龍源電力集團股份有限公司
CHINA LONGYUAN POWER GROUP CORPORATION LIMITED*

(A joint stock limited company incorporated in the People's Republic of China with limited liability)

(Stock Code: 00916)

Results Announcement For The Year Ended 31 December 2022

FINANCIAL HIGHLIGHTS

- For the year ended 31 December 2022, revenue amounted to RMB39,862 million, representing a decrease of 0.03% over last year
- For the year ended 31 December 2022, profit before taxation amounted to RMB7,684 million, representing a decrease of 23.31% over last year
- For the year ended 31 December 2022, net profit attributable to equity holders of the Company amounted to RMB5,132 million, representing a decrease of 30.96% over last year
- For the year ended 31 December 2022, earnings per share amounted to RMB0.5863, representing a decrease of RMB0.3069 over last year

The board of directors (the "**Board**") of China Longyuan Power Group Corporation Limited* (the "**Company**") is pleased to announce the audited consolidated results of the Company and its subsidiaries (the "**Group**") for the year ended 31 December 2022, together with comparative figures for the corresponding period in 2021. The results were prepared in accordance with the International Financial Reporting Standards issued by the International Accounting Standards Board and the disclosure requirements under the Hong Kong Companies Ordinance (Cap. 622).

CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

FOR THE YEAR ENDED 31 DECEMBER 2022

(Expressed in thousands of Renminbi unless otherwise stated)

	Notes	**2022** ***RMB'000***	2021 *(Restated)* *RMB'000*
Revenue	6	**39,861,647**	39,871,937
Other net income	7	**1,206,428**	1,200,926
Operating expenses			
Depreciation and amortisation		**(10,259,954)**	(9,015,190)
Coal consumption		**(3,558,261)**	(3,306,220)
Coal sales costs		**(6,274,866)**	(7,518,765)
Service concession construction costs		**(56,704)**	(170,875)
Personnel costs		**(3,577,239)**	(3,194,697)
Material costs		**(253,555)**	(172,838)
Repair and maintenance		**(1,010,824)**	(1,043,503)
Administration expenses		**(765,592)**	(793,510)
Impairment losses on financial assets, net		**7,770**	(194,375)
Other operating expenses		**(3,415,915)**	(1,488,495)
		(29,165,140)	(26,898,468)
Operating profit		**11,902,935**	14,174,395
Finance income		**306,836**	498,582
Finance expenses		**(4,106,687)**	(4,076,322)
Net finance expenses	8	**(3,799,851)**	(3,577,740)
Share of profits less losses of associates and joint ventures		**(419,372)**	(576,864)
Profit before taxation	9	**7,683,712**	10,019,791
Income tax	10	**(1,554,474)**	(1,598,839)
Profit for the year		**6,129,238**	8,420,952

	Notes	**2022** ***RMB'000***	2021 *(Restated)* *RMB'000*
Other comprehensive (loss)/income:			
Other comprehensive income/(loss) that will not be reclassified to profit or loss in subsequent periods:			
Changes in fair value of equity investments at fair value through other comprehensive income/(loss), net of tax		**125,092**	(59,467)
Other comprehensive (loss)/income that may be reclassified to profit or loss in subsequent periods:			
Exchange differences on translation of foreign operations		**(150,891)**	89,196
Exchange differences on net investments in foreign operations		**(5,884)**	1,905
Other comprehensive (loss)/income for the year, net of tax	11	**(31,683)**	31,634
Total comprehensive income for the year		**6,097,555**	8,452,586
Profit attributable to:			
Equity holders of the Company			
– Shareholders		**4,903,454**	7,178,246
– Perpetual medium-term notes and renewable corporate bonds holders		**228,348**	254,417
Non-controlling interests		**997,436**	988,289
Profit for the year		**6,129,238**	8,420,952
Total comprehensive income attributable to:			
Equity holders of the Company			
– Shareholders		**4,863,358**	7,205,184
– Perpetual medium-term notes and renewable corporate bonds holders		**228,348**	254,417
Non-controlling interests		**1,005,849**	992,985
Total comprehensive income for the year		**6,097,555**	8,452,586
Basic and diluted earnings per share *(RMB cent)*	12	**58.63**	89.32

CONSOLIDATED STATEMENT OF FINANCIAL POSITION

AT 31 DECEMBER 2022

(Expressed in thousands of Renminbi unless otherwise stated)

	Notes	2022 *RMB'000*	2021 *(Restated)* *RMB'000*
Non-current assets			
Property, plant and equipment		**151,599,930**	145,929,078
Investment properties		**7,090**	7,680
Right-of-use assets		**3,802,118**	3,734,270
Intangible assets		**6,287,691**	6,905,846
Goodwill		**195,617**	195,617
Investments in associates and joint ventures		**3,796,677**	4,166,936
Other assets		**4,125,972**	4,736,326
Deferred tax assets		**539,827**	295,991
Total non-current assets		**170,354,922**	165,971,744
Current assets			
Inventories		**749,955**	765,096
Trade and bills receivables	13	**27,657,623**	30,250,343
Prepayments and other current assets		**3,428,069**	3,663,413
Tax recoverable		**104,479**	127,128
Other financial assets		**448,539**	742,494
Restricted deposits		**2,137,452**	262,099
Cash at banks and on hand		**18,338,302**	3,913,121
Total current assets		**52,864,419**	39,723,694

