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華能國際電力股份有限公司

HUANENG POWER INTERNATIONAL, INC.

(a Sino-foreign joint stock limited company incorporated in the People's Republic of China)

(Stock Code: 902)

ANNOUNCEMENT OF ANNUAL RESULTS FOR 2021

Power generation by domestic power plants:	457.336 billion kWh
Consolidated operating revenue:	RMB204,605 million
Net loss attributable to equity holders of the Company:	RMB10,636 million
Losses per share:	RMB0.81
Proposed dividend:	Nil

SUMMARY OF OPERATING RESULTS

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 2021.

For the twelve months ended 31 December 2021, the Company realized consolidated operating revenue of RMB204,605 million, representing an increase of 20.75% compared to the same period last year, and net loss attributable to equity holders of the Company amounted to RMB10,636 million, representing a decrease of 547.27% as compared with the same period last year. Losses per share amounted to RMB0.81.

The Board proposed to declare no cash dividend 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 2021

In 2021, facing up to the impacts and test of epidemic and the market environment of significant price increase in the coal market, the Company made all-out efforts to coordinate the work of epidemic prevention and control, production and operation, and transformation and development, thus the safety production and supply of electric power and thermal power maintained stable, the pace of transformation and upgrading accelerated, and innovation made a new progress. We completed the major objectives of the year and continued to fulfill the responsibility of providing sufficient, reliable and eco-friendly energy to the community.

1. Operating Results

For the twelve months ended 31 December 2021, the Company realized operating revenue of RMB204,605 million, representing an increase of 20.75% as compared with the same period last year. Net loss attributable to equity holders of the Company amounted to RMB10,636 million, representing a decrease of 547.27% as compared with the same period last year. Losses per share amounted to RMB0.81.

As at the end of 2021, net assets per share of the Company amounted to RMB4.12, representing a decrease of 20.62% as compared with the same period last year.

The Audit Committee of the Company convened a meeting on 21 March 2022 and reviewed the 2021 annual results of the Company.

2. Power Generation

In 2021, with the principal of maximization of the overall interests, the Company strengthened the market analysis, adhered to the coordination of the volume and price, made best efforts on the market trading, strived to increase effective power generation, took advantage of the opportunities from the policy of expanding the floating range of electricity price to optimize the marketing strategy in a timely manner and both of volume and price raised in electricity and heat supply fields. Total power generated by the Company's domestic operating power plants on consolidated statements basis amounted to 457.336 billion KWh, representing a year-on-year increase of 13.20%. The electricity sold amounted to 430.165 billion KWh, representing a year-on-year increase of 13.23%. The annual average utilization hours of the Company's domestic power plants reached 4,058 hours, representing a year-on-year increase of 314 hours. The utilization hours of coal-fired power generating units was 4,488 hours, representing a year-on-year increase of 429 hours. The utilization hours of most of the Company's coal-fired power plants were leading in its corresponding area respectively. Total heat supplied by the Company amounted to 297 million GJ, representing a year-on-year increase of 12.64%.

3. Cost Control

In 2021, the Company procured an aggregate of 203 million tons of coal. In the context of the tense situation of coal supply and demand market, the Company paid close attention to the real time market trend, took full advantage in the policy support, proactively seized the market opportunity, optimized procurement strategy and regional supply structure, strengthened the cooperation with major coal mines, identified high-quality low-cost resources on an advanced basis, so as to control the procurement cost of fuel coal. However, affected by the significant increase in the coal price, the fuel cost for sales of power of the Company was RMB316.36/MWh throughout the year, representing a year-on-year increase of 51.32%.

4. Energy Saving and Environmental Protection

The Company maintained the leading position among major domestic power enterprises in terms of safety production, technical and economic and energy consumption indicators throughout the year. In 2021, the average equivalent availability ratio of the domestic thermal generating units of the Company was 93.26%, coal consumption of power supply of 290.69g/kWh and the house consumption rate of plants was 4.34%. With respect to air pollution emissions, the power generation companies affiliated to the Company have carried out ultra-low-emissions transformation as planned with marked results. All of them have met or outperformed the national emission standards. With respect to treatment of wastewater discharge and coal yards and ash yards, the Company has allocated funds to carry out environmental technological transformation projects such as wastewater treatment, coal yard closure, and ash yard transformation in power plants in key regions. All power plants have accelerated environmental protection transformation projects to ensure that pollutant emissions meet the requirements under pollution discharge permits and other ecological and environmental protection policies.

5. Project Development

During the year, the controlled generation capacity of the newly commissioned thermal generating units, wind generating units, solar power units and biomass units was 2,000 MW, 2,403.45 MW, 799 MW and 30 MW, respectively. As of 31 December 2021, the Company's controlled and equity-based generation capacity was 118,695 MW and 103,875 MW, respectively.

6. Overseas Business

Tuas Power Ltd., 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 19.2%. The Business in Singapore in 2021 recorded a pre-tax profit of RMB163 million, representing an increase of RMB32 million as compared with the same period of last year.

Sahiwal coal-fired power plant is the first large-scale coal-fired power plant put into operation in the China-Pakistan Economic Corridor. It greatly eased the power shortage in Pakistan. The Business in Pakistan recorded a pre-tax profit of RMB776 million for 2021, representing an increase of RMB38 million as compared with the same period of last year.

PROSPECTS FOR 2022

In 2022, the Company will continue to promote the implementation of the development strategy, actively respond to changes in the electricity, coal and capital markets, and strive to complete the annual production and operation tasks.

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

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

In terms of electric power marketing, the Company will take the principle of maximizing the overall benefit, strengthen market analysis, insist on quantity and price coordination, make every effort to conduct market transactions, and strive to generate more and more efficient power. The Company will actively respond to the market reform of electricity, promote the construction of institutional mechanism and strengthen the training of market trading talents. The Company will fully develop the electricity sales market, improve the operation level of the energy sales company, and further promote the optimization of carbon market transactions, striving to achieve an annual domestic power generation of 465 billion kWh approximately.

In terms of fuel, the Company will closely track the changes in policies and domestic and international coal markets, and strive to promote the signing of medium and long-term coal contracts to ensure strict compliance. The Company will continue to optimize the supply structure and achieve the best procurement cost by taking into account factors such as resource origin, transportation mode and coal type matching. The Company will strengthen inventory management, play the role of light storage and high consumption, buy low and use high, and strive to reduce procurement costs.

In terms of capital, the Company will keep an eye on changes in the international and domestic capital markets and give full play to its credit and management advantages, seize opportunities brought by the green finance policy, ensure the smooth main credit financing channel, increase the issuance in the interbank market, actively explore innovative financing tools in the capital market, broaden financing channels, and strive to reduce capital costs while ensuring capital security.

The Company will further enhance the awareness of opportunities and risks, seize the development opportunities, effectively deal with challenges, maintain strategic determination, make concerted efforts to overcome difficulties, coordinate safety and security, quality and efficiency improvement, transformation and upgrading, reform and innovation, and accelerate the pace of creating an international first-class listed power generation company by.

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 construction, operation and management of large power plants within China. As of 31 December 2021, the Company had a controlled installed capacity of 118,695 MW and an equity-based installed capacity of 103,875 MW, of which approximately 22.39% was from clean energy sources (gas turbine, hydro, wind and photovoltaic power generation). The Company located its power plants in 26 provinces, autonomous region and municipalities within China; the Company also owns a wholly owned power enterprise located in Singapore and invests in a power enterprise located in Pakistan. The Company is among the biggest listed power companies in China.

For the year ended 31 December 2021, the operating revenue of the Company amounted to RMB204,605 million, representing an increase of 20.75% over the same period of last year. The net loss attributable to equity holders of the Company was RMB10.636 billion, representing a decrease of 547.27% over the same period of last year; the losses per share was RMB0.81.

A. OPERATING RESULTS

1. 2021 operating results

The electricity sold by the Company's domestic power plants for the year ended 31 December 2021 is as listed below (in billion kWh):

Region	Electricity Sold			
	2021 10-12	Change	2021 1-12	Change
Coal-fired	93.873	0.93%	378.528	10.81%
Combined Cycle	6.493	3.68%	26.867	26.24%
Wind-Power	5.501	41.99%	19.867	46.78%
PV	0.863	44.72%	3.408	46.90%
Heilongjiang Province	2.800	-20.75%	12.846	-2.96%
Coal-fired	2.301	-26.82%	11.389	-5.00%
Wind-power	0.468	30.87%	1.327	18.83%
PV	0.032	0.26%	0.130	-2.15%
Jilin Province	2.258	-9.03%	8.805	-15.21%
Coal-fired	1.776	-12.41%	7.013	-21.03%
Wind-power	0.320	-5.03%	1.145	5.66%
Hydro-power	0.016	-17.21%	0.070	-6.60%
PV	0.059	11.08%	0.246	72.08%
Biomass power	0.087	92.53%	0.331	63.89%
Liaoning Province	3.644	-25.24%	18.370	5.24%
Coal-fired	3.486	-85.10%	17.777	5.30%
Wind-power	0.116	21.54%	0.415	11.38%
Hydro-power	0.008	235.49%	0.029	-28.41%
PV	0.034	-9.80%	0.148	-6.80%
Inner Mongolia	0.198	221.45%	0.553	165.66%
Wind-power	0.198	221.45%	0.553	165.66%
Hebei Province	2.584	-20.42%	10.608	-6.64%
Coal-fired	2.322	-25.20%	9.976	-8.16%
Wind-power	0.189	43.28%	0.511	14.58%
PV	0.074	520.40%	0.122	120.78%

Region	Electricity Sold			
	2021 10-12	Change	2021 1-12	Change
Gansu Province	3.858	13.23%	14.382	15.09%
Coal-fired	3.238	10.11%	11.912	16.79%
Wind-power	0.620	32.91%	2.470	7.53%
Ningxia	0.003	-0.36%	0.022	-4.02%
PV	0.003	-0.36%	0.022	-4.02%
Beijing	2.018	-14.18%	8.484	3.25%
Coal-fired	0.647	163.70%	1.294	48.71%
Combined Cycle	1.371	-34.90%	7.190	-2.14%
Tianjin	1.793	-9.15%	6.509	2.70%
Coal-fired	1.242	-13.04%	4.941	4.23%
Combined Cycle	0.549	1.21%	1.554	-1.78%
PV	0.002	-28.17%	0.013	-8.14%
Shanxi Province	2.538	-18.11%	9.491	-6.33%
Coal-fired	1.381	-31.77%	6.319	-15.31%
Combined Cycle	0.810	-11.57%	1.997	-5.70%
Wind-power	0.148	2,392.69%	0.340	5,630.21%
PV	0.199	29.78%	0.836	52.53%
Shandong Province	22.031	-1.03%	81.879	7.41%
Coal-fired	21.406	-2.24%	79.687	6.30%
Wind-power	0.419	58.15%	1.393	83.29%
PV	0.120	18.27%	0.520	3.29%
Biomass power	0.087	—	0.278	—
Henan Province	4.985	-4.30%	21.704	8.79%
Coal-fired	4.131	-13.54%	18.039	-1.36%
Combined Cycle	0.008	-75.53%	0.218	-63.30%
Wind-power	0.841	113.48%	3.423	227.37%
PV	0.006	31.92%	0.024	5.78%
Jiangsu Province	10.936	20.60%	42.717	19.96%
Coal-fired	8.313	13.44%	32.335	11.33%
Combined Cycle	1.503	64.50%	6.109	55.94%
Wind-power	1.059	36.43%	4.010	61.84%
PV	0.062	21.42%	0.264	56.05%

Region	Electricity Sold			
	2021 10-12	Change	2021 1-12	Change
Shanghai	5.135	10.90%	20.190	22.45%
Coal-fired	4.874	12.69%	18.874	25.53%
Combined Cycle	0.254	-14.99%	1.286	-10.71%
PV	0.007	8.38%	0.030	142.29%
Chongqing	3.531	41.33%	13.064	49.96%
Coal-fired	2.739	27.02%	10.274	44.20%
Combined Cycle	0.738	148.04%	2.525	86.96%
Wind-power	0.054	21.17%	0.264	11.94%
Zhejiang Province	7.360	25.40%	31.649	31.21%
Coal-fired	7.160	26.64%	30.526	30.72%
Combined Cycle	0.159	-22.87%	1.039	45.34%
Wind-power	0.028	—	0.028	—
PV	0.013	38.69%	0.055	4.20%
Hubei Province	4.428	7.05%	16.574	14.73%
Coal-fired	4.227	7.04%	15.632	15.19%
Wind-power	0.177	36.58%	0.656	20.99%
Hydro-power	0.019	-64.10%	0.264	-15.17%
PV	0.005	20.33%	0.022	1.81%
Hunan Province	3.163	16.37%	11.717	22.14%
Coal-fired	2.946	15.63%	10.775	24.36%
Wind-power	0.139	12.10%	0.620	7.07%
Hydro-power	0.068	76.37%	0.275	-10.51%
PV	0.010	25.37%	0.047	9.50%
Jiangxi Province	6.022	-0.52%	22.313	7.97%
Coal-fired	5.689	-1.80%	21.025	7.01%
Wind-power	0.222	19.09%	0.857	6.38%
PV	0.111	49.19%	0.430	102.29%
Anhui Province	1.896	3.24%	6.135	13.14%
Coal-fired	1.682	3.35%	5.196	6.34%
Wind-power	0.204	9.85%	0.807	90.08%
Hydro-power	0.010	-57.35%	0.132	18.05%

Region	Electricity Sold			
	2021 10-12	Change	2021 1-12	Change
Fujian Province	4.586	11.63%	20.116	22.79%
Coal-fired	4.583	11.64%	20.104	22.81%
PV	0.002	-9.20%	0.012	3.51%
Guangdong Province	6.748	7.91%	31.197	34.84%
Coal-fired	5.853	5.86%	27.128	25.35%
Combined Cycle	0.889	23.82%	4.044	174.92%
PV	0.006	-1.11%	0.025	6.26%
Guangxi Province	0.203	-8.28%	0.747	9.82%
Combined Cycle	0.109	-9.00%	0.435	2.06%
Wind-power	0.093	-7.44%	0.313	22.82%
Yunnan Province	2.016	-2.81%	8.239	13.60%
Coal-fired	1.896	-2.59%	7.756	16.32%
Wind-power	0.116	-1.06%	0.455	-17.19%
Hydro-power	0.004	-63.71%	0.028	-20.01%
Guizhou Province	0.143	145.73%	0.541	86.74%
Wind-power	0.046	11.71%	0.185	-15.18%
PV	0.098	460.04%	0.355	399.97%
Hainan Province	2.172	11.43%	11.312	2.26%
Coal-fired	1.982	14.98%	10.554	0.87%
Combined Cycle	0.102	-7.58%	0.470	47.11%
Wind-power	0.046	-16.16%	0.094	-14.89%
Hydro-power	0.021	-51.00%	0.088	29.71%
PV	0.020	18.26%	0.106	5.28%
Total	107.050	2.95%	430.165	13.23%

The increase in the Company's electricity sold was mainly attributable to the following factors: (1) the electricity consumption of the whole society in the year 2021 stayed at a high level, which led to a sharp increase in the power generation on the supply side, among which the power generation by our plants in Chongqing, Guangdong, Zhejiang, Shanghai, Fujian, Hunan, Jiangsu, Gansu and Hubei experienced a significant increase, (2) given the hydro-power generation was lower than expected, coal-fired power generation, which accounted for a substantial portion of the Company's power generation capacity, maintained a high rate increase; meanwhile, the Company's coal-fired power plants operated at high load during the winter peak hours, which further led to the increase of our power generation, and (3) the Company has been making further efforts on promoting green and low carbon operation, and the Company's new energy power generation increased significantly.

For the year ended 31 December 2021, the accumulated power generation of Tuas Power Ltd., the Company's wholly owned subsidiary in Singapore, accounted for a market share of 19.2%, representing a decrease of 2.2 percentage points from the same period last year.

In respect of tariff, the Company's domestic average tariff (inclusive of taxes) for the year ended 31 December 2021 was RMB431.88 per MWh, increased by 4.41% from last year (while average tariff (exclusive of taxes) for the same period increased by 4.41% to RMB382.19 per MWh). Sinosing Power Pte Ltd ("**Sinosing Power**")'s average tariff for 2021 was RMB594.46 per MWh, representing an increase by 12.03% from last year.

In respect of fuel costs, due to the sharp increase in thermal coal prices, the Company's fuel cost per unit of power sold by domestic coal-fired power plants increased by 51.32% to RMB316.36 per MWh from last year.

Influenced by the forgoing factors, for the year ended 31 December 2021, the Company recorded an operating revenue of RMB204.605 billion, representing an increase of 20.75% from RMB169.446 billion of last year, and the operating costs and expenses of RMB210.286 billion, representing an increase of 35.03% from RMB155.734 billion of last year, and the net loss before income tax expense was RMB15.121 billion, representing a decrease of 416.74% from the net profit before income tax of RMB4.774 billion of last year.

2. Comparative Analysis of Operating results

2.1 Operating revenue and tax and levies on operations

Operating revenue mainly consists of revenue from electricity sold. For the year ended 31 December 2021, the consolidated operating revenue of the Company and its subsidiaries amounted to RMB204.605 billion, representing an increase of 20.75% from RMB169.446 billion for the year ended 31 December 2020. The operating revenue from domestic operations of the Company increased by RMB28.679 billion over the same period of last year, while the operating revenue generated from newly acquired entities and newly operated generating units was RMB7.7 billion. The increase of operating revenue from the domestic operations of our existing generating units of RMB20.979 billion was mainly due to the simultaneous increase of our electricity sold within China and domestic average tariff.

