0.29) per ordinary share, totaling approximately RMB1,520 million (2016: RMB4,408 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 2018, net profit attributable to holders of other equity instruments, based on the applicable rate, was RMB342 million, and the cumulative distribution paid-in 2018 was RMB334 million.

## 26 LONG-TERM LOANS

Long-term loans comprised the following:

	As at 31 December	
	2018	2017
Loans from Huaneng Group and its subsidiaries (a)	4,724,753	7,427,183
Bank loans and other loans (b)	145,444,257	117,702,233
	150,169,010	125,129,416
Less: current portion of long-term loans	20,620,849	18,098,458
Total	129,548,161	107,030,958

## 26LONG-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 2018				
	Original currency '000	RMB equivalent	Less: Current portion	Non-current portion	Annual interest rate
Loans from Huaneng Group					
Unsecured					
RMB					
– Variable rate	665,225	665,225	–	665,225	4.75 %
Loans from Huaneng Finance					
Unsecured					
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")					
Secured					
RMB					
– Variable rate	463,528	463,528	141,265	322,263	4.42%-4.75 %
Total		4,724,753	610,465	4,114,288	

## 26LONG-TERM LOANS (Cont'd)

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

As at 31 December 2017

	Original currency '000	RMB equivalent	Less: Current portion	Non-current portion	Annual interest rate
Loans from Huaneng Group					
Unsecured					
RMB					
– Variable rate	665,225	665,225	–	665,225	4.75 %
Loans from Huaneng Finance					
Unsecured					
RMB					
– Variable rate	2,794,780	2,794,780	244,500	2,550,280	4.28%-4.66 %
Loans from Huaneng Tiancheng Financial					
Leasing					
Secured					
RMB					
– Variable rate	3,967,178	3,967,178	1,878,994	2,088,184	4.06%-4.51 %
Total		7,427,183	2,123,494	5,303,689	

## 26LONG-TERM LOANS (Cont'd)

## (b) Bank loans and other loans

Details of bank loans and other loans are as follows:

	As at 31 December 2018		Less:		
	Original currency '000	RMB equivalent	Current portion	Non-current portion	Annual interest rate
Secured					
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 %
Unsecured					
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		145,444,257	20,010,384	125,433,873	

## 26LONG-TERM LOANS (Cont'd)

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

As at 31 December 2017

	Original currency '000	RMB equivalent	Less: Current portion	Non-current portion	Annual interest rate
Secured					
RMB					
– Fixed rate	7,080,379	7,080,379	1,213,150	5,867,229	4.41%-4.90%
– Variable rate	4,117,055	4,117,055	657,231	3,459,824	4.66%-4.90%
Unsecured					
RMB					
– Fixed rate	14,981,859	14,981,859	3,179,426	11,802,433	2.00%-5.00%
– Variable rate	76,467,082	76,467,082	10,013,829	66,453,253	1.80%-6.03%
US\$					
– Variable rate	347,676	2,271,785	418,163	1,853,622	1.74%/2.26%
S\$					
– Variable rate	2,538,619	12,396,329	419,570	11,976,759	2.73%/4.25%
€					
– Fixed rate	30,463	237,680	67,207	170,473	1.30%-2.15%
JPY					
– Fixed rate	2,592,661	150,064	6,388	143,676	0.75%
Total		117,702,233	15,974,964	101,727,269	

As at 31 December 2018, long-term loans of RMB986 million (31 December 2017: RMB4,605 million) were secured by certain property, plant and equipment with net book value amounting to approximately RMB1,756 million (31 December 2017: RMB5,167 million).

## 26LONG-TERM LOANS (Cont'd)

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

Thereinto, certain subsidiaries of the Company had the sales and leaseback agreements with Tiancheng Financial Leasing and other financial leasing companies in previous years. 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 2018, the equipment mentioned above has a total carrying amount of RMB769 million and RMB987 million (31 December 2017: RMB4,064 million and RMB1,103 million) while the long-term borrowings is RMB464 million and RMB522 million (31 December 2017: RMB3,967 million and RMB638 million) from Tiancheng Financial Leasing and other financial leasing companies, respectively.

As at 31 December 2018, long-term loans of approximately RMB8,938 million were secured by future electricity and heat revenue (31 December 2017: RMB10,559 million).

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	
	2018	2017	2018	2017
1 year or less	610,465	2,123,494	20,010,384	15,974,964
More than 1 year but no more than 2 years	760,580	1,689,582	27,940,579	19,039,483
More than 2 years but no more than 3 years	1,104,684	1,281,082	33,477,976	18,624,576
More than 3 years but no more than 4 years	805,024	294,020	14,109,277	16,388,976
More than 4 years but no more than 5 years	97,000	728,225	11,216,306	11,927,930
More than 5 years	1,347,000	1,310,780	38,689,735	35,746,304
	4,724,753	7,427,183	145,444,257	117,702,233
Less: amount due within 1 year included under current liabilities	610,465	2,123,494	20,010,384	15,974,964
Total	4,114,288	5,303,689	125,433,873	101,727,269

## 26 LONG-TERM LOANS (Cont'd)

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

The interest payment schedule of long-term loans in the future years are summarized as follows:

	As at 31 December	
	2018	2017
1 year or less	6,496,298	5,071,743
More than 1 year but not more than 2 years	5,258,275	4,225,736
More than 2 years but not more than 5 years	9,028,758	7,903,397
More than 5 years	5,289,799	4,864,084
Total	26,073,130	22,064,960

## 27 LONG-TERM BONDS

The Company issued corporate bonds with maturity of 10 years in May 2008 with a face value of RMB4 billion bearing an annual interest rate of 5.20%. The actual proceeds received by the Company were approximately RMB3.933 billion. These bonds are denominated in RMB and issued at par. Interest is payable annually while principal will be paid when the bonds fall due. The annual effective interest rate of bond is 5.42%. Interest paid per annum during the tenure of the bonds is RMB208 million. The bond with the original maturity of 10 years had matured in May 2018 and the Company repaid the principal of RMB4 billion.

The Company issued medium-term notes with maturity of 5 years in July 2014 with a face value of RMB4 billion bearing an annual interest rate of 5.30%. The actual proceeds received by the Company were approximately RMB3.988 billion. These notes are denominated in RMB and issued at par. Interest is payable annually while principal will be paid when the notes fall due. The annual effective interest rate of these notes is 5.37%. Interest paid per annum during the tenure of the notes is RMB212 million. As at 31 December 2018, interest payable for the bonds amounted to approximately RMB99.32 million (31 December 2017: RMB99.32 million).

The Company issued corporate bonds with maturity of 5 years and 10 years in June 2016 with face values of RMB3 billion and RMB1.2 billion bearing annual interest rates of 3.48% and 3.98%, respectively. The total actual proceeds received by the Company were approximately RMB4.2 billion. These bonds are denominated in RMB and issued at par. Interest is payable annually while principal will be paid when the bonds fall due. The annual effective interest rates of those bonds are 3.48% and 3.98%, respectively. Interest paid per annum during the tenure of the bonds is RMB104.40 million and RMB47.76 million, respectively. As at 31 December 2018, interest payable for the bonds amounted to approximately RMB57.78 million (31 December 2017: RMB57.78 million) and RMB26.43 million (31 December 2017: RMB26.43 million), respectively.

## 27 LONG-TERM BONDS (Cont'd)

The Company issued medium-term notes with maturity of 5 years in July 2017 with a face value of RMB5 billion bearing an annual interest rate of 4.69%. The actual proceeds received by the Company were approximately RMB5 billion. These notes are denominated in RMB and issued at par. Interest is payable annually while principal will be paid when the notes fall due. The annual effective interest rate of those notes is 4.69%. Interest paid per annum during the tenure of the notes is RMB234.50 million. As at 31 December 2018, interest payable for the notes amounted to approximately RMB111.15 million (31 December 2017: RMB111.15 million).

