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SINOSING SERVICES PTE. LTD.

(a company incorporated under the laws of Singapore)

Unconditionally and Irrevocably Guaranteed by

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)

U.S.$300,000,000 2.250 per cent. Guaranteed Bonds due 2025
Stock Code: 40155
U.S.$300,000,000 2.625 per cent. Guaranteed Bonds due 2030
Stock Code: 40156
Issue Price for the 2025 Bonds: 99.653 per cent.
Issue Price for the 2030 Bonds: 99.277 per cent.

This announcement is published by Sinosing Services Pte. Ltd. in compliance with the continuing obligations under Chapter 37 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited.

The information contained in appendix to this announcement has been published by Huaneng Power International, Inc. using equity stock code (stock code: 902) on 21 March 2023 and is now republished using debt stock codes, i.e. stock code: 40155 and stock code: 40156, respectively, for the debt holders' information.

By Order of the Board
Sinosing Services Pte. Ltd.
Jiang Hanbin
Director

21 March 2023

As at the date of this announcement, the directors of Sinosing Services Pte. Ltd. are Jiang Hanbin and Chia Wee Chiang Joseph.

As at the date of this announcement, the directors of Huaneng Power International, Inc. are

Zhao Keyu *(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)*

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 2022

Power generation by domestic power plants:	**425.186 billion kWh**
Consolidated operating revenue:	**RMB246,725 million**
Net loss attributable to equity holders of the Company:	**RMB8,026 million**
Losses per share:	**RMB0.65**
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 2022.

For the twelve months ended 31 December 2022, the Company and its subsidiaries realized consolidated operating revenue of RMB246,725 million, representing an increase of 20.31% compared to the same period last year, and net loss attributable to equity holders of the Company amounted to RMB8,026 million, representing a decrease of loss of 22.66% as compared with the same period last year. Losses per share amounted to RMB0.65. The Board is satisfied with the results of the Company in the past year.

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 2022

In 2022, facing the severe challenges of tight supply of energy and high price of thermal coal, the Company actively responded to market changes, vigorously promoted business reform and development, and achieved good results in power production, quality and efficiency improvement, green development and overseas business, marking a new stage in high-quality development of the Company.

1. Operating Results

For the twelve months ended 31 December 2022, the Company and its subsidiaries realized operating revenue of RMB246.725 billion, representing an increase of 20.31% as compared with the same period last year. Net loss attributable to equity holders of the Company amounted to RMB8,026 million, representing a decrease of loss of 22.66% as compared with the same period last year. Losses per share amounted to RMB0.65.

As at the end of 2022, net assets per share of the Company amounted to RMB3.41, representing a decrease of 17.43% as compared with the same period last year.

The Audit Committee of the Company convened a meeting on 20 March 2023 and reviewed the 2022 annual results of the Company.

2. Power Generation

In 2022, holding the principle of maximizing overall interests, the Company strengthened the market analysis, adhered to the coordination of the volume and price, made best efforts on the market trading, 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 strove to increase profitable electricity generation, The Company's total on-grid power generation of the power plants within China on consolidated basis amounted to 425.186 billion kWh, representing a year-on-year decrease of 1.44%. The average utilization hours of the Company's power plants within China were 3,785 hours, representing a year-on-year decrease of 273 hours. In particular, the utilization hours of coal-fired power generating units was 4,228 hours, representing a year-on-year decrease of 260 hours. Total heat supplied by the Company amounted to 322 million GJ, representing a year-on-year increase of 8.3%.

3. Cost Control

In 2022, the Company procured an aggregate of 194 million tons of coal. Affected by the tight supply of energy markets at home and abroad, the coal price was at a high level. The Company vigorously promoted the signing and performance of medium and long-term thermal coal contracts and emergency guarantee contracts for imported coal, continuously optimized the supply structure of domestic and foreign, responded to unfavorable situations such as price inversion of imported coal, shortage of coal resources and high price of coal, and effectively guaranteed the supply of electric power and heat power for summer peak consumption season, heating in the winter and demands of important period. However, due to the sharp increase in the coal price, the Company's fuel cost per unit of power sold by domestic coal-fired power plants increased to RMB372.56/MWh, representing a year-on-year increase of 17.73%.

4. Energy Saving and Environmental Protection

In 2022, the average equivalent availability ratio of the domestic thermal generating units of the Company was 93.37%, coal consumption of power supply was 287.69g/kWh and the house consumption rate of plants was 4.37%. Main energy consumption indicators such as coal consumption of power supply maintained a leading position in the whole power industry. With respect to air pollution emissions, all thermal power units of the Company have met the ultra-low-emissions standard. With respect to treatment of wastewater discharge and coal yards and ash yards, the Company has allocated funds to carry out environmental technology transformation projects such as wastewater treatment, coal yard closure, and ash yard transformation in power plants in key regions. All power plants have accelerated environmental protection transformation projects to ensure that pollutant emissions meet the stringent requirements under pollution discharge permits and other ecological and environmental protection policies.

5. Project Development

The Company overcame the impact of adverse factors, such as rise in price of PV modules, extreme weather, labor shortage and lagged supply of materials and equipment, promoted the construction of power generation projects in an orderly manner. During the year, the Company added 8,614 MW of controlled generation capacity of new projects, with 6,564 MW of low carbon clean energy installed capacity added. As of 31 December 2022, the Company's controlled generation installed capacity was 127,228 MW and low carbon clean energy installed capacity accounted for 26.07%.

6. Overseas Business

Tuas Power Ltd. ("Tuas Power"), a wholly-owned subsidiary of the Company in Singapore, maintained safe and stable operation of the generation units throughout the year. Through dynamic optimization of the market strategy, the Company actively expanded the electricity retail market to constantly increase the marginal contribution of electricity sales per unit. The total market share of Tuas Power Ltd. in the power generation market for the whole year was 22.3%, representing a year-on-year increase of 3.1 percentage points. Power generation in Singapore amounted to 12.354 billion kWh, representing a year-on-year increase of 1.860 billion kWh; the revenue was RMB28.443 billion, representing a year-on-year increase of RMB12.107 billion; the pre-tax profit was RMB1.878 billion, representing a year-on-year increase of RMB1.714 billion.

The Sahiwal coal-fired power plant continues to make positive contributions to the power supply in Pakistan. In 2022, the pre-tax profit of projects in Pakistan was RMB597 million, representing a decrease of RMB180 million as compared with the same period last year.

PROSPECTS FOR 2023

In 2023, the Company will adhere to the underlying principle of maintaing stability while seeking progress, implement the new development concept completely, accurately and comprehensively, help build a new development pattern, focus on the Company's "14th Five-Year Plan" and the Company's development strategy, firmly resolve to green and low-carbon development, vigorously promote the Company's transformation and development, fully complete the annual targets and tasks, and strive to create a new situation of high-quality development of the Company.

In terms of electric power construction, adhering to the green development concept, the Company will take safety development as the basis, quality and efficiency as the centre, scientific and technological innovation as the support, and modern management as the methods to coordinate and grasp the safety, quality, progress, cost, equipment, design, technological innovation, intelligent infrastructure and other comprehensive work, vigorously develop clean energy, continue to optimize the thermal power structure, accelerate the pace of transformation and upgrading, and ensure the effective improvement of quality and reasonable growth of quantity.

In terms of electric power generation, while operating and maintaining the clean energy power generation system, the Company attaches importance to the basic role and peak load management capability 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 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 to consolidate the leading position in safety production, energy conservation and environmental protection.

In terms of electric power marketing, the Company will insist on efficiency first basing on quantity and price coordination, make every effort to conduct market transactions, and focus on stabilizing the revenue from long-term agreements, while making reasonable use of spot market rules to increase spot revenue. The Company will actively respond to the reform of the electricity market, promote the construction of institutional mechanisms, improve information systems, enhance technical support capabilities and strengthen talent training. The Company will make every effort to develop the electricity sales market and improve the operation of our energy marketing companies, while further promoting the optimisation of carbon market transactions. Strive to achieve a domestic power generation capacity of around 469 billion kWh in 2023.

In terms of fuel, the Company will scientifically coordinate the relationship between supply security and price control, with the principle of strictly controlling fuel costs while fulfilling its responsibility for energy security. The Company will make every effort to improve the performance rate of coal contracts and give full play to the role of ballast in medium and long-term contracts. Trying effort to implement the coal and electricity industry synergy plan, the Company will make full use of safeguarding role of internal supply. At the same time, the Company actively optimises the coal procurement structure, accurately procured imported coal and made every effort to reduce procurement costs.

In terms of capital, the Company will focus 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 accessibility of 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.

In the new year, the Company will further strengthen its willingness, and strive to coordinate the work of safety and security, quality and efficiency improvement, transformation and upgrading, reform and innovation, to implement the Company's development strategy, and accelerate the pace of building a first-class international listed power generation company.

OPERATING AND FINANCIAL REVIEWS AND PROSPECTS

MANAGEMENT'S DISCUSSION AND ANALYSIS

(Prepared under International Financial Reporting Standards ("IFRSs"))

General

The principal activities of the Company are construction, operation and management of large power plants within China. The Company is one of the largest listed power generation company in China. As of 31 December 2022, the Company had a controlled installed capacity of 127,228 MW, of which approximately 26.07% 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.

According to the amendments to IAS 16 *Property, Plant and Equipment: Proceeds before Intended Use* issued by the International Accounting Standards Board in May 2020, which was related to the proceeds from trail run stage, the Company has made retrospective adjustments to the financial data for the same period of last year.

For the year ended 31 December 2022, the consolidated operating revenue of the Company and its subsidiaries amounted to RMB246.725 billion, representing an increase of 20.31% over the same period of last year. For the influencing factors, such as coal price being in high position during the current year, the high proportion of installation of the coal-fired power plants, and profits from the new energy power plants not being enough to cover the losses from the coal-fired power plants, the annual performance of the Company is in loss position. The net loss attributable to equity holders of the Company was RMB8.026 billion, representing a decrease of loss of RMB2.352 billion over the same period of last year; the losses per share was RMB0.65.

A. OPERATING RESULTS

1. 2022 operating results

The electricity sold by the Company's domestic power plants for the year ended 31 December 2022 is as listed below (in 100 million kWh):

	Electricity Sold			
Type/Region	**2022 10-12**	Year-on-Year Change	**2022 1-12**	Year-on-Year Change
Coal-fired	**884.13**	-6.09%	**3,638.93**	-4.01%
Combined Cycle	**70.77**	9.00%	**263.48**	-1.93%
Wind-Power	**77.96**	37.42%	**274.10**	34.01%
PV	**14.62**	62.23%	**60.06**	71.29%
Hydro-power	**0.65**	-55.50%	**8.09**	-8.59%
Biomass power	**2.27**	30.64%	**7.19**	17.45%
Heilongjiang Province	**33.06**	18.05%	**120.99**	-6.08%
Coal-fired	**26.10**	13.43%	**98.89**	-13.17%
Wind-power	**6.05**	29.36%	**18.47**	35.51%
PV	**0.64**	104.10%	**3.08**	137.12%
Biomass power	**0.26**	-	**0.55**	-
Jilin Province	**32.45**	42.61%	**113.32**	28.45%
Coal-fired	**21.54**	21.25%	**77.92**	11.10%
Wind-power	**9.22**	173.34%	**28.99**	149.34%
Hydro-power	**0.20**	26.38%	**0.96**	38.18%
PV	**0.56**	-4.90%	**2.59**	5.51%
Biomass power	**0.93**	7.51%	**2.86**	-13.49%
Liaoning Province	**38.29**	5.00%	**149.62**	-18.56%
Coal-fired	**33.79**	-34.03%	**134.22**	-24.50%
Wind-power	**4.07**	243.19%	**13.28**	217.74%
Hydro-power	**0.05**	-39.62%	**0.32**	9.14%
PV	**0.37**	11.28%	**1.81**	21.80%
Inner Mongolia	**2.31**	16.82%	**7.72**	17.72%
Wind-power	**2.31**	16.82%	**7.72**	17.72%

	Electricity Sold			
Type/Region	**2022 10-12**	Year-on-Year Change	**2022 1-12**	Year-on-Year Change
Hebei Province	**26.32**	1.85%	**111.88**	5.26%
Coal-fired	**22.71**	-2.16%	**99.66**	-0.10%
Wind-power	**2.00**	5.81%	**6.54**	24.04%
PV	**1.61**	117.74%	**5.69**	349.42%
Gansu Province	**36.13**	-6.35%	**146.61**	1.48%
Coal-fired	**30.72**	-5.13%	**121.71**	2.17%
Wind-power	**5.41**	-12.69%	**24.90**	-1.76%
Ningxia	**0.04**	3.70%	**0.23**	3.91%
PV	**0.04**	3.70%	**0.23**	3.91%
Beijing	**24.08**	19.32%	**82.76**	-2.45%
Coal-fired	**2.27**	-64.94%	**8.15**	-37.04%
Combined Cycle	**21.81**	59.05%	**74.61**	3.77%
Tianjin	**12.92**	-27.94%	**53.77**	-17.38%
Coal-fired	**10.55**	-15.02%	**44.13**	-10.69%
Combined Cycle	**2.34**	-57.32%	**9.50**	-38.86%
PV	**0.02**	2.66%	**0.14**	5.35%
Shanxi Province	**26.52**	3.91%	**85.85**	-9.99%
Coal-fired	**14.29**	3.46%	**49.68**	-21.38%
Combined Cycle	**8.39**	3.57%	**20.68**	3.56%
Wind-power	**1.98**	21.91%	**6.26**	63.39%
PV	**1.87**	-6.23%	**9.23**	10.07%
Shandong Province	**194.17**	-12.24%	**827.58**	0.95%
Coal-fired	**185.12**	-13.52%	**793.20**	-0.46%
Wind-power	**5.66**	18.88%	**20.53**	41.49%
PV	**2.31**	47.76%	**10.08**	81.05%
Biomass power	**1.07**	23.58%	**3.78**	34.33%
Henan Province	**53.59**	7.28%	**229.48**	5.55%
Coal-fired	**44.71**	8.25%	**192.34**	6.63%
Combined Cycle	**0.10**	26.59%	**1.34**	-38.47%
Wind-power	**8.73**	2.52%	**35.56**	2.79%
PV	**0.05**	-14.68%	**0.24**	-2.64%

Type/Region	Electricity Sold 2022 10-12	Year-on-Year Change	2022 1-12	Year-on-Year Change
Jiangsu Province	**100.44**	-8.29%	**409.93**	-4.24%
Coal-fired	**72.27**	-13.06%	**297.54**	-7.98%
Combined Cycle	**14.73**	-2.02%	**62.17**	1.77%
Wind-power	**12.73**	18.50%	**47.09**	14.78%
PV	**0.71**	15.70%	**3.14**	18.96%
Shanghai	**42.01**	-18.18%	**185.97**	-7.89%
Coal-fired	**38.82**	-20.36%	**172.18**	-8.77%
Combined Cycle	**3.10**	21.85%	**13.42**	4.39%
PV	**0.10**	45.36%	**0.37**	20.93%
Chongqing	**34.53**	-2.24%	**144.12**	10.31%
Coal-fired	**25.91**	-5.40%	**110.71**	7.75%
Combined Cycle	**7.47**	1.21%	**29.07**	15.14%
Wind-power	**1.15**	107.96%	**4.34**	63.40%
Zhejiang Province	**80.33**	8.48%	**321.16**	1.14%
Coal-fired	**69.78**	-2.54%	**293.54**	-3.84%
Combined Cycle	**2.90**	82.35%	**9.97**	-4.08%
Wind-power	**7.20**	885.24%	**15.39**	1,062.24%
PV	**0.45**	241.10%	**2.26**	310.55%
Hubei Province	**42.68**	-3.61%	**175.95**	6.16%
Coal-fired	**40.16**	-4.99%	**163.43**	4.54%
Wind-power	**1.84**	3.78%	**7.31**	11.49%
Hydro-power	**0.06**	-70.18%	**1.94**	-26.68%
PV	**0.63**	1,189.31%	**3.27**	1,411.54%
Hunan Province	**24.13**	-23.73%	**104.24**	-11.04%
Coal-fired	**21.97**	-25.44%	**93.40**	-13.32%
Wind-power	**1.73**	24.53%	**7.16**	15.39%
Hydro-power	**0.16**	-77.22%	**2.68**	-2.41%
PV	**0.28**	170.76%	**1.00**	111.46%