The operating revenue from the operations of the Company in Singapore increased by RMB5.368 billion over the same period of last year, representing a 48.94% increase, which was mainly attributed to the increase in the tariff. The operating revenue from the operations of the Company in Pakistan increase by RMB1.112 billion, representing an increase of 26.93% compared to the same period last year, mainly due to the increase in the power generation by 24.92% led by the increase in the domestic electricity demand in Pakistan.

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2021	2020	Change
Heilongjiang Province			
Coal-fired	381.50	379.26	0.59%
Wind-power	453.07	526.17	-13.89%
PV	693.91	710.02	-2.27%
Jilin Province			
Coal-fired	383.48	371.86	3.12%
Wind-power	484.74	490.30	-1.13%
Hydro-power	413.29	412.18	0.27%
PV	446.55	587.14	-23.95%
Biomass power	746.82	749.99	-0.42%
Liaoning Province			
Coal-fired	404.26	391.23	3.33%
Wind-power	549.54	539.05	1.95%
Hydro-power	362.04	362.04	0.00%
PV	841.78	874.25	-3.71%
Inner Mongolia			
Wind-power	465.05	454.91	2.23%
Hebei Province			
Coal-fired	366.77	361.80	1.37%
Wind-power	495.71	495.03	0.14%
PV	488.52	723.65	-32.49%
Gansu Province			
Coal-fired	318.85	312.40	2.06%
Wind-power	362.06	343.69	5.35%
Ningxia			
PV	800.00	800.00	0.00%
Beijing			
Coal-fired	550.97	478.58	15.13%
Combined Cycle	624.87	620.27	0.74%

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2021	2020	Change
Tianjin			
Coal-fired	370.40	365.79	1.26%
Combined Cycle	604.19	597.85	1.06%
PV	645.51	634.61	1.72%
Shanxi Province			
Coal-fired	344.43	314.39	9.56%
Combined Cycle	558.72	612.51	-8.78%
Wind-power	521.25	600.00	-13.12%
PV	538.39	628.78	-14.38%
Shandong Province			
Coal-fired	414.22	408.18	1.48%
Wind-power	599.15	598.67	0.08%
PV	827.67	850.98	-2.74%
Biomass power	700.14	—	—
Henan Province			
Coal-fired	389.03	360.81	7.82%
Combined Cycle	1,909.57	960.30	98.85%
Wind-power	578.98	585.94	-1.19%
PV	357.90	361.70	-1.05%
Jiangsu Province			
Coal-fired	423.84	395.57	7.15%
Combined Cycle	636.93	632.45	0.71%
Wind-power	792.78	757.19	4.70%
PV	620.08	734.74	-15.61%
Shanghai			
Coal-fired	425.80	406.49	4.75%
Combined Cycle	897.46	871.34	3.00%
PV	819.95	521.50	57.23%

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2021	2020	Change
Chongqing			
Coal-fired	417.92	406.68	2.76%
Combined Cycle	587.99	724.30	-18.82%
Wind-power	607.68	607.05	0.10%
Zhejiang Province			
Coal-fired	420.71	406.53	3.49%
Combined Cycle	679.45	828.89	-18.03%
Wind-power	850.00	—	—
PV	1,061.46	1,121.06	-5.32%
Hubei Province			
Coal-fired	420.49	408.17	3.02%
Wind-power	605.75	610.02	-0.70%
Hydro-power	378.66	375.18	0.93%
PV	880.18	880.00	0.02%
Hunan Province			
Coal-fired	463.82	447.29	3.70%
Wind-power	561.27	558.50	0.50%
Hydro-power	327.67	332.02	-1.31%
PV	800.46	837.84	-4.46%
Jiangxi Province			
Coal-fired	429.88	410.66	4.68%
Wind-power	597.15	604.41	-1.20%
PV	667.39	736.44	-9.38%
Anhui Province			
Coal-fired	384.63	361.38	6.43%
Wind-power	590.88	602.33	-1.90%
Hydro-power	421.59	421.63	-0.01%
Fujian Province			
Coal-fired	401.48	395.20	1.59%
PV	978.64	980.00	-0.14%

Region/type of power generation	Average tariff rate (VAT inclusive) (RMB/MWh)		
	2021	2020	Change
Guangdong Province			
Coal-fired	426.68	408.00	4.58%
Combined Cycle	600.62	568.04	5.74%
PV	980.00	980.00	0.00%
Guangxi Province			
Combined Cycle	721.49	718.25	0.45%
Wind-power	562.11	591.98	-5.05%
Yunnan Province			
Coal-fired	364.97	350.97	3.99%
Wind-power	481.82	472.26	2.02%
Hydro-power	246.00	246.00	0.00%
Guizhou Province			
Wind-power	598.33	586.98	1.93%
PV	454.26	512.54	-11.37%
Hainan Province			
Coal-fired	445.89	441.75	0.94%
Combined Cycle	523.57	580.13	-9.75%
Wind-power	603.00	604.58	-0.26%
Hydro-power	387.86	382.76	1.33%
PV	897.93	908.98	-1.22%
Domestic total	431.88	413.63	4.41%
SinoSing Power	594.46	530.61	12.03%

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 2021, the tax and levies on operations of the Company and its subsidiaries were RMB1.686 billion, representing a decrease of RMB108 million from RMB1.794 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 2021, the total operating expenses of the Company and its subsidiaries was RMB210.286 billion, representing an increase of 35.03% from the same period last year. The operating expenses in domestic operations of the Company increased by RMB47.988 billion, or 33.72%, from the same period last year, of which the newly acquired entities and the new generating units accounted for RMB4.407 billion; the costs attributable to the existing entities increased by RMB43.581 billion, which was primarily attributable to the increase in the fuel cost led by the sharp increase in thermal coal purchase price.

The operating expenses from the operations in Singapore increased by RMB5.215 billion, or 48.66%, from the same period last year, which was mainly due to the increase in the tariff in Singapore, which in turn increase the operating cost of purchasing electricity. The operating expenses from the operations in Pakistan increased by RMB1.349 billion, which was mainly due to increase in fuel costs led by the increase in coal purchase 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 2021, fuel costs of the Company and its subsidiaries increased by 64.71% to RMB146.539 billion from RMB88.966 billion for the year ended 31 December 2020. The fuel costs from domestic operations of the Company and its subsidiaries increased by RMB57.197 billion, which was primarily attributable to the sharp increase in thermal coal purchase price. The fuel costs of the newly acquired entities and new generating units were RMB2.740 billion and the fuel costs of the existing generating units increased by RMB54.457 billion from same period last year. Fuel costs in Singapore increased by RMB0.367 billion from the same period last year, mainly due to increased fuel costs as a result of increased natural gas price. The fuel cost per unit of power sold by the Company's domestic power plants increased by 51.32% to RMB316.36/MWh from RMB209.07/MWh in 2020.

2.2.2 Maintenance

For the year ended 31 December 2021, the maintenance expenses of the Company and its subsidiaries amounted to RMB4.504 billion, representing a decrease of RMB498 million from RMB5.002 billion for the year ended 31 December 2020. The maintenance expenses of the Company's domestic operations decreased by RMB481 million compared to the same period last year. The maintenance expenses of operations in Singapore decreased by RMB17 million compared to the same period last year.

2.2.3 Depreciation

For the year ended 31 December 2021, depreciation expenses of the Company and its subsidiaries stayed stably at RMB22.270 billion, compared to RMB22.146 billion in the year ended 31 December 2020. The depreciation expenses of domestic operations increased by RMB283 million compared to the same period last year, of which the depreciation costs incurred by the newly acquired entities and new generating units was RMB1.326 billion. The depreciation expenses of the operations in Singapore decreased by RMB159 million compared to the same time last year, mainly due to the maturity of certain assets in the year of 2021.

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 2021, the labor costs of the Company and its subsidiaries amounted to RMB16.107 billion, representing an increase of RMB1.604 billion from RMB14.503 billion for the year ended 31 December 2020. This is mainly attributable to the implementation of social security fee reduction in various regions in 2020 due to the COVID-19, and the increase of average social wage and social security contribution base in 2021, which resulted in a year-on-year increase in social security related expenses in 2021. Labor costs for Singapore operations increased by RMB14 million compared to the same time last year.

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

Other operating expenses include environmental protection expenses, insurance premiums, office expenses, amortization, Tuas Power's electricity power purchase costs, impairment losses, government subsidies and net losses on disposal of properties, plant and equipment. For the year ended 31 December 2021, other operating expenses of the Company and its subsidiaries was RMB20.866 billion, representing a decrease of RMB4.251 billion from RMB25.117 billion for the year ended 31 December 2020. The other operating expenses from the Company's domestic operations decreased by RMB10.601 billion mainly due to the decreased impairment recorded for the period, detailed information for which can be found in Note 12 to the financial statements prepared in accordance with IFRS of this announcement. Other operating expenses of the operations in Singapore increased by RMB5.001 billion compared to the same period last year. Other operating expenses of the operations in Pakistan increased by RMB1.349 billion compared to the same period last year, mainly due to the increased fuel costs led by the increase in coal price.

2.3 Financial expenses

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

2.3.1 Interest expenses

For the year ended 31 December 2021, the interest expenses of the Company and its subsidiaries were RMB8.798 billion, representing a decrease of 4.38% from RMB9.201 billion for the year ended 31 December 2020. The interest expenses from the Company's domestic operations decreased by RMB186 million. The interest expenses from the newly acquired entities and new generating units were RMB836 million and those incurred by the existing entities in China decreased by RMB1,022 million, which is largely attributable to lower funding costs.

The interest expenses of Singapore operations decreased by RMB88 million compared to the same period last year.

2.3.2 Net exchange differences and bank charges

For the year ended 31 December 2021, the Company and its subsidiaries recorded a net loss of RMB40 million from net exchange difference and bank charges, representing an increase of RMB141 million in loss compared with the net gain of RMB101 million for the year ended 31 December 2020.

The operations in Singapore recorded net loss of RMB88 million in exchange changes and bank charges, representing an increase of RMB277 million in loss from the net gain of RMB189 million for the year ended 31 December 2020, mainly due to increase in US dollar-to-Singapore dollar exchange rates. The operations in Pakistan recorded net gain of RMB51 million in exchange losses and bank charges in 2021, representing an increase in net gain of RMB140 million as compared to a net loss of RMB89 million in 2020.

2.4 Share of profits less losses of associates and joint ventures

For the year ended 31 December 2021, the share of profits less losses of associates and joint ventures was RMB0.804 billion, representing a decrease of RMB970 million from RMB1.774 billion of last year, mainly due to the decreased profits of one of our associates, Shenzhen Energy Group Co., Ltd.

2.5 Income tax expenses

For the year ended 31 December 2021, the Company and its subsidiaries recognized income tax expenses of minus RMB1.930 billion, representing an decrease of RMB4,093 million from RMB2.163 billion for the year ended 31 December 2020. Our income tax expenses for our domestic operation decreased by RMB4.133 billion due to the loss incurred for our domestic operations. The income tax expenses for the operations in Singapore increased by RMB43 million.

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

For the year ended 31 December 2021, the Company and its subsidiaries achieved a net loss of RMB13.191 billion, representing a decrease of RMB15.802 billion, or 605.21%, from a net profit of RMB2.611 billion for the year ended 31 December 2020; the net loss attributable to equity holders of the Company was RMB10.636 billion, representing a decrease of RMB13.014 billion from the net profit attributable to equity holders of the Company of RMB2.378 billion for the year ended 31 December 2020.

The profit attributable to equity holders of the Company from its domestic operations decreased by RMB13,014 million, mainly due to the sharp increase in the thermal coal purchase price. The net profit attributable to equity holders of the Company from its operations in Singapore was RMB123 million, representing a decrease of RMB15 million as compared to the same period last year. The net profit attributable to equity holders of the Company from its operations in Pakistan was RMB305 million, representing an increase of RMB17 million.

The Company's recorded profit from its non-controlling interests decreased to a loss of RMB2,555 million for the year ended 31 December 2021 as compared to the profit of RMB233 million for the year ended 31 December 2020, mainly attributable to the decline in net profit and increase in net loss of the Company's non-wholly owned subsidiaries.

2.7 Comparison of financial positions

2.7.1 Comparison of asset items

As of 31 December 2021, consolidated total assets of the Company and its subsidiaries was RMB500.771 billion, increased by 11.31% from RMB449.905 billion as of 31 December 2020; total assets of the domestic operations increased by RMB50.498 billion to RMB460.280 billion, including a net increase of RMB20.952 billion in non-current assets, which is mainly attributable to new construction outweighing the depreciation and leading to an increase in assets, a net increase in inventory of RMB9.993 billion, which is mainly attributable to the increased coal price and the increased replenished coal inventory of some power plants controlled by the Company, aiming to guarantee coal supply during seasons and to meet the demand of stable energy supply as instructed by NDRC policy, and a net increase in account receivables of RMB4.721 billion, which was mainly attributable to increases in revenues and receivables of renewable energy subsidies.

As of 31 December 2021 total assets of the operations in Singapore were RMB27.088 billion, representing an increase of RMB222 million from the same period last year. Non-current assets decreased by RMB1.239 billion to RMB22.567 billion.

As of 31 December 2021, total assets of the operations in Pakistan were RMB13.403 billion, representing an increase of RMB146 million from the same period last year. Non-current assets decreased by RMB755 million from last year to RMB8.298 billion.

2.7.2 Comparison of liability items

As of 31 December 2021, consolidated total liabilities of the Company and its subsidiaries were RMB367.213 billion, representing an increase of 23.11% from RMB298.288 billion as of 31 December 2020.

As of 31 December 2021, interest-bearing debts of the Company and its subsidiaries totaled RMB297.703 billion. The interest-bearing debts consist of long-term loans (including those maturing within a year), long-term bonds (including those maturing within a year), short-term loans, short-term bonds and lease liabilities (including those maturing within a year).

As of 31 December 2021, the total liabilities of the operations in Singapore were RMB15.200 billion, representing an increase of 0.72% from RMB15.092 billion as of 31 December 2020. As of 31 December 2021, the total liabilities of the operations in Pakistan were RMB9.596 billion, representing a decrease of 1.40% from RMB9.732 billion as of 31 December 2020.

2.7.3 Comparison of equity items

Excluding the impact of profit and profit appropriations, total equity attributable to the equity holders of the Company decreased by RMB16.798 billion as of 31 December 2021 as compared to 1 January 2021, resulting from a decrease of RMB10.934 billion arising from comprehensive net loss, a decrease of RMB2.826 billion arising from dividends, a decrease of RMB2.139 billion arising from the payments of interests for other equity instruments and a decrease of RMB899 million due to other reasons. Non-controlling interests decreased by RMB1,260 million in 2021.

2.7.4 Major financial position ratios

	2021	2020
Current ratio	0.50	0.43
Quick ratio	0.41	0.39
Ratio of liability to equity holders’ equity	3.25	2.30
Multiples of interest earned	-0.63	1.38

Formula of the financial ratios:

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

The current ratio and quick ratio as of 31 December 2021 increased due to the increase of current assets as of the year end outweighing the increase of current liabilities, and the increase of current assets resulted from the increase in the operating revenue and accounts receivable led by the increase in the receivables of new energy subsidies, as well as the increased coal price and the increased replenished coal inventory of some power plants controlled by the Company, aiming to guarantee coal supply during seasons and to meet the demand of stable energy supply as instructed by NDRC policy. The ratio of liabilities to shareholder's equity as of 31 December 2021 increased due to the outflow of cash used in operating activities and increase in debts for the purpose of our operation and construction activities in the ordinary course of our business. The multiples of interest earned was negative mainly attributable to the increased coal price, thus leading to the operating loss of domestic market.

B. LIQUIDITY AND CASH RESOURCES

1. Liquidity

	For the year ended 31 December		
	2021	2020	Change
	<i>RMB billion</i>	<i>RMB billion</i>	<i>%</i>
Net cash provided by operating activities	6.033	41.987	-85.63
Net cash used in investing activities	-42.276	-42.237	0.09
Net cash provided by financing activities	39.386	1.804	2,083.26
Currency exchange impact	-0.846	-0.739	14.48
Net increase in cash and cash equivalents	2.297	0.815	181.84
Cash and cash equivalents as at the beginning of the year	13.258	12.443	6.55
Cash and cash equivalents as at the end of the year	15.555	13.258	17.33

For the year ended 31 December 2021, net cash provided by operating activities of the Company and its subsidiaries was RMB6.033 billion, representing a decrease of 85.63% from last year, mainly attributable to the increased coal price, thus leading to the operating loss of domestic market, which in turn led to a substantial decrease in cash inflow provided by operation activities. The net cash provided by operating activities in Singapore was RMB1,751 million. The net cash provided by operating activities in Pakistan was RMB605 million. The net cash used in investing activities was RMB42.276 billion for the year ended 31 December 2021, representing an increase of 0.09% from last year, mainly due to the increase in the construction investments, including purchase of non-current assets, construction expenditure and construction material procurement. The net cash provided by financing activities was RMB39.386 billion for the year ended 31 December 2021, representing an increase of RMB2,083.26% billion from the last year, which was mainly due to the increase of net financing amounts of the Company for the year. As of 31 December 2021, the cash and cash equivalents of the Company and its subsidiaries denominated in RMB, Singapore dollar, U.S. dollar and other currencies were RMB13.879 billion, RMB699 million, RMB822 million, and RMB155 million, respectively.

As of 31 December 2021, net current liabilities of the Company and its subsidiaries were approximately RMB93.927 billion. Based on the Company's proven financing record, readily available banking facilities and sound credibility, the Company believes it is able to duly repay outstanding debts, obtain long-term financing and secure funding necessary for its operations. The Company has also capitalized on its good credit record to make short-term loans at relatively lower interest rates, thus reducing its interest expenses.