The Company issued debt financing instrument with maturity of 3 years in July 2017 with a face value of RMB500 million bearing an annual interest rate of 4.75%. The actual proceeds received by the Company were approximately RMB499 million. These bonds are denominated in RMB and issued at par. Interest is payable annually while principal will be paid when the bonds fall due. The annual effective interest rate of those bonds is 4.82%. Interest paid per annum during the tenure of the bonds is RMB23.75 million. As at 31 December 2018, interest payable for the bonds amounted to approximately RMB11.02 million (31 December 2017: RMB11.02 million).

The Company issued corporate bonds with maturity of 3 years in November 2017 with a face values of RMB2.3 billion bearing an annual interest rates of 4.99%. The actual proceeds received by the Company were approximately RMB2.299 billion. These bonds are denominated in RMB and issued at par. Interest is payable annually while principal will be paid when the bonds fall due. The annual effective interest rate of those bonds is 4.99%. Interest paid per annum during the tenure of the bonds is RMB114.77 million, respectively. As at 31 December 2018, interest payable for the bonds amounted to approximately RMB17.61 million. (31 December 2017: RMB17.61 million)

The Company issued corporate bonds with maturity of 3 years and 10 years in April 2018, September 2018 with face values of RMB1.5 billion and RMB5 billion bearing annual interest rates of 4.90% and 5.05%, respectively. The actual proceeds received by the Company were approximately RMB1.499 billion, RMB4.999 billion respectively. These bond are denominated in RMB and issued at par. Interest is payable annually while principal will be paid when the bonds fall due. The annual effective interest rates of those bonds are 4.90% and 5.05%, respectively. Interest paid per annum during the tenure of the bonds is RMB73.50 million and RMB252.50 million, respectively. As at 31 December 2018, interest payable for the bonds amounted to approximately RMB54.77 million and RMB78.17 million, respectively.

The Company issued medium-term notes with maturity of 3 years in May 2018, July 2018 with a face value of RMB3 billion and RMB2 billion bearing an annual interest rate of 4.80% and 4.41% respectively. The actual proceeds received by the Company were approximately RMB2.99 billion and RMB1.99 billion respectively. These notes are denominated in RMB and issued at par. Interest is payable annually while principal will be paid when the notes fall due. The annual effective interest rate of those notes are 4.91% and 4.97% respectively. Interest paid per annum during the tenure of the notes are RMB144 million and RMB88.20 million. As at 31 December 2018, interest payable for the notes amounted to approximately RMB96.26 million and RMB42.05 million, respectively.

## 27 LONG-TERM BONDS (Cont'd)

The Company issued debt financing instrument with maturity of 3 years in July 2018 with a face value of RMB2.5 billion bearing an annual interest rate of 4.68%. The actual proceeds received by the Company were approximately RMB2.49 billion. These bonds are denominated in RMB and issued at par. Interest is payable annually while principal will be paid when the bonds fall due. The annual effective interest rate of those bonds is 4.81%. Interest paid per annum during the tenure of the bonds is RMB117 million. As at 31 December 2018, interest payable for the bonds amounted to approximately RMB55.78 million.

## 28 OTHER NON-CURRENT LIABILITIES

	As at 31 December	
	2018	2017
Finance lease payables (a)	1,442,174	1,600,106
Government grants		
– Environmental subsidies (b)	1,224,878	1,245,810
– Other government grants	320,083	179,226
Contract liabilities (c)	2,248,682	–
Other deferred income (c)	70,211	1,825,614
Others	1,114,754	969,052
Subtotal	6,420,782	5,819,808
Current portion of finance lease payables	(326,048 )	(470,985 )
Current portion of other non-current liabilities	(149,598 )	(64,361 )
Subtotal	(475,646 )	(535,346 )
Total	5,945,136	5,284,462

## 28 OTHER NON-CURRENT LIABILITIES (Cont'd)

(a) The Company and its subsidiaries had obligation under finance leases as follows:

	As at 31 December	
	2018	2017
Within 1 year	415,962	500,790
After 1 year but within 2 years	341,415	312,125
After 2 years but within 3 years	327,239	281,990
After 3 years	674,355	674,256
	1,758,971	1,769,161
Less: total future interest expense	316,797	169,055
Total	1,442,174	1,600,106

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

Upon the adoption of IFRS 15, upfront fees received from heat customers related to the heating pipeline were  
(c) reclassified from “other non-current liabilities – other deferred income” to “other non-current liabilities – contract liabilities” (Note 2(b)).

(d) In 2018, the asset-related government grants which were credited to the statement of comprehensive income amounted to RMB132.82 million (2017: RMB140.13 million).

## 29 ACCOUNTS PAYABLE AND OTHER LIABILITIES

Accounts payable and other liabilities comprised:

	As at 31 December	
	2018	2017
Accounts and notes payable	14,683,707	15,496,475
Payables to contractors for construction	12,353,097	14,491,632
Retention payables to contractors	1,557,737	2,008,106
Amounts received in advance	–	1,504,926
Accrued interests	1,152,767	947,302
Others	5,391,372	4,451,691
Total	35,138,680	38,900,132

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

As at 31 December 2018 and 2017, there were no notes payable secured by notes receivable.

The carrying amounts of financial liabilities (excluding amounts received in advance) included in accounts payable and other liabilities are denominated in the following currencies:

	As at 31 December	
	2018	2017
RMB	33,354,665	36,399,243
S\$ (RMB equivalent)	561,064	556,881
US\$ (RMB equivalent)	1,075,678	436,358
JPY (RMB equivalent)	10,088	2,469
EUR (RMB equivalent)	–	255
PKR (RMB equivalent)	137,185	–
Total	35,138,680	37,395,206

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

	As at 31 December	
	2018	2017
Within 1 year	14,423,179	15,201,380
Between 1 to 2 years	143,514	196,082
Over 2 years	117,014	99,013
Total	14,683,707	15,496,475

**30 TAXES PAYABLE**

Taxes payable comprises:

	As at 31 December	
	2018	2017
VAT payable	867,615	619,329
Income tax payable	231,299	430,703
Others	375,523	252,178
Total	1,474,437	1,302,210

**31 SHORT-TERM BONDS**

The Company issued unsecured super short-term bonds with face value of RMB4 billion, RMB2 billion, RMB1 billion and RMB4 billion bearing annual interest rates of 4.10%, 4.19%, 4.17% and 4.17% in October 2017, November 2017, November 2017 and December 2017, respectively. Such bonds are denominated in RMB, issued at face value and mature in 180 days, 180 days, 180 days and 90 days. The annual effective interest rates of these bonds 4.22%, 4.35%, 4.19% and 4.35%, respectively. These bonds had matured and were fully repaid in April 2018, May 2018, May 2018 and March 2018 respectively.

The Company issued unsecured super short-term bonds with face values of RMB4 billion, RMB2 billion, RMB2 billion, RMB4 billion, RMB2.5 billion, RMB4 billion, RMB2 billion, RMB2 billion, RMB4 billion and RMB2 billion bearing annual interest rates of 4.35%, 4.35%, 4.40%, 4.45%, 4.25%, 4.08%, 3.98%, 3.80%, 4.05% and 2.80% in February 2018, March 2018, March 2018, March 2018, May 2018, May 2018, May 2018, May 2018, June 2018 and August 2018 respectively. Such bonds are denominated in RMB, issued at face value and mature in 90 days, 90 days, 150 days, 180 days, 180 days, 150 days, 180 days, 90 days, 180 days and 90 days from the issuance date. The annual effective interest rates of these bonds are 4.42%, 4.38%, 4.53%, 4.59%, 4.29%, 4.22%, 4.10%, 3.88%, 4.21% and 2.88% respectively. These bonds were fully repaid in May 2018, May 2018, August 2018, September 2018, October 2018, September 2018, November 2018, August 2018, November 2018 and November 2018 respectively.