	Electricity Sold			
Type/Region	**2022 10-12**	Year-on-Year Change	**2022 1-12**	Year-on-Year Change
Jiangxi Province	**76.44**	21.27%	**290.79**	27.14%
Coal-fired	**72.49**	21.52%	**274.56**	27.23%
Wind-power	**2.44**	7.83%	**9.84**	14.16%
PV	**1.51**	35.67%	**6.39**	48.59%
Anhui Province	**17.62**	-7.21%	**71.40**	16.21%
Coal-fired	**13.27**	-21.07%	**57.71**	11.05%
Wind-power	**2.66**	28.48%	**10.50**	28.80%
Hydro-power	**0.04**	-62.05%	**0.82**	-37.70%
PV	**1.65**	23,148.80%	**2.37**	33,279.90%
Fujian Province	**35.45**	-22.69%	**146.87**	-26.99%
Coal-fired	**35.29**	-23.01%	**146.47**	-27.15%
PV	**0.17**	620.22%	**0.40**	230.11%
Guangdong Province	**66.86**	-0.92%	**279.96**	-10.26%
Coal-fired	**58.18**	-0.59%	**240.99**	-11.17%
Combined Cycle	**8.60**	-3.33%	**38.63**	-4.47%
PV	**0.08**	42.91%	**0.34**	38.01%
Guangxi Province	**1.59**	-21.66%	**6.25**	-16.37%
Combined Cycle	**0.70**	-35.81%	**3.07**	-29.43%
Wind-power	**0.89**	-5.16%	**3.18**	1.78%
PV	**0.00**	-	**0.00**	-
Yunnan Province	**21.26**	5.46%	**78.64**	-4.56%
Coal-fired	**20.21**	6.56%	**74.22**	-4.31%
Wind-power	**1.06**	-9.14%	**4.32**	-5.07%
Hydro-power	**0.00**	-100.00%	**0.09**	-66.28%
Guizhou Province	**1.72**	19.81%	**8.00**	34.47%
Wind-power	**0.42**	-8.06%	**1.71**	-7.82%
PV	**1.30**	32.78%	**6.29**	53.61%

	Electricity Sold			
Type/Region	**2022 10-12**	Year-on-Year Change	**2022 1-12**	Year-on-Year Change
Hainan Province	**25.45**	17.20%	**98.78**	-12.68%
Coal-fired	**23.98**	20.97%	**94.31**	-10.64%
Combined Cycle	**0.64**	-37.23%	**1.01**	-78.52%
Wind-power	**0.42**	-8.97%	**1.04**	10.40%
Hydro-power	**0.15**	-26.45%	**1.28**	45.46%
PV	**0.26**	27.27%	**1.15**	8.39%
Total	**1,050.40**	-2.32%	**4,251.86**	-1.44%

Note: According to the amendments to IAS 16 *Property, Plant and Equipment: Proceeds before Intended Use* issued by the International Accounting Standards Board in May 2020, which was related to the proceeds from trail run stage, the on-grid electricity generated during the trail run stage was included in the amount of electricity sold, and the amount of electricity sold of the same period of last year was restated.

The decrease in the Company's electricity sold was mainly attributable to the following factors:

(1) the electricity consumption of the whole society in the fourth quarter of 2022 was at a low level, which led to a decrease of the Company's electricity generation compared to the same period of last year, (2) given the factors of the high level of the coal price throughout the whole year, the expansion of electricity market transaction scale, and the lower growth of the expected electricity consumption, etc., the Company optimized the power units operation mode, arranged the maintenance reasonably, and generated more economic electricity, on the condition of guarantee the supply of electricity and heating, resulting in a year-on-year decline in thermal power generation, (3) the Company has been making further efforts on promoting green and low carbon operation, and the Company's wind and photovoltaic power generation kept increasing, and the generation of new energy has increased rapidly year on year, which has narrowed the decline of the annual cumulative power generation.

For the year ended 31 December 2022, the accumulated power generation of Tuas Power Ltd., the Company's wholly owned subsidiary in Singapore, accounted for a market share of 22.3%, representing an increase of 3.1 percentage points from the same period of last year.

In respect of tariff, the Company's domestic average tariff (inclusive of taxes) for the year ended 31 December 2022 was RMB509.92 per MWh, increased by 18.04% from last year. For the operation in Singapore, the average tariff for the year ended 31 December 2022 was RMB944.00 per MWh, representing an increase by 58.80% from the same period of last year.

In respect of fuel costs, due to the sharp increase in fuel purchase prices, the Company's fuel cost per unit of power sold by domestic coal-fired power plants increased by 17.73% to RMB372.56 per MWh from the same period of last year.

Influenced by the forgoing factors, for the year ended 31 December 2022, the Company and its subsidiaries recorded a consolidated operating revenue of RMB246.725 billion, representing an increase of 20.31% from RMB205.079 billion (restated) of last year, and the operating costs and expenses of RMB247.657 billion, representing an increase of 17.63% from RMB210.547 billion (restated) of last year, and the net loss before income tax was RMB10.814 billion, representing a decrease of loss of RMB4.050 billion from the net loss before income tax of RMB14.864 billion (restated) 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 2022, the consolidated operating revenue of the Company and its subsidiaries amounted to RMB246.725 billion, representing an increase of 20.31% from RMB205.079 billion (restated) for the year ended 31 December 2021. The operating revenue from domestic operations increased by RMB29.052 billion over the same period of last year, mainly due to the increase of the domestic average tariff over the same period of last year, including an increasing of RMB29.327 billion due to the increase of tariff and a decrease of RMB2.378 billion due to the decrease of electricity sold. The operating revenue from domestic operations of the Company generated from the newly acquired entities and newly operated generating units was RMB9.109 billion, and the operating revenue from domestic operations of the Company generated from the existing generating units was RMB19.943 billion. The operating revenue from the operations in Singapore increased by RMB12.107 billion over the same period of last year, representing an increase of 74.11%. This is mainly due to the increase of the tariff and electricity sales in Singapore over the same period of the last year. The operating revenue from the operations of Pakistan increased by RMB0.487 billion, representing an increase of 9.29% over the same period of last year, mainly due to the increase of the tariff over the same period of last year.

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 2022, the tax and levies on operations of the Company and its subsidiaries were RMB1.442 billion, representing a decrease of RMB0.244 billion from RMB1.686 billion (restated) for the same period of last year. This was mainly due to the decrease in the value-added tax paid by domestic operations.

2.2 Operating expenses

For the year ended 31 December 2022, the total operating expenses of the Company and its subsidiaries was RMB247.657 billion, representing an increase of 17.63% from the same period of last year. The operating expenses in domestic operations increased by RMB26.015 billion, or 13.65%, from the same period of last year, of which the newly acquired entities and the new generating units accounted for RMB6.171 billion; the costs attributable to the existing entities increased by RMB19.844 billion, which was primarily attributable to the increase in the fuel cost led by the sharp increase in domestic coal price over the same period of last year.

The operating expenses from the operations in Singapore increased by RMB10.393 billion, or 65.24%, from the same period of last year, mainly due to the increase of fuel cost and operating cost of purchasing electricity. The operating expenses from the operations in Pakistan increased by RMB0.701 billion, mainly due to the increase in fuel cost caused by the increase in the coal price Pakistan.

2.2.1 Fuel costs

Fuel costs accounted for the majority of the operating expenses for the Company and its subsidiaries. For the year ended 31 December 2022, fuel costs increased by 16.19% to RMB170.507 billion from RMB146.752 billion for the year ended 31 December 2021. The fuel costs from domestic operations increased by RMB20.244 billion, which was mainly attributable by the sharp increase in domestic coal price. The fuel costs of the newly acquired entities and new generating units were RMB3.775 billion and the fuel costs of the existing generating units increased by RMB16.469 billion from same period of last year. Fuel costs in Singapore increased by RMB3.511 billion from the same period of last year, mainly due to increase of natural gas price, as a result of the increase of global oil price. The fuel cost per unit of power sold by the Company's domestic power plants increased by 17.73% to RMB372.56/MWh from RMB316.45/MWh in 2021.

2.2.2 *Maintenance*

For the year ended 31 December 2022, the total maintenance expenses of the Company and its subsidiaries amounted to RMB4.485 billion, which was approximately the same as the last year with RMB4.504 billion.

2.2.3 *Depreciation*

For the year ended 31 December 2022, depreciation expenses of the Company and its subsidiaries increased by RMB2.105 billion to RMB24.380 billion from RMB22.275 billion (restated) for the year ended 31 December 2021. The depreciation expenses of domestic operations increased by RMB1.560 billion compared to the same period of last year, of which the depreciation costs incurred by the newly acquired entities and new generating units was RMB1.786 billion, the depreciation expense of existing units decreased by RMB226 million. Depreciation expenses of Singapore business were basically the same year on year.

2.2.4 *Labor*

Labor costs consist of salaries to employees and contributions payable for employees' housing funds, medical insurance, pension and unemployment insurance, as well as training costs. For the year ended 31 December 2022, the labor costs of the Company and its subsidiaries amounted to RMB16.148 billion, which was approximately the same as RMB16.117 billion (restated) of 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 gains or losses on disposal of properties, plant and equipment. For the year ended 31 December 2022, other operating expenses of the Company and its subsidiaries was RMB32.137 billion, representing an increase of RMB11.238 billion from RMB20.899 billion (restated) for the year ended 31 December 2021. The other operating expenses from the Company's domestic operations increased by RMB3.769 billion, mainly due to the increase of the assets impairment losses and R&D expenses related to the major business operation over the same period of last year. Other operating expenses of the operations in Singapore increased by RMB6.768 billion over the same period of last year, mainly due to the increase of operating cost of purchasing electricity as a result of the increase of tariff in Singapore. Other operating expenses of the operations in Pakistan increased by RMB0.701 billion over the same period of last year, mainly due to the increase of fuel costs led by the increase in coal price.

2.3 *Financial expenses*

Financial expenses consist of interest expense, bank charges and net exchange gains or losses.

2.3.1 *Interest expense*

For the year ended 31 December 2022, the interest expense of the Company and its subsidiaries was RMB9.962 billion, representing an increase of RMB1.164 billion from RMB8.798 billion for the year ended 31 December 2021. The interest expense from the Company's domestic operations increased by RMB933 million, mainly due to the increase of the scale of the interest-bearing debts over the same period of last year. The interest expense from the newly acquired entities and new generating units was RMB0.892 billion and those incurred by the domestic existing entities increased by RMB41 million. The interest expense of Singapore operations increased by RMB104 million compared to the same period of last year. Interest expense of Pakistan operations increased by RMB127 million over the same period of last year.

2.3.2 *Net exchange gains or losses and bank charges*

For the year ended 31 December 2022, the Company and its subsidiaries recorded a net gain of RMB136 million from net exchange difference and bank charges, representing an increase of RMB176 million in gain compared with the net loss of RMB40 million for the year ended 31 December 2021. The sum of exchange gains and losses and bank charge fee of domestic business was a net loss of RMB74 million, representing an increase of loss amounting to RMB71 million compared with the net loss of RMB3 million for the year ended 31 December 2021, mainly due to the net US dollar liabilities exposure of the domestic business and the increase of foreign exchange rate of the US dollar against RMB. The operations in Singapore recorded net gain of RMB2 million in exchange changes and bank charges, representing an increase of RMB90 million in gain from the net loss of RMB88 million for the year ended 31 December 2021, mainly due to the net US dollar liabilities exposure of Singapore business and the rapid decrease of the foreign exchange rate of US dollar against

Singapore dollar in the fourth quarter of 2022. The operations in Pakistan recorded net gains of RMB208 million in exchange differences and bank charges, representing an increase in net gains of RMB157 million as compared to a net gains of RMB51 million for the year ended 31 December 2021, mainly due to the net US dollar assets exposure of Pakistan business and the increase of the foreign exchange rate of US dollar against Pakistani rupees.

2.4 Share of profits less losses of associates and joint ventures

For the year ended 31 December 2022, the share of profits less losses of associates and joint ventures was RMB1.042 billion, representing an increase of RMB194 million from RMB0.848 billion (restated) of last year. This is mainly due to the increase in net profits of Hebei Hanfeng Power Co., Ltd. and other associated/joint ventures.

2.5 Income tax expense

For the year ended 31 December 2022, the Company and its subsidiaries recognized income tax expense of RMB159 million, representing an increase of expense of RMB2.089 billion from income tax credit of RMB1.930 billion for the year ended 31 December 2021. The income tax expenses from domestic operation increased by RMB1.797 billion, mainly due to the increase of the profits of new energy power generation such as domestic wind power generation business over the same period of last year, as well as no deferred tax assets recognised for the loss of some subsidiaries which did not meet the recognition conditions. The income tax expense for the operations in Singapore increased by RMB290 million, mainly due to the profit growth of Singapore business over the same period of last year. The income tax expenses for the operations in Pakistan was approximately the same over the same period of last year.

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

For the year ended 31 December 2022, the Company and its subsidiaries achieved a net loss of RMB10.973 billion, representing a decrease of loss of RMB1.961 billion, from a net loss of RMB12.934 billion (restated) for the year ended 31 December 2021. The net loss attributable to equity holders of the Company was RMB8.026 billion, representing a decrease of RMB2.352 billion from the net loss attributable to equity holders of the Company of RMB10.378 billion (restated) for the year ended 31 December 2021. For the influencing factors, such as coal price being in high position during the current year, the high proportion of installation of the coal-fired power plants, and profits from the new energy power plants not being enough to cover the losses from the coal-fired power plants, the annual performance of the Company is in loss position.

The loss attributable to equity holders of the Company from the domestic operations decreased by RMB0.999 billion. The net profit attributable to equity holders of the Company from the operations in Singapore was RMB1.548 billion, representing an increase of RMB1.425 billion as compared to the same period last year, mainly due to the sharp increase of tariff in Singapore over the same period of last year, which led to the increase of margin over the same period of last year. The net profit attributable to equity holders of the Company from the operations in Pakistan was RMB232 million, representing a decrease of RMB72 million.

The Company's recorded loss from its non-controlling interests of RMB2.946 billion for the year ended 31 December 2022 as compared to the loss of RMB2.556 billion (restated) for the year ended 31 December 2021, representing an increase of loss amounted to RMB0.390 billion, mainly due to the 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 2022, the total assets of the Company and its subsidiaries were RMB512.222 billion, increased by 2.23% from RMB501.049 billion (restated) as of 31 December 2021; total assets of the domestic operations increased by RMB7.229 billion to RMB467.788 billion, including a net increase of RMB15.493 billion in fixed assets, mainly due to the comprehensive impact of new capital infrastructure investment and accrual depreciation in the current year, and a net decrease in inventory of RMB5.917 billion, which mainly due to the decrease of quantity and coal price at the end of 2022 compared with the year end of 2021.