	Notes	**2022** ***RMB'000***	2021 *(Restated)* *RMB'000*
Current liabilities			
Borrowings		**53,279,235**	42,402,672
Trade and bills payables	14	**2,936,019**	4,130,038
Other current liabilities		**17,132,068**	15,347,582
Lease liabilities		**266,882**	37,325
Tax payable		**412,531**	321,786
Total current liabilities		**74,026,735**	62,239,403
Net current liabilities		**(21,162,316)**	(22,515,709)
Total assets less current liabilities		**149,192,606**	143,456,035
Non-current liabilities			
Borrowings		**66,359,454**	61,165,878
Lease liabilities		**711,384**	1,286,944
Deferred income		**965,503**	1,103,361
Deferred tax liabilities		**259,090**	200,136
Other non-current liabilities		**1,153,906**	1,675,537
Total non-current liabilities		**69,449,337**	65,431,856
NET ASSETS		**79,743,269**	78,024,179
CAPITAL AND RESERVES			
Share capital		**8,381,963**	8,036,389
Perpetual medium-term notes and renewable corporate bonds		**5,056,400**	6,061,652
Reserves		**55,009,265**	53,990,014
Total equity attributable to equity holders of the Company		**68,447,628**	68,088,055
Non-controlling interests		**11,295,641**	9,936,124
TOTAL EQUITY		**79,743,269**	78,024,179

NOTES

1 PRINCIPAL ACTIVITIES

China Longyuan Power Group Corporation Limited (the "**Company**") and its subsidiaries (the "**Group**") are principally engaged in wind and coal power generation and sale, coal trading and other related businesses in the People's Republic of China (the "**PRC**"). The registered office address of the Company is Room 2006, 20th Floor, Block c, 6 Fuchengmen North Street, Xicheng District, Beijing, PRC.

The Company's parent and ultimate holding company is China Energy Investment Corporation Limited ("**CHN Energy**"), which is a company with registered address and main business places in the PRC and a state-owned enterprise, controlled by the State-owned Assets Supervision and Administration Commission.

2 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) Statement of compliance

These financial statements have been prepared in accordance with International Financial Reporting Standards ("**IFRSs**"), which include all applicable International Financial Reporting Standards, International Accounting Standards ("**IASs**") and interpretations 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 ("**Hong Kong Stock Exchange**").

The IASB has issued certain new and revised IFRSs that are first effective or available for early adoption for the current accounting year of the Group. Note 3 provides information on any changes in accounting policies resulting from the initial application of these developments to the extent that they are relevant to the Group for the current and prior accounting years reflected in these financial statements.

(b) Basis of preparation of the financial statements

Basis of consolidation

The consolidated financial statements include the financial statements of the Group for the year ended 31 December 2022. A subsidiary is an entity (including a structured entity), directly or indirectly, controlled by the Company. Control is achieved when the Group is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee (i.e., existing rights that give the Group the current ability to direct the relevant activities of the investee).

When the Company has, directly or indirectly, less than a majority of the voting or similar rights of an investee, the Group considers all relevant facts and circumstances in assessing whether it has power over an investee, including:

(i) the contractual arrangement with the other vote holders of the investee;

(ii) rights arising from other contractual arrangements; and

(iii) the Group's voting rights and potential voting rights.

The financial statements of the subsidiaries are prepared for the same reporting period as the Company, using consistent accounting policies. The results of subsidiaries are consolidated from the date on which the Group obtains control, and continue to be consolidated until the date that such control ceases.

Profit or loss and each component of other comprehensive income are attributed to the equity holders of the Company and to the non-controlling interests, even if this results in the non-controlling interests having a deficit balance. All intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

The Group reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control described above. A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

If the Group loses control over a subsidiary, it derecognises: (i) the assets (including goodwill) and liabilities of the subsidiary; (ii) the carrying amount of any non-controlling interest; and (iii) the cumulative translation differences recorded in equity; and recognises: (i) the fair value of the consideration received; (ii) the fair value of any investment retained; and (iii) any resulting surplus or deficit in profit or loss. The Group's share of components previously recognised in other comprehensive income is reclassified to profit or loss or retained profits, as appropriate, on the same basis as would be required if the Group had directly disposed of the related assets or liabilities.

Going concern

The consolidated financial statements have been prepared assuming that the Group will continue as a going concern notwithstanding the net current liabilities of the Group at 31 December 2022 amounting to RMB21,162,316,000. The directors are of the opinion that, based on a review of the forecasted cash flows, the Group will have sufficient liquid funds to finance its operation and capital expenditure.

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.