The Company issued unsecured super short-term bonds with face value of RMB2.5 billion, RMB2 billion, RMB2 billion, RMB2 billion and 1 billion bearing annual interest rate 3.20%, 2.78%, 3.05%, 3.10%, 2.78% and 3.30% in October 2018, November 2018, November 2018, November 2018, November 2018 and December 2018 respectively. Such bonds are denominated in RMB, issued at face value and matured in 180 days, 90 days, 180 days, 180 days, 90 days and 270 days from the issuance date. The annual effective interest rates of these bonds are 3.23%, 2.83%, 3.13%, 3.13%, 2.83% and 3.34% respectively. As at December 2018, interest payables for these bonds amounted to approximately RMB16.2 million, RMB7.01 million, RMB6.52 million, RMB6.80 million, RMB5.18 million and RMB2.35 million respectively.

## 32 SHORT-TERM LOANS

Short-term loans are as follows:

	As at 31 December 2018			As at 31 December 2017		
	Original currency '000	RMB equivalent	Annual interest rate	Original currency '000	RMB equivalent	Annual interest rate
Secured						
RMB						
– Fixed rate	435,856	435,856	3.41%-6.90 %	24,000	24,000	4.71%-5.50 %
– Variable rate	75,000	75,000	3.60%-3.85 %	–	–	–
Unsecured						
RMB						
– Fixed rate	11,740,658	11,740,658	3.30%-4.90 %	10,450,248	10,450,248	3.92%-4.35 %
– Variable rate	47,227,150	47,227,150	3.92%-4.65 %	69,777,100	69,777,100	3.74%-4.35 %
US\$						
– Variable rate	180,401	1,238,131	3.79 %	–	–	–
PKR						
– Variable rate	6,500,000	321,977	11.51 %	–	–	–
Total		61,038,772			80,251,348	

### 32 SHORT-TERM LOANS (Cont'd)

As at 31 December 2018, short-term loans of RMB461 million (31 December 2017: RMB24 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 2018, short-term loans of RMB1,560 million (31 December 2017: Nil) represented the guaranteed loan borrowed by Ruyi Pakistan Energy, of which US\$0.18 billion (RMB equivalents of RMB1,238 million) is guaranteed by Huaneng Group and Ruyi Technology Group on the proportion of the shareholding basis and PKR6.5 billion (RMB equivalents of RMB322 million) is guaranteed by Shandong Luyi Power International Limited Company ("Luyi Power") with an irrevocable stand-by letter of credit amounting to USD66 million.

As at 31 December 2018, short-term loan borrowed from Huaneng Capital Services Co., Ltd. ("Huaneng Capital Services") amounted to RMB50 million were secured by future electricity revenue (31 December 2017: Nil)

As at 31 December 2018, short-term loans borrowed from Huaneng Finance amounted to RMB9,454 million (31 December 2017: RMB6,505 million) with annual interest rate ranged from 4.13% to 4.35% (31 December 2017: from 3.92% to 4.35%).

As at 31 December 2017, a short-term loan borrowed from Xi'an Thermal Power Research Institute Co., Ltd. ("Xi'an Thermal") amounted to RMB100 million with annual interest rate of 4.13%. As at 31 December 2018, the loan was fully repaid.

As at 31 December 2017, short-term loans borrowed from a subsidiary of Huaneng Energy & Communications Holdings Co., Ltd. amounted to RMB753 million with annual interest rate from 3.92% to 4.13%. As at 31 December 2018, the loans were fully repaid.

## 33 DEFERRED INCOME TAX ASSETS AND LIABILITIES

The deferred income tax assets and liabilities are as follows:

	As at 31 December	
	2018	2017
Deferred income tax assets before offsetting	3,903,331	3,604,577
Offset amount	(1,620,746)	(1,304,486)
Deferred income tax assets after offsetting	2,282,585	2,300,091
Deferred income tax liabilities before offsetting	(5,486,905)	(5,871,166)
Offset amount	1,620,746	1,304,486
Deferred income tax liabilities after offsetting	(3,866,159)	(4,566,680)
	(1,583,574)	(2,266,589)

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

	2018	2017
Beginning of the year	(2,266,589)	(998,795 )
Adjustment on initial application of IFRS 9	(106,649 )	–
Adjusted balance at beginning of the year	(2,373,238)	(998,795 )
Business combination (Note 42)	(68,083 )	(2,322,513)
Disposal of subsidiaries	–	17,407
Credited to profit or loss (Note 35)	775,820	724,712
Credited to other comprehensive income	100,966	330,834
Currency translation differences	(19,039 )	(18,234 )
End of the year	(1,583,574)	(2,266,589)

## 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	Amortization of land use rights	Provision for impairment loss	Depreciation	Accrued expenses	VAT refunds on purchases of domestically manufactured equipment	Unused tax losses	Others	Total
As at 1 January 2017	17,476	13,915	607,154	538,204	42,123	205,009	230,988	777,683	2,432,552
Business combination	—	—	—	574,600	5,052	—	139,387	414,891	1,133,930
Disposal of subsidiaries	—	—	(10,686 )	(9,962 )	—	—	(5,566 )	(52,270 )	(78,484 )
(Charged)/credited to profit or loss	—	(493 )	(2,593 )	(70,209 )	7,076	(25,433 )	196,613	20,026	124,987
Charged to other comprehensive income	(11,905 )	—	—	—	—	—	—	—	(11,905 )
Currency translation differences	—	—	82	—	—	—	—	3,415	3,497
As at 31 December 2017	5,571	13,422	593,957	1,032,633	54,251	179,576	561,422	1,163,745	3,604,577
Business combination (Note 42)	—	—	—	—	—	—	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

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## 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 license	Mining rights	Territorial water use right	Other	Total
As at 1 January 2017	(18,399)	(348,537)	(891,155 )	(1,149,054)	(654,363)	(129,383)	(72,432)	(168,024)	(3,431,34
Business combination	—	(1,736 )	(148,129 )	(3,209,672)	—	—	—	(96,906 )	(3,456,44
Disposal of subsidiaries	—	—	1,761	22,162	—	—	68,696	3,272	95,891
Credited to profit or loss	—	—	27,457	525,780	—	—	1,327	45,161	599,725
(Charged)/credited to other comprehensive loss	(5,558 )	348,297	—	—	—	—	—	—	342,739
Currency translation differences	(304 )	—	(540 )	(9,490 )	(11,397 )	—	—	—	(21,731
As at 31 December 2017	(24,261)	(1,976 )	(1,010,606)	(3,820,274)	(665,760)	(129,383)	(2,409 )	(216,497)	(5,871,16
Adjustment on initial application of IFRS9	—	(106,649)	—	—	—	—	—	—	(106,649
As at 1 January 2018	(24,261)	(108,625)	(1,010,606)	(3,820,274)	(665,760)	(129,383)	(2,409 )	(216,497)	(5,977,81
Business combination (Note 42)	—	—	—	(98,618 )	—	—	—	—	(98,618
Credited to profit or loss	—	—	28,760	518,843	—	—	—	43,160	590,763
Credited/(charged) to other comprehensive loss	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)	(5,486,90

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

As at 31 December 2018 and 2017, taxable temporary differences relating to interest in equity method investees amounted to RMB3.08 billion and RMB2.95 billion, respectively. No deferred tax liabilities were recognised as at 31 December 2018 and 2017 as dividends from investments in associates and joint ventures are exempted from the PRC income tax and the Company has no plan to dispose any of these investees in the foreseeable future.

As at 31 December 2018 and 2017, taxable temporary differences relating to the undistributed profit of wholly-owned foreign subsidiaries amounted to RMB2.53 billion and RMB3.06 billion, respectively. No deferred tax liabilities were recognised in respect of the tax that would be payable on the distribution of these retained profit as at 31 December 2018 and 2017 as the Company controls the dividend policy of the subsidiary, and it has been determined that it is probable that the profits will not be distributed in the foreseeable future.