As of 31 December 2022, the total assets of the operations in Singapore were RMB29.597 billion, representing an increase of RMB2.508 billion from the same period of last year. Non-current assets increased by RMB1.567 billion to RMB24.134 billion compared with the year end of 2021. Current assets increased by RMB942 million to RMB5.463 billion compared with the year end of 2021. The total assets of the operations in Pakistan were RMB14.837 billion, representing an increase of RMB1.435 billion compared with the year end of 2021. Non-current assets amounted to RMB8.160 billion, which was approximately the same with last year. Current assets amounted to RMB6.677 billion, representing an increase of RMB1.572 billion compared with the year end of 2021.

2.7.2 Comparison of liability items

As of 31 December 2022, the total liabilities of the Company and its subsidiaries were RMB376.906 billion, representing an increase of 2.64% from RMB367.213 billion as of 31 December 2021.

As of 31 December 2022, interest-bearing debts of the Company and its subsidiaries amounted to RMB307.118 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 2022, the total liabilities of the operations in Singapore were RMB17.206 billion, representing an increase of RMB2.006 billion from RMB15.200 billion as of 31 December 2021. As of 31 December 2022, the total liabilities of the operations in Pakistan were RMB11.085 billion, representing an increase of RMB1.489 billion from RMB9.596 billion as of 31 December 2021.

2.7.3 *Comparison of equity items*

The total equity attributable to the equity holders of the Company increased by RMB2.337 billion as of 31 December 2022 as compared to 1 January 2022, mainly due to the issuances of the Energy Supply Special Bonds (recorded as other equity instruments) of RMB13.550 billion, the comprehensive loss of RMB8.115 billion in the current year, a decrease of RMB2.137 billion arising from the declaration of interests for other equity instruments and a decrease of RMB0.961 billion due to other reasons. Non-controlling interests decreased by RMB858 million as compared to 1 January 2022.

2.7.4 *Major financial position ratios*

	2022	2021
Current ratio	**0.51**	0.50
Quick ratio	**0.43**	0.41
Ratio of liability to equity holders' equity	**3.26**	3.24
Multiples of interest earned	**-0.08**	-0.60

Formula of the financial ratios:

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

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

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

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

The current ratio and quick ration as of 31 December 2022 increased, mainly due to the decrease of current liabilities compared to 1 January 2022. The decrease of current liabilities mainly due to the decline of short-term loans, short-term bonds, and long-term bonds due within one year compared to 1 January 2022. The ratio of liabilities to equity holders' equity as of 31 December 2022 increased, mainly due to the comprehensive impacts of the Company's increased investment, operating losses and the issuance of the special bonds (other equity instruments) for energy conservation and supply. The multiples of interest earned were negative, but improved during this year, mainly due to the Company's year-on-year loss reduction.

B. LIQUIDITY AND CASH RESOURCES

1. Liquidity

	2022 *RMB billion*	2021 *RMB billion (Restated)*	Change %
Net cash generated in operating activities	**32.520**	6.251	420.23%
Net cash used in investing activities	**-39.830**	-42.494	-6.27%
Net cash generated in financing activities	**7.831**	39.386	-80.12%
Currency exchange impact	**0.441**	-0.846	-152.15%
Net increase in cash and cash equivalents	**0.962**	2.297	-58.11%
Cash and cash equivalents as at the beginning of the year	**15.555**	13.258	17.33%
Cash and cash equivalents as at the end of the year	**16.517**	15.555	6.19%

For the year ended 31 December 2022, net cash generated in operating activities of the Company and its subsidiaries was RMB32.520 billion, representing an increase of 420.23% from last year, mainly due to the decrease of the operating loss, the increases of collection of prior years' renewable energy subsidies and the decrease of fund occupation from inventories as compared to that of the same period of last year. The net cash generated in operating activities in Singapore was RMB2.443 billion. The net cash generated in operating activities in Pakistan was RMB1.204 billion. The net cash used in investing activities was RMB39.830 billion for the year ended 31 December 2022, mainly consisted of the investment in the construction, including purchase of non-current assets, construction expenditure and construction materials, representing a decrease of 6.27%, and the decrease compared with the same period of last year was mainly due to the decline of the expenditure on large and medium-sized construction projects. The net cash generated in financing activities was RMB7.831 billion for the year ended 31 December 2022, representing a decrease of 80.12% as compared with last year, which was mainly due to the significant increase of net cash generated in operating activities, which greatly supported capital expenditure and thus net cash generated from financing decreased significantly. As of 31 December 2022, the cash and cash equivalents of the Company and its subsidiaries denominated in RMB, Singapore dollar, U.S. dollar and other currencies were RMB14.145 billion, RMB1.403 billion, RMB464 million, and RMB504 million, respectively.

As of 31 December 2022, net current liabilities of the Company and its subsidiaries were approximately RMB84.611 billion. Based on the Company's proven financing record, readily available banking facilities and sound credibility, the Company believes it is able to duly repay outstanding debts, obtain long-term financing and secure funding necessary for its operations. The Company has also capitalized on its good credit record to make short-term loans at relatively lower interest rates, thus reducing its interest expenses.

2. Capital expenditure and fund resources

2.1 Capital expenditure on infrastructure construction and renovation projects

The actual capital expenditure of the Company and its subsidiaries in 2022 was RMB40.014 billion, which was mainly used for the construction of infrastructure and renovation, including RMB3.258 billion for Zhejiang Cangnan Offshore Wind-power, RMB1.681 billion for Zhuanghe Wind-power, RMB1.336 billion for Shidongkou I, RMB969 million for Shantou Haimen Offshore Wind-power, RMB880 million for Da'an Clean Energy, RMB823 million for Yangpu Co-generation, RMB810 million for Sheyang New Energy Power Generation, RMB727 million for Dalian Co-generation, RMB722 million for Diandong Yuwang Mining, RMB694 million for Jiangxi Clean Energy, RMB656 million for Mengcheng Wind-power, RMB642 million for Yuhuan Power, RMB637 million for Ranghuluqu Clean Energy, RMB636 million for Zaoyang New Energy, RMB605 million for Licheng Yingheng Clean Energy, RMB560 million for Yangjie New Energy, RMB552 million for Qingdao Co-generation, RMB548 million for Dalian Chuanbo (Offshore Wind Power), RMB524 million for Huajingchen New Energy, RMB497 million for Diandong Power Mining Branch, RMB495 million for Dashiqiao New Energy, RMB478 million for Napo Clean Energy, RMB449 million for Yangzhao New Energy, RMB433 million for Rongshui New Energy, RMB388 million for Qujing Zhanyi New Energy, RMB388 million for Yangyuan New Energy, RMB376 million for Shanyan (Shouguang) New Energy, RMB366 million for Lantian Co-generation, RMB355 million for Huangtai Power, RMB348 million for Jiangsu Comprehensive Energy Service. Capital construction and renovation expenditures for other projects were RMB18.181 billion.

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

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

(Unit: RMB100 million)

Project	**Capital Expenditure Plan for 2023**	**Cash resources arrangements**	**Financing costs and note on use**
Thermal power projects	53.90	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Hydropower projects	0	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Wind power projects	118.36	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Coal mining projects	9.50	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Photovoltaic power projects	140.00	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Ports	0	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC
Technology renovation etc.	79.82	Including internal capital and bank loans	Within the floating range of benchmark lending interest rates of PBOC

2.2 *Cash resources and anticipated financing costs*

Good operating results and sound credit status provide the Company with strong financing capabilities. As of 31 December 2022, the unutilized banking facilities available to the Company and its subsidiaries amounted over RMB290.0 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 5, January 7, February 9, February 11, March 17, July 7, July 8, July 20, August 3, September 8, September 9, September 14, October 21, October 27, November 4, November 18, November 29 and December 8, at principal amount of RMB2 billion, RMB2 billion, RMB2 billion, RMB2 billion, RMB2 billion, RMB3 billion, RMB3 billion, RMB2 billion, RMB2.5 billion, RMB2 billion, RMB0.3 billion, RMB2 billion, RMB3 billion, RMB3 billion, RMB3 billion, RMB3 billion, RMB2 billion and RMB3 billion, with nominal annual interest rates of 2.1%, 2.08%, 2.0%, 2.0%, 2.0%, 1.54%, 1.54%, 1.48%, 1.47%, 1.25%, 1.66%, 1.25%, 1.48%, 1.47%, 1.53%, 2.09%, 1.73% and 1.83%, respectively. Each installment of the notes was denominated in RMB, issued at par value, and would successively mature in 58 days, 46 days, 41 days, 32 days, 90 days, 29 days, 32 days, 58 days, 90 days, 35 days, 180 days, 37 days, 32 days, 33 days, 32 days, 61 days, 30 days and 34 days from the value date.

The Company, through its subsidiary SinoSing Power, issued two tranches of secured corporate bonds of US$300 million and US$300 million on 20 February 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 International.

As of 31 December 2022, short-term loans of the Company and its subsidiaries were RMB83.573 billion (2021: RMB91.897 billion). Loans from banks were charged at interest rates ranging from 1.24% to 18.01% per annum (2021: 2.00% to 11.35%).

As of 31 December 2022, short-term bonds payable by the Company and its subsidiaries were RMB6.313 billion (2021: RMB8.223 billion).

As of 31 December 2022, the Company and its subsidiaries' long-term loans (including long-term loans due within one year) totaled RMB170.808 billion (2021: RMB154.072 billion), including RMB loans of RMB154.611 billion (2021: RMB138.436 billion), USD loans of USD1.495 billion (2021: USD1.187 billion), EUR loans of EUR2 million (2021: EUR7 million), SGD loans of SGD1.092 billion (2021: SGD1.325 billion), JPY loans of 2.044 billion yen (2021: 2.151 billion yen). Among them, Singapore dollar loans are floating rate loans, and EUR loans and Japanese yen loans are fixed interest rate loans. For the year ended 31 December 2022, the annual interest rate of long-term loans is 0.75% to 6.75% (2021: 0.75% to 4.98%).

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 2022, the board of directors proposed that the Company pay no dividends in year 2022. 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.

2.4 *Maturity profile of interest-bearing debts*

Maturity Profile *(RMB100 million)*	**2023**	**2024**	**2025**	**2026**	**2027**
Principal amount planned for repayment	1,096.74	312.78	508.94	206.25	139.01
Interest amount planned for repayment	78.71	59.35	47.06	34.65	30.60
Total	1,175.45	372.13	556.00	240.90	169.61

Note: The amount of principle to be paid in 2023 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 mix, 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 proper managed, leading in technology, energy saving and environmental friendly, reasonable 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 strengthen 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

The Central Economic Work Conference emphasized that we should adhere to the general principle of seeking progress while maintaining stability, comprehensively deepen reform and opening up, and vigorously boost market confidence in 2023. The Conference called for adhering to the principle of "priority on stabilization, and advancement from stabilization", continuing to implement a proactive fiscal policy and a stable monetary policy, intensifying macro-policy control, coordinating with various policies, and forming a joint force to promote high-quality development. We should optimize the implementation of industrial policies, pay close attention to the transformation and upgrading of traditional industries and the cultivation and expansion of strategic emerging industries, and forge new industrial competitive advantages in the process of implementing the objectives and tasks of carbon peak and carbon neutralization. In terms of the power 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, temperature in winter and summer and low base in 2022, it is estimated that the electricity consumption of the whole society will have a year-on-year increase of 6% in 2023; driven by the rapid development of new energy power generation, it is estimated that the total installed power generation capacity and the installed power generation capacity of non-fossil energy will reach a new high in 2023, and the newly installed power generation capacity nationwide is expected to reach about 250 million kilowatts.

In terms of the power market, the requirements of "the Notice on Further Deepening the Market-based Reform of the On-grid Tariff for Coal-fired Power Generation" (《關於進一步深化燃煤發電上網電價市場化改革的通知》) issued by the NDRC in 2022 have been implemented. The electricity generated by coal-fired has been totally entered into trade within the electricity grid market and the range of market-based prices has been expanded to 20%. In 2023, the state requires a high proportion of medium-and long-term electricity transactions to be signed, and the directories of high-energy-consuming enterprises in various places will be launched one after another, and the coal price is expected to decline, so the operating conditions of coal-fired power generation enterprises will be improved to some extent. However, with the full spread of the spot market and the intensified competition in the electricity market, the market uncertainty will further increase. Due to the increase in new energy parity production projects and the increase in market entry rate, the electricity prices of wind power and photovoltaic are expected to decline.

In terms of the carbon market, the ministry of Ecology and Environment of the People's Republic of China issued the Notice of Implementation of Relevant Work on Distribution of National Carbon Emission Rights Trading Quota for 2021 and 2022 (《關於做好二零二一、二零二二年度全國碳排放權交易配額分配相關工作的通知》) on 15 March. According to the quota distribution plan, the carbon emission benchmark value has been adjusted downward and the quota distribution has been greatly tightened. With the gradual promotion of peak carbon emissions and carbon neutrality, the cost of carbon emission performance will increase.

In terms of the coal market, policy-based supply guarantee will continue to exert efforts to promote the release of advanced coal production of newly lisenced capacity. However, since most of the newly lisenced capacity has been released in the previous two years, there is limited room for substantial increase in production. In the international market, with the increase of coal production in Indonesia and India, the import and purchase opportunities of Mongolian coal, Russian coal and Australian coal increase, and the supplementary role of imported coal in China is enhanced. On the demand side, the proportion of non-fossil energy electricity will continue to increase in 2023, and the growth rate of coal consumption will further slow down. In 2023, under the policy guarantee, the performance rate of medium-and long-term contracts for coal will be improved, and the "cornerstone" role of long-term coal associations will be effectively brought into play. It is expected that the supply and demand of the coal market will be eased and the coal price center will move down.

In terms of the capital market, according to the report on the work of the State Council and the monetary policy implementation report of the People's Bank of China, in 2023, a stable monetary policy will be precise and powerful to make cross-cycle adjustment, which will not only support the expansion of domestic demand and provide stronger support for the real economy, but also give consideration to short-term and long-term, economic growth and price stability, internal balance and external balance, stabilize the sustainable support for the real economy and maintain reasonable and 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 22 April 2003. In 2011, Shenzhen Energy Group divided into a remainder company of the same name and a new company Shenzhen Energy Management Company ("SE Management"), and the Company holds 25% equity interests in each of the two successors. The Company acquired 200 million shares from Shenzhen Energy Corporation ("Shenzhen Energy"), a subsidiary of Shenzhen Energy Group in December 2007. Shenzhen Energy allotted shares with its capital surplus in 2011. In February 2013, Shenzhen Energy merged SE Management through the combination of directional seasoned offering and cash payment to shareholders of SE management, Shenzhen State-owned Assets Administration Commission and the Company. After the merger, the Company held 661 million shares of Shenzhen Energy, representing 25.02% of its equity interests. In 2022, Shenzhen Energy distributed cash dividend amounting to RMB1.75 (tax inclusive) of every 10 shares to its shareholders, and the Company held 1,190 million shares of Shenzhen Energy by 31 December 2022. These investments brought a net profit to the Company of RMB297 million for the year ended 31 December 2022 under IFRSs. 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 China Huaneng Group Co., Ltd. ("Huaneng Group") the controlling shareholder of Sichuan Energy Development. This investment brought a net profit to the Company of RMB196 million for the year ended 31 December 2022 under IFRSs. This investment is expected to provide steady returns to the Company.