2. Capital expenditure and cash resources

2.1 Capital expenditure on infrastructure construction and renovation projects

The actual capital expenditure of the Company in 2021 was RMB43.874 billion, which was mainly used for capital construction and renovation expenditures, including RMB3.788 billion for Zhuanghe Wind-power, RMB3.363 billion for Yantai New Energy, RMB3.288 for Clean Energy Tongyu, RMB2.018 billion for Pinghu Offshore, RMB1.651 billion for Ruijin Power, RMB1.402 billion for Jiutai Power, RMB1.284 billion for Shidongkou I, RMB1.233 billion for Qingdao Co-generation, RMB1.165 billion for Daqing Ranghulu, RMB1.078 for Dalian Co-generation, RMB1.070 billion for Da'an Clean Energy, RMB921 million for Zhejiang Cangnan Offshore, RMB851 million for Yangpu Co-generation, RMB821 million for Jiuquan Wind-power, RMB791 million for Poyang Luohong, RMB761 million for Shengdong Rudong Offshore, RMB644 million for Dalian Chuanbo, RMB572 million for Anhui Mengcheng Wind-power, RMB569 million for Yuhuan Power, RMB498 million for Fengcheng New Energy, RMB467 million for Diandong Kuangye, RMB462 million for Dezhou New Energy, RMB451 million for Diandong Energy, RMB446 million for Luobei Wind-power, and RMB435 million for Jiangxi Clean Energy. Capital construction and renovation expenditures for other projects were RMB13.845 billion.

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

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

(Unit: RMB100 million)

Capital Expenditure Project	Capital Expenditure Plan for 2022	Cash resources arrangements	Financing costs and note on use
Thermal power projects	60.46	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Hydropower projects	0	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Wind power projects	126.49	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Coal mining projects	10.62	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Photovoltaic power projects	186.09	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Ports	0.2	Including internal cash resources and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Technology renovation etc.	74.39	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

Good operating results and sound credit status provide the Company with strong financing capabilities. As of 31 December 2021, the undrawn banking facilities available to the Company and its subsidiaries amount more than RMB300.0 billion, which are granted by commercial banks such as Bank of China, China Construction Bank and Industrial and Commercial Bank of China.

The Company completed issuances of unsecured super short-term bonds in 18 installments on January 20, January 25, February 25, April 26, April 29, July 9, July 16, July 22, August 6, August 30, September 3, September 10, October 15, October 22, October 27, November 4, December 13, and December 29, at principal amount of RMB2 billion, 3 billion, 3 billion, 2 billion, 3 billion, 2 billion, 3 billion, 2.5 billion, 1.5 billion, 2 billion, 3 billion, 1.5 billion, 1.5 billion, 3 billion, 2 billion, 5 billion, 3 billion and 200 million, with nominal annual interest rates of 2.2%, 2.3%, 2.4%, 2.1%, 2.1%, 2.1%, 2.1%, 2.0%, 2.0%, 2.1%, 2.1%, 2.0%, 2.1%, 2.2%, 2.1%, 2.4%, 2.2% and 2.6%, respectively. Each installment of the notes was denominated in RMB, issued at par value, and would successively mature in 37 days, 30 days, 41 days, 37 days, 36 days, 29 days, 29 days, 36 days, 54 days, 54 days, 54 days, 54 days, 29 days, 29 days, 36 days, 98 days, 29 days and 270 days from the value date.

The Company, through its subsidiary SinoSing Power, issued two tranches of secured corporate bonds of RMB300 million and RMB300 million on February 20, 2020 with coupon rate of 2.25% and 2.63%. The instrument was denominated in US dollars and issued at 99.653% and 99.277% of the par value with maturity of five years and ten years from the value date, respectively. The bonds are guaranteed by Huaneng Group.

As of 31 December 2021, short-term loans of the Company and its subsidiaries were RMB91.897 billion (2020: RMB66.311 billion). Loans from banks were charged at interest rates ranging from 2.00% to 11.35% per annum (2020: 2.15% to 4.90%).

As of 31 December 2021, short-term bonds payable by the Company and its subsidiaries were RMB8.223 billion (2020: RMB5.003 billion).

As of 31 December 2021, the Company and its subsidiaries' long-term loans (including long-term loans due within one year) totaled RMB154.072 billion (2020: RMB131.886 billion), including RMB loans of RMB138.436 billion (2020: 114.350 billion), USD loans of USD1.376 billion (2020: USD1.480 billion), EUR loans of EUR7 million (2020: EUR11 million), SGD loans of SGD1.456 billion (2020: SGD1.551 billion), JPY loans of 2.151 billion yen (2020: 2.266 billion yen). Among them, US dollar loans and Singapore dollar loans are floating rate loans, and other foreign currency loans are fixed rate loans. For the fiscal year ended 31 December 2021, the annual interest rate of long-term loans is 0.75% to 4.98% (2020: 0.75% to 6.55%).

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, the Company will make continuous efforts to not only meet cash requirements of daily operations, constructions and acquisitions, but also establish an optimal capital structure to minimize the cost of capital and manage financial risks through effective financial management activities, thus maintaining sustainable and stable returns to the shareholders.

2.3 Other financing requirements

Pursuant to the memorandum and articles of the Company, given the negative realized net profit attributable to the equity holders of the Company and considering the need for future investments in accordance with the Company's transformational development plans and the increased debt-asset ratio of the Company's in year 2021, the board of directors proposed that the Company pay no dividends in year 2021. The proposal has been reviewed and approved by the board of directors and the board of supervisors of the Company, subject to the approval at annual general meeting for year 2021.

2.4 Maturity profile of loans and bonds

Maturity Profile <i>(RMB100 million)</i>	2022*	2023	2024	2025	2026
Principal amount planned for repayment	1,234.45	256.49	446.69	153.28	139.90
Interest amount planned for repayment	<u>76.77</u>	<u>62.17</u>	<u>50.28</u>	<u>38.83</u>	<u>32.88</u>
Total	<u><u>1,311.22</u></u>	<u><u>318.66</u></u>	<u><u>496.97</u></u>	<u><u>192.11</u></u>	<u><u>172.78</u></u>

Note: The amount of principle to be paid in 2022 is relatively large because this includes expected repayment of short-term loans and short-term bonds.

C. LONG-TERM DEVELOPMENT STRATEGY AND PLANNING

The Company fully implements the new development philosophy of “innovation, coordination, green, openness and sharing,” adheres to the idea of systemisation, follows the requirements of establishing a clean, low-carbon, safe and efficient modern energy regime, adheres to the principle of treating quality and efficiency as the key focus, reform and innovation as the driving force, institutional mechanism as the safeguard, and deepening the supply-side structural reforms as the cardinal line, coordinates the energy safety and “green development,” comprehensively promotes the high-quality developments, and aims to further develop the Company into a properly managed, leading in technology, energy saving and environmental friendly, reasonably structured, excellently operated world-class listed power generation company with outstanding corporate governance and market value.

The Company adheres to the new energy safety strategy of “Four Revolutions and One Cooperation,” promotes the green and low-carbon transformation of energy with the aims of peak carbon emission and carbon neutrality, prioritizes the quality and efficiency, insists on principles of “centralized and distributed construction of equal importance, and independent construction of priority”. Making full use of the favorable conditions for centralized development of new energy power in “Three-North Area,” coastal region, Southwest China region and certain areas in Central China region, the Company further develops large-scale clean energy production base, with the idea of “Three-types and Three-isations” namely “base-type, clean-type and complementary-type, together with intensification, digitalisation and standardization”, promotes the leap-forward development of new energy production, accelerates the optimization and upgrading of coal-power structure, prioritizes the gas power and other clean energy power, and provides more competitive and finer comprehensive energy services. The Company proactively adapts to the national structural reform of energy supply, persists on accelerating digitalized transformation, actively develops strategic emerging industries, and carries out transformation of diversified supply and energy service around core industries. Adhering to the new development pattern of integrating domestic and international dual circulations, the Company will strength international cooperation with the principles of clean being primary, profitability being first and prudence being essential, to reinforce the efficient operation of oversea assets and to enhance the anti-risk ability and profitability. The Company aims to actively implement innovative development strategy, focuses on high-quality development led by technological innovation mechanisms, continues to serve the nationwide strategy, and adhere to the facing towards the Company’s major demands. The Company adheres to digital & intelligent development, deepens and enhances the ability of independent innovation, implements scientific and technological demonstration projects, and strengthens basic and forward-looking technical research. The Company aims to vigorously implement the excellent operation strategy, adhere to the strategies of increasing profitability, improving efficiency and creating value, reinforce its operational management, improve its management efficiency, optimize its asset structure, comprehensively improve its modern operating and management level, vigorously promote the improvement of quality and efficiency, improve corporate governance, enhance the Company’s brand value and conscientiously perform its social responsibilities.

D. TREND ANALYSIS

Focusing on the general trend of national economic development and based on the principle of “priority on stabilization, and advancement from stabilization,” the Central Economic Work Conference proposed several key goals as the fundamental principles and action guidance to follow for the national economy development in year 2022 and longer terms thereafter, such as to implement stable and effective macroeconomic policies, continue to stimulate the vitality of market entities, smoothen the national economic cycle, solidly implement science and technology policies, and stimulate developments by implementing reform and opening-up policies, and enhance the balance and coordination of the regional developments and securing the basic goals for residents’ livelihood. The Conference also proposed that correct understanding of the essence of the carbon peak and carbon neutralization should be established, and the gradual withdrawal of traditional energy should be based on the safe and reliable substitution of new energy. Based on the basic national conditions of coal, we should pay attention to the clean and efficient utilization of coal, increase the consumption capacity of new energy, and promote the optimal combination of coal and new energy. At the same time, the Conference proposed that renewable energy and raw material energy consumption should not be calculated into the total energy consumption control.

In terms of the electricity supply and demand, according to the analysis and forecast of the China Electricity Council, with the considerations such as the domestic and international economic situation, the steady increasement of electrification driven by electric power replacement, statistic comparison base of last year, as well as the uncertainty resulting from the epidemic and other the external events, it is estimated that the electricity consumption of the whole society will have a year-on-year increase of 5%-6% in year 2022, a growth rate that is four percentage points lower as compared to that in year 2021. It is estimated that in year 2022, the newly installed power generation capacity nationwide will be about 230 million kilowatts, a record high over the years, while the utilization hours for thermal units will decrease slightly on a year-on-year basis.

In terms of electricity market, on January 18, 2022, the NDRC and the National Energy Administration jointly issued “Guidance on accelerating the construction of a national unified power market system”, aiming to realize the sharing, mutual assistance and optimal allocation of power resources across the country, and accelerate the formation of a unified, open, orderly, safe and efficient power market system with efficient governance. As all coal-fired electricity shall totally enter into trade within the electricity grid market as stipulated by principle, the transaction ratio of the total amount of electricity generated demonstrate an upward growth. And considering the combined effects of the fluctuations of coal market prices, the inter-provincial negotiation over electrovalence for outbound transactions, the spot electrovalence fluctuating with coal prices, and the electrovalence of pumped-hydroelectricity being set by the government, the rising range of the price of coal-fired electricity is expected to be less than 20%. Affected by the increase in the number of new energy parity projects putting into operation, the prices of wind and photovoltaics have decreased compared with year 2021, while the price of hydropower electricity remains the same as that of year 2021. In respect of carbon market, China Carbon Emission Trade Exchange (CCETE) was officially launched in year 2021, with the first fulfilment cycle during year 2019 to year 2020 closed smoothly. Carbon emission quota is expected to be tightened under the background of relevant national policy switching from “dual energy consumption control” to” dual control of carbon emission amount and emission intensity”.

In terms of the coal market, the CPC Central Committee currently attaches great importance to the safe supply of coal production, and the relevant governmental authorities issued multiple industry policies to stabilize the supply and demand of coal market. On February 24, 2022, the NDRC issued the “Notice on Further Improving the Coal Market Price Formation Mechanism,” specifying that mid- and long-term coal supply contracts should adopt the reasonable price range between RMB570 to RMB770 per ton (tax inclusive) and making it clear that pricing adjustment measures regarding coal price will be made pursuant to the Pricing Law. Such measures are expected to facilitate the normalization of thermal coal price. On the coal consumption side, given the establishment of the

policy on controlling the increase of coal consumption during the “Fourteenth Five-Year” period and the scale development of the renewable energy section, it is expected that the increase of the coal demand shall slowdown in year 2022. While on the supply side, the advanced production capability has been gradually released domestically, which, together with the fact that coal exportation by Indonesia restored at a normal level, shall improve the supply situation of the thermal coal market. With the supply-demand situation significantly improved as compared to 2021, it is expected that the coal price will fall into a more reasonable range.

In terms of the capital market, the monetary policy in 2022 is expected to be prudent with proper flexibilities, which will increase the intensity of cross-cycle adjustment, give full play to the dual functions of the total amount and structure of monetary policy tools, and focus on sufficient effectuation, precise effectuation, and forward effectuation, aiming to meet the reasonable and effective financing needs of the real economy without having “flooding irrigation” effects, and focus on increasing financial support for key areas and weak links of the economy, so as to achieve a better goal combining the stabilized total volume with an optimized structure and maintain a reasonably abundant liquidity.

E. PERFORMANCE OF SIGNIFICANT INVESTMENTS AND THEIR PROSPECTS

The Company acquired 25% equity interest in Shenzhen Energy Group for RMB2.39 billion on April 22, 2003. In 2011, Shenzhen Energy Group divided into a remainder company of the same name and a new company Shenzhen Energy Management Company (“SE Management”), and the Company holds 25% equity interests in each of the two successors. The Company acquired 200 million shares from Shenzhen Energy Corporation (“Shenzhen Energy”), a subsidiary of Shenzhen Energy Group in December 2007. Shenzhen Energy allotted shares with its capital surplus in 2011. In February 2013, Shenzhen Energy merged SE Management through the combination of directional seasoned offering and cash payment to shareholders of SE management, Shenzhen State-owned Assets Administration Commission and the Company. After the merger, the Company held 661 million shares of Shenzhen Energy, representing 25.02% of its equity interests. In 2021, Shenzhen Energy distributed RMB0.50 of cash dividend and a two-share share dividend out of every 10 shares to its shareholders, and the Company held 1,190 million shares of Shenzhen Energy by 31 December 2021. These investments brought a net profit attributable to the equity holders of the Company of RMB331 million for the year ended 31 December 2021 under IFRS. This investment is expected to provide steady returns to the Company.

The Company held 60% direct equity interest in Huaneng Sichuan Energy Development Co., Ltd (“Sichuan Energy Development”) as of 31 December 2006. In January 2007, Huaneng Group increased its capital investment in Sichuan Energy Development by RMB615 million, thus reducing the Company’s equity interest in Sichuan Hydropower to 49% and making Huaneng Group the controlling shareholder of Sichuan Energy Development. This investment brought a net profit attributable to the equity holders of the Company of RMB201 million for the year ended 31 December 2021 under IFRS.

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

F. EMPLOYEE BENEFITS

As of 31 December 2021, the Company and its subsidiaries had 57,513 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 2021, the Company provides guarantee to long-term bank loans of Tuas Power Ltd of RMB6.257 billion (2020: RMB7.053 billion).

As of 31 December 2021, the details of secured loans of the Company and its subsidiaries were as follows:

As of 31 December 2021, pledge and mortgage loans of the Company were RMB12.333 billion (2020: RMB11.105 billion).

As of 31 December 2021, short-term loans of RMB829 million (2020: RMB1,317 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 2021, long-term loans of RMB4.595 billion (2020: RMB3.322 billion) of the Company and its subsidiaries were secured by certain property, plant and equipment with net book value of approximately RMB5.025 billion (2020: RMB3.400 billion).

As of 31 December 2021, long-term loans of approximately RMB4.516 billion (2020: RMB7.435 billion) were secured by future electricity revenue of the Company and its subsidiaries. Long-term loans of approximately RMB2.814 billion (31 December 2020: nil) were secured by equity interests of a subsidiary of the Company. Long-term loans of approximately RMB20 million were secured by carbon emission trading rights (31 December 2020: nil).

As at 31 December 2021, certain land use right with net book value of RMB17 million (31 December 2020: nil) was in a state of seizure due to pre-litigation preservation.

As of 31 December 2021, the restricted bank deposits of the Company and its subsidiaries were RMB796 million (2020: RMB614 million).

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

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

I. RISK FACTORS

1. Risks relating to COVID-19

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

The Company will strictly implement regular COVID-19 prevention and control measures, and strictly implement emergency plans to ensure that risks in relation to personnel safety, power generation, new units construction, material supply, and fuel supply are controllable and under control.

2. Risks relating to the electricity industry and market

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

Secondly, the “dual energy consumption control” policy applicable to the coal-fired power plants in China has been gradually shifting to the “dual control of carbon emission amount and emission intensity” policy. Given factors such as the power generation capacity and cost recycle regime and ancillary service market are yet to develop, and the market mechanism on the coordination of electrovalence and coal price is yet to be established, the choices for power generation enterprises to optimize their expenses and costs for power generation are still limited, which in return increased the operating risks for coal-fired power generation business. Some high-energy-consuming users will be limited in power consumption and the total amount of regional coal consumption will be also limited. Under such background, the demand for coal-fired power will be compressed and there exists a risk of the decline in the utilization hours for the coal-fired power units.

Thirdly, as the reform process of China’s power market is further accelerated, the scale of direct transactions continues to expand, spot market pilots are fully promoted, and new energy power transactions have begun. In 2022, the power and coal supply situation is still unclear, and it is expected that the market competition shall be fiercer, with uncertainties increased. Meanwhile, the demand for coal-fired power has been decreasing, and the utilization hours for coal-fired power units is expected to decline in a long term and a risk of the declining of transaction price of the generated electricity.

Fourthly, with new energy units commissioned, in 2022, the non-fossil energy units are expected to account for 50% of all units nationwide. Due to the production characteristics of new energy units, it is expected that during summer and winter peaks, the power supply in certain regions may witness tight-in-supply periods, which poses higher requirements in respect of the ancillary services capacity of the coal-fired power units.