In accordance with the accounting policy set out in Note 2(w), the Company and its subsidiaries 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 follow:

	As at 31 December	
	2018	2017
Deductible temporary differences	5,324,572	4,672,788
Unused tax losses	9,581,856	8,665,079
Total	14,906,428	13,337,867

The expiry dates of the tax losses of the Company and its subsidiaries for which no deferred income tax assets were recognised are summarized as follows:

	As at 31 December	
	2018	2017
Year of expiry		
2018	–	1,557,045
2019	1,553,294	1,579,066
2020	1,520,528	1,524,531
2021	1,438,360	1,558,573
2022	2,359,946	2,445,864
2023	2,709,728	–
Total	9,581,856	8,665,079

### 34 ADDITIONAL FINANCIAL INFORMATION TO THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

As at 31 December 2018, the net current liabilities of the Company and its subsidiaries amounted to approximately RMB76,407 million (2017: RMB107,413 million). On the same date, total assets less current liabilities were approximately RMB281,697 million (2017: RMB240,639 million).

### 35 INCOME TAX EXPENSE

	For the year ended 31 December	
	2018	2017
Current income tax expense	1,418,993	1,942,238
Deferred income tax (Note 33)	(775,820 )	(724,712 )
Total	643,173	1,217,526

No Hong Kong profits tax has been provided as there were no estimated assessable profits in Hong Kong for the year (2017: nil).

The reconciliation of the effective income tax rate from the notional income tax rate is as follows:

	For the year ended 31 December	
	2018	2017
Notional tax on profit before income tax expense, calculated at the applicable income tax rates in the countries concerned	27.82 %	26.13 %
Effect of tax losses not recognised	26.83 %	18.45 %
Effect of deductible temporary differences not recognised	5.92 %	6.04 %
Effect of non-taxable income	(28.53 %)	(12.37 %)
Effect of non-deductible expenses	11.22 %	7.05 %
Statutory tax concession	(6.38 %)	0.26 %
Others	(4.27 %)	(2.10 %)
Effective tax rate	32.61 %	43.46 %

**35 INCOME TAX EXPENSE (Cont'd)**

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 2018 and 2017.

Pursuant to Guo Shui Han [2009] No. 33, starting from 1 January 2008, the Company and its PRC branches calculate and pay income tax on a consolidated basis according to relevant tax laws and regulations. The original regulation specifying locations for power plants and branches of the Company to make enterprise income tax payments was abolished. The income tax of subsidiaries remains to be calculated individually based on their individual operating results.

The income tax rate applicable to Singapore subsidiaries is 17% (2017: 17%). The Company's overseas subsidiary in Pakistan engaged in power generation business is entitled to an income tax exemption for a period of 30 years according to Pakistani 2015 Fiscal Act; the other subsidiary engaged in maintenance service is subject to income tax at the higher of 8% of its revenue and 31% of its profit.

**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	
	2018	2017
Consolidated net profit attributable to equity holders of the Company	734,435	1,579,836
Less: cumulative distribution of other equity instruments	342,349	68,600
Consolidated net profit attributable to ordinary Shareholders of the Company	392,086	1,511,236
Weighted average number of the Company's outstanding ordinary shares ('000)*	15,283,335	15,200,383
Basic and diluted earnings per share (RMB)	0.03	0.10

## 36 EARNINGS PER SHARE (Cont'd)

\* Weighted average number of ordinary shares:

	2018 '000	2017 '000
Issued ordinary shares at 1 January	15,200,383	15,200,383
Effect of share issue (Note 22)	82,952	—
Weighted average number of ordinary shares at 31 December	15,283,335	15,200,383

There was no dilutive effect on earnings per share since the Company had no dilutive potential ordinary shares for the years ended 31 December 2018 and 2017.

## 37 NOTES TO CONSOLIDATED STATEMENT OF CASH FLOWS

Bank balances and cash comprised the following:

	As at 31 December	
	2018	2017
Total bank balances and cash	15,832,788	9,364,823
Add: cash and cash equivalents transferred to disposal group	15,104	—
Less: Restricted cash	430,210	82,433
Cash and cash equivalents as at year end	15,417,682	9,282,390

The bank balances and cash of the Company and its subsidiaries are denominated in the following currencies:

	As at 31 December	
	2018	2017
RMB	14,389,435	8,213,100
S\$ (RMB equivalent)	927,395	835,995
US\$ (RMB equivalent)	482,666	315,535
Others	33,292	193
Total	15,832,788	9,364,823

There is no material non-cash investing and financing transactions for the years ended 31 December 2018 and 2017.

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

The table below details changes in the Company and its subsidiaries' 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 Company and its subsidiaries' consolidated cash flow statement as cash flows from financing activities:

Items	Loans (Note 26,32)	Bonds (Note 27,31)	Accrued Interests (Note 29)	Cumulative distribution of other equity instrument investments (Note 25)	Finance leases payables (Note 28)	Interest rate swaps 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 investments	—	—	—	342,350	—	—
Capitalised borrowing costs	—	—	495,818	—	—	—
Transfer to group held for sale	(297,400 )	—	(415 )	—	—	—
Others	38,122	(8,726 )	—	—	196,185	—
As at 31 December 2018	211,207,782	41,519,596	1,152,767	8,846	1,442,174	149,117

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

Items	Loans (Note 26,32)	Bonds (Note 27,31)	Accrued interests (Note 29)	Finance leases payables (Note 28)	Interest rate swaps contracts (liabilities) (Note 14)
As at 1 January 2017	132,220,120	42,788,810	676,462	1,088,846	169,201
(a) Business combination	47,562,251	—	85,380	521,083	—
(b) Changes from financing cash flows:					
Proceeds from new bank loans	140,270,455	—	—	—	—
Repayment of bank loans	(113,769,036)	—	—	—	—
Proceeds from new bonds	—	38,788,679	—	—	—
Repayment of bonds	—	(50,300,000)	—	—	—
Capital element of finance lease rentals paid	—	—	—	(636,145 )	—
Interest element of finance lease rentals paid	—	—	—	(58,874 )	—
Interest paid	—	(885,000 )	(9,195,102)	—	—
Others	(3,135 )	(80,643 )	—	—	—
(c) Exchange adjustments	82,298	—	2,095	235	—
(d) Changes in fair value	—	—	—	—	(38,558 )
(e) Other changes:					
New finance leases	—	—	—	659,895	—
Interest expenses	—	747,377	8,902,402	99,225	—
Capitalised borrowing costs	—	—	476,065	—	—
Disposal of subsidiaries	(1,166,899 )	—	—	—	—
Others	184,710	—	—	(74,159 )	—
As at 31 December 2017	205,380,764	31,059,223	947,302	1,600,106	130,643

### 38RELATED PARTY BALANCES AND TRANSACTIONS

The related parties of the Company and its subsidiaries that had transactions with the Company and its subsidiaries 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 (Tianjing) 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
Huaneng Group Fuel Company and also and its subsidiaries	Associates of the Company 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
Liaocheng Luxi Fuel Co., Ltd. Company	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
Chongqing Changyao Electricity Sales Co., Ltd.	An associate of the Company
Zhengzhou Airport Xinggang Power Co., Ltd.	An associate of the Company
Hainan Nuclear	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**	Joint ventures of the Company

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Names of related parties	Nature of relationship
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 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 Xining Power Co., Ltd.	A subsidiary 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
Ningxia Daba Power Generation Co., Ltd.	A subsidiary of Huaneng Group
Huaneng Shandong Shidao Bay Nuclear Power Co., Ltd.	A subsidiary of Huaneng Group
Huangtai #8 Power Plant	An investee with significant influence
Other government-related enterprises***	Related parties of the Company

38RELATED PARTY BALANCES AND TRANSACTIONS (Cont'd)

\* Transactions with subsidiaries of Huaneng Group which also are associates of the Company and its subsidiaries are presented as transactions with subsidiaries of Huaneng Group for note 38(a) and 38(b).

\*\* Hong Kong Energy and its subsidiaries were included in the consolidated financial statements as at 31 December 2018 for note 42(b). Prior to this, the transactions were listed in the disclosure of joint ventures of the Company.

\*\*\* 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 Company and its subsidiaries ("other government-related enterprises").