3 CHANGES IN ACCOUNTING POLICIES AND DISCLOSURES

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
Amendment to IFRS 16	Covid-19-Related Rent Concessions beyond 30 June 2021
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 are described below:

(a) 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 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 IFRS 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.

(b) Amendment to IFRS 16 issued in April 2021 extends the availability of the practical expedient for lessees to elect not to apply lease modification accounting for rent concessions arising as a direct consequence of the Covid-19 pandemic by 12 months. Accordingly, the practical expedient applies to rent concessions for which any reduction in lease payments affects only payments originally due on or before 30 June 2022, provided the other conditions for applying the practical expedient are met. The amendment is effective retrospectively for annual periods beginning on or after 1 April 2021 with any cumulative effect of initially applying the amendment recognised as an adjustment to the opening balance of retained profits at the beginning of the current accounting period. Earlier application is permitted.

    The Group has early adopted the amendment on 1 January 2021, but has not received Covid-19-related rent concessions. The amendments did not have significant impact on the consolidated financial position and performance of the Group.

(c) 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.

Set out below is the amount by which each financial statement line item was affected as at 1 January 2022 as a result of the adoption of the amendments to IAS 16:

	Increase/(decrease)
	RMB'000
Assets	
Property, plant and equipment	399,842
Deferred tax assets	(1,974)
Total assets	397,868
Equity	
Retained earnings	362,111
Non-controlling interests	35,757
	397,868

(d) 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.

(e) 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.

4 RESTATEMENTS ARISING FROM BUSINESS COMBINATIONS UNDER COMMON CONTROL

On 15 January 2021, the Company entered into the Agreement on Purchase of Assets through Cash Payment("**Purchase Agreement**") with CHN Energy Northeast Electric Power Co., Ltd. ("**Northeast Electric Power**"), CHN Energy Shaanxi Electric Power Co., Ltd. ("**Shaanxi Electric Power**"), CHN Energy Guangxi Electric Power Co., Ltd. ("**Guangxi Electric Power**"), CHN Energy Yunnan Electric Power Co., Ltd.("**Yunnan Electric Power**"), CHN Energy Gansu Electric Power Co., Ltd. ("**Gansu Electric Power**") and CHN Energy North China Electric Power Co., Ltd. ("**North China Electric Power**") (the "**Acquisition I**").

The above mentioned Acquisition I was completed on 4 January 2022, 5 January and 6 January 2022, respectively. Besides, Longyuan Tibet New Energy Co., Ltd ("**Tibet New Energy**"), the subsidiary the Company, entered into the equity transfer agreement with CHN Energy Group Tibet Electric Power Co., Ltd (the "**Agreement**"). According to the Agreement, Tibet New Energy purchased 95% equity interest of CHN Energy Longyuan Ali New Energy (ALI) Co., Ltd ("**Ali Energy**") with cash consideration of RMB114,000 (the "**Acquisition II**"). The Acquisition II was completed on 24 June 2022.

As the Group, Northeast New Energy, Dingbian New Energy, Guangxi Energy, Yunnan New Energy, Inner Mongolia New Energy, Shanxi Jieneng, Tianjin Jieneng, Gansu New Energy and Ali Energy were under common control of CHN Energy before and after the Acquisition I and the Acquisition II (the "**2022 Acquisitions**"), it is considered as a business combination under common control. The principle of merger accounting for business combination involving businesses under common control has therefore been applied. As a result, the consolidated financial statements of the Group have been prepared as if Northeast New Energy, Dingbian New Energy, Guangxi Energy, Yunnan New Energy, Inner Mongolia New Energy, Shanxi Jieneng, Tianjin Jieneng, Gansu New Energy and Ali Energy were the subsidiaries of the Company ever since they became under common control of CHN Energy.

Accordingly, the consolidated statement of financial position as at 31 December 2021 has been restated to include the assets and liabilities of Northeast New Energy, Dingbian New Energy, Guangxi Energy, Yunnan New Energy, Inner Mongolia New Energy, Shanxi Jieneng, Tianjin Jieneng, Gansu New Energy and Ali Energy at carrying amount in the books of the Group. The consolidated statement of profit or loss and other comprehensive income, the consolidated statement of changes in equity and consolidated statement of cash flows for the year ended 31 December 2021 have been restated to include the results and cash flows of Northeast New Energy, Dingbian New Energy, Guangxi Energy, Yunnan New Energy, Inner Mongolia New Energy, Shanxi Jieneng, Tianjin Jieneng, Gansu New Energy and Ali Energy as if these above mentioned companies were the subsidiaries of the Company throughout the year ended 31 December 2021. Respective notes to the consolidated financial statements have also been restated. All significant intra-group transactions, balances, income and expenses are eliminated on combination.

5 SEGMENT REPORTING

The Group manages its businesses by divisions, which are organised by types of business. Consistent with the way in which information is reported internally to the Group's most senior executive management for the purposes of resource allocation and performance assessment, the Group has presented the following reportable segments:

- Wind power: this segment constructs, manages and operates wind power plants and generates electric power for sale to external power grid companies.