F. EMPLOYEE BENEFITS

As of 31 December 2022, the Company and its subsidiaries had 57,069 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 2022, the Company provided guarantee for long-term bank loans of Tuas Power in the amount of RMB3.109 billion (31 December 2021: RMB6.257 billion), As of 31 December 2022, the Company provided guarantees for long-term loans of RMB237 million of the Company's domestic subsidiaries (31 December 2021: nil).

As of 31 December 2022, long-term loans of approximately RMB199 million (approximately US$29 million) (31 December 2021: RMB176 million (approximately US$28 million)) were guaranteed by Huaneng Shandong Power Generation Co., Ltd. ("Shandong Power").

As of 31 December 2022, long-term loans of approximately RMB6,766 million (31 December 2021: RMB6,794 million) were guaranteed by Shandong Power, China Export & Credit Insurance Corporation and Jining Chengtou Holding Group Co., Ltd. ("Jining Chengtou") at the liability ratios of 17.5%, 65.0% and 17.5% respectively (31 December 2021: Shandong Power, China Export & Credit Insurance Corporation and Jining Chengtou at the liability ratios of 17.5%, 65.0% and 17.5% respectively).

As of 31 December 2022, long-term loans of approximately RMB1,116 million (31 December 2021: RMB1,020 million) were guaranteed by Shandong Power and Jining Chengtou at the liability ratios of 50.0% and 50.0% respectively (31 December 2021: Shandong Power and Jining Chengtou at the liability ratios of 50.0% and 50.0% respectively).

As of 31 December 2022, the details of secured loans of the Company and its subsidiaries were as follows:

As of 31 December 2022, short-term bank loans of RMB361 million (2021: RMB829 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 bank loans.

As of 31 December 2022, short-term loans of RMB0.772 billion (2021: RMB0.387 billion) of the Company and its subsidiaries were secured by certain property, plant and equipment with net book value of approximately RMB1.519 billion (2021: RMB0.475 billion).

As of 31 December 2022, long-term loans of RMB4.633 billion (2021: RMB4.595 billion) of the Company and its subsidiaries were secured by certain property, plant and equipment with net book value of approximately RMB6.984 billion (2021: RMB5.025 billion).

As of 31 December 2022, long-term loans of approximately RMB4.794 billion (2021: RMB4.516 billion) were secured by electricity and heat receivables of the Company and its subsidiaries. Long-term loans of approximately RMB461 million (2021: RMB approximately 2,814 million) were secured by equity interests of the Company and its subsidiaries. Long-term loans of approximately RMB50 million were secured by carbon emission trading rights (2021: approximately RMB20 million). Long-term loans of approximately RMB44 million were secured by franchise (2021: nil).

As of 31 December 2022, the restricted bank deposits of the Company and its subsidiaries were RMB658 million (2021: RMB796 million).

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

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

I. RISK FACTORS

1. Risks relating to the electricity industry and market

(i) In 2023, with the implementation of a series of national policies and measures to stabilize the economy, it is expected that the domestic economic operation will generally rebound and the electricity consumption of the whole society will increase year-on-year, which will increase the pressure on the supply of electricity and fuel, and the continuous loss of coal-fired power enterprises will lead to a decline in the overall support capacity. In extreme weather and peak load, there may be the risk of power supply shortage in some areas in individual periods.

(ii) With the construction of the new electricity market, the differentiated competition among different energy types across provinces and regions is more intense, and there is downside risk in electricity price.

(iii) With a large number of affordable new energy projects entering the market, the new energy in the country has maintained rapid growth. The guaranteed volume of fixed-price purchase of electricity continues to decline and the scale of participation in market transactions gradually expanded. The characteristics of new energy power generation lead to the widespread participation in market-oriented transactions in the form of price reduction, which has the risk of declining returns.

The Company will actively pursue a green transformation, accelerate its adoption of clean energy, optimize and upgrade the composition of its installed capacity. The Company is also committed to strengthening its policy research effort, actively adapting to the development of the power sector as guided by the carbon peak and carbon neutrality goal, continuing to promote the standardization of market operation, adjusting pricing strategies in a timely manner, and making every endeavor to prevent and control risks relating to electricity price.

2. Risks relating to fuel procurement market

(i) The national policy of increasing production and ensuring supply has continued to develop, domestic coal output has increased rapidly, and thermal coal has maintained a high supply. However, since most of the nuclear production capacity has been released in the previous two years, the space for increasing production significantly is limited, and the actual supply increment is uncertain.

(ii) With the overall recovery of the national macro-economy, the electricity consumption of the whole society will be improved, and there will be intermittent supply shortage in some areas. Thermal power will continue to be relied upon to ensure that energy demands are met, and coal supply is still under great pressure.

(iii) Affected by the uncertainty of the international situation and other factors, the global energy supply is tight, the amount of imported coal is unlikely to increase significantly, and there is uncertainty in the downward trend of the price center of imported coal, which may lead to a staged shortage of supply and demand in the domestic coal market.

(iv) Under the market situation of tight coal supply and demand and high price, it is difficult to fully implement the three 100% policy requirements of the NDRC on mid- and long-term contracts for thermal coal. Coal prices remain high and the dual challenges of ensuring sufficient fuel supply and controlling fuel price have surfaced.

The Company will closely follow the changes in the coal market, implement the national policy requirements and promote the signing of mid- and long-term contracts for power coal to strive to improve the coverage of long-term contracts. The Company will strictly implement the price mechanism in accordance with national policies, strengthen the performance of long-term contracts and improve the fulfilment of mid- and long-term contracts to give full play to the "cornerstone" role of long-term contracts. The Company will optimize and adjust the supply structure of underground coal, accurately purchase imported coal, open up and implement domestic trade alternative resources to effectively control coal prices and ensure the safe and stable supply of coal. The Company will 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 control the cost of coal procurement.

3. Risks relating to carbon markets

The ministry of Ecology and Environment of the People's Republic of China issued the Notice of Implementation of Relevant Work on Distribution of National Carbon Emission Rights Trading Quota for 2021 and 2022（《關於做好二零二一、二零二二年度全國碳排放權交易配額分配相關工作的通知》）on 15 March 2023. According to the quota distribution plan, the carbon emission benchmark value has been adjusted downward and the quota distribution has been greatly tightened. With the gradual promotion of peak carbon emissions and carbon neutrality, the cost of carbon emission performance will increase. Meanwhile, the carbon market will be followed by trading entities such as institutions and individuals in the future, which may further push up the carbon transaction price and may result in an increase of fulfillment cost for carbon trades by electricity generating companies.

The Company will pay close attention to national carbon market policies and the progress of restarting voluntary emission reduction projects, continue to strengthen carbon trading management, optimize carbon trading strategies, and strive to complete the second cycle of national carbon market trading performance work on schedule at a lower cost.

4. Environmental protection risk

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. and may increase the environmental protection expenditure of relevant grass-roots enterprises.

The Company strictly implements the national environmental protection policy. 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 coal-fired units in China have also completed ultralow emission transformation pursuant to the regulations 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. Meanwhile, the Company actively follows up on the concerns of environmental protection authorities, cautiously select from advanced technical solutions that are applicable, and make positive efforts to upgrade its water-saving and wastewater treatment systems, build closed coal yards, and improve the recycling and utilization of coal ash in order to ensure that risks to the environment are addressed and effectively resolved in a timely manner.

5. Capital market risks

According to the report on the work of the State Council and the monetary policy implementation report of the People's Bank of China, in 2023, a prudent monetary policy will be precise and powerful to make cross-cycle adjustment, which will not only support the expansion of domestic demand and provide stronger support for the real economy, but also give consideration to short-term and long-term, economic growth and price stability, internal balance and external balance, stabilize the sustainable support for the real economy and maintain reasonable and 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.

In 2023, the Company will focus on the improvement of operating results, enhance capital operation, innovate financing methods and further expand financing channels. The Company will also take advantage of green finance policy and issue energy supply special bonds. The Company will speed up capital turnover by means of increasing in issuance of ultra-short financing bonds. Meanwhile, 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 and prevent capital risks, to realize cost reduction and efficiency improvement.

STRUCTURE OF SHARE CAPITAL

As at 31 December 2022, 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 of association provided for its cash dividend policy that the Company may pay cash dividends in any year when its earnings and accumulated undistributed profits are positive and its cash flows are sufficient for the normal conduct of business and sustainable development of the Company, provided that the profits to be distributed by the Company in cash shall, in principle, not be less than 50% of the distributable profits realized in that year as indicated in the consolidated accounts.

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

As the Company recorded a net loss attributable to shareholders of the Company in 2022 and take in account our potential investment needs for transformation and development of the Company and increase in the Company's asset-liability ratio in 2022, the Board of Directors recommends that no dividend be distributed in 2022 in accordance with the Company's articles of association. The proposal has been reviewed and approved by the Company's Board and the Supervisory Committee, and will be submitted to the Company's annual general meeting for approval.

PRE-EMPTIVE RIGHTS

According to the articles of association 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 2022 were China Huaneng Group Fuel Co., Ltd. (Huaneng Group, the ultimate controlling shareholder of the company, holds about 73% of its equity), Huaneng Supply Chain Platform Technology Co., Ltd. (Huaneng Group holds about 45% of its equity), Coal Sales Branch Company of Huaneng Inner Mongolia East Energy Co., Ltd. (Huaneng Group holds 100% of its equity), Gansu Huating Coal-fired Power Co., Ltd. (Huaneng Group holds about 42% of its equity), and Huayang New Material Technology Co., Ltd. respectively. The total purchase from them amounted to approximately RMB98.577 billion, representing approximately 42% of the total purchase of the year. The largest supplier was China Huaneng Group Fuel Co., Ltd., the purchase from which amounted to RMB55.195 billion, representing approximately 24% 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 2022 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 RMB98.383 billion (exclusive of taxes), representing approximately 40% 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 RMB37.348 billion (exclusive of taxes), representing approximately 15% of the total sales of power for the year.

Except for the above circumstances, 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")) or any shareholders (holding 5% or more of the issued shares of the Company to the best knowledge of the Board) had any interest in the five largest suppliers and customers of the Company mentioned above in 2022.

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 wavier of pre-emptive rights being obtained from other shareholders of the assets), in addition, the Company should have the right of first refusal to acquire from Huaneng Group the newly developed, acquired or invested projects as engaged in the conventional energy business of Huaneng Group located in Shandong Province;

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

4. Huaneng Group would continue to perform each of its aforesaid undertakings in order to support the development of its subordinated listed companies. The 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 14 directors and only 4 of them have positions in Huaneng Group. According to the articles of association of the Company, in case a conflict of interest arises, the relevant directors shall abstain from voting in the relevant resolutions. Therefore, the operation of the Company is independent from Huaneng Group, and the operation of the Company is conducted for its own benefit.

PURCHASE, SALE OR REDEMPTION OF SHARES OF THE COMPANY

The Company and its subsidiaries did not sell, purchase or redeem any shares or other securities of the Company in 2022.

DIRECTORS OF THE COMPANY

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

Name of Director	Position	Date of appointment
Zhao Keyu	Chairman	Appointed on 5 March 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

Name of Departured Director	Position	Date of appointment
Zhao Ping	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 2022.

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

For the year ended 31 December 2022, 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 2022, 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 2022, 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 2022 on 20 March 2023 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 2022:

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	4,172,175,180	26.58%
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	258,452,600	1.65%
Liaoning Energy Investment (Group) Limited Liability Company	244,205,000	1.56%
Contractual Repurchase Securities Trading Dedicated Securities Account of Guotai Junan Securities Co., Ltd. (國泰君安證券股份有限公司約定購回式證券交易專用證券帳戶)	175,613,600	1.12%
Dalian City Investment Holding Group Co., Ltd.	125,886,400	0.80%

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 21% 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 62% 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 17% 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 2022. The Company also reimburses the independent directors for the expenses they incur in attending board meetings and general meetings and other reasonable expenses they incur while fulfilling their obligations under the Company Law and the Company's Articles of Association (including travelling expenses and administrative expenses). Besides these, the Company does not give the independent directors any other benefit.

STAFF HOUSING

According to the relevant regulations of the State and local governments, the 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 State and the local governments, the Company and its subsidiaries have joined medical insurance schemes for their employees.

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 one extraordinary general meeting.

1. The Company's 2021 Annual General Meeting was held on 28 June 2022. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 29 June 2022.

2. The Company's 2022 First Extraordinary General Meeting was held on 30 December 2022. The resolutions passed at the meeting were published in China Securities Journal and Shanghai Securities News on 31 December 2022.

DISCLOSURE OF MAJOR EVENTS

1. Based on commercial considerations, the Company submitted a delisting notification letter to the New York Stock Exchange ("NYSE") on 17 June 2022, proposing to voluntarily delist from the NYSE; after the closing of the market on 7 July EST, the delisting of the Company ADS from the NYSE had become effective; on 6 October EST, the Company's overseas listing of ordinary shares took effect after being deregistered by the Securities and Exchange Commission.

2. Adjustments to the management of the Company

   On 26 September 2022, Mr. Zhao Ping resigned from his position as the President and Executive Director of the Company due to age reasons.

   On 26 December 2022, Mr. Liu Wei resigned from his position as the Chief Engineer of the Company due to work relocation.

   On 26 February 2023, Mr. Chen Shuping ceased to hold the position of Vice President of the Company due to age reasons.

CHANGES IN INFORMATION OF DIRECTORS AND SUPERVISORS DURING THE REPORTING PERIOD

On 26 September 2022, Mr. Zhao Ping resigned from his position as the President and Executive Director of the Company due to age reasons.

CODE OF CORPORATE GOVERNANCE PRACTICES

During the reporting period, the Company had complied with all the code provisions except for code provision C.2.1 of the Corporate Governance Code contained in Appendix 14 to the Listing Rules. Pursuant to code provision C.2.1, the role of chairman and the chief executive should be separate and should not be performed by the same individual. Mr. Zhao Ping, the President and executive Director of the Company, resigned as President, executive Director and from any other positions in the Company due to his age, effective from 26 September 2022. In order to fill the vacancy as soon as possible, the duties of the President of the Company were assumed by Mr. Zhao Keyu, the Chairman of the Company, effective from 26 September 2022. Although deviating from Code Provisions C.2.1 of the Listing Rules, Mr. Zhao Keyu provided solid and continuous leadership to the Group with his extensive experience and knowledge in management and the support of our management. Moreover, under the supervision of other existing members of the Board, the Board was appropriately structured with balance of power to provide sufficient checks to protect the interests of the Company and its shareholders. As such, the Board is of the view that the deviation from code provision C.2.1 of the Corporate Governance Code was appropriate in the circumstances. The Company will appoint a new President as soon as possible to comply with the requirement of code provision C.2.1.

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 2022, the Company and its subsidiaries did not have any designated deposit with any financial institutions within the PRC nor any overdue fixed deposit which could not be recovered.

POVERTY ALLEVIATION EXPENDITURE

In 2022, the expenditure on targeted poverty alleviation and rural revitalization project funds in the PRC in the name of the Company totaled RMB12.982 million.

LEGAL PROCEEDINGS

As at 31 December 2022, 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 2022 annual general meeting, the record date(s) for determining the eligibility to attend and vote at the 2022 annual general meeting, the entitlement to the final dividend and the period(s) for closure of register, the Company will upon confirmation thereof announce such details in the notice of the 2022 annual general meeting. Such notice is expected to be issued to shareholders in May 2023.

AUDITORS

As approved at the 2021 annual general meeting, Ernst & Young Hua Ming LLP was appointed as the Company's domestic and U.S. 20F Annual Report auditor for 2022, and Ernst & Young, registered public interest entity auditor, was appointed as the Hong Kong auditor of the Company for 2022. The Company did not change its auditors for the past three years.