The majority of the business activities of the Company and its subsidiaries are conducted with other government-related enterprises. For the purpose of the related party balances and transactions disclosure, the Company and its subsidiaries have 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 privatization programs. Nevertheless, management believes that all material related party balances and transactions 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 Company and its subsidiaries and their related parties during the year and significant balances arising from related party transactions as at year end.

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

## (a) Related party balances

## (i) Cash deposits in related parties

	As at 31 December	
	2018	2017
Deposits in Huaneng Finance		
– Savings deposit	10,914,633	7,506,706
Deposits in Great Wall Securities		
– Savings deposit	–	–
Total	10,914,633	7,506,706

For the year ended 31 December 2018, the annual interest rates for these savings deposits placed with from 0.35% to 1.35% (2017: from 0.35% to 1.35%).

(ii) As described in Note 26 and 32, certain loans of the Company and its subsidiaries were borrowed from Huaneng Group, HIPDC, Huaneng Finance, Xi'an Thermal, 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 within one year. As at and for the years ended 31 December 2018 and 2017, no provision is made on receivable balances from these parties.

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

	As at 31 December	
	2018	2017
Due from Huaneng Group	1,010,023	860,941
Due from HIPDC	2,850	99
Due from joint ventures	122,775	360,442
Due from associates	–	89,083
Due from subsidiaries of Huaneng Group	125,777	196,621
Due from Huangtai #8 Power Plant	839,067	903,671
Total	2,100,492	2,410,857

## 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 comprised the following balances due to related parties:

	As at 31 December	
	2018	2017
Due to Huaneng Group	284,244	260,306
Due to HIPDC	13,628	16,138
Due to joint ventures	97,431	336,170
Due to associates	8,962	5,751
Due to subsidiaries of Huaneng Group	4,528,500	4,239,688
Total	4,932,765	4,858,053

(v) As at 31 December 2018, included in long-term loans (including current portion) and short-term loans are loans payable to other government-related enterprises amounting to RMB208.4 billion (2017: RMB203.2 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 payables and other payables arising from the purchases of coal and property, plant and equipment construction and related labor service provided by other government-related enterprises. Except for bank deposits, these balances are unsecured and the majority of receivable/repayable is within one year.

(vi) As at 31 December 2018, prepayment for construction materials to subsidiaries of Huaneng Group amounted to RMB19 million (2017: RMB21 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	
	2018	2017
Huaneng Group		
Other purchases	506	446
HIPDC		
Technical services and engineering contracting services	7	—
Subsidiaries of Huaneng Group		
Purchase of coal and transportation services	23,873,672	19,945,752
Technical services and engineering contracting services	1,121,516	1,024,369
Purchase of equipment	176,506	294,372
Purchase of heat	69,527	52,791
Other purchases	260	716
Joint ventures of the Company		
Purchase of coal and transportation services	1,798,673	2,054,209
Entrusting other parties for power generation	10,127	28,953
Associates of the Company		
Other purchases	36,826	27,732
Technical services and engineering contracting services	3,812	—

## 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	
	2018	2017
Huaneng Group		
Service provided	15,472	907
HIPDC		
Service provided	1,067	520
Other sales	2,534	—
Subsidiaries of Huaneng Group		
Sales of power generation quota	3,065	—
Sales of goods	637,059	1,114,347
Other sales	11,399	15,247
Service provided	45,677	25,229
Provision of entrusted power generation	—	58,639
Joint ventures of the Company		
Service provided	392,744	319,844
Other sales	45,997	407,697
Huangtai #8 Power Plant		
Service provided	2,830	2,802

## 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	
	2018	2017
(1) Rental charge on leasehold		
HIPDC	107,712	106,885
Subsidiaries of Huaneng Group	123,472	141,542
A joint venture of the Company	589	2,128
(2) Rental income from leasehold		
A joint venture of the Company	7,448	7,448
Subsidiaries of Huaneng Group	3,609	2,509
(3) Drawdown of loans		
Subsidiaries of Huaneng Group	17,940,287	15,374,480
Huaneng Group	—	665,225
(4) Interest expense on loans		
Huaneng Group	32,037	33,481
HIPDC	—	10
Subsidiaries of Huaneng Group	524,716	589,012
(5) Interest income on loans		
A joint venture of the Company	3,540	3,329
An associate of the Company	6,639	917
Subsidiaries of Huaneng Group	—	4,344

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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	
	2018	2017
(6) Capital injection from a subsidiary of Huaneng Group		
A subsidiary of Huaneng Group	379,906	274,752
(7) Capital injection to		
Subsidiaries of Huaneng Group	320,680	—
Associates of the Company	142,579	52,200
Joint ventures of the Company	—	249,716
(8) Pre-construction cost paid by		
A subsidiary of Huaneng Group	90	23,529
A joint venture of the Company	—	179
(9) Finance lease payments received from		
Subsidiaries of Huaneng Group	57,676	—
(10) Interest expense of finance lease		
Subsidiaries of Huaneng Group	30,720	22,261
(11) Entrusted management fee		
Huaneng Group	15,000	13,453
(12) Trusteeship management income		
Huaneng Group	5,110	1,518
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## 38 RELATED PARTY BALANCES AND TRANSACTIONS (Cont'd)

(b) Related party transactions (Cont'd)

(iii) Other related party transaction (Cont'd)s

	For the year ended 31 December	
	2018	2017
(13) Net proceeds received from investee with significant influence Huangtai #8 Power Plant	60,246	72,920
(14) Finance lease to investee with significant influence Huangtai #8 Power Plant	—	86,946
(15) Interest income from finance lease Huangtai #8 Power Plant	22,497	11,626
(16) Receive collateral under loan agreement An associate of the Company	96,902	—
(17) Acquisition consideration		

In 2018, Shandong Power acquired subsidiaries from Taishan Power, please refer to Note 42(a) for details of the acquisition 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 2018 and 2017, the Company and its domestic subsidiaries sold substantially all their 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 2018 and 2017, other collectively-significant transactions with government-related enterprises also include a large portion of fuel purchases, property, plant and equipment construction and related labor employed.

## (c) Guarantees

	As at 31 December	
	2018	2017
(i) Long-term loans guaranteed by		
– Huaneng Group	3,028,109	1,675,147
– HIPDC	2,057,200	2,099,600
(ii) Long-term bonds guaranteed by		
– HIPDC	–	4,000,000

## (d) Pre-tax benefits and social insurance of key management personnel

	For the year ended 31 December	
	2018	2017
Salaries	6,754	7,676
Pension	1,292	1,511
Total	8,046	9,187

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

## (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	
	2018	2017
Subsidiaries of Huaneng Group	315,609	290,041

## (ii) Fuel purchase and transportation commitments

	As at 31 December	
	2018	2017
Subsidiaries of Huaneng Group	1,382,058	1,111,649
A joint venture of the Company	358,441	279,408
Total	1,740,499	1,391,057

## (iii) Operating lease commitments

	As at 31 December	
	2018	2017
Subsidiaries of Huaneng Group	126,492	171,804
HIPDC	55,973	76,202
Total	182,465	248,006

### 39LABOR COST

Other than the salaries and staff welfare, the labor cost of the Company and its subsidiaries mainly comprises the following:

All PRC employees of the Company and its subsidiaries are entitled to a monthly pension upon their retirements. The PRC government is responsible for the pension liability to these employees on retirement. The Company and its subsidiaries are required to make contributions to the publicly administered retirement plan for their PRC employees at a specified rate, currently set at 14% to 22% (2017: 14% to 22%) of the basic salary of the PRC employees. The retirement plan contributions paid by the Company and its subsidiaries for the year ended 31 December 2018 were approximately RMB1,179 million (2017: RMB1,156 million), including approximately RMB1,135 million (2017: RMB1,110 million) charged to profit or loss.

In addition, the Company and its subsidiaries have 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 Company and its subsidiaries, and the Company and its subsidiaries are 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 2018, the contributions to supplementary defined contribution retirement scheme paid by the Company and its subsidiaries amounted to approximately RMB483 million (2017: RMB312 million), including approximately RMB465 million (2017: RMB299 million) charged to profit or loss.