- Coal power: this segment constructs, manages and operates coal power plants and generates electric power for sale to external power grid companies and coal trading business.

The Group combined other business activities that are not mentioned above in "**All others**". Revenue included in this category is mainly from the manufacturing and sale of power equipment, the provision of consulting services, maintenance and training services to wind power plants, and other renewable power generation.

(a) Segment results, assets and liabilities

For the purposes of assessing segment performance and allocating resources between segments, the Group's senior executive management monitors the results, assets and liabilities attributable to each reportable segment on the following basis:

Segment assets do not include investments in associates and joint ventures, equity investments at fair value through other comprehensive income, other financial assets, tax recoverable, deferred tax assets and unallocated head office and corporate assets. Segment liabilities do not include deferred tax liabilities, tax payable and unallocated head office and corporate liabilities.

Revenue and expenses are allocated to the reportable segments with reference to sales generated by those segments and the expenses incurred by those segments or which otherwise arise from the depreciation or amortisation of assets attributable to those segments. Segment revenue and expenses do not include share of profits less losses of associates and joint ventures, net finance expenses, service concession construction revenue and cost and unallocated head office and corporate expenses.

The measure used for reporting segment profit is the operating profit. Information regarding the Group's reportable segments as provided to the Group's most senior executive management for the purposes of resource allocation and assessment of segment performance for the years ended 31 December 2022 and 2021 is set out below:

For the year ended 31 December 2022:

	Wind power *RMB'000*	Coal power *RMB'000*	All others *RMB'000*	Total *RMB'000*
Revenue from external customers				
– Sales of electricity	**27,102,031**	**4,069,444**	**703,700**	**31,875,175**
– Others	**89,081**	**7,646,691**	**193,996**	**7,929,768**
Subtotal	**27,191,112**	**11,716,135**	**897,696**	**39,804,943**
Inter-segment revenue	**–**	**–**	**657,442**	**657,442**
Reportable segment revenue	**27,191,112**	**11,716,135**	**1,555,138**	**40,462,385**
Reportable segment profit /(losses) (operating profit/(losses))	**11,622,306**	**441,238**	**(613,033)**	**11,450,511**
Depreciation and amortisation before inter-segment elimination	**(9,716,162)**	**(306,849)**	**(287,043)**	**(10,310,054)**
(Provision)/reversal of impairment losses of trade and other receivables	**(12,280)**	**(8)**	**20,058**	**7,770**
Provision of impairment losses of property, plant and equipment and intangible assets *(note (i))*	**(1,945,897)**	**–**	**(98,778)**	**(2,044,675)**
Recognition of provision for inventory obsolescence	**–**	**–**	**(8,094)**	**(8,094)**
Interest income	**51,831**	**8,358**	**122,617**	**182,806**
Interest expense	**(3,122,494)**	**(51,749)**	**(328,436)**	**(3,502,679)**
Reportable segment assets	**209,654,212**	**5,208,790**	**18,451,590**	**233,314,592**
Expenditures for reportable segment non-current assets during the year	**10,047,451**	**436,713**	**7,101,044**	**17,585,208**
Reportable segment liabilities	**131,905,684**	**3,898,978**	**15,255,312**	**151,059,974**

Note:

(i) For the year ended 31 December 2022, the Group recognised the impairment losses of RMB2,044,675,000 of property, plant and equipment and intangible assets in "Other operating expenses" which mainly contains the followings: (1) certain property, plant and equipment in the wind power segment and the photovoltaic ("PV") power business in other segments were in long-term delay of construction progress, the Group made a provision for the impairment of RMB289,204,000 (2021: RMB78,679,000) and RMB2,164,000 (2021: nil) included in wind power segment and other segment, respectively; (2) the recoverable amount of two CGUs in wind power segment and one CGU of PV power segment was lower than their carrying amount due to the continuing operating losses, the Group assessed the recoverable amount based on the discounted future cash flows and recognised an impairment loss of RMB408,347,000 (2021: RMB177,553,000) and RMB97,914,000 (2021: nil) included in wind power segment and other segment; (3) the recoverable amount of the operated wind farms in Ukraine of the Group was lower than its carrying amount due to the impact of the Russia-Ukraine conflict, the Group assessed the recoverable amount based on the discounted future cash flows and recognized the impairment losses of RMB384,914,000 (2021: nil). Besides, the construction work of another wind farm in Ukraine was suspended due to Russia-Ukraine conflict, the Group made a provision for the impairment of RMB271,932,000 (2021: nil); (4) the recoverable amount of certain property, plant and equipment for several wind farms was lower than their carrying amount due to the special programme of replacing smaller units of wind turbines with larger ones, the Group assessed the recoverable amount based on basis of the fair value less cost of disposal and recognized the impairment losses of RMB590,200,000 (2021: nil).