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

This announcement of 2022 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 2022 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 2022, in accordance with the requirements under the Environmental, Social and Governance Reporting Guide of the Hong Kong Stock Exchange, the Company has completed the preparation and disclosure of the Environmental, Social and Governance in due time. The Company's 2022 Annual Environmental, Social and Governance Report will be published on the websites of the Company and the Hong Kong Stock Exchange in April 2023.

The Company was selected as one of the "2022 ESG Best Practice Cases List for A-share Listed Companies" by the China Listed Companies Association and was invited to share its experience at the ESG training conference for directors and supervisors of listed companies held by the Beijing Securities Regulatory Bureau.

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 2022 and will be published in April 2023, respectively. 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 will be available at:

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

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)
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
22 March 2023

A. FINANCIAL INFORMATION EXTRACTED FROM FINANCIAL STATEMENTS PREPARED UNDER INTERNATIONAL FINANCIAL REPORTING STANDARDS ("IFRSs")

1 Consolidated Statement of Comprehensive Income

For the year ended 31 December 2022
(Prepared in accordance with IFRSs)
(Amounts expressed in thousands of RMB, except per share data)

		For the year ended 31 December	
	Notes	**2022**	2021
			(Restated)
Operating revenue	*3*	**246,724,789**	205,079,497
Tax and levies on operations		**(1,442,438)**	(1,686,346)
Operating expenses, net			
Fuel		**(170,506,913)**	(146,752,263)
Maintenance		**(4,485,105)**	(4,503,584)
Impairment losses on financial and contract assets		**(48,257)**	(103,625)
Depreciation	*12*	**(24,380,204)**	(22,275,231)
Labour		**(16,147,626)**	(16,117,018)
Service fees on transmission and transformer facilities of HIPDC		**(47,947)**	(47,947)
Purchase of electricity		**(16,357,899)**	(9,114,851)
Others, net	*12*	**(15,683,187)**	(11,632,782)
Total operating expenses		**(247,657,138)**	(210,547,301)
Loss from operations		**(2,374,787)**	(7,154,150)

	Notes	For the year ended 31 December 2022	2021
			(Restated)
Interest income		**339,258**	288,291
Financial expenses, net			
Interest expense	*12*	**(9,962,125)**	(8,798,200)
Exchange gain/(loss) and bank charges, net		**136,151**	(40,290)
Total financial expenses, net		**(9,825,974)**	(8,838,490)
Share of profits less losses of associates and joint ventures		**1,042,108**	848,100
Other investment gain/(loss)		**5,438**	(7,345)
Loss before income tax expense	*12*	**(10,813,957)**	(14,863,594)
Income tax expense	*4*	**(158,658)**	1,929,755
Net loss		**(10,972,615)**	(12,933,839)

	For the year ended 31 December	
	2022	2021
		(Restated)
Other comprehensive loss, net of tax		
Items that will not be reclassified to profit or loss in subsequent periods:		
Fair value changes of other equity instrument investments	**(12,782)**	(46,808)
Share of other comprehensive income/(loss)of joint ventures and associates	**32,960**	(42,863)
Income tax effect	**3,324**	12,231
Items that may be reclassified subsequently to profit or loss:		
Share of other comprehensive income/(loss)of joint ventures and associates	**25,616**	(1,441)
Cash flow hedges:		
Effective portion of changes in fair value of hedging instruments arising during the year	**269,361**	1,235,874
Reclassification adjustments for losses included in profit or loss	**(1,401,283)**	(624,876)
Exchange differences on translation of foreign operations	**446,350**	(989,932)
Income tax effect	**192,427**	(103,870)
Other comprehensive loss, net of tax	**(444,027)**	(561,685)
Total comprehensive loss	**(11,416,642)**	(13,495,524)

	Notes	For the year ended 31 December 2022	2021
			(Restated)
Net loss attributable to:			
– Equity holders of the Company		**(8,026,233)**	(10,377,939)
– Non-controlling interests		**(2,946,382)**	(2,555,900)
		(10,972,615)	(12,933,839)
Total comprehensive loss attributable to:			
– Equity holders of the Company		**(8,114,708)**	(10,675,616)
– Non-controlling interests		**(3,301,934)**	(2,819,908)
		(11,416,642)	(13,495,524)
Losses per share attributable to the shareholders of the Company ***(expressed in RMB per share)***			
– Basic and diluted	*13*	**(0.65)**	(0.80)

Consolidated Statement of Financial Position
As at 31 December 2022
(Prepared in accordance with IFRSs)
(Amounts expressed in thousands of RMB)

	Notes	As at 31 December **2022**	2021 (Restated)
ASSETS			
Non-current assets			
Property, plant and equipment		**336,126,522**	320,819,879
Right-of-use assets		**18,998,833**	19,603,927
Investments in associates and joint ventures		**24,015,630**	23,085,837
Investment properties		**632,565**	635,268
Other equity instrument investments		**708,912**	729,070
Power generation licence		**4,156,846**	3,783,756
Mining rights		**1,611,486**	1,611,486
Deferred income tax assets		**5,632,709**	4,907,081
Derivative financial assets		**3,570**	69,753
Goodwill		**14,384,909**	14,276,224
Other non-current assets	*5*	**19,227,929**	19,056,005
Total non-current assets		**425,499,911**	408,578,286
Current assets			
Inventories		**12,701,908**	16,824,431
Other receivables and assets		**14,076,384**	14,698,932
Accounts and notes receivable	*6*	**42,654,332**	43,877,997
Contract assets		**68,738**	66,974
Derivative financial assets		**44,925**	652,458
Bank balances and cash		**17,175,575**	16,350,332
Total current assets		**86,721,862**	92,471,124
Total assets		**512,221,773**	501,049,410

	Notes	As at 31 December 2022	2021 (Restated)
EQUITY AND LIABILITIES			
Equity attributable to equity holders of the Company			
Share capital		**15,698,093**	15,698,093
Other equity instruments	*10*	**62,083,704**	48,417,977
Capital surplus		**23,710,686**	25,667,502
Surplus reserves		**8,140,030**	8,140,030
Reserve funds		**117,308**	–
Currency translation differences		**(602,823)**	(1,443,398)
Retained earnings		**6,517,524**	16,846,951
		115,664,522	113,327,155
Non-controlling interests		**19,651,537**	20,509,045
Total equity		**135,316,059**	133,836,200
Non-current liabilities			
Long-term loans		**151,677,526**	136,857,716
Long-term bonds	*8*	**39,062,047**	29,396,919
Lease liabilities		**5,622,536**	6,138,846
Deferred income tax liabilities		**2,169,841**	2,300,088
Derivative financial liabilities		**245,613**	99,323
Other non-current liabilities		**6,794,804**	6,022,017
Total non-current liabilities		**205,572,367**	180,814,909

		As at 31 December	
	Notes	**2022**	2021
			(Restated)
Current liabilities			
Accounts payable and other liabilities	*9*	**54,472,701**	54,609,553
Contract liabilities		**3,348,828**	3,274,770
Taxes payable		**1,647,373**	2,053,418
Dividends payable		**617,576**	1,041,452
Derivative financial liabilities		**417,237**	41,034
Short-term bonds		**6,312,777**	8,222,517
Short-term loans		**83,573,497**	91,896,725
Current portion of long-term loans		**19,129,989**	17,213,799
Current portion of long-term bonds	*8*	**730,336**	7,175,540
Current portion of lease liabilities		**1,009,339**	800,521
Current portion of other non-current liabilities		**73,694**	68,972
Total current liabilities		**171,333,347**	186,398,301
Total liabilities		**376,905,714**	367,213,210
Total equity and liabilities		**512,221,773**	501,049,410

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

(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 2022, the Group had net current liabilities of approximately RMB84.611 billion, and a portion of the Group's funding requirements for capital expenditures were satisfied by short-term financing. Taking into consideration the unutilised banking facilities of approximately exceeding RMB290.0 billion as at 31 December 2022, 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 3	*Reference to the Conceptual Framework*
Amendments to IAS 16	*Property, Plant and Equipment: Proceeds before Intended Use*
Amendments to IAS 37	*Onerous Contracts – Cost of Fulfilling a Contract*
Annual Improvements to IFRSs 2018-2020	Amendments to IFRS 1, IFRS 9, Illustrative Examples accompanying IFRS 16, and IAS 41

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

(i) Amendments to IFRS 3 *Reference to the Conceptual Framework*

Amendments to IFRS 3 replace a reference to the previous Framework for the Preparation and Presentation of Financial Statements with a reference to the *Conceptual Framework for Financial Reporting* (the "Conceptual Framework") issued in March 2018 without significantly changing its requirements. The amendments also add to IFRS 3 an exception to its recognition principle for an entity to refer to the Conceptual Framework to determine what constitutes an asset or a liability. The exception specifies that, for liabilities and contingent liabilities that would be within the scope of IAS 37 or IFRIC 21 if they were incurred separately rather than assumed in a business combination, an entity applying IFRS 3 should refer to IAS 37 or IFRIC 21 respectively instead of the Conceptual Framework. Furthermore, the amendments clarify that contingent assets do not qualify for recognition at the acquisition date. The Group has applied the amendments prospectively to business combinations that occurred on or after 1 January 2022. As there were no contingent assets, liabilities and contingent liabilities within the scope of the amendments arising in the business combination that occurred during the period, the amendments did not have any impact on the financial position and performance of the Group.

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

Amendments to IAS 16 prohibit an entity from deducting from the cost of an item of property, plant and equipment any proceeds from selling items produced while bringing that asset to the location and condition necessary for it to be capable of operating in the manner intended by management. Instead, an entity recognises the proceeds from selling any such items, and the cost of those items, in profit or loss. The Group has applied the amendments retrospectively to items of property, plant and equipment made available for use on or after 1 January 2021.

The following adjustments were made to the amounts recognised in the Group's consolidated statement of financial position at 1 January 2022. Line items that were affected by the changes of this accounting standard were shown below:

	As previously reported	**Effect of application of Amendments to IAS 16**	**As restated**
Property, plant and equipment	320,589,625	230,254	320,819,879
Investments in associates and joint ventures	23,037,904	47,933	23,085,837
Retained earnings	16,567,610	279,341	16,846,951
Non-controlling interests	20,510,199	(1,154)	20,509,045

As a result of the application of Amendments to IAS 16, the relevant line items in the Group's consolidated statement of comprehensive income for the year ended 31 December 2021 have been restated. The following table shows the effect for each individual line item affected:

	As previously reported	**Effect of application of Amendments to IAS 16**	**As restated**
Operating revenue	204,605,083	474,414	205,079,497
Tax and levies on operations	(1,686,341)	(5)	(1,686,346)
Operating expenses, net			
Fuel	(146,539,362)	(212,901)	(146,752,263)
Depreciation	(22,270,421)	(4,810)	(22,275,231)
Labour	(16,107,285)	(9,733)	(16,117,018)
Others, net	(11,599,153)	(33,629)	(11,632,782)
Share of profits less losses of associates and joint ventures	804,386	43,714	848,100
Net loss attributable to non-controlling interests	(2,554,695)	(1,205)	(2,555,900)

As a result of the application of Amendments to IAS 16, the relevant line items in the Group's consolidated statement of cash flows for the year ended 31 December 2021 have been restated. The following table shows the effect for each individual line item affected:

	As previously reported	**Effect of application of Amendments to IAS 16**	**As restated**
Loss before income tax expense	(15,120,644)	257,050	(14,863,594)
Depreciation of property, plant and equipment	21,490,876	4,810	21,495,686
Share of profits less losses of associates and joint ventures	(804,386)	(43,714)	(848,100)
Net cash generated from operating activities	6,032,841	218,147	6,250,988
Payment for the purchase of property, plant and equipment	(43,055,805)	(218,147)	(43,273,952)
Net cash used in investing activities	(42,275,959)	(218,147)	(42,494,106)

As a result of the application of Amendments to IAS 16, the relevant line items in the Group's consolidated statement of comprehensive income for the years ended 31 December 2022 and 2021 which have been affected are shown below:

	2022	2021
Operating revenue	**823,353**	474,414
Tax and levies on operations	**203**	5
Operating expenses, net		
Fuel	**219,481**	212,901
Labour	**25,212**	9,733
Others, net	**33,922**	33,629

(iii) Amendments to IAS 37 *Onerous Contracts – Cost of Fulfilling a Contract*

Amendments to IAS 37 clarify that for the purpose of assessing whether a contract is onerous under IAS 37, the cost of fulfilling the contract comprises the costs that relate directly to the contract. Costs that relate directly to a contract include both the incremental costs of fulfilling that contract (e.g., direct labour and materials) and an allocation of other costs that relate directly to fulfilling that contract (e.g., an allocation of the depreciation charge for an item of property, plant and equipment used in fulfilling the contract as well as contract management and supervision costs). General and administrative costs do not relate directly to a contract and are excluded unless they are explicitly chargeable to the counterparty under the contract. The Group has applied the amendments prospectively to contracts for which it has not yet fulfilled all its obligations at 1 January 2022 and no onerous contracts were identified. Therefore, the amendments did not have any impact on the financial position or performance of the Group.

(iv) *Annual Improvements to IFRSs 2018-2020* Amendments to IFRS 1, IFRS 9, Illustrative Examples accompanying IFRS 16, and IAS 41

Annual Improvements to IFRSs 2018-2020 sets out amendments to IFRS 1, IFRS 9, Illustrative Examples accompanying IFRS 16, and IAS 41. Details of the amendments that are applicable to the Group are as follows:

- IFRS 9 *Financial Instruments*: clarifies the fees that an entity includes when assessing whether the terms of a new or modified financial liability are substantially different from the terms of the original financial liability. These fees include only those paid or received between the borrower and the lender, including fees paid or received by either the borrower or lender on the other's behalf. The Group has applied the amendment prospectively to financial liabilities that are modified or exchanged on or after 1 January 2022. As there was no modification of the Group's financial liabilities during the period, the amendment did not have any impact on the financial position or performance of the Group.