SinoSing Power and its subsidiaries in Singapore appropriate a specified rate, currently set at 6.5% to 16% (2017: 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 2018 amounted to approximately RMB17.53 million (2017: RMB19.92 million), all of which were charged to profit or loss.

The Company and its subsidiaries have no further obligation for post-retirement benefits beyond the annual contributions made above.

In addition, the Company and its subsidiaries also make 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 Company and its subsidiaries amounted to approximately RMB802 million (2017: RMB784 million) and RMB930 million (2017: RMB901 million) for the year ended 31 December 2018 including approximately RMB764 million (2017: RMB748 million) and RMB886 million (2017: RMB857 million) were charged to profit or loss, respectively.

## 40DIRECTORS', 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 2018 is set out below:

Name of director	Fees	Basic salaries	Performance salaries	Pension	Total
Mr. Shu Yinbiao <sup>1</sup>	—	—	—	—	—
Mr. Cao Peixi <sup>2</sup>	—	—	—	—	—
Mr. Liu Guoyue <sup>3</sup>	—	—	—	—	—
Mr. Fan Xiaxia <sup>4</sup>	—	—	—	—	—
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 <sup>5</sup>	—	66	250	63	379
Mr. Zhang Xiancheng <sup>6</sup>	—	36	87	22	145
Sub-total	—	256	813	215	1,284
Total	370	256	813	215	1,654

## 40DIRECTORS', 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 2017 is set out below:

Name of director	Fees	Basic salaries	Performance salaries	Pension	Total
Mr. Cao Peixi	—	—	—	—	—
Mr. Guo Junming	—	—	—	—	—
Mr. Liu Guoyue	—	—	—	—	—
Mr. Fan Xiaxia	—	—	—	—	—
Mr. Li Shiqi	—	—	—	—	—
Mr. Huang Jian	—	—	—	—	—
Mr. Wang Yongxiang	—	—	—	—	—
Mr. Mi Dabin	24	—	—	—	24
Mr. Guo Hongbo	—	—	—	—	—
Mr. Zhu Yousheng	24	—	—	—	24
Ms. Li Song	24	—	—	—	24
Mr. Cheng Heng	—	—	—	—	—
Mr. Lin Chong	—	—	—	—	—
Mr. Li Zhensheng	37	—	—	—	37
Mr. Yue Heng	74	—	—	—	74
Mr. Geng Jianxin	37	—	—	—	37
Mr. Xia Qing	37	—	—	—	37
Mr. Xu Mengzhou	74	—	—	—	74
Mr. Liu Jizhen	37	—	—	—	37
Mr. Xu Haifeng	37	—	—	—	37
Mr. Zhang Xianzhi	37	—	—	—	37
Sub-total	442	—	—	—	442
Name of supervisor					
Mr. Ye Xiangdong	—	—	—	—	—
Mr. Mu Xuan	24	—	—	—	24
Ms. Zhang Mengjiao	—	—	—	—	—
Mr. Gu Jianguo	24	—	—	—	24
Ms. Zhang Xiaojun	—	137	466	124	727
Mr. Zhu Daqing	—	135	464	123	722
Sub-total	48	272	930	247	1,497
Total	490	272	930	247	1,939

40DIRECTORS', SUPERVISORS' AND SENIOR MANAGEMENT'S EMOLUMENTS (Cont'd)

(a)Pre-tax benefits and social insurance of directors and supervisors (Cont'd)

<sup>1</sup>Appointed on 30 January 2019.

<sup>2</sup>Resigned on 30 January 2019.

<sup>3</sup>Resigned on 15 May 2018.

<sup>4</sup>Resigned on 28 February 2018.

<sup>5</sup>Resigned on 30 October 2018.

<sup>6</sup>Appointed on 30 October 2018.

During the year, no option was granted to the directors or the supervisors (2017: 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 (2017: nil).

No director or supervisor had waived or agreed to waive any emoluments during the years 2018 and 2017.

(b)Five highest paid individuals

The five individuals whose emoluments were the highest in the Company and its subsidiaries for the year include no director (2017: no director) whose emoluments are reflected in the analysis presented above. The emoluments payable to the all five (2017: remaining five) individuals during the year (within the range of nil to RMB0.86 million) are as follows:

	As at 31	
	December	
	2018	2017
Basic salaries	1,500	1,524
Performance salaries	2,100	1,800
Pension	679	648
	4,279	3,972

## 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	
	2018	2017
Contracted but not provided	16,790,739	16,985,439

## (b) Operating lease commitments

The Company and its subsidiaries have various operating lease arrangements for land and buildings. Some of the leases contain renewal options and most of the leases contain escalation clauses. Lease terms do not contain restrictions on the Company and its subsidiaries' 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	2017
Land and buildings		
– not later than 1 year	194,333	196,870
– later than 1 year and not later than 2 years	99,149	118,272
– later than 2 year and not later than 5 years	191,853	143,628
– later than 5 years	1,161,916	1,028,014
Total	1,647,251	1,486,784

In addition, in accordance with a 30-year operating lease agreement signed by Huaneng Dezhou Power Plant (“Dezhou Power Plant”) and Shandong Land Bureau for the land occupied by Dezhou Power Plant Phases I and II in June 1994, annual rental amounted to approximately RMB30 million effective from June 1994 and is subject to revision at the end of the fifth year from the contract date. Thereafter, the annual rental is subject to revision once every three years. The increment for each rental revision is restricted to no more than 30% of the previous annual rental amount. For the years ended 31 December 2018 and 2017, the annual rentals was approximately RMB34 million.

## 41 COMMITMENTS (Cont'd)

## (c) Fuel purchase commitments

The Company and its subsidiaries have entered into various long-term fuel supply agreements with various suppliers in securing fuel supply for various periods. All the agreements require minimum, maximum or forecasted volume purchases and subject to certain termination provisions. Related purchase commitments are as follows:

As at 31 December 2018			
	Periods	Purchase quantities	Estimated unit costs (RMB)
A government – related enterprise	2019-2039	2.8 million m <sup>3</sup> /day*	2.31/m <sup>3</sup>
A government – related enterprise	2019-2023	991 million m <sup>3</sup> /year*	2.50/m <sup>3</sup>
	2019-2023	541 million m <sup>3</sup> /year*	2.32/m <sup>3</sup>
	2019-2023	450 million m <sup>3</sup> /year*	2.50/m <sup>3</sup>
A government – related enterprise	2019-2026	200 million m <sup>3</sup> /year*	2.45/m <sup>3</sup>
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

## 41 COMMITMENTS (Cont'd)

## (c) Fuel purchase commitments (Cont'd)

As at 31 December 2017

	Periods	Purchase quantities	Estimated unit costs (RMB)
A government – related enterprise	2018-2039	2.8 million m <sup>3</sup> /day*	2.21/m <sup>3</sup>
A government – related enterprise	2018-2023	541 million m <sup>3</sup> /year*	2.06/m <sup>3</sup>
	2018-2023	450 million m <sup>3</sup> /year*	2.06/m <sup>3</sup>
	2018-2023	541 million m <sup>3</sup> /year*	2.10/m <sup>3</sup>
	2018-2023	450 million m <sup>3</sup> /year*	2.27/m <sup>3</sup>
A government – related enterprise	2018-2026	200 million m <sup>3</sup> /year*	2.38/m <sup>3</sup>
Other suppliers	2018-2019	243 BBtu <sup>**</sup> /day	approximately 67,000/BBtu
	2020-2021	242 BBtu <sup>**</sup> /day	approximately 67,000/BBtu
	2022	248 BBtu <sup>**</sup> /day	approximately 67,000/BBtu
	2023	247.5~256.6 BBtu <sup>**</sup> /day	approximately 67,000/BBtu
	2024-2028	49.9-81.5BBtu <sup>**</sup> /day	approximately 69,000/BBtu

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

\*\*BBtu: Billion British Thermal Unit.