Fifthly, with new energy units commissioned, in 2022, the non-fossil energy units are expected to account for 50% of all units nationwide. Due to the production characteristics of new energy units, it is expected that during summer and winter peaks in 2022, the power supply in certain regions may witness a short tight-in-supply period during peaking hours, presenting challenges to both the flexibility⁴³ in the workload adjustment of coal-fired

units and the rationalized construction of ancillary service markets.

The Company will actively promote the “green” transformation and accelerate the increase in the proportion of clean energy. Through alternative development, transformation and upgrading, decommission and storing for backup, and capital operation, the Company aims to achieve the structural optimization and upgrading of its coal-fired power units, and shall make coordinated arrangements on the energy saving and emission reduction upgrading and transformation, flexibility upgrading and transformation, heating upgrading and transformation, biomass coupling upgrading and transformation for our current coal-fired units, to create a new competing edge. The Company shall also strengthen policy research, actively adapt to the development of the electricity market under the “dual carbon” goal, continue to promote the standardized operation of the market, adjust pricing strategies in a timely manner, and make every effort to prevent and control electricity price risks.

3. Risks relating to fuel procurement market

Firstly, China’s control over the coal market has been strengthened. With the coal market showing an obvious “policy-driven market” characteristic, the future uncertainty with respect to coal price shall continue to increase.

Secondly, although the ban on exportation of coal by Indonesia has been lifted, the market order still takes time to restore. Meanwhile, considering uncertainty resulting from the worsen situation of geopolitical conflicts, and the high level of international energy price, the supplement function of imported coal might be weakened.

Thirdly, the national environmental protection and safety inspectors maintains a normalized high pressure, and the release of coal production capacity in the main production areas will be affected to a certain extent.

Fourthly, in 2022, most international economies choose to coexist with the epidemic, and the pace of economic recovery will accelerate. China's "stabilizing growth" economic strategy continues to exert its force with the policy of dual control of energy consumption being more flexible, the production of industrial products will remain strong, and the consumption of coal may continue to increase, which will impact the supply of thermal coal to certain extent.

The Company will closely follow the changes in national policies and the coal market, strive to enter into medium and long-term coal contracts with suppliers, strengthen cooperation with competitive large mines, and ensure the strict performance of contracts and the safe and stable supply of coal. The Company shall comprehensively consider factors such as resource origin, transportation mode, coal type matching, etc., to continue to optimize the supply structure and achieve optimal procurement costs, strengthen inventory management, have the off-season coal storage management play a meaningful role, increase the intensity of economic coal blending, and take multiple measures to reduce the cost of coal procurement.

4. Risks relating to carbon markets

The national carbon emission quota trading market has been launched. Units with higher carbon emission intensity will bear increased cost of carbon transaction performance, while units with lower carbon emission intensity can obtain emission reduction benefits. The Company maintains industry-leading overall energy utilization level. In the years of 2019 and 2020, the overall carbon trading performance cost of the Company is considered at a better level compared with other industry peers. However, since the quota allocation plan for 2021 and subsequent years has not yet been issued, and the allocation of quotas will gradually tighten, the risk of increased power generation costs exists. In addition, at the initial stage of the carbon market, the transactions between institutions and individuals have not been included, and if, at a later stage, institutions and individuals can enter into the market for transactions, there is a risk of increased performance costs for power generation companies. Besides, the Singapore government recently

announced that it planned to further increase the level of carbon tax during year 2024 and year 2025. Such policy is expected to affect the profitability of Tuas Power, if the carbon tax cannot be transmitted to end users through market.

The Company will pay close attention to both domestic and foreign carbon market policies, continue to strengthen carbon trading management, formulate carbon trading strategies, closely monitor to the progress of the restart of voluntary emission reduction projects, make full use of offset policies, and strive to complete the national carbon market trading performance work on schedule at a lower cost.

5. Environmental protection risk

The newly built units of the coal-fired power plants of the Company are all equipped with technological advanced and powerful flue gas purification systems. Other units have also completed ultra-low emission transformation pursuant to the requirements of the Chinese authorities, affording such units good adaptability to the fluctuations of internal and external factors such as weather conditions, fuel quality and electric heat load. Such units have also passed the inspection procedure conducted by the local environmental protection authorities and been recognized by the energy regulatory agency.

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

The Company closely monitor the areas of concern of the environmental protection authorities, by carefully selecting advanced and applicable technical solutions, and making achievements in improving the wastewater treatment system, building closed facilities for coal yard, and improving the comprehensive utilization of ash and slag, so as to ensure that various environmental risks are responded to in a timely manner and effective resolution.

6. Capital market risks

In 2021, the Company's expenditure on the procurement of fuel increased significantly, leading to a significant decrease in operating cash flow. Good operating results and sound credit status provide the Company with strong financing capabilities, making it accessible and convenient for the Company to raise fund to ensure the overall capital operation, meanwhile, leading to the significant increase of debt financing scale. It is expected that the Company's overall debt ratio, debt risks, and financial costs will increase apparently.

According to the Work Report of the State Council and Monetary Policy Implementation Report of the People's Bank of China, the monetary policy in 2022 is expected to be prudent with appropriate flexibilities, which will increase the intensity of cross-cycle adjustment, give full play to the dual functions of the total amount and structure of monetary policy tools, and focus on sufficient effectuation, precise effectuation, and forward effectuation, aiming to meet the reasonable and effective financing needs of the real economy without having "flooding irrigation" effects, and focus on increasing financial support for key areas and weak links of the economy, so as to achieve a better goal combining the stabilized total volume with an optimized structure and maintain a reasonably abundant liquidity. With respect to debt denominated in foreign currencies, given the Company has only a small amount of such debts, the fluctuation in the corresponding interest rates has a less meaningful impact on the Company.

The Company will pay close attention to changes in domestic and overseas capital markets, adjust financing strategies in a timely manner on the premise of ensuring capital needs, seize the market window period, make good use of policy tools such as carbon emission reduction support tools and special re-lending tools for supporting clean and efficient use of coal, to reduce interest rates fluctuation risks and make efforts to control financing costs.

STRUCTURE OF SHARE CAPITAL

As at 31 December 2021, the entire issued share capital of the Company amounted to 15,698,093,359 shares, of which 10,997,709,919 shares were domestic shares, representing 70.06% of the total issued share capital, and 4,700,383,440 shares were foreign shares, representing 29.94% of the total issued share capital of the Company. In respect of foreign shares, Huaneng Group through its wholly-owned subsidiaries China Hua Neng Group Hong Kong Limited and China Huaneng Group Treasury Management (Hong Kong) Limited, held 472,000,000 and 131,596,000 shares, representing 3.01% and 0.84% of the total issued share capital of the Company, respectively. In respect of domestic shares, Huaneng International Power Development Corporation (“HIPDC”) owned a total of 5,066,662,118 shares, representing 32.28% of the total issued share capital of the Company, while Huaneng Group held 1,555,124,549 shares, representing 9.91% of the total issued share capital of the Company, and held 29,994,199 shares through its controlling subsidiary, China Huaneng Finance Corporation Limited, representing 0.19% of the total issued share capital of the Company. Other domestic shareholders held a total of 4,345,929,053 shares, representing 27.68% of the total issued share capital.

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 RMB62.687 billion paid.

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

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

According to the Company's articles of association, due to the negative net profit attributable to equity holders of the Company in 2021, and having taken into account the investment needs of the Company's transformation and development and the increase in the Company's asset-liability ratio in 2021, the Board of Directors recommends that no dividend be distributed in 2021. The proposal has been reviewed and approved by the Company's Board of Directors and the Supervisory Committee, and will be submitted to the Company's annual general meeting for consideration.

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 2021 were China Huaneng Group Fuel Co., Ltd., Huaneng Supply Chain Platform Technology Co, Ltd., Huayang New Material Technology Co., Ltd., Shanxi Coal Selling and Transportation (Group) Corporation and China Coal Energy Company Limited respectively. The total purchase from them amounted to approximately RMB90.387 billion, representing approximately 47% of the total purchase of the year. The largest supplier was China Huaneng Group Fuel Co., Ltd., the purchase from which amounted to RMB41.834 billion, representing approximately 22% of the total purchase of the year.

As a domestic power producer, the Company sells the electricity generated by its power plants mainly through local grid operators. The five largest customers of the Company and its subsidiaries for 2021 were State Grid Shandong Electric Power Company, State Grid Jiangsu Electric Power Company, State Grid Zhejiang Electric Power Company, China Southern Power Grid Guangdong Power Grid Co., Ltd. and State Grid Jiangxi Electric Power Company. The combined amount of sales of power was approximately RMB81.469 billion (exclusive of taxes), representing approximately 39.82% of the total sales of power for the year. The largest customers was State Grid Shandong Electric Power Company, and the amount of sale was RMB30.346 billion (exclusive of taxes), representing approximately 14.84% of the total sales of power for the year.

None of the directors, supervisors and their respective close associates (as defined in the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the “Listing Rules”)) had any interest in the five largest suppliers and customers of the Company mentioned above in 2021.

BUSINESS COMPETITION WITH CONTROLLING SHAREHOLDERS

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

To support the business development of the Company, Huaneng Group has committed to avoid business competition during its initial public offerings at home and abroad. On 17 September 2010, the Company received an undertaking from Huaneng Group regarding further avoidance of business competition. On the premises of continuing the undertaking previously provided, Huaneng Group further undertook that: (1) it should treat the Company as the only platform for integrating the conventional energy business of Huaneng Group; (2) with respect to the conventional energy business assets of Huaneng Group located in Shandong Province, Huaneng Group undertook that it would take approximately 5 years to improve the profitability of such assets and when the terms become appropriate, it would inject those assets into the Company.

The Company had a right of first refusal to acquire from Huaneng Group the newly developed, acquired or invested projects which are engaged in the conventional energy business of Huaneng Group located in Shandong Province; (3) with respect to the other non-listed conventional energy business assets of Huaneng Group located in other provincial administrative regions, Huaneng Group undertook that it would take approximately five years, and upon such assets meeting the conditions for listing, to inject such assets into the Company, with a view to supporting the Company's continuous and stable development; and (4) Huaneng Group would continue to perform each of its undertakings to support the development of its listed subsidiaries.

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

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

2. with respect to the conventional energy business assets of Huaneng Group located in Shandong Province, Huaneng Group undertook that it would, by the end of 2016, inject into the Company such assets of which the profitability should have been improved and meet with the requirements for injecting into a listed company (such as those assets with clean titles, the injection of which should not reduce the earnings per share of Huaneng Power, of no material non-compliance issues, with positive effect on preservation of and value appreciation of state owned assets, and waiver of pre-emptive rights being obtained from other shareholders of the assets), in addition, the Company should have the right of first refusal to acquire from Huaneng Group the newly developed, acquired or invested projects as engaged in the conventional energy business of Huaneng Group located in Shandong Province;
3. with respect to the other non-listed conventional energy business assets of Huaneng Group located in other provincial administrative regions, Huaneng Group undertook that it would, by the end of 2016, inject into the Company such assets of which the profitability should have been improved and meet with the requirements for injecting into a listed company (such as those assets with clear titles, the injection of which should not reduce the earnings per share of Huaneng Power, of no material non-compliance issues, with positive effect on preservation of and value appreciation of state owned assets, and waiver of pre-emptive rights being obtained from other shareholders of the assets), so as to support a sustainable and stable development of the Company;
4. Huaneng Group would continue to perform each of its aforesaid undertakings in order to support the development of its subordinated listed companies. The period of the undertaking was from 28 June 2014 to 31 December 2016.

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

Currently, the Company has 15 directors and only 6 of them have positions in Huaneng Group. According to the articles of association of the Company, in case a conflict of interest arises, the relevant directors shall abstain from voting in the relevant resolutions. Therefore, the operation of the Company is independent from Huaneng Group, and the operation of the Company is conducted for its own benefit.

PURCHASE, SALE OR REDEMPTION OF SHARES OF THE COMPANY

The Company and its subsidiaries did not sell, purchase or redeem any shares or other securities of the Company in 2021.

DIRECTORS OF THE COMPANY

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

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

MODEL CODE FOR SECURITIES TRANSACTIONS BY DIRECTORS AND SUPERVISORS

On 30 June 2021, the Company's Board considered and approved the Amended Management Guidelines Regarding the Holding of the Company's Shares by the Directors, Supervisors and Senior Management of Huaneng Power International, Inc. The standard of such guidelines is no less exacting than those set out in the Model Code for Securities Transactions by Directors of Listed Issuers as set out in Appendix 10 to the Listing Rules. Enquiries have been made with all Directors and Supervisors and all of them confirmed that they have complied with the code throughout 2021.

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

For the year ended 31 December 2021, 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 ("SFO")) which are (a) required to be notified to the Company and The Stock Exchange of Hong Kong Limited ("Hong Kong Stock Exchange") pursuant to Divisions 7 and 8 of Part XV of the SFO; or (b) required to be recorded in the register kept by the Company pursuant to Section 352 of the SFO; (c) required to be notified to the Company and the Hong Kong Stock Exchange pursuant to the Model Code for Securities Transactions by Directors of Listed Issuers.

For the year ended 31 December 2021, none of the Directors, Chief Executives, Supervisors, senior management of the Company or their spouses and children under the age of 18 was given the right to acquire any shares, underlying shares or debentures of the Company or any associated corporations (within the meaning of the SFO).

DIRECTORS' AND SUPERVISORS' INTEREST IN CONTRACTS AND SERVICE CONTRACTS

Save for the service contracts mentioned below, as at the end of 2021, the Directors and Supervisors of the Company did not have any material interests in any contracts entered into by the Company.

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

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

INDEPENDENT DIRECTORS' CONFIRMATION OF INDEPENDENCE

Each of the independent directors of the Company, namely Mr. Xu Mengzhou, Mr. Liu Jizhen, Mr. Xu Haifeng, Mr. Zhang Xianzhi and Mr. Xia Qing has signed a confirmation letter by independent non-executive directors for 2021 on 22 March 2022 and the Company considers them to be independent.

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.

SHAREHOLDINGS OF MAJOR SHAREHOLDERS

The following table sets out the shareholdings of the top ten shareholders of the Company as at 31 December 2021:

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	4,109,498,222	26.18%
China Huaneng Group Co., Ltd.	1,555,124,549	9.91%
Hebei Construction & Investment Group Co., Ltd.	493,316,146	3.14%
China Hua Neng Group Hong Kong Limited	472,000,000	3.01%
China Securities Finance Corporation Limited	466,953,720	2.97%
Jiangsu Guoxin Investment Group Limited	332,964,700	2.12%
Liaoning Energy Investment (Group) Limited Liability Company	264,966,200	1.69%
Dalian City Investment Holding Group Co., Ltd.	257,070,000	1.64%
Fujian Investment and Development Group Co., Ltd.	251,814,185	1.60%

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 20% of the total remuneration.

(2) Discretionary bonus

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

(3) Payments on pension, etc.

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

According to the resolution at the general meeting, the Company paid each independent director a subsidy amounting to RMB300,000 (inclusive of tax) in 2021. The Company also reimburses the independent director for the expenses they incur in attending board meetings and general meetings and other reasonable expenses they incur while fulfilling their obligations under the Company Law and the Company's Articles of Association (including travelling expenses and administrative expenses). Besides these, the Company does not give the independent director any other benefit.

STAFF HOUSING

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

STAFF MEDICAL INSURANCE SCHEME

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

RETIREMENT SCHEMES

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

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

GENERAL MEETINGS

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

1. The Company's 2020 Annual General Meeting was held on 22 June 2021. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 23 June 2021.
2. The Company's 2021 First Extraordinary General Meeting was held on 16 November 2021. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 17 November 2021.
3. The Company's 2021 Second Extraordinary General Meeting was held on 21 December 2021. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 22 December 2021.

DISCLOSURE OF MAJOR EVENTS

1. Adjustment to the management of the Company

In order to continue to supplement and enrich our management capacity, the Company made the following adjustments to the management team:

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

On 22 February 2021, Mr. Liu Ranxing ceased to hold the office of Vice President of the Company due to work reasons.

On 9 June 2021, Ms. Zhang Xiaojun resigned as a staff representative supervisor of the Supervisory Committee of the Company due to age reason. Instead, Mr. Zhu Tong was elected unanimously by the Company staff as the staff representative supervisor of the Tenth Session of the Supervisory Committee of the Company.

On 22 June 2021, Mr. Ye Cai ceased to act as the supervisor of the Company due to work relocation. As resolved through the proposal of election of supervisor of the Company at the annual general meeting convened by the Company on 22 June 2021, Mr. Xia Aidong was elected as the supervisor of the Tenth Session of the Supervisory Committee of the Company.

CHANGES IN INFORMATION OF DIRECTORS AND SUPERVISORS DURING THE REPORTING PERIOD

1. On 9 June 2021, Ms. Zhang Xiaojun resigned as a staff representative supervisor of the Supervisory Committee of the Company due to age reason. Instead, Mr. Zhu Tong was elected unanimously by the Company staff as the staff representative supervisor of the Tenth Session of the Supervisory Committee of the Company.
2. As resolved through the proposal of election of supervisors of the Company at the annual general meeting convened by the Company on 22 June 2021, Mr. Xia Aidong was elected as the supervisor of the Tenth Session of the Supervisory Committee of the Company. Mr. Ye Cai ceased to be the supervisor of the Company due to work relocation.

CODE OF CORPORATE GOVERNANCE PRACTICES

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

DESIGNATED DEPOSIT

As at 31 December 2021, 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.

LEGAL PROCEEDINGS

As at 31 December 2021, 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.

ANNUAL GENERAL MEETING AND CLOSURE OF REGISTER

As the Company has yet to confirm the date of the 2021 annual general meeting, the record date(s) for determining the eligibility to attend and vote at the 2021 annual general meeting and the period(s) for closure of register, the Company will upon confirmation thereof announce such details in the notice of the 2021 annual general meeting. Such notice is expected to be issued to shareholders in May 2022.