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 2022	PRC power segment	Overseas segment *Note i*	All other segments	Inter-segment revenue	Total
– Sales of power and heat	207,923,505	28,167,697	–	–	236,091,202
– Sales of coal ash, coal and raw materials	1,763,278	1,640	–	–	1,764,918
– Port service	–	–	605,072	(346,149)	258,923
– Transportation service	–	–	228,019	(183,609)	44,410
– Lease income	108,211	1,220,675	–	–	1,328,886
– Others	2,444,212	4,781,394	31,421	(20,577)	7,236,450
Total	212,239,206	34,171,406	864,512	(550,335)	246,724,789
Revenue:					
– From contracts with customers within the scope of IFRS 15					245,395,903
– From other sources					1,328,886

For the year ended 31 December 2021 (Restated)	PRC power segment	Overseas segment *Note i*	All other segments	Inter-segment revenue	Total
– Sales of power and heat	178,688,230	15,437,421	–	–	194,125,651
– Sales of coal ash, 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	183,092,218	21,577,832	1,426,554	(1,017,107)	205,079,497
Revenue:					
– From contracts with customers within the scope of IFRS 15					203,606,098
– From other sources					1,473,399

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

(b) Segment information

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

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

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

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

(Under PRC GAAP)

	PRC power segment	Overseas segment	All other segments	Total
For the year ended 31 December 2022				
Total revenue	**212,239,206**	**34,171,406**	**864,512**	**247,275,124**
Intersegment revenue	**–**	**–**	**(550,335)**	**(550,335)**
External revenue	**212,239,206**	**34,171,406**	**314,177**	**246,724,789**
Segment results	**(12,554,462)**	**2,493,091**	**520,002**	**(9,541,369)**
Interest income	**203,093**	**133,871**	**2,294**	**339,258**
Interest expense	**(8,892,309)**	**(934,676)**	**(125,096)**	**(9,952,081)**
Impairment loss	**(2,726,262)**	**(5,834)**	**–**	**(2,732,096)**
Credit loss	**46,465**	**(94,722)**	**–**	**(48,257)**
Depreciation and amortisation	**(22,916,308)**	**(684,862)**	**(260,314)**	**(23,861,484)**
Net gain/(loss) on disposal of non-current assets	**164,415**	**(585)**	**(4)**	**163,826**
Share of profits less losses of associates and joint ventures	**423,159**	**–**	**522,934**	**946,093**
Income tax expense	**(26,205)**	**(335,157)**	**(20,844)**	**(382,206)**

	PRC power Segment	Overseas segment	All other segments	Total
For the year ended 31 December 2021 (Restated)				
Total revenue	183,092,218	21,577,832	1,426,554	206,096,604
Intersegment revenue	–	–	(1,017,107)	(1,017,107)
External revenue	183,092,218	21,577,832	409,447	205,079,497
Segment results	(15,446,192)	954,815	590,003	(13,901,374)
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	(20,811,625)	(600,029)	(224,634)	(21,636,288)
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	200,606	–	483,532	684,138
Income tax expense	1,667,483	(42,726)	(21,043)	1,603,714

				(Under PRC GAAP)
	PRC power segment	**Overseas segment**	**All other segments**	**Total**
31 December 2022				
Segment assets	**438,449,391**	**44,394,771**	**10,779,389**	**493,623,551**
Including:				
Additions to non-current assets (excluding financial assets and deferred income tax assets)	**44,492,820**	**240,565**	**53,207**	**44,786,592**
Investments in associates	**14,748,090**	**–**	**5,320,368**	**20,068,458**
Investments in joint ventures	**1,208,183**	**–**	**1,145,430**	**2,353,613**
Segment liabilities	**(344,746,791)**	**(27,166,963)**	**(2,015,618)**	**(373,929,372)**
31 December 2021(Restated)				
Segment assets	430,420,907	40,378,092	10,938,171	481,737,170
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	14,030,470	–	4,995,904	19,026,374
Investments in joint ventures	1,346,963	–	1,151,581	2,498,544
Segment liabilities	(337,445,709)	(23,857,688)	(2,655,232)	(363,958,629)

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

	For the year ended 31 December	
	2022	2021
		(Restated)
External revenue (PRC GAAP)	**246,724,789**	205,079,497
Operating revenue per IFRSs consolidated statement of comprehensive income	**246,724,789**	205,079,497

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

	For the year ended 31 December	
	2022	2021
		(Restated)
Segment results (PRC GAAP)	**(9,541,369)**	(13,901,374)
Reconciling items:		
Loss related to the headquarters	**(287,484)**	(309,414)
Share of profits of Huaneng Finance	**125,340**	188,956
Dividend income of other equity instrument Investments	**832**	1,743
Impact of IFRSs adjustments*	**(1,111,276)**	(843,505)
Loss before income tax expense per IFRSs consolidated statement of comprehensive income	**(10,813,957)**	(14,863,594)

Reportable segment assets are reconciled to total assets as follows:

	As at 31 December	
	2022	2021
		(Restated)
Total segment assets (PRC GAAP)	**493,623,551**	481,737,170
Reconciling items:		
Investment in Huaneng Finance	**1,476,326**	1,426,986
Deferred income tax assets	**6,322,055**	5,503,847
Prepaid income tax	**124,575**	695,156
Other equity instrument investments	**708,912**	729,070
Corporate assets	**350,560**	254,442
Impact of IFRSs adjustments*	**9,615,794**	10,702,739
Total assets per IFRSs consolidated statement of financial position	**512,221,773**	501,049,410

Reportable segment liabilities are reconciled to total liabilities as follows:

	As at 31 December	
	2022	2021
Total segment liabilities (PRC GAAP)	**(373,929,372)**	(363,958,629)
Reconciling items:		
Current income tax liabilities	**(331,928)**	(227,880)
Deferred income tax liabilities	**(1,086,765)**	(900,885)
Corporate liabilities	**(713,863)**	(1,089,086)
Impact of IFRSs adjustments*	**(843,786)**	(1,036,730)
Total liabilities per IFRSs consolidated statement of financial position	**(376,905,714)**	(367,213,210)

Other material items:

	Reportable segment total	Headquarters	Share of profits of Huaneng Finance	Impact of IFRSs adjustments*	Total
For the year ended 31 December 2022					
Total revenue	**246,724,789**	**–**	**–**	**–**	**246,724,789**
Interest expense	**(9,952,081)**	**(10,044)**	**–**	**–**	**(9,962,125)**
Depreciation and amortisation	**(23,861,484)**	**(51,809)**	**–**	**(574,549)**	**(24,487,842)**
Impairment loss	**(2,732,096)**	**–**	**–**	**(396,086)**	**(3,128,182)**
Credit loss	**(48,257)**	**–**	**–**	**–**	**(48,257)**
Share of profits less losses of associates and joint ventures	**946,093**	**–**	**125,340**	**(29,325)**	**1,042,108**
Net gain on disposal of non-current assets	**163,826**	**–**	**–**	**(34,989)**	**128,837**
Income tax expense	**(382,206)**	**–**	**–**	**223,548**	**(158,658)**
For the year ended 31 December 2021 (Restated)					
Total revenue	205,079,497	–	–	–	205,079,497
Interest expense	(8,785,995)	(12,205)	–	–	(8,798,200)
Depreciation and amortisation	(21,636,288)	(50,986)	–	(657,674)	(22,344,948)
Impairment loss	(89,094)	–	–	(2,543)	(91,637)
Credit loss	(103,625)	–	–	–	(103,625)
Share of profits less losses of associates and joint ventures	684,138	–	188,956	(24,994)	848,100
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

* IFRSs 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	
	2022	2021
		(Restated)
PRC	**212,553,383**	183,501,665
Overseas	**34,171,406**	21,577,832
Total	**246,724,789**	205,079,497

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	
	2022	2021
		(Restated)
PRC	**386,751,134**	371,522,590
Overseas	**22,586,601**	22,087,875
Total	**409,337,735**	393,610,465

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 2022, the revenue from grid companies under common control of State Grid Corporation of China within the PRC power segment in total accounted for 78% of external revenue (2021: 70%). 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			
	2022		2021	
	Amount	**Proportion**	Amount	Proportion
			(Restated)	(Restated)
State Grid Shandong Electric Power Company	**37,348,460**	**15%**	30,400,186	15%

(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 RMB323 million (2021: RMB324 million) at the beginning of the year has been recognised as revenue of heating pipeline service in 2022. The contract liabilities of RMB2,712 million (2021: RMB2,199 million) at the beginning of the year has been recognised as revenue of heat sales in 2022.

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

	As at 31 December	
	2022	**2021**
Within 1 year	**148,671**	208,668
Over 1 year	**3,966,404**	2,685,875
Total	**4,115,075**	2,894,543

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 2022 that have an original expected duration of one year or less.

4 Income tax expense

	For the year ended 31 December	
	2022	2021
		(Restated)
Current income tax expense	**881,825**	1,039,920
Deferred income tax	**(723,167)**	(2,969,675)
Total	**158,658**	(1,929,755)

No Hong Kong profits tax has been provided as there were no estimated assessable profits in Hong Kong for the year (2021: 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 2022 and 2021.

The income tax rate applicable to Singapore subsidiaries is 17% (2021: 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. 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) Turn over tax at 1.25% of 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. (i) 10 years in the case of ACT; (ii) The carry forward time period is 3 years in the case of turn over tax.

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

	For the year ended 31 December	
	2022	2021
		(Restated)
PRC statutory enterprise income tax rate	**25.00%**	25.00%
Effect of different tax rates of certain subsidiaries	**10.44%**	6.33%
Utilisation of previously unrecognised tax losses and deductible temporary differences	**2.60%**	2.01%
Unrecognised tax losses for the year	**(27.58%)**	(17.28%)
Unrecognised deductible temporary differences	**(8.87%)**	(3.22%)
Effect of non-taxable income	**2.36%**	1.06%
Effect of non-deductible expenses	**(3.29%)**	(1.08%)
Others	**(2.13%)**	0.16%
Effective tax rate	**(1.47%)**	12.98%

For the year ended 31 December 2022, the effective tax rate was proportioned by income tax expense to loss before tax (for the year ended 31 December 2021: income tax credit to loss before tax).

5 Other non-current assets

Details of other non-current assets are as follows:

	As at 31 December	
	2022	2021
Finance lease receivables *(i)*	**8,682,006**	8,664,550
VAT recoverable	**5,604,843**	6,213,495
Prepayments for pre-construction cost	**953,147**	479,138
Intangible assets *(ii)*	**657,420**	632,639
Prepaid connection fees	**24,156**	28,598
Contract assets	**1,002,283**	837,559
Others	**2,304,074**	2,200,026
Total	**19,227,929**	19,056,005

Notes:

(i) Ruyi Pakistan Energy entered into a power purchase agreement with Central Power Purchasing Agency (Guarantee) Limited ("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 2022, there was no impairment provided for the intangible assets (2021: Nil).

6 Accounts and notes receivable

Accounts and notes receivable comprised the following:

	As at 31 December	
	2022	2021
Accounts receivable	**39,986,340**	40,274,603
Notes receivable	**2,792,246**	3,743,482
	42,778,586	44,018,085
Less: Loss allowance	**124,254**	140,088
Total	**42,654,332**	43,877,997
Analysed into:		
Accounts receivable		
– At amortised cost	**39,986,340**	39,996,822
– At fair value through other comprehensive income	**–**	277,781
	39,986,340	40,274,603
Notes receivable		
– At amortised cost	**2,792,246**	3,743,482

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

	As at 31 December	
	2022	2021
RMB	**38,114,036**	39,818,368
S$ (RMB equivalent)	**1,756,789**	1,177,499
US$ (RMB equivalent)	**311,964**	85,595
PKR (RMB equivalent)	**2,595,797**	2,936,623
Total	**42,778,586**	44,018,085

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. The credit period of accounts receivable from CPPA-G by Ruyi Pakistan Energy was to five months.

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:

	2022	2021
Beginning of the year	**(140,088)**	(155,929)
Provision	**(10,941)**	(22,096)
Reversal	**24,859**	36,586
Write-off	**2,438**	925
Currency translation differences	**(522)**	426
End of the year	**(124,254)**	(140,088)

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

	As at 31 December	
	2022	2021
Within 1 year	**42,301,386**	43,683,311
Between 1 and 2 years	**241,380**	114,471
Between 2 and 3 years	**54,471**	59,241
Over 3 years	**181,349**	161,062
Total	**42,778,586**	44,018,085

As at 31 December 2022, the maturity period of the notes receivable ranged from 1 to 12 months (31 December 2021: from 1 to 12 months).

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

(a) Dividends of ordinary shares

On 28 June 2022, upon the approval from the annual general meeting of the shareholders, the Company declared no dividend in 2021 (2020: RMB0.18 per ordinary share, totalling approximately RMB2,826 million).

On 21 March 2023, the Board of Directors proposed no cash dividend for the year of 2022. 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 2022, the net profit attributable to holders of other equity instruments, based on the applicable rates, was RMB2,192 million, and the cumulative distribution paid in 2022 was RMB2,137 million.

8 Long-term bonds

Outstanding corporate bonds, medium-term notes and debt financing instruments (including long-term bonds due within one year) of the Group as at 31 December 2022 are summarised as follows:

Type of Instruments	Face Value	Issuance Date	Initial Period	Initial Distribution Rate	Effective Rate	Issue Price	Balance as at 31 December 2021	Issued Amount	Amortisation	Interest	Repayment	Foreign Exchange Gain	Foreign Currency Translation Differences	Interest Payable	Balance as at 31 December 2022
2016 corporate bonds (5 years)	3,000,000	June 2016	5 years	3.48%	3.48%	3,000,000	9	–	(9)	–	–	–	–	–	–
2016 corporate bonds (10 years)	1,200,000	June 2016	10 years	3.98%	3.98%	1,200,000	1,226,442	–	12	47,760	(47,760)	–	–	26,430	1,226,454
2017 medium-term notes (5 years)	5,000,000	July 2017	5 years	4.69%	4.90%	5,000,000	5,114,928	–	5,181	123,353	(5,234,500)	–	–	–	8,962
2018 medium-term notes (3 years)	2,000,000	July 2018	3 years	4.41%	4.56%	2,000,000	2,799	–	–	–	–	–	–	–	2,799
2018 corporate bonds (10 years)	5,000,000	September 2018	10 years	5.05%	5.05%	5,000,000	5,078,224	–	30	252,500	(252,500)	–	–	78,171	5,078,254
2019 corporate bonds (10 years)	2,300,000	April 2019	10 years	4.70%	4.70%	2,300,000	2,374,948	–	14	108,100	(108,100)	–	–	74,930	2,374,962
2019 corporate bonds (3 years)	1,000,000	July 2019	3 years	3.55%	3.55%	1,000,000	1,017,160	–	(42)	18,382	(1,035,500)	–	–	–	–
2019 medium-term notes (3 years)	500,000	July 2019	3 years	3.55%	3.65%	500,000	507,807	–	266	9,677	(517,750)	–	–	–	–
2019 medium-term notes (5 years)	1,500,000	July 2019	5 years	3.85%	3.96%	1,500,000	1,522,587	–	1,444	57,750	(57,750)	–	–	26,264	1,524,031
2020 corporate bonds (5 years)	2,108,865	February 2020	5 years	2.25%	2.32%	2,108,865	1,920,795	–	329	47,714	(47,810)	(11,250)	190,468	17,493	2,100,246
2020 corporate bonds (10 years)	2,108,865	February 2020	10 years	2.63%	2.72%	2,108,865	1,915,197	–	406	55,666	(55,778)	(11,250)	190,732	20,409	2,094,973
2021 medium-term notes (3 years)	1,000,000	February 2021	3 years	3.45%	3.66%	1,000,000	1,030,612	–	1,887	34,500	(34,500)	–	–	30,814	1,032,499
2021 medium-term notes (3 years)	2,500,000	April 2021	3 years	3.35%	3.40%	2,500,000	2,559,318	–	707	83,750	(83,750)	–	–	59,658	2,560,025
2021 corporate bonds (3 years)	500,000	May 2021	3 years	3.35%	3.35%	500,000	510,189	–	10	16,750	(16,750)	–	–	10,188	510,199
2021 corporate bonds (10 years)	1,500,000	May 2021	10 years	3.97%	3.97%	1,500,000	1,536,212	–	9	59,550	(59,550)	–	–	36,219	1,536,221
2021 corporate bonds (3 years)	500,000	June 2021	3 years	3.33%	3.33%	500,000	509,489	–	10	16,650	(16,650)	–	–	9,488	509,499
2021 corporate bonds (10 years)	3,500,000	June 2021	10 years	3.97%	3.97%	3,500,000	3,579,163	–	21	138,950	(138,950)	–	–	79,182	3,579,184
2021 corporate bonds (10 years)	1,800,000	June 2021	10 years	3.99%	3.99%	1,800,000	1,838,162	–	11	71,820	(71,820)	–	–	38,173	1,838,173
2021 corporate bonds (3 years)	2,000,000	August 2021	3 years	2.99%	3.01%	2,000,000	2,022,070	–	500	59,800	(59,800)	–	–	22,282	2,022,570
2021 corporate bonds (3 years)	2,000,000	November 2021	3 years	3.07%	3.07%	2,000,000	2,006,225	–	(183)	61,400	(61,400)	–	–	6,224	2,006,042
2021 medium-term bonds (3 years)	300,000	December 2021	3 years	2.95%	2.95%	300,000	300,123	–	–	8,848	(8,850)	–	–	121	300,121
2022 medium-term bonds (10 years)	1,500,000	February 2022	10 years	3.74%	3.80%	1,500,000	–	1,500,000	528	47,647	–	–	–	47,647	1,548,175
2022 medium-term bonds (3 years)	3,000,000	March 2022	3 years	2.84%	2.89%	3,000,000	–	3,000,000	(3,140)	70,728	–	–	–	70,728	3,067,588
2022 medium-term bonds (10 years)	1,500,000	April 2022	10 years	3.70%	3.76%	1,500,000	–	1,500,000	418	38,622	–	–	–	38,622	1,539,040
2022 medium-term bonds (3 years)	500,000	April 2022	3 years	2.92%	2.92%	500,000	–	500,000	–	10,000	–	–	–	10,000	510,000
2022 medium-term bonds (2 years)	300,000	June 2022	2 years	2.37%	2.40%	300,000	–	300,000	25	3,740	–	–	–	3,740	303,765
2022 medium-term bonds (3 years)	2,000,000	August 2022	3 years	2.40%	2.51%	2,000,000	–	2,000,000	(4,974)	19,595	–	–	–	19,595	2,014,621
2022 medium-term bonds (2 years)	500,000	August 2022	2 years	2.14%	2.17%	500,000	–	500,000	22	3,958	–	–	–	3,958	503,980
Total						50,617,730	36,572,459	9,300,000	3,482	1,467,210	(7,909,468)	(22,500)	381,200	730,336	39,792,383