## 42 BUSINESS COMBINATIONS

### (a) Acquisition from Taishan Power

On 31 July 2018, Shandong Power entered into an equity transfer agreements with Taishan Power to acquire:

80% equity interests of Laizhou Wind Power

80% equity interests of Shandong Laiwu Thermal Power

75% equity interests of Shandong Liaocheng Thermal Power

These entities are all mainly engaged in power generation and sales business. The acquisition was completed on 1 August 2018 (the acquisition date), when Shandong Power obtained the control over above mentioned entities through the corresponding voting rights obtained and consolidated them in its financial statement. The acquisition is expected to increase its generation capacity in relevant areas. The acquired business contributed revenue of RMB743 million and net loss of RMB92 million to the Company and its subsidiaries for the period from the date of acquisition to 31 December 2018.

The total consideration is RMB1.173 billion after certain adjustments made in accordance with the equity transfer agreements, which has been settled in cash by 31 December 2018.

## 42 BUSINESS COMBINATIONS (Cont'd)

## (a) Acquisition from Taishan Power (Cont'd)

	Acquisition Date
Total consideration	1,172,508
Non-controlling interests	276,713
Less: Fair value of total identifiable net assets	1,218,003
Goodwill	231,218
Total consideration	1,172,508
Less: Bank balances and cash of acquirees	122,699
Cash consideration paid for acquisition of subsidiaries, net of cash acquired	1,049,809

Goodwill arising from the acquisitions is attributable to the synergies expected to arise after the acquisitions of the equity interests in the subsidiaries stated above. None of the goodwill recognised is expected to be deductible for tax purposes.

The Company incurred acquisition related cost amounted RMB0.96 million for financial advisory, legal and audit fees.

## 42 BUSINESS COMBINATIONS (Cont'd)

## (a) Acquisition from Taishan Power (Cont'd)

The assets and liabilities arising from the acquisitions of above entities are as follows:

	Laizhou wind power Fair value	Shandong Laiwu Thermal Power Fair value	Shandong Liaocheng Thermal Power Fair value
Property, plant and equipment	568,177	1,888,021	736,577
Land use rights	30,232	67,245	301,114
Other non-current assets	2,007	5,124	836
Inventories	131	2,354	22,225
Other receivables and assets	4,461	12,277	8,622
Accounts receivable	47,274	137,573	55,246
Bank balances and cash	10,486	57,558	54,655
Long-term loans	(115,800)	(379,254 )	(200,000 )
Deferred income tax liabilities	—	(31,588 )	(39,414 )
Other non-current liabilities	—	(26,235 )	(118,628 )
Accounts payable and other liabilities	(62,059 )	(162,237 )	(122,774 )
Taxes payables	(905 )	(1,686 )	(2,215 )
Short-term loans	(150,000)	(550,000 )	(34,000 )
Current portion of long-term loans	(334,791)	(462,606 )	—
Total identifiable net assets	(787 )	556,546	662,244

The fair value of the identifiable assets and liabilities acquired in the acquisition were assessed based on independent valuation prepared by external valuers.

## 42 BUSINESS COMBINATIONS (Cont'd)

(b) A subsidiary transferred from a joint venture

Hong Kong Energy, which has two wholly owned subsidiaries engaged in electricity production, sales and other relevant activities in Pakistan, was previously a joint venture established by a subsidiary of the Company and the other shareholder with 50%:50% equity interests. Previously, according to the terms in articles of association, Hong Kong Energy was jointly controlled by the two shareholders and therefore it was accounted for using equity method.

In December 2018, the other shareholder signed a voting in concert agreement whereby it agreed to vote the same in respect of significant financial and operating decisions made by Hong Kong Energy and its subsidiaries. As a result, Hong Kong Energy was included in the consolidated financial statements since then (acquisition date: 31 December 2018).

	Acquisition Date
Non-controlling interests	1,314,040
Fair value of pre-existing interest in Hong Kong Energy	1,314,040
Less: Fair value of total identifiable net assets	2,628,080
Goodwill	—

The identifiable assets and liabilities of Hong Kong Energy as at the acquisition date are as follows:

	Fair Value
Property, plant and equipment	275,889
Deferred income tax assets	2,919
Other non-current assets	10,205,870
Inventories	372,248
Other receivables and assets	1,030,858
Accounts receivable	1,523,409
Bank balances and cash	374,964
Long-term loans	(8,200,739 )
Other non-current liabilities	(210,142 )
Accounts payable and other liabilities	(675,009 )
Taxes payable	(1,330 )
Short-term loans	(1,560,108 )
Current portion of long-term loans	(510,749 )
Total identifiable net assets	2,628,080

## 43 NON-CONTROLLING INTERESTS

The following table summarizes the information relating to each of the Company and subsidiaries that have material non-controlling interests (“NCI”):

NCI percentage	Qinbei Power 40	Beijing Co-generation 59	Luohuang Power 40	Weiwei Power 40	Jinling Power 40	Yueyang Power 45	Shidongkou Power 50	Y C
31 December 2018								
Non-current assets	9,660,834	6,623,915	3,901,928	4,343,946	4,729,663	4,556,823	3,467,694	
Current assets	1,645,248	1,147,225	1,187,551	695,125	525,725	1,038,193	404,508	
Non-current liabilities	(3,831,883)	(334,910 )	(611,767 )	(59,651 )	(1,559,581)	(662,863 )	(409,762 )	
Current liabilities	(4,255,529)	(1,665,921)	(1,824,010)	(2,263,301)	(1,591,228)	(2,579,578)	(1,879,696)	
Net assets	3,218,670	5,770,309	2,653,702	2,716,119	2,104,579	2,352,575	1,582,744	
Carrying amount of NCI	1,301,384	3,404,517	1,040,463	1,086,448	841,854	1,074,060	791,372	
Revenue	5,293,403	5,704,966	2,819,106	3,587,416	3,346,779	4,003,821	2,109,785	
Net (loss)/profit	(198,026 )	757,268	18,811	253,552	200,269	118,342	131,129	
Total comprehensive (loss)/income	(198,026 )	757,268	18,811	253,552	200,269	118,342	131,129	
(Loss)/Profit allocated to NCI	(79,210 )	446,788	7,524	101,421	80,108	53,254	65,564	
Other comprehensive income/(loss) allocated to NCI	—	—	—	—	—	—	—	
Cash flow from operating activities	954,820	1,321,867	192,608	473,349	711,800	412,413	527,783	
Cash flow from investment activities	(503 )	(316,754 )	(201,012 )	(98,420 )	(52,701 )	(106,596 )	(45,045 )	
Cash flow from financing activities	(843,094 )	(904,822 )	(5,288 )	(306,054 )	(570,838 )	(305,872 )	(472,543 )	
Net increase/(decrease) in cash and cash equivalents	111,223	101,482	(13,692 )	68,875	88,261	(55 )	10,195	
Dividends paid to NCI	165,965	460,262	—	140,000	95,979	46,790	51,870	

## 43 NON-CONTROLLING INTERESTS (Cont'd)

NCI percentage	Qinbei Power 40	Beijing Co-generation % 59	Luohuang Power % 40	Weihai Power % 40	Jinling Power % 40	Yueyang Power % 45	Shidongkou Power % 50	
31 December 2017								
Non-current assets	10,553,775	6,841,918	4,055,507	4,664,868	5,049,079	4,875,004	3,712,623	
Current assets	1,738,000	1,257,485	887,225	633,012	494,312	987,812	494,073	
Non-current liabilities	(3,053,535 )	(394,590 )	(242,944 )	(81,048 )	(1,541,444)	(1,042,093)	(731,640 )	
Current liabilities	(5,821,543 )	(2,501,516)	(2,064,897)	(2,462,363)	(1,854,441)	(2,590,470)	(1,919,701)	
Net assets	3,416,697	5,203,297	2,634,891	2,754,469	2,147,506	2,230,253	1,555,355	
Carrying amount of NCI	1,380,594	3,050,283	1,032,938	1,101,787	859,024	1,019,016	777,678	
Revenue	4,587,612	4,262,547	2,303,079	3,421,115	3,423,688	3,149,190	2,117,052	
Net (loss)/profit	(169,261 )	541,602	(60,758 )	324,335	269,949	47,224	164,557	
Total comprehensive (loss)/income	(169,261 )	541,602	(60,758 )	324,335	269,949	47,224	164,557	
(Loss)/Profit allocated to NCI	(67,704 )	319,545	(24,303 )	129,734	107,980	21,251	82,278	
Other comprehensive (loss)/income allocated to NCI	—	—	—	—	—	—	—	
Cash flow from operating activities	970,585	1,071,888	195,282	681,568	731,714	426,437	311,668	
Cash flow from investment activities	(252,441 )	(1,190,093)	(383,004 )	(231,142 )	(47,518 )	(242,288 )	(93,434 )	
Cash flow from financing activities	(613,010 )	70,299	156,483	(405,196 )	(680,226 )	(191,231 )	(384,317 )	
Net increase/(decrease) in cash and cash equivalents	105,134	(49,605 )	(31,239 )	45,230	3,970	(7,082 )	(166,083 )	
Dividends paid to NCI	150,000	532,966	—	160,000	179,023	65,675	133,700	

#### 44 SUBSEQUENT EVENTS

(a) After the end of the reporting period, the directors proposed a final dividend. Further details are disclosed in Note 25.