For the year ended 31 December 2021:

	Wind power *(Restated)* *RMB'000*	Coal power *RMB'000*	All others *(Restated)* *RMB'000*	Total *(Restated)* *RMB'000*
Revenue from external customers				
– Sales of electricity	26,508,874	3,516,239	585,938	30,611,051
– Others	30,776	8,945,114	114,121	9,090,011
Subtotal	26,539,650	12,461,353	700,059	39,701,062
Inter-segment revenue	–	–	516,280	516,280
Reportable segment revenue	26,539,650	12,461,353	1,216,339	40,217,342
Reportable segment profit (operating profit)	13,888,455	351,118	123,400	14,362,973
Depreciation and amortisation before inter-segment elimination	(8,598,883)	(281,768)	(180,923)	(9,061,574)
(Provision)/reversal of impairment losses of trade and other receivables	(199,036)	–	4,661	(194,375)
Provision of impairment losses of property, plant and equipment *(note (i))*	(256,232)	–	–	(256,232)
Interest income	19,033	17,490	23,789	60,312
Interest expense	(3,240,614)	(51,242)	(143,064)	(3,434,920)
Reportable segment assets	194,927,511	4,886,975	10,310,765	210,125,251
Expenditures for reportable segment non-current assets during the year	18,088,172	435,405	2,081,114	20,604,691
Reportable segment liabilities	122,850,524	4,035,775	12,744,458	139,630,757

(b) Reconciliations of reportable segment revenue, profit or loss, assets and liabilities

	2022 *RMB'000*	2021 *(Restated)* *RMB'000*
Revenue		
Reportable segment revenue	**40,462,385**	40,217,342
Service concession construction revenue	**56,704**	170,875
Elimination of inter-segment revenue	**(657,442)**	(516,280)
Consolidated revenue	**39,861,647**	39,871,937
Profit		
Reportable segment profit	**11,450,511**	14,362,973
Elimination of inter-segment profit	**678,968**	25,944
	12,129,479	14,388,917
Share of profits less losses of associates and joint ventures	**(419,372)**	(576,864)
Net finance expenses	**(3,799,851)**	(3,577,740)
Unallocated head office and corporate expenses	**(226,544)**	(214,522)
Consolidated profit before taxation	**7,683,712**	10,019,791

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Assets		
Reportable segment assets	**233,314,592**	210,125,251
Inter-segment elimination	**(7,066,922)**	(5,974,287)
	226,247,670	204,150,964
Investments in associates and joint ventures	**3,796,677**	4,166,936
Equity investments at fair value through other comprehensive income	**261,632**	697,586
Other financial assets	**448,539**	742,494
Tax recoverable	**104,479**	127,128
Deferred tax assets	**539,827**	295,991
Unallocated head office and corporate assets	**89,319,368**	75,631,836
Elimination	**(97,498,851)**	(80,117,497)
Consolidated total assets	**223,219,341**	205,695,438
Liabilities		
Reportable segment liabilities	**151,059,974**	139,630,757
Inter-segment elimination	**(32,433,998)**	(12,759,594)
	118,625,976	126,871,163
Tax payable	**412,531**	321,786
Deferred tax liabilities	**259,090**	200,136
Unallocated head office and corporate liabilities	**96,932,370**	74,332,469
Elimination	**(72,753,895)**	(74,054,295)
Consolidated total liabilities	**143,476,072**	127,671,259

(c) Geographical information

(i) External revenue generated from the following countries:

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
PRC	**39,176,395**	39,227,688
Overseas	**685,252**	644,249
Total	**39,861,647**	39,871,937

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 investments in associates and joint ventures, deferred tax assets and financial assets included in other assets) located in the following countries:

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
PRC	**162,133,909**	156,709,736
Overseas	**3,574,280**	4,052,090
Total	**165,708,189**	160,761,826

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

(d) Major customers

Revenue from the PRC government-controlled power grid companies amounted to RMB31,189,923,000 for the year ended 31 December 2022 (2021: RMB29,966,802,000 (restated)). All the service concession construction revenue was from the PRC government.

6 REVENUE

The amount of each significant category of revenue recognised during the year is as follows:

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Revenue from contracts with customers		
Sales of electricity	**31,875,175**	30,611,051
Sales of steam	**848,838**	793,598
Service concession construction revenue	**56,704**	170,875
Sales of coal	**6,422,950**	7,694,661
Others	**657,980**	601,752
	39,861,647	39,871,937

(i) Disaggregated revenue information:

For the year ended 31 December 2022

	Wind power *RMB'000*	Coal power *RMB'000*	All others *RMB'000*	Total *RMB'000*
Types of goods and services				
Sales of electricity	27,102,031	4,069,444	703,700	31,875,175
Sales of steam	–	848,838	–	848,838
Service concession construction revenue	56,704	–	–	56,704
Sales of coal	–	6,422,950	–	6,422,950
Others	89,081	374,903	193,996	657,980
	27,247,816	11,716,135	897,696	39,861,647
Geographic markets				
Mainland China	26,562,564	11,716,135	897,696	39,176,395
Canada	215,631	–	–	215,631
South Africa	339,590	–	–	339,590
Ukraine	130,031	–	–	130,031
	27,247,816	11,716,135	897,696	39,861,647
Timing of revenue recognition				
Goods transferred at a point of time	27,102,031	11,533,210	703,700	39,338,941
Services transferred over time	145,785	182,925	193,996	522,706
	27,247,816	11,716,135	897,696	39,861,647