AUDITORS

As approved at the 2020 annual general meeting, Ernst & Young Hua Ming LLP was appointed as the Company's domestic and U.S. 20F Annual Report auditor for 2021, and Ernst & Young, registered public interest entity auditor, was appointed as the Hong Kong auditor of the Company for 2021.

PUBLICATION OF RESULTS ON THE WEBSITES OF THE HONG KONG STOCK EXCHANGE AND THE COMPANY

This announcement of 2021 annual results of the Company is published on the Hong Kong Stock Exchange's website (<http://www.hkex.com.hk>) and the Company's website (<http://www.hpi.com.cn>). The 2021 annual report of the Company containing all the information required by the Listing Rules will be despatched to the shareholders and available on the above websites in due course.

REQUIREMENTS UNDER THE ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORTING GUIDELINES

In 2021, in accordance with the requirements under the Environmental, Social and Governance Reporting Guide of the Hong Kong Stock Exchange, which was amended on 18 December, 2019, the Company has completed the preparation and disclosure of the Environmental, Social and Governance in due time. The Environmental, Social and Governance Report and the annual report of the Company will be published on the websites of the Company and the Hong Kong Stock Exchange.

DOCUMENTS FOR INSPECTION

The Company's report on interim results and the annual report (A share version and H share version) was published in August 2021 and will be published in April 2022, 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 2022. 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:

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By Order of the Board
Huaneng Power International, Inc.
Zhao Keyu
Chairman

As at the date of this announcement, the directors of the Company are:

Zhao Keyu

(Executive Director)

Zhao Ping

(Executive Director)

Huang Jian

(Non-executive Director)

Wang Kui

(Non-executive Director)

Lu Fei

(Non-executive Director)

Teng Yu

(Non-executive Director)

Mi Dabin

(Non-executive Director)

Cheng Heng

(Non-executive Director)

Li Haifeng

(Non-executive Director)

Lin Chong

(Non-executive Director)

Xu Mengzhou

(Independent Non-executive Director)

Liu Jizhen

(Independent Non-executive Director)

Xu Haifeng

(Independent Non-executive Director)

Zhang Xianzhi

(Independent Non-executive Director)

Xia Qing

(Independent Non-executive Director)

Beijing, the PRC

23 March 2022

A. FINANCIAL INFORMATION EXTRACTED FROM FINANCIAL STATEMENTS PREPARED UNDER INTERNATIONAL FINANCIAL REPORTING STANDARDS (“IFRS”)

**1 Prepared in accordance with International Financial Reporting Standards
Consolidated Statement of Comprehensive Income**

For the year ended 31 December 2021

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

		For the year ended 31 December	
	<i>Note</i>	2021	2020
Operating revenue	3	204,605,083	169,446,338
Tax and levies on operations		(1,686,341)	(1,794,004)
Operating expenses, net			
Fuel		(146,539,362)	(88,966,304)
Maintenance		(4,503,584)	(5,001,982)
Depreciation		(22,270,421)	(22,146,316)
Labour		(16,107,285)	(14,503,290)
Service fees on transmission and transformer facilities of HIPDC		(47,947)	(95,894)
Purchase of electricity		(9,114,851)	(4,720,261)
Others, net		(11,702,778)	(20,300,072)

Total operating expenses		<u>(210,286,228)</u>	<u>(155,734,119)</u>
(Loss)/profit from operations		<u>(7,367,486)</u>	<u>11,918,215</u>
		For the year ended	
		31 December	
	<i>Note</i>	<u>2021</u>	<u>2020</u>
Interest income		288,291	292,724
Financial expenses, net			
Interest expense		(8,798,200)	(9,200,612)
Exchange (loss)/gain and bank charges, net		<u>(40,290)</u>	<u>100,643</u>
Total financial expenses, net		<u>(8,838,490)</u>	<u>(9,099,969)</u>
Share of profits less losses of associates and joint ventures		804,386	1,774,322
Loss on fair value changes of financial assets/liabilities	12	–	(1,566)
Other investment loss		<u>(7,345)</u>	<u>(109,990)</u>
(Loss)/profit before income tax expense	12	(15,120,644)	4,773,736
Income tax expense	4	<u>1,929,755</u>	<u>(2,163,173)</u>
Net (loss)/profit		<u>(13,190,889)</u>	<u>2,610,563</u>

	For the year ended 31 December	
	2021	2020
Other comprehensive loss, net of tax		
<i>Items that will not be reclassified to profit or loss in subsequent periods:</i>		
Fair value changes of other equity instrument investments	(46,808)	(175,984)
Share of other comprehensive loss of joint ventures and associates	(42,863)	(178,501)
Income tax effect	12,231	43,996
<i>Items that may be reclassified subsequently to profit or loss:</i>		
Share of other comprehensive loss of joint ventures and associates	(1,441)	(4,348)
Cash flow hedges:		
Effective portion of changes in fair value of hedging instruments arising during the year	1,235,874	(166,323)
Reclassification adjustments for (losses)/gains included in profit or loss	(624,876)	414,821
Exchange differences on translation of foreign operations	(989,932)	(862,454)
Income tax effect	(103,870)	(42,245)
Other comprehensive loss, net of tax	<u>(561,685)</u>	<u>(971,038)</u>
Total comprehensive (loss)/income	<u>(13,752,574)</u>	<u>1,639,525</u>

		For the year ended	
		31 December	
	Note	2021	2020
Net (loss)/profit attributable to:			
– Equity holders of the Company		(10,636,194)	2,377,851
– Non-controlling interests		(2,554,695)	232,712
		<u>(13,190,889)</u>	<u>2,610,563</u>
Total comprehensive (loss)/income attributable to:			
– Equity holders of the Company		(10,933,871)	1,599,471
– Non-controlling interests		(2,818,703)	40,054
		<u>(13,752,574)</u>	<u>1,639,525</u>
(Losses)/earnings per share attributable to the shareholders of the Company <i>(expressed in RMB per share)</i>			
– Basic and diluted	13	<u>(0.81)</u>	<u>0.04</u>

Consolidated Statement of Financial Position

As at 31 December 2021

(Amounts expressed in thousands of RMB)

		As at 31 December	
	Note	2021	2020
ASSETS			
Non-current assets			
Property, plant and equipment		320,589,625	300,171,142
Right-of-use assets		19,603,927	18,292,074
Investments in associates and joint ventures		23,037,904	22,375,377
Investment properties		635,268	647,471
Other equity instrument investments		729,070	664,946
Power generation licenses		3,783,756	3,954,983
Mining rights		1,611,486	1,611,486
Deferred income tax assets		4,907,081	2,699,395
Derivative financial assets		69,753	74,554
Goodwill		14,276,224	14,738,016
Other non-current assets	5	19,056,005	18,537,583
Total non-current assets		408,300,099	383,767,027
Current assets			
Inventories		16,824,431	6,602,459
Other receivables and assets		14,698,932	7,308,077
Accounts and notes receivable	6	43,877,997	38,215,715
Contract assets		66,974	29,678
Derivative financial assets		652,458	110,179

		As at 31 December	
	<i>Note</i>	2021	2020
Bank balances and cash		16,350,332	13,871,523
Total current assets		92,471,124	66,137,631
Total assets		500,771,223	449,904,658
EQUITY AND LIABILITIES			
Capital and reserves attributable to equity holders of the Company			
Share capital		15,698,093	15,698,093
Other equity instruments	10	48,417,977	48,419,779
Capital surplus		25,667,502	26,162,550
Surplus reserves		8,140,030	8,140,030
Currency translation differences		(1,443,398)	(738,927)
Retained earnings		16,567,610	32,164,398
		113,047,814	129,845,923
Non-controlling interests		20,510,199	21,770,275
Total equity		133,558,013	151,616,198
Non-current liabilities			
Long-term loans		136,857,716	112,077,395
Long-term bonds	8	29,396,919	20,382,405
Lease liabilities		6,138,846	3,805,635
Deferred income tax liabilities		2,300,088	3,002,527
Derivative financial liabilities		99,323	188,139
Other non-current liabilities		6,022,017	4,784,268
Total non-current liabilities		180,814,909	144,240,369

		As at 31 December	
	<i>Note</i>	2021	2020
Current liabilities			
Accounts payable and other liabilities	9	54,609,553	42,755,361
Contract liabilities		3,274,770	2,903,296
Taxes payable		2,053,418	2,044,869
Dividends payable		1,041,452	694,854
Derivative financial liabilities		41,034	106,862
Short-term bonds		8,222,517	5,002,877
Short-term loans		91,896,725	66,311,160
Current portion of long-term loans		17,213,799	19,808,313
Current portion of long-term bonds		7,175,540	12,678,511
Current portion of lease liabilities		800,521	1,676,711
Current portion of other non-current liabilities		68,972	65,277
Total current liabilities		186,398,301	154,048,091
Total liabilities		367,213,210	298,288,460
Total equity and liabilities		500,771,223	449,904,658

NOTES TO THE FINANCIAL INFORMATION EXTRACTED FROM FINANCIAL STATEMENTS PREPARED UNDER IFRS

(Amounts expressed in thousands of RMB unless otherwise stated)

1 Basis of preparation

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

As at 31 December 2021, the Group had net current liabilities of approximately RMB93.93 billion, and a portion of the Group’s funding requirements for capital expenditures were satisfied by short-term financing. Taking into consideration the undrawn available banking facilities exceeded RMB300.0 billion as at 31 December 2021, the Group is expected to refinance certain of its short-term loans and bonds and also to consider alternative sources of financing, where applicable and when needed.

Therefore, the directors of the Company are of the opinion that the Group will be able to meet its liabilities as and when they fall due within the next twelve months and accordingly, these consolidated financial statements are prepared on a going concern basis.

2 Principal accounting policies

Changes in accounting policies

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

Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16	<i>Interest Rate Benchmark Reform – Phase 2</i>
Amendment to IFRS 16	<i>Covid-19-Related Rent Concessions beyond 30 June 2021 (early adopted)</i>

The nature and the impact of the revised IFRSs are described below:

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

Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 address issues not dealt with in the previous amendments which affect financial reporting when an existing interest rate benchmark is replaced with an alternative risk-free rate (“RFR”). The amendments provide a practical expedient to allow the effective interest rate to be updated without adjusting the carrying amount of financial assets and liabilities when accounting for changes in the basis for determining the contractual cash flows of financial assets and liabilities, if the change is a direct consequence of the interest rate benchmark reform and the new basis for determining the contractual cash flows is economically equivalent to the previous basis immediately preceding the change. In addition, the amendments permit changes required by the interest rate benchmark reform to be made to hedge designations and hedge documentation without the hedging relationship being discontinued. Any gains or losses that could arise on transition are dealt with through the normal requirements of IFRS 9 to measure and recognise hedge ineffectiveness. The amendments also provide a temporary relief to entities from having to meet the separately identifiable requirement when an RFR is designated as a risk component. The relief allows an entity, upon designation

of the hedge, to assume that the separately identifiable requirement is met, provided the entity reasonably expects the RFR risk component to become separately identifiable within the next 24 months. Furthermore, the amendments require an entity to disclose additional information to enable users of financial statements to understand the effect of interest rate benchmark reform on an entity's financial instruments and risk management strategy. These amendments had no material impact on the consolidated financial statements of the Group.

(ii) *Amendment to IFRS 16 Covid-19-Related Rent Concessions beyond 30 June 2021 (early adopted)*

Amendment to IFRS 16 issued in April 2021 extends the availability of the practical expedient for lessees to elect not to apply lease modification accounting for rent concessions arising as a direct consequence of the covid-19 pandemic by 12 months. Accordingly, the practical expedient applies to rent concessions for which any reduction in lease payments affects only payments originally due on or before 30 June 2022, provided the other conditions for applying the practical expedient are met. The amendment is effective retrospectively for annual periods beginning on or after 1 April 2021 with any cumulative effect of initially applying the amendment recognised as an adjustment to the opening balance of retained profits at the beginning of the current accounting period. Earlier application is permitted. The amendment did not have any impact on the financial position and performance of the Group as there were no lease payments reduced or waived by the lessors as a result of the covid-19 pandemic during the year.

3 Revenue and segment information

(a) Disaggregation of revenue

In the following table, revenue is disaggregated by major products and/or service lines of revenue recognition. The table also includes a reconciliation of the disaggregated operating revenue to the Group's reportable segments (Note 3(b)).

For the year ended 31 December 2021	PRC power segment	Overseas segment	All other segments	Inter-segment revenue	Total
		<i>Note i</i>			
– Sales of power and heat	178,213,816	15,437,421	–	–	193,651,237
– Sales of coal and raw materials	2,286,929	657,654	543,648	(446,930)	3,041,301
– Port service	–	–	615,183	(373,198)	241,985
– Transportation service	–	–	232,442	(172,791)	59,651
– Lease income	148,023	1,325,376	–	–	1,473,399
– Others	1,969,036	4,157,381	35,281	(24,188)	6,137,510
Total	<u>182,617,804</u>	<u>21,577,832</u>	<u>1,426,554</u>	<u>(1,017,107)</u>	<u>204,605,083</u>
Revenue:					
– From contracts with customers within the scope of IFRS 15					203,131,684
– From other sources					1,473,399

For the year ended 31 December 2020	PRC power segment	Overseas segment <i>Note i</i>	All other segments	Inter-segment revenue	Total
– Sales of power and heat	150,752,779	10,700,000	–	–	161,452,779
– Sales of coal and raw materials	1,857,484	29,780	–	–	1,887,264
– Port service	–	–	510,765	(312,625)	198,140
– Transportation service	–	–	153,679	(102,155)	51,524
– Lease income	86,136	1,544,118	–	–	1,630,254
– Others	1,392,275	2,823,775	26,161	(15,834)	4,226,377
Total	<u>154,088,674</u>	<u>15,097,673</u>	<u>690,605</u>	<u>(430,614)</u>	<u>169,446,338</u>

Revenue:

– From contracts with customers within the scope of IFRS 15	167,816,084
– From other sources	1,630,254

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

The revenue from the sale of power and heat and the sale of coal and raw materials is recognised at the point in time upon the transfer of products, whereas the revenue from port service, transportation service, maintenance service, and heating pipeline service is recognised over time during the provision of such services. Lease income is recognised over the lease term.

(b) Segment information

Directors and certain senior management of the Company perform the function as the chief operating decision maker (collectively referred to as the “senior management”). The senior management reviews the internal reporting of the Group in order to assess performance and allocate resources. The Company has determined the operating segments based on these reports. The reportable segments of the Group are the PRC power segment, overseas segment and all other segments (mainly including port and transportation operations). No operating segments have been aggregated to form a reportable segment.

Senior management assesses the performance of the operating segments based on a measure of profit before income tax expense under China Accounting Standards for Business Enterprises (“PRC GAAP”) excluding dividend income received from other equity instrument investments, share of profits of China Huaneng Finance Co., Ltd (“Huaneng Finance”) and operating results of the centrally managed and resource allocation functions of headquarters (“segment results”). Other information provided, except as noted below, to the senior management of the Company is measured under PRC GAAP.