On 28 September 2018, Huaneng Group entered into a guarantee agreement with Industrial and Commercial Bank of China Limited (“ICBC”), to provide guarantee amounted USD100 million for short-term loans of Ruyi Pakistan Energy, a subsidiary of Hong Kong Energy (the short-term loans approximated RMB90million as at 31 December (b) 2018). On 30 January 2019, the first extraordinary general meeting of the Company approved the proposal regarding Shandong Power’s takeover of the guarantee agreement from Huaneng Group. On 6 March 2019, Shandong Power issued the confirmation letter upon the approval, which officially confirmed with ICBC that it took over the obligation of Huaneng Group under the aforementioned guarantee agreement thereon.

(c) The Company issued super short-term bonds with face value of RMB2 billion bearing annual interest rate of 2.40% in March 2019. The bonds are denominated in RMB and mature in 90 days, with a par value of RMB100.

## 45 STATEMENT OF FINANCIAL POSITION

	As at 31 December	
	2018	2017
		(Note)
<b>ASSETS</b>		
Non-current assets		
Property, plant and equipment	51,487,868	53,607,732
Investments in associates and joint ventures	14,616,511	14,170,132
Investments in subsidiaries	76,529,927	74,995,916
Loans to subsidiaries	21,701,410	20,987,987
Investment property	154,794	145,548
Available-for-sale financial assets	–	1,573,702
Other equity investment	2,052,794	–
Land use rights	1,277,688	1,339,468
Deferred income tax assets	436,917	571,085
Goodwill	106,854	106,854
Other non-current assets	1,853,790	319,807
Total non-current assets	170,218,553	167,818,231
Current assets		
Inventories	2,546,965	2,091,519
Other receivables and assets	5,074,105	5,566,961
Accounts receivable	5,636,997	5,948,977
Loans to subsidiaries	8,206,550	2,445,837
Bank balances and cash	4,312,255	964,340
Total current assets	25,776,872	17,017,634
Total assets	195,995,425	184,835,865
<b>EQUITY AND LIABILITIES</b>		
Capital and reserves attributable to equity holders of the Company		
Share capital	15,698,093	15,200,383
Capital surplus	26,481,712	23,348,988
Other equity instruments	10,077,396	5,068,550
Surplus reserves	8,140,030	8,140,030
Retained earnings	33,719,245	35,034,741
Total equity	94,116,476	86,792,692

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## 45 STATEMENT OF FINANCIAL POSITION (Cont'd)

	As at 31 December	
	2018	2017
		(Note)
EQUITY AND LIABILITIES (continued)		
Non-current liabilities		
Long-term loans	25,367,936	14,734,234
Long-term bonds	25,984,663	15,993,833
Derivative financial liabilities	—	22,283
Other non-current liabilities	1,002,359	1,030,721
Total non-current liabilities	52,354,958	31,781,071
Current liabilities		
Accounts payable and other liabilities	6,758,376	7,325,154
Contract liabilities	246,742	—
Taxes payables	114,945	234,223
Derivative financial liabilities	4,118	—
Short-term bonds	11,541,454	11,068,357
Short-term loans	22,875,000	41,555,000
Current portion of long-term loans	3,960,716	2,059,056
Current portion of long-term bonds	3,993,479	3,997,033
Current portion of other non-current liabilities	29,161	23,279
Total current liabilities	49,523,991	66,262,102
Total liabilities	101,878,949	98,043,173
Total equity and liabilities	195,995,425	184,835,865

Note: The Company has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated. See Note 2(b).

#### 46 COMPARATIVE INFORMATION

The Company and its subsidiaries have initially applied IFRS 15 and IFRS 9 since 1 January 2018. Under the transition methods chosen, comparative information is not restated. Further details of the changes in accounting policies are disclosed in Note 2(b).

In view of the change of presentation to focus on key information of the consolidated financial statements, certain line item descriptions have been updated to conform to current year's presentation.

These financial statements were approved for issue by the Board of Directors on 19 March 2019 and were signed on its behalf.

Shu Yinbiao Huang Jian  
DirectorDirector

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FINANCIAL STATEMENTS RECONCILIATION BETWEEN PRC GAAP AND IFRS  
FOR THE YEAR ENDED 31 DECEMBER 2018

(Prepared in accordance with International Financial Reporting Standards)

(Amounts expressed in thousands of RMB unless otherwise stated)

The financial statements, which are prepared by the Company and its subsidiaries 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	
	2018	2017 (Restated)	2018	2017 (Restated)
Consolidated net profit/equity attributable to equity holders of the Company under PRC GAAP	1,438,881	1,742,482	83,234,629	75,671,844
Impact of IFRS adjustments:				
Differences in accounting treatment on business combinations under common control and depreciation and amortization of assets acquired in business combinations under common control (a)	(1,232,974)	(631,806 )	13,354,351	13,862,628
Difference on depreciation related to borrowing costs capitalized in previous years (b)	(27,016 )	(27,016 )	155,454	182,470
Amortization of the difference in the recognition of housing benefits of previous years (c)	(653 )	(653 )	(140,695 )	(140,042 )
Others	(198,628 )	(105,300 )	(242,331 )	(285,533 )
Applicable deferred income tax impact of the GAAP differences above (d)	381,838	355,942	1,208,692	849,177
Profit/Equity attributable to non-controlling interests on the adjustments above	372,987	246,187	(3,134,682 )	(2,498,978 )
Consolidated net Profit/Equity attributable to equity holders of the Company under IFRS	734,435	1,579,836	94,435,418	87,641,566

- (a) Differences in accounting treatment on business combinations under common control and depreciation and amortization 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.

(a) Differences in accounting treatment on business combinations under common control and depreciation and amortization under common control (Cont'd)

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.

(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) Difference in the recognition of housing benefits to the employees of the Company and its subsidiaries in previous years

The Company and its subsidiaries once provided staff quarters to the employees of the Company and its subsidiaries and sold such staff quarters to the employees of the Company and its subsidiaries at preferential prices set by the local housing reform office. Difference between cost of the staff quarters and proceeds from the employees represented the housing losses, and was borne by the Company and its subsidiaries.

Under Previous Accounting Standards and Accounting System ("Previous PRC GAAP"), in accordance with the relevant regulations issued by the Ministry of Finance, such housing losses incurred by the Company and its subsidiaries are fully charged to non-operating expenses in previous years. Under IFRS, such housing losses incurred by the Company and its subsidiaries are recognised on a straight-line basis over the estimated remaining average service lives of the employees.

(d) Deferred income tax impact on GAAP differences

This represents related deferred income tax impact on the GAAP differences above where applicable.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the under-signed, thereunto duly authorized.

HUANENG POWER  
INTERNATIONAL, INC.

By        /s/ Huang Chaoquan

Name: Huang Chaoquan  
Title: Company Secretary

Date: April 23, 2019