For the year ended 31 December 2021

	Wind power *(Restated)* *RMB'000*	Coal power *RMB'000*	All others *(Restated)* *RMB'000*	Total *(Restated)* *RMB'000*
Types of goods and services				
Sales of electricity	26,508,874	3,516,239	585,938	30,611,051
Sales of steam	–	793,598	–	793,598
Service concession construction revenue	170,875	–	–	170,875
Sales of coal	–	7,694,661	–	7,694,661
Others	30,776	456,855	114,121	601,752
	26,710,525	12,461,353	700,059	39,871,937
Geographic markets				
Mainland China	26,066,276	12,461,353	700,059	39,227,688
Canada	198,386	–	–	198,386
South Africa	388,187	–	–	388,187
Ukraine	57,676	–	–	57,676
	26,710,525	12,461,353	700,059	39,871,937
Timing of revenue recognition				
Goods transferred at a point of time	26,508,874	12,290,328	585,938	39,385,140
Services transferred over time	201,651	171,025	114,121	486,797
	26,710,525	12,461,353	700,059	39,871,937

The following table shows the amount of revenue recognised in the current reporting period that was included in the contract liabilities at the beginning of the reporting period and recognised from performance obligations satisfied in previous periods:

	2022	2021
	RMB'000	*RMB'000*
Revenue recognised that was included in contract liabilities at the beginning of the reporting period:		
Types of goods and services – others	**162,150**	356,693

(ii) Performance obligations

Information about the Group's performance obligations is summarised below:

Sales of electricity, steam and coal

The Group's contracts with customers for the sales of electricity, steam and coal generally include one performance obligation. The Group has concluded that the performance obligation is satisfied at a point of time and revenue continues to be recognised upon transmission to the customers.

Service concession construction revenue

Revenue from the provision of construction services under a service concession construction contract is recognised over time, using an input method to measure progress towards complete satisfaction of the service. The input method recognises revenue based on the proportion of the actual costs incurred relative to the estimated total costs for satisfaction of the construction services.

Rendering of services

Revenue from the rendering of services is recognised over time by reference to the stage of completion of the transaction based on the progress of work performed.

The amounts of transaction prices allocated to the remaining performance obligations (unsatisfied or partially unsatisfied) as at 31 December are as follows:

	2022	2021
	RMB'000	*RMB'000*
Amounts expected to be recognised as revenue:		
Within one year	**21,962**	28,883
After one year	**15,404**	17,102
	37,366	45,985

The amounts of transaction prices allocated to the remaining performance obligations which are expected to be recognised as revenue after one year relate to the rendering of services, of which the performance obligations are to be satisfied within two years. All the other amounts of transaction prices allocated to the remaining performance obligations are expected to be recognised as revenue within one year.

7 OTHER NET INCOME

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Government grants	**1,103,039**	1,041,727
Rental income from investment properties	**9,281**	13,033
Gains on disposal of property, plant and equipment, right-of-use assets and intangible assets	**1,732**	5,303
Gains on bargain acquisition of subsidiaries	**2,210**	8,801
Others	**90,166**	132,062
	1,206,428	1,200,926

8 FINANCE INCOME AND EXPENSES

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Interest income on financial assets	**182,806**	60,312
Dividend income	**12,317**	106,393
Net unrealised profits on trading securities and derivative financial instruments	**104,518**	289,580
Foreign exchange gains	**7,195**	42,297
Finance income	**306,836**	498,582
Less:		
Interest on bank and other borrowings wholly repayable within five years	**2,562,214**	2,533,984
Interest on bank and other borrowings repayable more than five years	**1,103,798**	1,278,644
Interest on lease liabilities	**52,747**	54,592
Less: Interest expenses capitalised into property, plant and equipment and intangible assets	**(216,080)**	(432,300)
	3,502,679	3,434,920
Foreign exchange losses	**429,377**	94,685
Net unrealised losses on trading securities	**108,086**	–
Bank charges and others	**66,545**	546,717
Finance expenses	**4,106,687**	4,076,322
Net finance expenses	**3,799,851**	3,577,740

The borrowing costs have been capitalised at rates of 2.20% to 4.83% per annum for the year ended 31 December 2022 (2021: 3.05% to 4.83%).