Outstanding corporate bonds, medium-term notes and debt financing instruments (including long-term bonds due within one year) of the Group as at 31 December 2021 are summarised as follows:

Type of Instruments	Face Value	Issuance Date	Initial Period	Initial Distribution Rate	Effective Rate	Issue Price	Balance as at 31 December 2020	Issued Amount	Amortisation	Interest	Repayment	Foreign Exchange Gain	Foreign Currency Translation Differences	Interest Payable	Balance as at 31 December 2021
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)	2,108,865	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)	2,108,865	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

As at 31 December 2022, the Company provided guarantees for long-term bonds of approximately RMB4,179 million (31 December 2021: RMB3,826 million) of the Company's overseas subsidiary.

The maturity profile of the Group's long-term bonds as at the end of the reporting period, based on the contractual undiscounted payments, is as follows:

	As at 31 December	
	2022	2021
Within 1 year	**2,110,625**	8,457,746
After 1 year but within 2 years	**1,141,603**	1,277,140
After 2 years but within 5 years	**22,427,334**	16,048,337
After 5 years	**21,252,990**	18,405,291
Total	**46,932,552**	44,188,514

9 Accounts payable and other liabilities

Accounts payable and other liabilities comprised of:

	As at 31 December	
	2022	2021
Accounts and notes payables	**24,367,693**	25,774,238
Payables to contractors for construction	**21,443,219**	19,922,953
Retention payables to contractors	**1,773,257**	1,795,819
Consideration payables for acquiring a subsidiary	**22,842**	22,842
Others	**6,865,690**	7,093,701
Total	**54,472,701**	54,609,553

As at 31 December 2022, there were notes payable amounting to RMB22 million (31 December 2021: RMB7 million) secured by notes receivable.

As at 31 December 2022 and 31 December 2021, 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	
	2022	2021
RMB	**49,619,219**	50,956,022
S$ (RMB equivalent)	**2,047,597**	1,537,356
US$ (RMB equivalent)	**2,146,746**	576,113
JPY (RMB equivalent)	**16,700**	13,988
PKR (RMB equivalent)	**642,426**	1,526,074
GBP (RMB equivalent)	**13**	–
Total	**54,472,701**	54,609,553

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

	As at 31 December	
	2022	2021
Within 1 year	**23,857,045**	25,271,613
Between 1 to 2 years	**368,324**	373,752
Over 2 years	**142,324**	128,873
Total	**24,367,693**	25,774,238

10 Other equity instruments

(a) Other equity instruments as at 31 December 2022

Type of Instruments	Issuance Date	Category	Initial Distribution Rate	Issue Price	Number	Par Value	Initial Period	Conversion Condition	Conversion Result
Yingda Insurance Financing Plan (1st)	September 2018	Equity Instrument	5.79%	–	–	3,283,000	8 years	None	None
Yingda Insurance Financing Plan (2nd)	September 2018	Equity Instrument	5.79%	–	–	827,000	8 years	None	None
Yingda Insurance Financing Plan (3rd)	September 2018	Equity Instrument	5.79%	–	–	890,000	8 years	None	None
China Life Financing Plan (1st)	September 2019	Equity Instrument	5.05%	–	–	2,070,000	8 years	None	None
PICC Financing Plan (1st)	September 2019	Equity Instrument	5.10%	–	–	930,000	10 years	None	None
China Life Financing Plan (2nd)	October 2019	Equity Instrument	5.05%	–	–	2,260,000	8 years	None	None
PICC Financing Plan (2nd)	October 2019	Equity Instrument	5.10%	–	–	1,740,000	10 years	None	None
2019 medium-term notes (4th)	November 2019	Equity Instrument	4.53%	0.1	15,000,000	1,500,000	5 Years	None	None
Bond 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
2022 medium-term notes (5th)	July 2022	Equity Instrument	2.93%	0.1	20,000,000	2,000,000	3 Years	None	None
2022 medium-term notes (8th)	September 2022	Equity Instrument	2.78%	0.1	5,000,000	500,000	3 Years	None	None
2022 medium-term notes (9th)	October 2022	Equity Instrument	2.78%	0.1	20,000,000	2,000,000	3 Years	None	None
2022 medium-term notes (10th)	October 2022	Equity Instrument	2.72%	0.1	20,000,000	2,000,000	3 Years	None	None
2022 medium-term notes (11th)	November 2022	Equity Instrument	2.66%	0.1	25,000,000	2,500,000	3 Years	None	None
Huaneng Trust (1st)	September 2022	Equity Instrument	2.91%	–	–	2,500,000	5 Years	None	None
Huaneng Trust (2nd)	October 2022	Equity Instrument	3.06%	–	–	3,050,000	5 Years	None	None
Huaneng Trust (3rd)	November 2022	Equity Instrument	3.11%	–	–	4,000,000	5 Years	None	None
Huaneng Trust (4th)	November 2022	Equity Instrument	3.11%	–	–	4,000,000	5 Years	None	None
Total						61,550,000			

(b) Major provisions

In 2017, the Company issued two tranches of perpetual corporate bonds with net proceeds of approximately RMB2,500 million (Bond A) and RMB2,500 million (Bond B), respectively. The perpetual corporate bonds are issued at par value with initial distribution rates of 5.05% and 5.17% with a term of 3 years and 5 years respectively. 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 years 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, and will remain it afterwards. 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. On the first call date of Bond B in September 2022, the Company decided to exercise the callable option. The bond was redeemed in whole on 25 September 2022.

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, and will remain it afterwards. On the first call date of above medium-term notes in October 2022, the Company decided to exercise the callable option. The two tranches of medium-term notes were redeemed in whole on 18 October 2022 and 25 October 2022, respectively.

In November 2019, the Company issued two tranches of medium-term notes with net proceeds of approximately RMB2,500 million and RMB1,500 million. The medium-term notes are issued at par value with initial distribution rates of 4.15% and 4.53%, respectively. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in November in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interests and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 and 5 years respectively. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards. On the first call date of 2019 medium-term notes of RMB2,500 million, the Company decided to exercise the callable option. The bond was redeemed in whole on 5 November 2022.

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

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

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

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

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

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

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

In July 2022, the Company issued medium-term notes with net proceeds of approximately RMB2,000 million. The medium-term notes are issued at par value with an initial distribution rate of 2.93%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

In September 2022, the Company issued medium-term notes with net proceeds of approximately RMB500 million. The medium-term notes are issued at par value with an initial distribution rate of 2.78%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

In September 2022, the Company issued the first tranche of the Huaneng Trust Yingfeng No.1 Single Fund Trust ("Huaneng Trust (1st)") with the proceeds of RMB2,500 million. Huaneng Trust (1st) has no fixed period with initial distribution rate of 2.91%. The interest of Huaneng Trust (1st) is recorded as distributions, which is paid annually in arrears in August in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company or liquidation or bankruptcy the Company) occur. The Company has the right to defer current interest and all deferred interest. Huaneng Trust (1st) has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 5th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 6th year after the issuance, to the basis rate plus 300 basis points, and will remain 5.91% afterwards.

In October 2022, the Company issued two medium-term notes with net proceeds of approximately RMB2,000 million and RMB2,000 million. The medium-term notes are issued at par value with an initial distribution rate of 2.78% and 2.72% respectively. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

In October 2022, the Company issued the second tranche of the Huaneng Trust Yingfeng No.1 Single Fund Trust ("Huaneng Trust (2nd)") with the proceeds of RMB3,050 million. Huaneng Trust (2nd) has no fixed period with initial distribution rate of 3.06%. The interest of Huaneng Trust (2nd) is recorded as distributions, which is paid annually in arrears in September in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company or liquidation or bankruptcy the Company) occur. The Company has the right to defer current interest and all deferred interest. Huaneng Trust (2nd) has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 5th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 6th year after the issuance, to the basis rate plus 300 basis points, and will remain 6.06% afterwards.

In November 2022, the Company issued medium-term notes with net proceeds of approximately RMB2,500 million. The medium-term notes are issued at par value with an initial distribution rate of 2.66%. The interest of the medium-term notes is recorded as distributions, which are paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory distribution payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company) occur. The Company has the right to defer current interest and all deferred interest. The medium-term notes have no fixed maturity date and are callable at the Company's discretion at specific time, and the payment of the principal may be deferred for each renewal period to 3 years. The applicable distribution rate will be reset on the first call date and for each renewal period after the first call date, to the sum of the applicable benchmark interest rate, the initial spread and 300 basis points per annum, and will remain it afterwards.

In November 2022, the Company issued the third tranche of the Huaneng Trust Yingfeng No.1 Single Fund Trust ("Huaneng Trust (3rd)") with the proceeds of RMB4,000 million. Huaneng Trust (3rd) has no fixed period with initial distribution rate of 3.11%. The interest of Huaneng Trust (3rd) is recorded as distributions, which is paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company or liquidation or bankruptcy the Company) occur. The Company has the right to defer current interest and all deferred interest. Huaneng Trust (3rd) has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 5th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 6th year after the issuance, to the basis rate plus 300 basis points, and will remain 6.11% afterwards.

In November 2022, the company issued the fourth tranche of the Huaneng Trust Yingfeng No.1 Single Fund Trust ("Huaneng Trust (4th)") with the proceeds of RMB4,000 million. Huaneng Trust (4th) has no fixed period with initial distribution rate of 3.11%. The interest of Huaneng Trust (4th) is recorded as distributions, which is paid annually in arrears in October in each year and may be deferred at the discretion of the Company unless compulsory payment events (distributions to ordinary shareholders of the Company or reduction of the registered capital of the Company or liquidation or bankruptcy the Company) occur. The Company has the right to defer current interest and all deferred interest. Huaneng Trust (4th) has no fixed maturity date and is callable at the Company's discretion in whole at each distribution date after the 5th year of issuance, or the payment of the principal may be deferred at each distribution date mentioned above. The applicable distribution rate will be reset during the period from the 6th year after the issuance, to the basis rate plus 300 basis points, and will remain 6.11% afterwards.

The perpetual corporate bonds, financing plans and medium-term notes were recorded as other equity instruments in the consolidated financial statements. During the year ended 31 December 2022, the profit attributable to holders of other equity instruments, based on the applicable distribution rates, was RMB2,192 million (2021: RMB2,137 million).

(c) Changes of other equity instruments during 2022

	As at 1 January 2022		Issuance		Cumulative distributions				As at 31 December 2022	
Type of instruments	Number	Amount	Number	Amount	Accrued distribution	Distribution payment	Redemption value	Other reduction	Number	Amount
Bond B	25,000,000	2,534,665	–	–	94,547	129,250	2,500,000.	38	–	–
Yingda Insurance Financing Plan (1st)	–	3,288,808	–	–	192,726	192,726	–	–	–	3,288,808
Yingda Insurance Financing Plan (2nd)	–	828,463	–	–	48,548	48,548	–	–	–	828,463
Yingda Insurance Financing Plan (3rd)	–	891,575	–	–	52,247	52,247	–	–	–	891,575
China Life Financing Plan (1st)	–	2,073,485	–	–	105,987	105,987	–	–	–	2,073,485
PICC Financing Plan (1st)	–	930,659	–	–	48,089	47,957	–	–	–	930,791
2019 medium-term notes (2nd)	20,000,000	2,008,058	–	–	64,833	81,600	2,000,000	8,709	–	–
2019 medium-term notes (3rd)	20,000,000	2,006,382	–	–	65,910	81,000	2,000,000	8,708	–	–
China Life Financing Plan (2nd)	–	2,263,804	–	–	115,715	115,715	–	–	–	2,263,804
PICC Financing Plan (2nd)	–	1,741,232	–	–	89,973	89,726	–	–	–	1,741,479
2019 medium-term notes (4th)	25,000,000	2,508,853	–	–	87,548	103,750	2,500,000	7,349	–	–
2019 medium-term notes (4th)	15,000,000	1,503,373	–	–	67,950	67,950	–	7,238	15,000,000	1,510,611
Bond C	20,000,000	2,055,687	–	–	71,600	71,600	–	24	20,000,000	2,055,711
Bond D	10,000,000	1,029,944	–	–	38,500	38,500	–	12	10,000,000	1,029,956
2020 medium-term notes (1st)	30,000,000	3,058,322	–	–	95,400	95,400	–	10,418	30,000,000	3,068,740
China Life Financing Plan (3rd)	–	3,575,653	–	–	171,930	171,930	–	–	–	3,575,653
PICC Financing Plan (3rd)	–	930,613	–	–	44,789	44,666	–	–	–	930,736
Bond E	25,000,000	2,553,517	–	–	77,250	77,250	–	29	25,000,000	2,553,546
2020 medium-term notes (2nd)	35,000,000	3,557,499	–	–	126,000	126,000	–	10,161	35,000,000	3,567,660
2020 medium-term notes (3rd)	20,000,000	2,024,834	–	–	79,800	79,800	–	4,682	20,000,000	2,029,516
PICC Financing Plan (4th)	–	3,001,916	–	–	139,917	139,533	–	–	–	3,002,300
Bond F	30,000,000	3,040,643	–	–	131,400	131,400	–	37	30,000,000	3,040,680
2020 medium-term notes (4th)	10,000,000	1,009,992	–	–	44,000	44,000	–	2,907	10,000,000	1,012,899

	As at 1 January 2022		Issuance		Cumulative distributions				As at 31 December 2022	
Type of instruments	Number	Amount	Number	Amount	Accrued distribution	Distribution payment	Redemption value	Other reduction	Number	Amount
2022 medium-term notes (5th)	–	–	20,000,000	2,000,000	26,169	–	–	–	20,000,000	2,026,169
2022 medium-term notes (8th)	–	–	5,000,000	500,000	4,608	–	–	–	5,000,000	504,608
2022 medium-term notes (9th)	–	–	20,000,000	2,000,000	12,034	–	–	–	20,000,000	2,012,034
2022 medium-term notes (10th)	–	–	20,000,000	2,000,000	10,284	–	–	–	20,000,000	2,010,284
2022 medium-term notes (11th)	–	–	25,000,000	2,500,000	10,749	–	–	–	25,000,000	2,510,749
Huaneng Trust (1st)	–	–	–	2,500,000	20,529	–	–	–	–	2,520,529
Huaneng Trust (2nd)	–	–	–	3,050,000	20,200	–	–	–	–	3,070,200
Huaneng Trust (3rd)	–	–	–	4,000,000	16,359	–	–	–	–	4,016,359
Huaneng Trust (4th)	–	–	–	4,000,000	16,359	–	–	–	–	4,016,359
Total	285,000,000	48,417,977	90,000,000	22,550,000	2,191,950	2,136,535	9,000,000	60,312	285,000,000	62,083,704

11 Additional financial information to the consolidated statement of financial position

As at 31 December 2022, the net current liabilities of the Group amounted to approximately RMB84,611 million (2021: RMB93,927 million). On the same date, total assets less current liabilities were approximately RMB340,888 million (2021: RMB314,651 million (restated)).