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

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

	<i>(Under PRC GAAP)</i>			
	<u>PRC power segment</u>	<u>Overseas segments</u>	<u>All other segment</u>	<u>Total</u>
For the year ended 31 December 2021				
Total revenue	182,617,804	21,577,832	1,426,554	205,622,190
Intersegment revenue	<u>—</u>	<u>—</u>	<u>(1,017,107)</u>	<u>(1,017,107)</u>
External revenue	<u>182,617,804</u>	<u>21,577,832</u>	<u>409,447</u>	<u>204,605,083</u>
Segment results	<u>(15,703,242)</u>	<u>954,815</u>	<u>590,003</u>	<u>(14,158,424)</u>
Interest income	171,655	114,637	1,999	288,291
Interest expense	(7,941,183)	(707,069)	(137,743)	(8,785,995)
Impairment loss	(90,805)	1,711	—	(89,094)
Credit loss	(50,161)	(53,464)	—	(103,625)
Depreciation and amortisation	(20,806,815)	(600,029)	(224,634)	(21,631,478)
Net gain on disposal of non-current assets	528,842	231	11,601	540,674
Share of profits less losses of associates and joint ventures	156,892	—	483,532	640,424
Income tax expense	<u>1,667,483</u>	<u>(42,726)</u>	<u>(21,043)</u>	<u>1,603,714</u>

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

	PRC power segment	Overseas segment	All other segments	Total
31 December 2021				
Segment assets	<u>430,142,720</u>	<u>40,378,092</u>	<u>10,938,171</u>	<u>481,458,983</u>
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	48,632,163	485,642	674,173	49,791,978
Investments in associates	13,962,007	–	4,995,904	18,957,911
Investments in joint ventures	1,367,492	–	1,151,581	2,519,073
Segment liabilities	<u>(337,445,709)</u>	<u>(23,857,688)</u>	<u>(2,655,232)</u>	<u>(363,958,629)</u>
31 December 2020				
Segment assets	<u>382,917,976</u>	<u>39,922,997</u>	<u>9,883,826</u>	<u>432,724,799</u>
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	38,156,544	432,151	186,313	38,775,008
Investments in associates	14,230,345	–	3,855,842	18,086,187
Investments in joint ventures	1,550,986	–	1,193,536	2,744,522
Segment liabilities	<u>(265,407,038)</u>	<u>(23,933,317)</u>	<u>(4,501,554)</u>	<u>(293,841,909)</u>

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

	For the year ended	
	31 December	
	2021	2020
External revenue (PRC GAAP)	204,605,083	169,439,187
Reconciling item:		
Impact of restatement under PRC GAAP in relation to business combination under common control*	–	(85,477)
Impact of recognition of build-operate-transfer (BOT) related revenue under IFRSs	–	92,628
Operating revenue per IFRS consolidated statement of comprehensive income	<u>204,605,083</u>	<u>169,446,338</u>

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

	For the year ended	
	31 December	
	2021	2020
Segment results (PRC GAAP)	(14,158,424)	8,756,946
Reconciling item:		
Loss related to the headquarters	(309,414)	(132,234)
Share of profits of Huaneng Finance	188,956	188,643
Dividend income of other equity instrument investments	1,743	775
Impact of restatement under PRC GAAP in relation to business combination under common control*	—	(13,995)
Impact of IFRS adjustments**	(843,505)	(4,026,399)
(Loss)/profit before income tax expense per IFRS consolidated statement of comprehensive income	<u>(15,120,644)</u>	<u>4,773,736</u>

Reportable segment assets are reconciled to total assets as follows:

	As at 31 December	
	2021	2020
Total segment assets (PRC GAAP)	481,458,983	432,724,799
Reconciling items:		
Investment in Huaneng Finance	1,426,986	1,394,030
Deferred income tax assets	5,503,847	2,996,690
Prepaid income tax	695,156	133,090
Other equity instrument investments	729,070	664,946
Corporate assets	254,442	292,197
Impact of IFRS adjustments**	10,702,739	11,698,906
Total assets per IFRS consolidated statement of financial position	<u>500,771,223</u>	<u>449,904,658</u>

Reportable segment liabilities are reconciled to total liabilities as follows:

	As at 31 December	
	2021	2020
Total segment liabilities (PRC GAAP)	(363,958,629)	(293,841,909)
Reconciling items:		
Current income tax liabilities	(227,880)	(288,106)
Deferred income tax liabilities	(900,885)	(977,810)
Corporate liabilities	(1,089,086)	(1,622,574)
Impact of IFRS adjustments**	(1,036,730)	(1,558,061)
Total liabilities per IFRS consolidated statement of financial position	<u>(367,213,210)</u>	<u>(298,288,460)</u>

Other material items:

	Reportable segment total	Headquarters	Share of profits of Huaneng Finance	Impact of restatement under PRC GAAP in relation to business combination under common control*	Impact of IFRS adjustments**	Total
For the year ended 31 December 2021						
Total revenue	204,605,083	-	-	-	-	204,605,083
Interest expense	(8,785,995)	(12,205)	-	-	-	(8,798,200)
Depreciation and amortisation	(21,631,478)	(50,986)	-	-	(657,674)	(22,340,138)
Impairment loss	(89,094)	-	-	-	(2,543)	(91,637)
Credit loss	(103,625)	-	-	-	-	(103,625)
Share of profits less losses of associates and joint ventures	640,424	-	188,956	-	(24,994)	804,386
Net gain on disposal of non-current assets	540,674	-	-	-	(19,796)	520,878
Income tax expense	1,603,714	-	-	-	326,041	1,929,755
For the year ended 31 December 2020						
Total revenue	169,439,187	-	-	(85,477)	92,628	169,446,338
Interest expense	(9,192,325)	(37,293)	-	29,006	-	(9,200,612)
Depreciation and amortisation	(21,266,170)	(36,434)	-	26,023	(997,912)	(22,274,493)
Impairment loss	(6,113,664)	-	-	-	(2,811,385)	(8,925,049)
Credit loss	(120,016)	-	-	-	(52,695)	(172,711)
Share of profits less losses of associates and joint ventures	1,615,192	-	188,643	-	(29,513)	1,774,322
Net loss on disposal of non-current assets	(612,246)	-	-	-	(14,411)	(626,657)
Income tax expense	(3,110,408)	-	-	176	947,059	(2,163,173)

- * The Group completed the acquisitions of equity interests of certain companies in 2020. As the acquisitions were business combinations under common control, the transactions were accounted for using the pooling of interests method under PRC GAAP. The assets and liabilities acquired in business combinations were measured at the carrying amounts of the acquirees in the consolidated financial statements of the ultimate controlling party on the acquisition date. The operating results for all periods presented were retrospectively restated as if the current structure and operations resulting from the acquisitions had been in existence from the date when the acquirees first became under the control of the same ultimate controlling party. Therefore, the relevant comparative figures in the segment information were restated under PRC GAAP as the acquisitions were accounted for using the acquisition method under IFRSs.
- ** IFRS adjustments above primarily represented the reclassification adjustments and adjustments related to business combination and borrowing cost. Other than the reclassification adjustments, the differences will be gradually eliminated following subsequent depreciation and amortisation of related assets or the extinguishment of liabilities.

Geographical information (Under IFRSs):

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

	For the year ended 31 December	
	2021	2020
PRC	183,027,251	154,348,665
Overseas	21,577,832	15,097,673
Total	<u>204,605,083</u>	<u>169,446,338</u>

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

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

	As at 31 December	
	2021	2020
PRC	371,244,403	346,766,179
Overseas	22,087,875	23,275,028
Total	<u>393,332,278</u>	<u>370,041,207</u>

The non-current asset information above is based on the locations of the assets.

The information on sales to major customers of the Group which accounted for 10% or more of external revenue is as follows:

In 2021, the revenue from grid companies under common control of State Grid Corporation of China within the PRC power segment in total accounted for 70% of external revenue (2020: 77%). The sales to a subsidiary of State Grid Corporation of China which accounted for 10% or more of external revenue are as follows:

	For the year ended 31 December			
	2021		2020	
	Amount	Proportion	Amount	Proportion
State Grid				
Shandong Electric				
Power Company	<u>30,346,435</u>	<u>15%</u>	<u>27,265,600</u>	<u>16%</u>

(c) *Contract balances*

The contract assets primarily relate to the Group's rights to consideration for service completed but not billed at the reporting date. The contract assets are transferred to receivables when the rights become unconditional according to the contract.

The contract liabilities primarily relate to the advance received from customers for heat sales and heating pipeline upfront fees. The contract liabilities of RMB324 million (2020: RMB242 million) at the beginning of the year has been recognised as revenue of heating pipeline service in 2021 (2020). The contract liabilities of RMB2,199 million (2020: RMB2,055 million) at the beginning of the year has been recognised as revenue of heat sales in 2021 (2020).

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

	As at 31 December	
	2021	2020
Within 1 year	208,668	268,001
Over 1 year	2,685,875	2,355,763
Total	<u>2,894,543</u>	<u>2,623,764</u>

The transaction prices allocated to the above remaining performance obligations expected to be recognised in more than one year relate to the provision of heating pipeline services, of which the performance obligations are to be satisfied within 17 years. All the other amounts of transaction prices allocated to the remaining performance obligations are expected to be recognised as revenue within one year. The amount disclosed above does not include variable consideration which is constrained.

(ii) Performance obligations

The Group has elected the practical expedient of not disclosing the remaining obligation excluding heating pipeline upfront fees. As allowed by IFRS 15, no information is provided about the performance obligations at 31 December 2021 that have an original expected duration of one year or less.

4 Income tax expense

	For the year ended 31 December	
	2021	2020
Current income tax expense	1,039,920	2,821,301
Deferred income tax	(2,969,675)	(658,128)
Total	<u>(1,929,755)</u>	<u>2,163,173</u>

No Hong Kong profits tax has been provided as there were no estimated assessable profits in Hong Kong for the year (2020: Nil).

The Company and its PRC branches and subsidiaries are subject to income tax at 25%, except for certain PRC branches and subsidiaries that are tax exempted or taxed at preferential tax rates, as determined in accordance with the relevant PRC income tax rules and regulations for the years ended 31 December 2021 and 2020.

The income tax rate applicable to Singapore subsidiaries is 17% (2020: 17%). The Company's overseas subsidiary in Pakistan is engaged in the power generation business is entitled to an income tax exemption according to Income Tax Ordinance 2001. Another subsidiary located in Pakistan engaged in the provision of maintenance services. Before 1 July 2019, the subsidiary's tax liability would be calculated at the highest of (i) normal tax at the rate of 29% of taxable income; (ii) Alternative Corporate Tax (ACT) at the rate of 17% of accounting profit; and (iii) minimum tax deductible at 8% of the revenue. If the income tax calculated is above normal tax at the rate of 29%, it would be carried forward to subsequent years for settlement against the liabilities of following years. The carry forward time period is 5 years in the case of minimum tax and 10 years in the case of ACT. However, from 1 July 2019, if the minimum tax liability is above the normal tax calculated, it cannot be carried forward to subsequent years.

The reconciliation of the effective income tax rate from the notional income tax rate is as follows:

	For the year ended	
	31 December	
	2021	2020
PRC statutory enterprise income tax rate	25.00%	25.00%
Effect of different tax rates of certain subsidiaries	5.80%	(13.88%)
Utilisation of previously unrecognised tax losses and deductible temporary differences	1.97%	(5.50%)
Unrecognised tax losses for the year	(16.99%)	12.99%
Unrecognised deductible temporary differences	(3.16%)	26.17%
Effect of non-taxable income	1.04%	(9.34%)
Effect of non-deductible expenses	(1.06%)	8.70%
Others	0.16%	1.17%
Effective tax rate	<u>12.76%</u>	<u>45.31%</u>

For the year ended 31 December 2021, the effective tax rate was proportioned by income tax credit to loss before tax (for the year ended 31 December 2020 income tax expense to profit before tax).

5 Other non-current assets

Details of other non-current assets are as follows:

	As at 31 December	
	2021	2020
Finance lease receivables (i)	8,664,550	9,431,733
VAT recoverable	6,213,495	5,526,256
Prepayments for pre-construction cost	479,138	438,167
Intangible assets (ii)	632,639	643,486
Prepaid connection fees	28,598	33,041
Contract assets	837,559	736,568
Others (iii)	2,200,026	1,728,332
Total	<u>19,056,005</u>	<u>18,537,583</u>

Notes:

- (i) Huaneng Shandong Ruyi (Pakistan) Energy (Private) Co., Ltd. (“**Ruyi Pakistan Energy**”) entered into a power purchase agreement with CPPA-G to sell all of the electricity produced with a regulated tariff mechanism approved by the National Electric Power Regulatory Authority. In accordance with the power purchase agreement and tariff mechanism, almost all the risks and rewards in relation to the power assets were in substance transferred to CPPA-G and therefore were accounted for as a finance lease to CPPA-G.
- (ii) The intangible assets primarily consist of software, patented technologies, etc. In 2021, there was no impairment provided for the intangible assets (2020: Nil).
- (iii) Included in others, there was an asset amounting to RMB110 million as at 31 December 2021 (31 December 2020: RMB110 million) which related to the acquisition of Huangtai #8 Power Plant. As at 31 December 2021, the Group recognised the impairment on aforementioned asset amounting to RMB110 million (31 December 2020: RMB55 million).

Included in others, there was an asset amounting to RMB485 million as at 31 December 2021 (31 December 2020: RMB485 million) which related to the funding receivables to Huangtai #8 Power Plant. As at 31 December 2021, the Group recognised the impairment on afore-mentioned asset amounting to RMB110 million (31 December 2020: nil).

According to the property right transfer agreement signed in December 2008 between Huaneng Shandong Power Generation Co., Ltd. (“**Shandong Power**”) and Shandong Luneng Development Group (“Shandong Luneng”) and the corresponding approval from the State-owned Assets Supervision and Administration Commission of the State Council in February 2009 (“State-owned Assets Right [2009] No.70”), Shandong Power acquired 30% of property right of Huangtai #8 Power Plant from Shandong Luneng at a cash consideration of RMB110 million. Huangtai #8 Power Plant is not a legal entity under PRC Company Law, though it has separate accounting books, and therefore the Group recognised the 30% property right as other non-current assets. Huangtai Power is in charge of daily operations of Huangtai #8 Power Plant on behalf of two property owners.

6 Accounts and notes receivable

Accounts and notes receivable comprised the following:

	As at 31 December	
	2021	2020
Accounts receivable	40,274,603	30,045,678
Notes receivable	3,743,482	8,325,966
	44,018,085	38,371,644
Less: Loss allowance	140,088	155,929
Total	43,877,997	38,215,715
Analysed into:		
Accounts receivable		
– At amortised cost	39,996,822	28,789,790
– At fair value through other comprehensive income	277,781	1,255,888
Notes receivable		
– At amortised cost	3,743,482	8,325,966

In November 2020, the Group's subsidiary, Shandong Power, entered into two agreements of single assets management plans (the "Assets Management Plans") with Yingda Securities Co., Ltd. Under the Assets Management Plans, the Group is not exposed to default risks of the accounts receivable after the transfer. Subsequent to the transfer, the Group did not retain any rights on the use of the accounts receivable, including the sale, transfer or pledge of the accounts receivable to any other third parties. As at 31 December 2021, one of the Assets Management Plans expired. The original carrying value in aggregate of the accounts receivable transferred and derecognised under the arrangement that have not been settled as at 31 December 2021 was RMB220 million (2020: RMB1,220 million).

During the year ended 31 December 2021, the Group recognised RMB14.86 million of loss on the date of transfer of the accounts receivable (2020: RMB41.48 million).

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

	As at 31 December	
	2021	2020
RMB	39,818,368	35,113,954
S\$ (RMB equivalent)	1,177,499	996,686
US\$ (RMB equivalent)	85,595	21,640
PKR (RMB equivalent)	2,936,623	2,239,364
Total	<u>44,018,085</u>	<u>38,371,644</u>

The Group usually grants credit periods of about one month to domestic local power grid customers from the end of the month in which the sales are made. SinoSing Power provides credit periods that range from 5 to 60 days from the dates of billing. Certain accounts receivable of Singapore subsidiaries are backed by bankers' guarantees and/or deposits from customers. It is not practicable to determine the fair value of the collateral that corresponds to these accounts receivable. Due to the cash flow difficulties caused by COVID-19, the credit period of accounts receivable from CPPA-G by Ruyi Pakistan Energy increased from one month to five months.

As at 31 December 2021, no accounts receivable were pledged to banks as collateral for loans (2020: Nil).

The Group, except for Singapore subsidiaries, does not hold any collateral or other credit enhancements over its accounts receivable. The accounts receivable are non-interest-bearing.

For the collateral of notes receivable, please refer to Note 9 for details.

Movements of provision for loss allowance during the years are analysed as follows:

	<u>2021</u>	<u>2020</u>
Beginning of the year	(155,929)	(195,320)
Provision	(22,096)	(24,105)
Reversal	36,586	441
Write-off	925	20
Others	–	62,772
Currency translation differences	426	263
	<u>(140,088)</u>	<u>(155,929)</u>
End of the year	<u>(140,088)</u>	<u>(155,929)</u>

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

	As at 31 December	
	2021	2020
Within 1 year	43,683,311	37,966,985
Between 1 and 2 years	114,471	174,604
Between 2 and 3 years	59,241	86,388
Over 3 years	161,062	143,667
Total	<u>44,018,085</u>	<u>38,371,644</u>

As at 31 December 2021, the maturity period of the notes receivable ranged from 1 to 12 months (2020: from 1 to 12 months).

7 Dividends of ordinary shares and cumulative distribution of other equity instruments

(a) Dividends of ordinary shares

On 22 June 2021, upon the approval from the annual general meeting of the shareholders, the Company declared the 2020 final dividend of RMB0.18 (2019: RMB0.135) per ordinary share, totalling approximately RMB2,826 million (2019: RMB2,119 million).

On 22 March 2022, the Board of Directors proposed no cash dividend. This proposal is subject to the approval of the shareholders at the annual general meeting.

(b) Cumulative distribution of other equity instruments

The other equity instruments were recorded as equity in the consolidated financial statements. For the year ended 31 December 2021, the net profit attributable to holders of other equity instruments, based on the applicable rate, was RMB2,137 million, and the cumulative distribution paid in 2021 was RMB2,139 million.