9 PROFIT BEFORE TAXATION

Profit before taxation is arrived at after charging:

(a) Personnel costs

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Salaries, wages and other benefits	**3,107,675**	2,810,093
Contributions to defined contribution retirement plans	**469,564**	384,604
	3,577,239	3,194,697

(b) Other items

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Amortisation		
– intangible assets	**609,167**	514,890
Depreciation		
– investment properties	**590**	590
– property, plant and equipment	**9,510,654**	8,365,288
– right-of-use assets	**139,543**	134,422
Provision/(reversal) of impairment losses		
– property, plant and equipment*	**1,940,802**	256,232
– trade receivables	**18,077**	195,282
– other receivables	**(25,847)**	(907)
– intangible assets*	**103,873**	–
Recognition of provision for inventory obsolescence*	**8,094**	–
Auditors' remuneration		
– annual audit services	**22,124**	17,280
– interim review services	**6,300**	6,300
– other services	**6,835**	2,558

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Operating lease charges		
– plant and equipment and motor vehicles	**38,891**	26,776
– properties	**45,659**	49,420
Net gains on disposal of property, plant and equipment, right-of-use assets and intangible assets	**(1,732)**	(5,303)
Cost of inventories	**10,086,682**	10,997,823
Revenue from trial sales	**(273,555)**	(477,394)
Cost of trial sales	**26,459**	77,552
Net gains from trial sales	**(247,096)**	(399,842)
Gains on bargain acquisition of subsidiaries	**(2,210)**	(8,801)

* The provision/(reversal) of impairment losses and recognition of provision for inventory obsolescence are included in "Other operating expenses" in the "Consolidated Statement of Profit or Loss and Other Comprehensive Income".

(c) Other operating expenses

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Insurance expenses	**258,968**	226,101
Other tax expenses	**216,052**	212,627
Purchase of electricity charges	**139,654**	101,478
Technical service expenses	**249,129**	171,868
Impairment losses on property, plant and equipment	**1,940,802**	256,232
Impairment losses on intangible assets	**103,873**	–
Recognition of provision for inventory obsolescence	**8,094**	–
Others	**499,343**	520,189
	3,415,915	1,488,495

10 INCOME TAX IN THE CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

(a) Taxation in the consolidated statement of profit or loss and other comprehensive income represents:

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Current tax		
Provision for the year	**1,661,809**	1,566,864
Underprovision in respect of prior years	**21,244**	15,174
Deferred tax		
Origination and reversal of temporary differences	**(128,579)**	16,801
	1,554,474	1,598,839

Notes:

(i) The provision for income tax of the PRC subsidiaries of the Group is calculated based on the statutory rate of 25% of the assessable profits of the Group as determined in accordance with the relevant PRC income tax rules and regulations for the years ended 31 December 2022 and 2021, except for certain subsidiaries of the Group, which are taxed at preferential rates of 0% to 15% according to the relevant tax authorities' approvals.

Pursuant to CaiShui [2008] No. 46 Notice on the Execution of the Catalogue of Public Infrastructure Projects Entitled for Preferential Tax Treatment, certain subsidiaries of the Group, which are set up after 1 January 2008 and are engaged in public infrastructure projects, are each entitled to a tax holiday of a 3-year full exemption followed by a 3-year 50% exemption commencing from their respective first operating income generating year.

Pursuant to CaiShui [2011] No. 58, the Company's subsidiaries established in the Western Region of the PRC are entitled to a preferential income tax rate of 15% from 1 January 2011 to 31 December 2020. In addition, according to the Announcement on Continuation of Enterprise Income Tax in West Development published by the Ministry of Finance of the People's Republic of China (the "**Ministry of Finance**"), the State Taxation Administration and the National Development and Reform Commission (the "**NDRC**") on 23 April 2020, the aforementioned subsidiaries established in the Western Region of the PRC are authorised to be taxed at a preferential income tax rate of 15% till 31 December 2030.

(ii) Hero Asia Investment Limited, a subsidiary of the Group incorporated in Hong Kong, is subject to Hong Kong profits tax at 16.5%. Pursuant to the rules and regulations of the British Virgin Islands ("**BVI**"), Hero Asia (BVI) Company Limited, a subsidiary of the Group, is not subject to any income tax in the BVI.

Hero Asia Investment Limited and Hero Asia (BVI) Company Limited, being overseas enterprises controlled by a PRC enterprise, are considered as the PRC tax residents in accordance with GuoShuiFa [2009] No. 82. Accordingly, they are subject to the PRC income tax at 25%, and dividends receivable by these two companies are exempted from the PRC dividend withholding tax.

Longyuan Canada Renewables Ltd., a subsidiary of the Group in Canada, is subject to income tax at a rate of 26.5%. Longyuan South Africa Renewables Proprietary Ltd., a subsidiary of the Group in South Africa, is subject to income tax at a rate of 28%. Ukraine Yuzhne Energy Co., Ltd. and Longyuan Ukraine Southern Wind Power Generation Co., Ltd., subsidiaries of the Group in Ukraine, are subject to income tax at a rate of 18%.