12 Loss before income tax expense

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

	For the year ended 31 December	
	2022	2021
		(Restated)
Total interest expense on borrowings	**10,955,940**	10,096,884
Less: amounts capitalised in property, plant and equipment	**993,815**	1,298,684
Interest expense charged to the consolidated statement of comprehensive income	**9,962,125**	8,798,200
Including: Interest expense on lease liabilities	**298,798**	169,696
Depreciation of property, plant and equipment	**23,372,667**	21,495,686
Depreciation of investment properties	**21,791**	30,162
Depreciation of right-of-use assets	**985,746**	749,383
	24,380,204	22,275,231
Included in other investment gain		
– Dividends on other equity instrument investments	**832**	1,743
– Other	**4,606**	5,772

	For the year ended 31 December	
	2022	2021
		(Restated)
Included in other operating expenses:		
– Operating expense of Ruyi Pakistan Energy	**4,612,008**	3,943,171
– Service concession construction cost	**89,048**	148,578
– Other materials expense	**1,641,319**	1,611,493
– Electricity charges	**758,112**	1,109,709
– Cost of sales of raw materials	**631,590**	1,125,710
– Water charges	**594,212**	617,595
– Insurance expense	**490,155**	413,985
– Cleaning, greening and fire protection expense	**434,833**	440,704
– Purchase of power generation quota	**708**	231,233
– Transportation allowance	**194,367**	190,532
– Pollutant charge	**127,015**	98,037
– Water conservancy fund and disabled security fund	**107,873**	92,199
– Test and inspection expense	**343,754**	341,511
– Service charge	**545,375**	335,874
– Heating pipeline related cost	**158,520**	159,990
– Auditors' remuneration-audit services	**40,326**	32,996
– Other consulting expense	**161,004**	114,361
– Office expense	**278,921**	276,561
– Minimum lease payments under operating leases, lease payments not included in the measurement of lease liabilities	**327,002**	114,909
– Amortisation of other non-current assets	**107,638**	69,717
– Property management expense	**138,110**	99,561
– Information technology maintenance expense	**254,415**	245,027
– Travel expense	**90,300**	128,458

	For the year ended 31 December	
	2022	2021
		(Restated)
– Business entertainment expense	**34,318**	39,678
– Research and development expenditure	**1,607,847**	1,324,735
– Net loss on disposal of materials and supplies	**185**	13,575
– Net gain on disposal of non-current assets	**(128,837)**	(520,878)
– Recognition/(reversal) of provision for inventory obsolescence	**6,486**	(242)
– Impairment loss on property, plant and equipment	**1,823,978**	28,879
– Impairment loss on goodwill	**897,524**	–
– Impairment loss on other non-current assets*	**400,194**	63,000
– Gain on Three Supplies and Property Management	**(139,094)**	(36,835)
– Government grants**	**(1,722,363)**	(2,013,149)
– Penalties	**10,113**	45,349
– Donations	**36,400**	37,707
– Others	**729,831**	709,052
Total	**15,683,187**	11,632,782

* In 2022, the Group recognised an impairment of RMB375 million for the investment in Huangtai #8 Power Plant.

** In 2022, the government subsidies related to income mainly include heat supply subsidy of RMB435 million (2021: RMB208 million), shutdown standby compensation of RMB389 million (2021: RMB707 million), thermal coal subsidy of RMB312 million (2021: RMB178 million), VAT reduction and rebate of RMB204 million (2021: RMB212 million), the post stabilization subsidy is RMB14 million (2021: RMB4 million) and the coal guarantee fund received by each company is RMB10 million (2021: RMB197 million).

13 Losses 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	
	2022	2021
		(Restated)
Consolidated net loss attributable to equity holders of the Company	**(8,026,233)**	(10,377,939)
Less: cumulative distribution of other equity instruments	**2,191,950**	2,137,420
Consolidated net loss attributable to ordinary shareholders of the Company	**(10,218,183)**	(12,515,359)
Weighted average number of the Company's outstanding ordinary shares *('000)* *	**15,698,093**	15,698,093
Basic and diluted loss per share *(RMB)*	**(0.65)**	(0.80)

* Weighted average number of ordinary shares:

	2022	2021
	'000	*'000*
Issued ordinary shares at 1 January	**15,698,093**	15,698,093
Weighted average number of ordinary shares at 31 December	**15,698,093**	15,698,093

There was no dilutive effect on earnings per share since the Company had no dilutive potential ordinary shares for the years ended 31 December 2022 and 2021.

14 Contingent liabilities

Disputes over responsibilities for damage caused by vessel collision over the 400MW Offshore Wind Power Project of Shengdong Rudong Offshore Wind-power Co., Ltd. (“Shengdong Rudong”)

Shengdong Rudong, a subsidiary of the Company, was in charge of the construction and operation of a 400MW Offshore Wind-power Project. As stipulated by the construction contract signed between Shengdong Rudong and CCCC Third Harbor Engineering Bureau Co., Ltd. (“CCCC Third Harbor Bureau”) on 18 April 2019, CCCC Third Harbor Bureau was responsible for the construction of the offshore wind farm and related construction safety management. On 1 August 2019, a vessel chartering contract was signed between CCCC Third Harbor Bureau and Nantong Ocean Water Construction Engineering Co., Ltd. (“Nantong Water Construction”). As stipulated by the contract, Vessel “Wen Qiang 8”, which was owned by Nantong Water Construction, would be chartered by CCCC Third Harbor Bureau as the construction operation vessel. During the chartering period, Nantong Water Construction was responsible for the safety of Vessel “Wen Qiang 8” and the security of the personnel on board.

On 22 September 2019, in order to evade typhoon, Vessel “Wen Qiang 8” anchored nearby the #32 wind turbine pile foundation of Shengdong Rudong 400MW Offshore Wind-farm located around Nantong coastal area. Affected by strong wind, violent waves and big tides, the anchor steel cable was broken, leading to dragging-of-anchor of Vessel “Wen Qiang 8”, and collision with the pipeline bridge of land-island access of Nantong Gang Yangkou Port. The pipeline bridge, bearing line pipes, and Vessel “WenQiang 8” all suffered damages from this collision accident, constituting a relatively large level of water traffic accident.

The above accident has resulted in three lawsuits in 2020, with the litigation claiming amount being approximately RMB831 million in total. Shengdong Rudong, together with other several entities, were joint defendants. At the end of 2021, the lawsuits were accepted by the court and are pending for judge up to now. Since the lawsuits are still at the stage of evidences exchange and loss identification between the plaintiff and the joint defendants, it is not possible to estimate the financial impact on the Company’s financial statements.

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	**2022**	2021 (Restated)	**Fluctuation** %
Operating revenue	RMB	246,724,789,201	205,079,496,628	20.31
Loss before income tax expense	RMB	(9,702,681,652)	(14,020,089,021)	-30.79
Net loss attributable to equity holders of the Company	RMB	(7,387,119,286)	(10,006,110,142)	-26.17
Net loss attributable to equity holders of the Company less non-recurring items	RMB	(9,422,071,298)	(12,300,155,645)	-23.40
Basic and diluted losses per share	RMB/share	(0.61)	(0.77)	-20.78
Basic losses per share less non-recurring items	RMB/share	(0.74)	(0.92)	-19.57
Weighted average of return on equity	%	(18.50)	(18.71)	-1.12
Weighted average of return on equity less non-recurring items	%	(22.43)	(22.24)	0.85
Net cash generated from operating activities	RMB	32,519,550,114	6,250,987,399	420.23
Total assets	RMB	502,605,977,488	490,346,672,977	2.50
Equity to equity holders of the Company	RMB	108,535,478,172	105,534,931,499	2.84

Notes: 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 the 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 2022
Net gain on disposal of non-current assets	163,825,674
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 *(Note 1)*	1,804,436,639
Reversal of loss allowances for receivables and contract assets individually tested for impairments	57,425,987
Profits and losses from entrusted loans	3,860,095
Non-operating income and expenses besides items above *(Note 2)*	339,177,397
Other items recorded in the profit or loss in accordance with the definition of non-recurring items *(Note 3)*	12,850,731
	2,381,576,523
Impact of income tax	(91,271,509)
Impact of non-controlling interests (net of tax)	(255,353,002)
	2,034,952,012

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 2022	Reason
Value-added tax levied immediately returned	169,016,680	Closely related to the normal business of the Company
Carbon emissions trading costs	104,395,867	Closely related to the normal business of the Company
Carbon emissions trading income	478,527,260	Closely related to the normal business of the Company

Note 2: In 2022, 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 and donations of the Company and its subsidiaries.

Note 3: In 2022, other items satisfy the definition of extraordinary profit or loss are expenses of entrusted management service purchased and income of entrusted operation services provided.

3 INCOME STATEMENTS

	For the year ended 31 December			
	2022 Consolidated	2021 Consolidated (Restated)	**2022 Company**	2021 Company (Restated)
Operating revenue	**246,724,789,201**	205,079,496,628	**29,158,191,109**	26,715,618,286
Less: Operating cost	**239,220,714,581**	205,542,199,513	**30,386,215,490**	30,155,539,075
Taxes and surcharges	**1,442,438,292**	1,686,346,156	**248,599,535**	287,592,993
Selling expenses	**180,177,087**	192,832,968	**16,678,721**	11,567,458
General and administrative expenses	**5,636,682,791**	5,594,097,660	**1,566,087,070**	1,542,038,501
Research and development expenses	**1,607,846,589**	1,324,734,581	**279,095,663**	279,166,476
Financial expenses	**9,486,716,366**	8,550,198,271	**2,060,397,534**	2,114,219,265
Including: Interest expenses	**9,962,125,108**	8,798,199,633	**2,370,854,970**	2,246,684,798
Interest income	**339,257,545**	288,290,945	**373,822,968**	155,225,082
Add: Other income	**1,965,834,016**	2,123,878,725	**560,473,567**	821,251,622
Investment income	**1,076,871,295**	865,748,323	**7,520,013,143**	5,466,921,260
Including: investment income from associates and joint ventures	**1,071,433,053**	873,093,642	**1,262,255,279**	1,106,116,869
Credit losses	**(48,257,115)**	(103,625,085)	**54,967,924**	(1,495,089,744)
Impairment losses	**(2,732,097,106)**	(89,093,473)	**(111,036,208)**	(5,716,330)
Gain on disposal of non-current assets	**176,733,417**	469,290,425	**1,432,498**	2,615,783
Operating (loss)/profit	**(10,410,701,998)**	(14,544,713,606)	**2,626,968,020**	(2,884,522,891)
Add: Non-operating income	**952,336,741**	819,922,803	**141,228,354**	226,924,848
Less: Non-operating expenses	**244,316,395**	295,298,218	**17,584,890**	119,134,874
(Loss)/profit before income tax expense	**(9,702,681,652)**	(14,020,089,021)	**2,750,611,484**	(2,776,732,917)
Less: Income tax expense	**382,205,764**	(1,603,713,732)	**198,510,685**	(93,419,811)
Net (loss)/profit	**(10,084,887,416)**	(12,416,375,289)	**2,552,100,799**	(2,683,313,106)

	For the year ended 31 December			
	2022	2021	**2022**	2021
	Consolidated	Consolidated	**Company**	Company
		(Restated)		(Restated)
(1) Classification according to the continuity of operation				
– Continuing operations net (loss)/profit	**(10,084,887,416)**	(12,416,375,289)	**2,552,100,799**	(2,683,313,106)
(2) Classification according to ownership:				
– Net (loss)/profit to equity holders of the Company	**(7,387,119,286)**	(10,006,110,142)	**2,552,100,799**	(2,683,313,106)
– Net (loss)/profit to non-controlling interests	**(2,697,768,130)**	(2,410,265,147)	**–**	–
Other comprehensive loss, net of tax	**(444,027,395)**	(561,682,682)	**48,606,308**	(79,565,793)
Other comprehensive loss attributable to equity holders of the Company, net of tax	**(88,475,318)**	(297,675,077)	**48,606,308**	(79,565,793)
(1) Items that will not be reclassified to profit or loss:				
Including:				
Share of other comprehensive income/(loss) of investees accounted for under the equity method (non-recycling)	**32,960,495**	(42,862,569)	**32,960,495**	(42,862,569)
Fair value changes of other equity instrument investments	**(9,458,065)**	(34,582,671)	**(9,970,199)**	(35,262,585)
(2) Items that may be reclassified subsequently to profit or loss:				
Including:				
Share of other comprehensive income/(loss) of investees accounted for under the equity method (recycling)	**25,616,012**	(1,440,639)	**25,616,012**	(1,440,639)
Effective portion of cash flow hedges	**(978,169,189)**	485,682,341	**–**	–
Translation differences of the financial statements of foreign operations	**840,575,429**	(704,471,539)	**–**	–
Other comprehensive loss attributable to non-controlling interests, net of tax	**(355,552,077)**	(264,007,605)	**–**	–
Total comprehensive (loss)/income	**(10,528,914,811)**	(12,978,057,971)	**2,600,707,107**	(2,762,878,899)

	For the year ended 31 December			
	2022	2021	**2022**	2021
	Consolidated	Consolidated	**Company**	Company
		(Restated)		(Restated)
Attributable to:				
– Equity holders of the Company	**(7,475,594,604)**	(10,303,785,219)		
– Non-controlling interests	**(3,053,320,207)**	(2,674,272,752)		
Losses per share				
– Basic	**(0.61)**	(0.77)		
– Diluted	**(0.61)**	(0.77)		

4 CONSOLIDATED FINANCIAL STATEMENTS RECONCILIATION BETWEEN PRC GAAP AND IFRSs

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

	Consolidated net loss attributable to equity holders of the Company	
	For the year ended 31 December	
	2022	2021
		(Restated)
Consolidated net loss attributable to equity holders of the Company under PRC GAAP	**(7,387,119,286)**	(10,006,110,142)
Impact of IFRSs adjustments:		
Differences in accounting treatment on business combinations under common control, depreciation, amortisation, disposal and impairment of assets acquired in business combinations under common control (a)	**(1,097,404,290)**	(777,213,013)
Difference on depreciation related to borrowing costs capitalised in previous years (b)	**(22,074,135)**	(25,596,583)
Others	**8,202,761**	(40,693,789)
Applicable deferred income tax impact on the GAAP differences above (c)	**223,547,876**	326,041,527
Profit attributable to non-controlling interests on the adjustments above	**248,614,325**	145,634,985
Consolidated net loss attributable to equity holders of the Company under IFRSs	**(8,026,232,749)**	(10,377,937,015)

(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) Impact of GAAP differences on deferred income tax

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