8 Long-term bonds

Outstanding corporate bonds, medium-term notes and debt financing instrument of the Group as at 31 December 2021 are summarised as follows:

Type of Instruments	Face Value	Issuance Date	Initial Period	Initial Distribution Rate	Effective Rate	Balance as at 31		Issued Amount	Amortisation	Interest	Repayment	Foreign Currency			Balance as at 31
						Issue Price	December 2020					Foreign Exchange Gain	Transition Differences	Interest Payable	December 2021
	RMB'000					RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000
2016 corporate bonds (5 years)	3,000,000	June 2016	5 years	3.48%	3.48%	3,000,000	3,057,912	-	(125)	46,622	(3,104,400)	-	-	-	9
2016 corporate bonds (10 years)	1,200,000	June 2016	10 years	3.98%	3.98%	1,200,000	1,226,429	-	12	47,761	(47,760)	-	-	26,432	1,226,442
2017 medium-term notes (5 years)	5,000,000	July 2017	5 years	4.69%	4.90%	5,000,000	5,113,989	-	939	234,500	(234,500)	-	-	111,147	5,114,928
2018 corporate bonds (3 years)	1,500,000	April 2018	3 years	4.90%	4.90%	1,500,000	1,554,843	-	(70)	18,727	(1,573,500)	-	-	-	-
2018 medium-term notes (3 years)	3,000,000	May 2018	3 years	4.80%	4.91%	3,000,000	3,095,285	-	977	47,738	(3,144,000)	-	-	-	-
2018 medium-term notes (3 years)	2,000,000	July 2018	3 years	4.41%	4.56%	2,000,000	2,043,397	-	1,448	46,154	(2,088,200)	-	-	-	2,799
2018 debt financing instrument (3 years)	2,500,000	July 2018	3 years	4.68%	4.81%	2,500,000	2,549,443	-	1,524	66,033	(2,617,000)	-	-	-	-
2018 corporate bonds (10 years)	5,000,000	September 2018	10 years	5.05%	5.05%	5,000,000	5,078,194	-	30	252,500	(252,500)	-	-	78,171	5,078,224
2019 corporate bonds (10 years)	2,300,000	April 2019	10 years	4.70%	4.70%	2,300,000	2,374,934	-	14	108,100	(108,100)	-	-	74,930	2,374,948
2019 corporate bonds (3 years)	1,000,000	July 2019	3 years	3.55%	3.55%	1,000,000	1,017,142	-	17	35,501	(35,500)	-	-	17,118	1,017,160
2019 medium-term notes (3 years)	500,000	July 2019	3 years	3.55%	3.65%	500,000	507,320	-	488	17,749	(17,750)	-	-	8,073	507,807
2019 medium-term notes (5 years)	1,500,000	July 2019	5 years	3.85%	3.96%	1,500,000	1,521,142	-	1,445	57,750	(57,750)	-	-	26,264	1,522,587
2020 corporate bonds (5 years)	1,980,810	February 2020	5 years	2.25%	2.32%	2,108,865	1,963,164	40,197	2,092	42,354	(42,728)	8,520	(92,804)	16,011	1,920,795
2020 corporate bonds (10 years)	1,980,810	February 2020	10 years	2.63%	2.72%	2,108,865	1,957,722	40,196	1,643	49,415	(49,849)	8,520	(92,450)	18,679	1,915,197
2021 medium-term notes (3 years)	1,000,000	February 2021	3 years	3.45%	3.66%	1,000,000	-	1,000,000	(202)	30,814	-	-	-	30,814	1,030,612
2021 medium-term notes (3 years)	2,500,000	April 2021	3 years	3.35%	3.40%	2,500,000	-	2,500,000	(340)	59,658	-	-	-	59,658	2,559,318
2021 corporate bonds (3 years)	500,000	May 2021	3 years	3.35%	3.35%	500,000	-	500,000	2	10,187	-	-	-	10,188	510,189
2021 corporate bonds (10 years)	1,500,000	May 2021	10 years	3.97%	3.97%	1,500,000	-	1,500,000	(8)	36,220	-	-	-	36,219	1,536,212
2021 corporate bonds (3 years)	500,000	June 2021	3 years	3.33%	3.33%	500,000	-	500,000	1	9,488	-	-	-	9,488	509,489
2021 corporate bonds (10 years)	3,500,000	June 2021	10 years	3.97%	3.97%	3,500,000	-	3,500,000	(19)	79,182	-	-	-	79,182	3,579,163
2021 corporate bonds (10 years)	1,800,000	June 2021	10 years	3.99%	3.99%	1,800,000	-	1,800,000	(10)	38,172	-	-	-	38,173	1,838,162
2021 corporate bonds (3 years)	2,000,000	August 2021	3 years	2.99%	3.01%	2,000,000	-	2,000,000	(211)	22,281	-	-	-	22,282	2,022,070
2021 corporate bonds (3 years)	2,000,000	November 2021	3 years	3.07%	3.07%	2,000,000	-	2,000,000	1	6,224	-	-	-	6,224	2,006,225
2021 medium-term bonds (3 years)	300,000	December 2021	3 years	2.95%	2.95%	300,000	-	300,000	-	123	-	-	-	123	300,123
Total						48,317,730	33,060,916	15,680,393	9,648	1,363,253	(13,373,537)	17,040	(185,254)	669,176	36,572,459

9 Accounts payable and other liabilities

Accounts payable and other liabilities comprised:

	As at 31 December	
	2021	2020
Accounts and notes payables	25,774,238	15,777,784
Payables to contractors for construction	19,922,953	18,734,201
Retention payables to contractors	1,795,819	1,530,764
Consideration payables for business acquisition	22,842	22,842
Others	7,093,701	6,689,770
Total	<u>54,609,553</u>	<u>42,755,361</u>

As at 31 December 2021, there were notes payable amounting to RMB7 million (31 December 2020: RMB245 million) secured by notes receivable.

As at 31 December 2021 and 31 December 2020, the accounts and notes payables and other liabilities are non-interest-bearing.

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

	As at 31 December	
	2021	2020
RMB	50,956,022	40,610,454
S\$ (RMB equivalent)	1,537,356	948,817
US\$ (RMB equivalent)	576,113	799,989
JPY (RMB equivalent)	13,988	12,293
EUR (RMB equivalent)	–	224
PKR (RMB equivalent)	1,526,074	383,584
Total	54,609,553	42,755,361

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

	As at 31 December	
	2021	2020
Within 1 year	25,271,613	15,514,112
Between 1 to 2 years	373,752	166,088
Over 2 years	128,873	97,584
Total	25,774,238	15,777,784

10 OTHER EQUITY INSTRUMENTS

(a) Other equity instruments as at 31 December 2021

Type of Instruments	Issuance Date	Category	Initial	Issue Price	Number	Par Value	Initial	Conversion	Conversion
			Distribution Rate						
				RMB'000		RMB'000	Period	Condition	Result
Bond B	September 2017	Equity Instrument	5.17%	0.1	25,000,000	2,500,000	5 years	None	None
Yingda Insurance Financing Plan (1st)	September 2018	Equity Instrument	5.79%	–	–	3,283,000	8 years	None	None
Yingda Insurance Financing Plan (2nd)	September 2018	Equity Instrument	5.79%	–	–	827,000	8 years	None	None
Yingda Insurance Financing Plan (3rd)	September 2018	Equity Instrument	5.79%	–	–	890,000	8 years	None	None
China Life Financing Plan (1st)	September 2019	Equity Instrument	5.05%	–	–	2,070,000	8 years	None	None
PICC Financing Plan (1st)	September 2019	Equity Instrument	5.10%	–	–	930,000	10 years	None	None
2019 medium-term notes (2nd)	October 2019	Equity Instrument	4.08%	0.1	20,000,000	2,000,000	3 years	None	None
2019 medium-term notes (3rd)	October 2019	Equity Instrument	4.05%	0.1	20,000,000	2,000,000	3 years	None	None
China Life Financing Plan (2nd)	October 2019	Equity Instrument	5.05%	–	–	2,260,000	8 years	None	None
PICC Financing Plan (2nd)	October 2019	Equity Instrument	5.10%	–	–	1,740,000	10 years	None	None
2019 medium-term notes (4th)	November 2019	Equity Instrument	4.15%	0.1	25,000,000	2,500,000	3 years	None	None
2019 medium-term notes (4th)	November 2019	Equity Instrument	4.53%	0.1	15,000,000	1,500,000	5 years	None	None
Bond C	March 2020	Equity Instrument	3.58%	0.1	20,000,000	2,000,000	3 years	None	None
Bond D	March 2020	Equity Instrument	3.85%	0.1	10,000,000	1,000,000	5 years	None	None
2020 medium-term notes (1st)	April 2020	Equity Instrument	3.18%	0.1	30,000,000	3,000,000	3 years	None	None
China Life Financing Plan (3rd)	April 2020	Equity Instrument	4.75%	–	–	3,570,000	8 years	None	None
PICC Financing Plan (3rd)	April 2020	Equity Instrument	4.75%	–	–	930,000	10 years	None	None
Bond E	April 2020	Equity Instrument	3.09%	0.1	25,000,000	2,500,000	3 years	None	None
2020 medium-term notes (2nd)	June 2020	Equity Instrument	3.60%	0.1	35,000,000	3,500,000	3 years	None	None
2020 medium-term notes (3rd)	August 2020	Equity Instrument	3.99%	0.1	20,000,000	2,000,000	3 years	None	None
PICC Financing Plan (4th)	August 2020	Equity Instrument	4.60%	–	–	3,000,000	10 years	None	None
Bond F	September 2020	Equity Instrument	4.38%	0.1	30,000,000	3,000,000	3 years	None	None
2020 medium-term notes (4th)	September 2020	Equity Instrument	4.40%	0.1	10,000,000	1,000,000	3 years	None	None
Total						<u>48,000,000</u>			

(b) Major provisions

In 2017, the Company issued two tranches of perpetual corporate bonds with net proceeds of approximately RMB2,500 million and RMB2,500 million, respectively. The perpetual corporate bonds are issued at par value with initial distribution rates of 5.05% and 5.17%. The interest of the perpetual corporate bonds is recorded as distributions, which are paid annually in arrears in September in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (e.g. distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The perpetual corporate bonds have no fixed maturity date and are callable at the Company's discretion in whole in August 2020 and 2022 respectively, and the payment of the principal may be deferred for each renewal period to 3 and 5 years respectively. The applicable distribution rate will be reset on the first call date and in each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum. On the first call date of bond A in September 2020, the Company decided to exercise the callable option. The bond was redeemed in whole on 25 September 2020.

In 2018, the Company issued three tranches of Yingda Insurance Financing Plan (the “Yingda plan”) with aggregate proceeds of RMB5,000 million. The Yingda plan has no fixed period with an initial distribution rate of 5.79%. The interest of the financing plan is recorded as distributions, which are paid annually in arrears in June and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (e.g. distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The Yingda plan has no fixed maturity date and is callable at the Company’s discretion in whole at each distribution date after the 8th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 9th to the 11th years after the issuance, the period from the 11th to the 13th years after the issuance and the 13th year onwards after the issuance, to the higher of the initial distribution rate plus 300 basis points and the 10-year treasury bond yield in the 9th year after the issuance plus 600 basis points, the higher of the initial distribution rate plus 600 basis points and the 10-year treasury bond yield in the 11th year after the issuance plus 900 basis points and the higher of the initial distribution rate plus 900 basis points and the 10-year treasury bond yield in the 13th year after the issuance plus 1,200 basis points, respectively. As at 24 November 2021, the Company signed a supplement agreement with regard to amending the clause of the applicable distribution rate. The applicable distribution rate will be reset during the period from the 9th year after the issuance, to the basis rate plus 300 basis points, and will remain 8.79% afterwards.

In 2019, the Company issued two tranches of China Life Financing Plan (the “China Life plan”) with aggregate proceeds of RMB4,330 million. The China Life plan has no fixed period with an initial distribution rate of 5.05%. The interest of the China Life plan are recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The China Life plan has no fixed maturity date and is callable at the Company’s discretion in whole at each distribution date after the 8th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 9th year after the issuance, to the basis rate plus 300 basis points, and will remain 8.05% afterwards.

In 2019, the Company issued two tranches of PICC Financing Plan (“the PICC plan”) with aggregate proceeds of RMB2,670 million. The PICC plan has no fixed period with an initial distribution rate of 5.10%. The interest of the PICC plan is recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The PICC plan has no fixed maturity date and IS callable at the Company’s discretion in whole at each distribution date after the 10th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 11th year after the issuance, to the basis rate plus 300 basis points, and will remain 8.10% afterwards.

In October 2019, the Company issued two tranches of medium-term notes with net proceeds of approximately RMB2,000 million and RMB2,000 million, respectively. The medium-term notes are issued at par value with initial distribution rates of 4.08% and 4.05%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years, respectively. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

In November 2019, the Company issued two tranches of medium-term notes with net proceeds of approximately RMB2,500 million and RMB1,500 million. The medium-term notes are issued at par value with initial distribution rates of 4.15% and 4.53%, respectively. The interest of the medium-term notes IS recorded as distributions, which are paid annually in arrears in November in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interests and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 and 5 years respectively. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

In March 2020, the Company issued two tranches of perpetual corporate bonds with net proceeds of approximately RMB2,000 million and RMB1,000 million, respectively. The perpetual corporate bonds are issued at par value with initial distribution rates of 3.58% and 3.85%. The interest of the perpetual corporate bonds is recorded as distributions, which are paid annually in arrears in March in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (e.g. distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The perpetual corporate bonds have no fixed maturity date and are callable at the Company's discretion in whole in February 2023 and 2025 respectively, and the payment of the principal may be deferred for each renewal period to 3 and 5 years respectively. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

In April 2020, the Company issued medium-term notes with net proceeds of approximately RMB3,000 million. The medium-term notes are issued at par value with an initial distribution rate of 3.18%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in April in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

In April 2020, the Company issued China Life Financing Plan (“the China Life plan”) with proceeds of RMB3,570 million. The China Life plan has no fixed period with an initial distribution rate of 4.75%. The interest of the China Life plan is recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The China Life plan has no fixed maturity date and is callable at the Company’s discretion in whole at each distribution date after the 8th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 9th year after the issuance, to the basis rate plus 300 basis points, and will remain 7.75% afterwards.

In April 2020, the Company issued the third tranche of the PICC plan with proceeds of RMB930 million. The PICC plan has no fixed period with an initial distribution rate of 4.75%. The interest of the PICC plan is recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The PICC plan has no fixed maturity date and is callable at the Company’s discretion in whole at each distribution date after the 10th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 11th year after the issuance, to the basis rate plus 300 basis points, and will remain 7.75% afterwards.

In April 2020, the Company issued a perpetual corporate bond with net proceeds of approximately RMB2,500 million. The perpetual corporate bond is issued at par value with an initial distribution rate of 3.09%. The interest of the perpetual corporate bond is recorded as distributions, which are paid annually in arrears in April in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (e.g. distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The perpetual corporate bond has no fixed maturity date and is callable at the Company's discretion in whole in March 2023, or the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

In June 2020, the Company issued medium-term notes with net proceeds of approximately RMB3,500 million. The medium-term notes are issued at par value with an initial distribution rate of 3.60%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in June in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

In August 2020 and September 2020, the Company issued two tranches of medium-term notes with net proceeds of approximately RMB2,000 million and RMB1,000 million, respectively. The medium-term notes are issued at par value with initial distribution rates of 3.99% and 4.40%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in August and September in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years, respectively. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

In August 2020, the Company issued the fourth tranche of the PICC plan with proceeds of RMB3,000 million. The PICC plan has no fixed period with an initial distribution rate of 4.60%. The interest of the PICC plan is recorded as distributions, which are paid annually in arrears in March, June, September and December in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The PICC plan has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 10th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 11th year after the issuance, to the basis rate plus 300 basis points, and will remain 7.60% afterwards.

In September 2020, the Company issued a perpetual corporate bond with net proceeds of approximately RMB3,000 million. The perpetual corporate bond is issued at par value with an initial distribution rate of 4.38%. The interest of the perpetual corporate bond is recorded as distributions, which are paid annually in arrears in September in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (e.g. distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The perpetual corporate bond has no fixed maturity date and is callable at the Company's discretion in whole in August 2023, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum.

The perpetual corporate bonds, financing plans and medium-term notes were recorded as equity in the consolidated financial statements. During the year ended 31 December 2021, the profit attributable to holders of other equity instruments, based on the applicable distribution rate, was RMB2,137 million (2020: RMB1,770 million).

(c) Changes of other equity instruments during 2021

Type of instruments	As at 1 January 2021		Issuance		Cumulative distributions				As at 31 December 2021	
	Number	Amount	Number	Amount	Accrued distribution	Distribution payment	Redemption value	Redemption difference	Number	Amount
		RMB'000		RMB'000	RMB'000	RMB'000	RMB'000	RMB'000		RMB'000
Bond B	25,000,000	2,534,678	–	–	129,250	129,256	–	–	25,000,000	2,534,672
Yingda Insurance Financing Plan (1st)	–	3,288,808	–	–	192,726	192,726	–	–	–	3,288,808
Yingda Insurance Financing Plan (2nd)	–	828,463	–	–	48,548	48,548	–	–	–	828,463
Yingda Insurance Financing Plan (3rd)	–	891,575	–	–	52,247	52,247	–	–	–	891,575
China Life Financing Plan (1st)	–	2,073,484	–	–	105,987	105,987	–	–	–	2,073,484
PICC Financing Plan (1st)	–	930,922	–	–	48,088	48,352	–	–	–	930,658
2019 medium-term notes (2nd)	20,000,000	2,011,579	–	–	81,600	81,601	–	–	20,000,000	2,011,578
2019 medium-term notes (3rd)	20,000,000	2,011,312	–	–	81,000	81,001	–	–	20,000,000	2,011,311
China Life Financing Plan (2nd)	–	2,263,804	–	–	115,715	115,715	–	–	–	2,263,804
PICC Financing Plan (2nd)	–	1,741,726	–	–	89,973	90,466	–	–	–	1,741,233
2019 medium-term notes (4th)	25,000,000	2,511,485	–	–	103,750	103,751	–	–	25,000,000	2,511,484
2019 medium-term notes (4th)	15,000,000	1,506,460	–	–	67,950	67,952	–	–	15,000,000	1,506,458
Bond C	20,000,000	2,055,691	–	–	71,600	71,604	–	–	20,000,000	2,055,687
Bond D	10,000,000	1,029,946	–	–	38,500	38,502	–	–	10,000,000	1,029,944
2020 medium-term notes (1st)	30,000,000	3,049,876	–	–	95,400	95,402	–	–	30,000,000	3,049,874
China Life Financing Plan (3rd)	–	3,575,653	–	–	171,930	171,930	–	–	–	3,575,653
PICC Financing Plan (3rd)	–	930,859	–	–	44,789	45,034	–	–	–	930,614
Bond E	25,000,000	2,553,521	–	–	77,250	77,254	–	–	25,000,000	2,553,517
2020 medium-term notes (2nd)	35,000,000	3,551,784	–	–	126,000	126,002	–	–	35,000,000	3,551,782
2020 medium-term notes (3rd)	20,000,000	2,024,828	–	–	79,800	79,801	–	–	20,000,000	2,024,827
PICC Financing Plan (4th)	–	3,002,683	–	–	139,917	140,683	–	–	–	3,001,917
Bond F	30,000,000	3,040,650	–	–	131,400	131,407	–	–	30,000,000	3,040,643
2020 medium-term notes (4th)	10,000,000	1,009,992	–	–	44,000	44,001	–	–	10,000,000	1,009,991
Total		<u>48,419,779</u>		<u>–</u>	<u>2,137,420</u>	<u>2,139,222</u>	<u>–</u>	<u>–</u>		<u>48,417,977</u>

11 Additional financial information to the consolidated statement of financial position

As at 31 December 2021, the net current liabilities of the Group amounted to approximately RMB93,927 million (2020: RMB87,910 million). On the same date, total assets less current liabilities were approximately RMB314,373 million (2020: RMB295,857 million).

12 (Loss)/profit before income tax expense

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

	For the year ended 31 December	
	2021	2020
Total interest expense on borrowings	10,096,884	10,128,467
Less: amounts capitalised in property, plant and equipment	1,298,684	927,855
Interest expense charged to the consolidated statement of comprehensive income	8,798,200	9,200,612
Including: Interest expense on lease liabilities	169,696	202,264
Depreciation of property, plant and equipment	21,490,876	21,337,932
Depreciation of investment properties	30,162	22,866
Depreciation of right-of-use assets	749,383	785,518
Included in other investment (income)/loss		
– Dividends on other equity instrument investments	(1,743)	(775)
– Investment loss of derivative financial instruments	–	74,870
– Other	(5,772)	(5,587)
Included in loss on fair value changes of financial assets/liabilities		
– Loss on fair value changes of trading derivatives	–	1,566

**For the year ended
31 December**

	2021	2020
Included in other operating expenses:		
– Operating expense of Ruyi Pakistan Energy	3,943,171	2,581,665
– Service concession construction cost	148,578	103,177
– Other materials expense	1,611,493	1,626,385
– Electricity charges	1,109,709	973,372
– Cost of sales of raw materials	1,125,710	295,330
– Water charges	617,595	549,260
– Insurance expense	413,985	386,435
– Cleaning, greening and fire protection expense	440,704	430,476
– Purchase of power generation quota	231,233	392,902
– Transportation allowance	190,532	179,955
– Pollutant charge	98,037	137,579
– Water conservancy fund and disabled security fund	92,199	471,129
– Test and inspection expense	341,511	359,997
– Service charge	335,874	333,916
– Heating pipeline related cost	159,990	134,915
– Auditors’ remuneration audit services	32,996	39,117
– Other consulting expense	114,361	97,559
– Office expense	276,561	223,913
– Minimum lease payments under operating leases, lease payments not included in the measurement of lease liabilities	114,909	106,031
– Amortisation of other non-current assets	69,717	128,177
– Property management expense	99,561	95,037
– Information technology maintenance expense	245,027	229,214
– Travel expense	128,458	99,106
– Business entertainment expense	39,678	28,553
– Research and development expenditure	1,324,735	667,592
– Net loss on disposal of materials and supplies	13,575	167,449
– Net (gain)/loss on disposal of non-current assets	(520,878)	626,657

	For the year ended 31 December	
	2021	2020
– Recognition of loss allowance for receivables*	103,625	172,711
– (Reversal)/recognition of provision for inventory obsolescence	(242)	43,076
– Impairment loss on property, plant and equipment	28,879	7,847,378
– Impairment loss on goodwill	–	685,036
– Impairment loss on other non-current assets*	63,000	349,559
– Gain on Three Supplies and Property Management	(36,835)	(126,425)
– Government grants**	(2,013,149)	(739,740)
– Penalties	45,349	22,279
– Donations	37,707	55,663
– Others	675,423	525,637
Total	<u>11,702,778</u>	<u>20,300,072</u>

* The loss allowance for receivables included in other non-current assets was recorded in the item of “Recognition of loss allowance for receivables”.

** For the year ended 31 December 2021, among the government grants, there were standby compensation of Huaneng Power International, Inc. Jining Power Plant, heating subsidies, VAT refund, coal guarantee fund and stabilizing subsidies amounting to RMB707 million, RMB208 million, RMB212 million RMB197 million and RMB405 million. There are no unfulfilled conditions or contingencies relating to these grants.

13 (Losses)/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	
	2021	2020
Consolidated net (loss)/profit attributable to equity holders of the Company	(10,636,194)	2,377,851
Less: cumulative distribution of other equity instruments	2,137,420	1,770,469
Consolidated net (loss)/profit attributable to ordinary shareholders of the Company	<u>(12,773,614)</u>	<u>607,382</u>
Weighted average number of the Company's outstanding ordinary shares ('000)*	<u>15,698,093</u>	<u>15,698,093</u>
Basic and diluted (loss)/earnings per share (RMB)	<u>(0.81)</u>	<u>0.04</u>

* Weighted average number of ordinary shares:

	2021	2020
	'000	'000
Issued ordinary shares at 1 January	<u>15,698,093</u>	<u>15,698,093</u>
Weighted average number of ordinary shares at 31 December	<u>15,698,093</u>	<u>15,698,093</u>

There was no dilutive effect on earnings per share since the Company had no dilutive potential ordinary shares for the years ended 31 December 2021 and 2020.

B. FINANCIAL INFORMATION EXTRACTED FROM CONSOLIDATED FINANCIAL STATEMENTS PREPARED UNDER PRC GAAP

(Amount expressed in units of RMB unless otherwise stated)

1 Financial Highlights and Financial Ratios

	Unit	2021	2020	Fluctuation
Operating revenue	RMB	204,605,083,056	169,439,187,471	20.75
(Loss)/profit before income tax expense	RMB	(14,277,139,207)	8,814,128,631	-261.98
Net (loss)/profit attributable to equity holders of the Company	RMB	(10,264,365,567)	4,564,989,863	-324.85
Net (loss)/profit attributable to Equity holders of the Company less non-recurring items	RMB	(14,695,830,584)	2,627,217,637	-659.37
Basic and diluted (losses)/earnings per share	RMB/share	(0.79)	0.18	-538.89
Basic (losses)/earnings per share less non-recurring items	RMB/share	(0.94)	0.17	-652.94
Weighted average of return on equity	%	-19.15	3.81	-602.62
Weighted average of return on equity less non-recurring items	%	-22.70	3.58	-734.08
Net cash provided by operating activities	RMB	6,032,840,715	42,049,806,396	-85.65
Total assets	RMB	490,068,485,832	438,205,752,374	11.84
Equity to equity holders of the Company	RMB	105,255,590,372	121,698,538,280	-13.51

Note: The financial ratio:

Earnings per share	=	Consolidated net profit attributable to ordinary shareholders of the Company/Weighted average number of the Company's outstanding ordinary shares
Weighted average of return on equity	=	Consolidated net profit attributable to equity holders of the Company/Weighted average number of equity attributable to equity holders of the Company (less non-controlling interests) *100%

2 ITEMS AND AMOUNTS OF NON-RECURRING ITEMS

	For the year ended 31 December 2021
Net gain on disposal of non-current assets	540,674,179
Government grants recognised though profit or loss, excluding those having close relationships with the company and its subsidiaries' operation and enjoyed in fixed amount or quantity according to uniform national standard (<i>Note 1</i>)	1,944,038,043
The investment income of derivative financial instruments and other equity instrument investments (excluding effective hedging instruments related to operating activities of the company)	—
Reversal of loss allowances for receivables and contract assets individually tested for impairments	83,824,161
The current net profit and loss of a subsidiary arising from a business combination under common control from the beginning of the period to the date of merger	—
Loan guarantee indemnity received	—
Profits and losses from entrusted loans	5,090,566
Non-operating income and expenses besides items above (<i>Note 2</i>)	231,396,574
Other items recorded in the profit and loss in accordance with the definition of non-recurring items (<i>Note 3</i>)	(7,611,642)
	2,797,411,881
Impact of Income tax	(117,774,733)
Impact of non-controlling interests (net of tax)	(385,591,645)
	2,294,045,503

Note 1: the Company and its subsidiaries recognised extraordinary profit and loss items in accordance with the requirement of explanatory Announcement No.1 on Information Disclosure for Companies Offering Their Securities to the Public_ Extraordinary Profit and Loss (CSRC announcement [2008] No. 43).

	The Amount of 2021	Reason
Value-added tax levied immediately returned	211,799,020	Closely related to the normal business of the Company
Carbon emissions trading costs	(78,974,513)	Closely related to the normal business of the Company
Carbon emissions trading incomes	268,860,432	Closely related to the normal business of the Company

Note 2: In 2021, other non-operating income other than the items mentioned above was mainly income from the gratuitous transfer of assets, the non-operating expenses were mainly loss of material scrap of the Company and its subsidiaries and donations contributed by the Company and its subsidiaries.

Note 3: In 2021, other items satisfy the definition of extraordinary profit and loss are expenses of entrusted management service purchased and income of entrusted operation services provided.

3 INCOME STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2021

(Amounts expressed in RMB, except for share data)

	2021	2020	2021	2020
	Consolidated	Consolidated	Company	Company
Operating revenue	204,605,083,056	169,439,187,471	26,714,522,696	46,395,787,169
Less: Operating cost	205,281,127,738	139,881,388,454	30,155,530,438	38,413,337,339
Taxes and surcharges	1,686,340,972	1,795,392,652	287,592,993	544,457,365
Selling expenses	192,832,968	147,613,052	11,567,458	41,237,821
General and administrative expenses	5,594,097,660	4,945,866,256	1,542,038,501	1,998,318,556
Research and development expenses	1,324,734,581	667,592,105	279,166,476	247,659,854
Financial expenses	8,550,198,271	8,836,219,036	2,114,219,265	2,522,243,542
Including: Interest expenses	8,798,199,633	9,229,618,488	2,246,684,798	2,663,196,044
Interest income	288,290,945	292,759,365	155,225,082	104,727,718
Add: Other income	2,123,878,725	964,814,710	821,251,622	189,141,979
Investment income	822,034,750	1,693,845,368	5,397,721,857	5,621,455,769
Including: investment income from associates and joint ventures	829,380,069	1,803,834,935	1,036,917,466	1,661,508,084
Loss from changes in fair value	-	(1,566,103)	-	-
Credit losses	(103,625,085)	(120,015,483)	(1,495,089,744)	(7,000,000)
Impairment losses	(89,093,473)	(6,113,663,647)	(5,716,330)	(6,227,150,267)
Gain on disposal of non-current assets	469,290,425	39,156,991	2,615,783	2,021,939
Operating (loss)/profit	(14,801,763,792)	9,627,687,752	(2,954,809,247)	2,207,002,112

	2021 Consolidated	2020 Consolidated	2021 Company	2020 Company
Add: Non-operating income	819,922,803	284,982,971	226,924,848	73,933,641
Less: Non-operating expenses	295,298,218	1,098,542,092	119,134,874	436,764,565
(Loss)/profit before income tax expense	(14,277,139,207)	8,814,128,631	(2,847,019,273)	1,844,171,188
Less: Income tax expense	(1,603,713,732)	3,110,408,146	(93,419,811)	1,022,711,113
Net (loss)/profit	(12,673,425,475)	5,703,720,485	(2,753,599,462)	821,460,075
The net loss of the merged party before the merger under the same control	-	13,994,376	-	-
(1) Classification according to the continuity of operation				
– Continuous operating net (loss)/profit	(12,673,425,475)	5,703,720,485	(2,753,599,462)	821,460,075
(2) Classification according to ownership Attributable to:				
– Equity holders of the Company	(10,264,365,567)	4,564,989,863	(2,753,599,462)	821,460,075
– Non-controlling interests	(2,409,059,908)	1,138,730,622	-	-
Other comprehensive loss, net of tax	(561,682,682)	(971,038,162)	(79,565,793)	(313,540,875)
Other comprehensive loss, net of tax, attributable to equity holders of the Company	(297,675,077)	(778,380,498)	(79,565,793)	(313,540,875)
(1) Items that will not be reclassified to profit or loss:				
Including:				
Share of other comprehensive loss of investees accounted for under the equity method (non-recycling)	(42,862,569)	(178,501,491)	(42,862,569)	(178,501,491)
Fair value changes of other equity instrument investments	(34,582,671)	(131,958,391)	(35,262,585)	(130,691,944)
(2) Items that may be reclassified subsequently to profit or loss:				
Including:				
Share of other comprehensive loss of investees accounted for under the equity method (recycling)	(1,440,639)	(4,347,440)	(1,440,639)	(4,347,440)
Effective portion of cash flow hedges	485,682,341	220,541,978	-	-

	2021 <u>Consolidated</u>	2020 <u>Consolidated</u>	2021 <u>Company</u>	2020 <u>Company</u>
Translation differences of the financial statements of foreign operations	(704,471,539)	(684,115,154)	-	-
Other comprehensive loss attributable to non-controlling interests, net of tax	(264,007,605)	(192,657,664)	-	-
Total comprehensive (loss)/income	<u>(13,235,108,157)</u>	<u>4,732,682,323</u>	<u>(2,833,165,255)</u>	<u>507,919,200</u>
Attributable to:				
– Equity holders of the Company	(10,562,040,644)	3,786,609,365	(2,833,165,255)	507,919,200
– Non-controlling interests	<u>(2,673,067,513)</u>	<u>946,072,958</u>		
(Losses)/earnings per share (based on the net profit attributable to equity holders of the Company)				
Basic earnings per share	<u>(0.79)</u>	<u>0.18</u>		
Diluted earnings per share	<u>(0.79)</u>	<u>0.18</u>		

4 CONSOLIDATED NET PROFIT RECONCILIATION BETWEEN PRC GAAP AND IFRS

The financial statements, which have been prepared by the Group in conformity with Accounting Standards for Business Enterprises (“PRC GAAP”), differ in certain respects from those of IFRSs. Major impact of adjustments for IFRSs, on the net consolidated profit and equity attributable to equity holders of the Company, is summarised as follows:

	Consolidated (loss)/profit attributable to equity holders of the Company	
	2021	2020
Consolidated net (loss)/profit attributable to equity holders of the Company under PRC GAAP	(10,264,365,567)	4,564,989,863
Impact of IFRS adjustments:		
Differences in accounting treatment on business combinations under common control, depreciation, amortisation, disposal and impairment of assets acquired in business combinations under common control (a)	(777,213,013)	(3,949,423,976)
Difference on depreciation related to borrowing costs capitalised in previous years (b)	(25,596,583)	(27,015,843)
Others	(40,693,789)	(63,775,533)
Applicable deferred income tax impact on the GAAP differences above (c)	326,041,527	947,058,871
Profit/equity attributable to non-controlling interests on the adjustments above	145,634,985	906,018,228
Consolidated net (loss)/profit attributable to equity holders of the Company under IFRSs	<u>(10,636,192,440)</u>	<u>2,377,851,610</u>

(a) Differences in the accounting treatment on business combinations under common control and depreciation, amortisation, disposal and impairment under common control

Huaneng Group is the parent company of HIPDC, which in turn is also the ultimate parent of the Company. The Company has carried out a series of acquisitions from Huaneng Group and HIPDC in recent years. As the acquired power companies and plants and the Company were under common control of Huaneng Group before and after the acquisitions, such acquisitions were regarded as business combinations under common control.

In accordance with PRC GAAP, for business combinations under common control, the assets and liabilities acquired in business combinations are measured at the carrying amounts of the acquirees in the consolidated financial statements of the ultimate controlling party on the acquisition date. The difference between the carrying amounts of the net assets acquired and the consideration paid is adjusted to the equity account of the acquirer. The operating results for all periods presented are retrospectively restated as if the current structure and operations resulting from the acquisition had been in existence since the beginning of the earliest year presented, with financial data of previously separate entities consolidated. The cash consideration paid by the Company is treated as an equity transaction in the year of acquisition. The subsequent adjustment of contingent consideration after the acquisition date is also accounted for as an equity transaction.

For business combinations occurred prior to 1 January 2007, in accordance with Previous PRC GAAP, when equity interests acquired were less than 100%, the assets and liabilities of the acquirees were measured at their carrying amounts. The excess of the consideration over the proportionate share of the carrying amounts of the net assets acquired was recorded as an equity investment difference and amortised on a straight-line basis for not more than 10 years. When acquiring the entire equity, the entire assets and liabilities are accounted for in a manner similar to purchase accounting. Goodwill arising from such transactions was amortised over the estimated useful lives on a straight-line basis. On 1 January 2007, in accordance with PRC GAAP, the unamortised equity investment differences and goodwill arising from business combinations under common control were written off against undistributed profits.

Under IFRSs, the Company and its subsidiaries have adopted the purchase method to account for the acquisitions above. The assets and liabilities acquired in acquisitions were recorded at fair value by the acquirer. The excess of the acquisition cost over the proportionate share of fair value of net identifiable assets acquired was recorded as goodwill. Goodwill is not amortised but is tested annually for impairment and carried at cost less accumulated impairment losses. The operating results of the acquirees are consolidated in the operating results of the Company and its subsidiaries from the acquisition dates onwards. The contingent consideration not classified as equity is measured at fair value at each reporting date with the changes in fair value recognised in profit or loss, if such changes are not measurement period adjustments.

As mentioned above, the differences in the accounting treatment under PRC GAAP and IFRSs on business combinations under common control affect both equity and profit. Meanwhile, due to different measurement bases of the assets acquired, depreciation and amortisation in the period subsequent to the acquisition will be affected which will also affect the equity and profit or loss upon subsequent disposals of such investments. Such differences will be gradually eliminated following subsequent depreciation, amortisation and disposal of the related assets.

(b) Effect of depreciation on the capitalisation of borrowing costs in previous years

In previous years, under Previous PRC GAAP, the scope of capitalisation of borrowing costs was limited to specific borrowings, and thus, borrowing costs arising from general borrowings were not capitalised. In accordance with IFRSs, the Company and its subsidiaries capitalised borrowing costs on general borrowings used for the purpose of obtaining qualifying assets in addition to the capitalisation of borrowing costs on specific borrowings. From 1 January 2007 onwards, the Company and its subsidiaries adopted PRC GAAP No. 17 prospectively. The current adjustments represent the related depreciation on capitalised borrowing costs included in the cost of the related assets under IFRSs in previous years.

(c) GAAP differences impact on deferred income tax

This represents related deferred income tax impact on the GAAP differences above where applicable.