(b) Reconciliation between tax expense and accounting profit at applicable tax rates:

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Profit before taxation	**7,683,712**	10,019,791
Notional tax on profit before taxation	**1,920,928**	2,504,948
Tax effect of non-deductible expenses	**48,048**	80,237
Tax effect of share of profits less losses of associates and joint ventures	**104,843**	144,216
Tax effect of non-taxable income	**(1,149)**	(26,598)
Effect of differential tax rate of certain subsidiaries of the Group	**(1,052,498)**	(1,216,376)
Use of unrecognised tax losses in prior years	**(90,036)**	(94,390)
Tax effect of unused tax losses and deductible temporary differences not recognised	**597,836**	191,628
Underprovision in respect of prior years	**21,244**	15,174
Others	**5,258**	–
Income tax	**1,554,474**	1,598,839

11 OTHER COMPREHENSIVE INCOME

	2022	2021
	RMB'000	*RMB'000*
Other comprehensive income/(loss) that will not be reclassified to profit or loss in subsequent periods:		
Equity investments at fair value through other comprehensive income/(loss) ("**FVOCI**"):		
– Changes in fair value recognised during the year	**135,390**	(81,271)
– Tax expense	**(10,298)**	21,804
Net of tax amount	**125,092**	(59,467)
Other comprehensive (loss)/income that may be reclassified to profit or loss in subsequent periods:		
Exchange differences on translation of foreign operations:		
– Before and net of tax amount	**(150,891)**	89,196
Exchange differences on net investment in foreign operations:		
– Before and net of tax amount	**(5,884)**	1,905
Other comprehensive (loss)/income	**(31,683)**	31,634

12 BASIC AND DILUTED EARNINGS PER SHARE

The calculation of basic earnings per share is based on the profit attributable to ordinary shareholders of the Company for the year ended 31 December 2022 of RMB4,903,454,000 (2021: RMB7,178,246,000) and the weighted average number of ordinary shares of 8,363,028,000 in issue during the year (2021: 8,036,389,000).

There was no difference between the basic and diluted earnings per share as there were no dilutive potential shares outstanding for the years presented.

13 TRADE AND BILLS RECEIVABLES

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Amounts due from third parties	**27,821,207**	30,446,186
Amounts due from fellow subsidiaries	**76,171**	47,614
Amounts due from associates	**50,970**	31,492
	27,948,348	30,525,292
Less: Allowance for doubtful debts	**(290,725)**	(274,949)
	27,657,623	30,250,343
Analysed into:		
Trade receivables	**27,293,803**	29,898,839
Bills receivable	**363,820**	351,504
	27,657,623	30,250,343

(a) Ageing analysis

The ageing analysis of trade and bills receivables of the Group, based on the invoice date and net of loss allowance, is as follows:

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Within 1 year or no invoice date specified	**27,635,236**	30,239,313
Between 1 and 2 years	**12,192**	3,838
Between 2 and 3 years	**3,303**	7,192
Over 3 years	**6,892**	–
	27,657,623	30,250,343

The Group's trade and bills receivables are mainly wind power, coal power and other renewable energy electricity sales receivables from local grid companies. Generally, the receivables are due within 15 to 30 days from the date of billing, except for the tariff premium. The collection of such tariff premium is subject to the allocation of funds by relevant government authorities to local grid companies, which consequently takes a relatively long time for settlement.

(b) Impairment of trade and bills receivables

The movements in the loss allowance for doubtful debts are as follows:

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
At 1 January	**274,949**	79,744
Impairment losses recognised	**41,170**	213,084
Reversal of impairment losses	**(23,093)**	(17,802)
Amount written off as uncollectible	**–**	(77)
Exchange reserve	**(2,301)**	–
At 31 December	**290,725**	274,949

An impairment analysis is performed at each reporting date using a provision matrix to measure expected credit losses. The calculation reflects the probability-weighted outcome, the time value of money and reasonable and supportable information that is available at the reporting date about past events, current conditions and forecasts of future economic conditions. Generally, trade receivables are written off if the Group is satisfied that the recovery of the amount is remote.

Pursuant to Caijian [2020] No. 4 Notice on Promoting the Healthy Development of Non-aqueous Renewable Energy Power Generation (關於促進非水可再生能源發電健康發展的若干意見) and Caijian [2020] No. 5 Notice on the Measures for Administration of Subsidy Funds for Tariff Premium of Renewable Energy (可再生能源電價附加資金管理辦法) jointly issued by the Ministry of Finance, the NDRC of the PRC and the National Energy Administration in January 2020, a set of new standardised procedures for the settlement of the aforementioned renewable energy tariff premium have came into force since January 2020 and approvals on a project-by-project basis are required before the allocation of funds to local grid companies. Caijian [2012] No. 102 Notice on the Interim Measures for Administration of Subsidy Funds for Tariff Premium of Renewable Energy (可再生能源電價附加補助資金管理暫行辦法) issued by the Ministry of Finance in March 2012 was repealed at the same time.

As at 31 December 2022, most of the Group's projects have been approved for the tariff premium of renewable energy and certain projects are in the process of applying for the approval. The directors are of the opinion that the approvals will be obtained in due course. The tariff premium receivables are settled in accordance with the prevailing government policies and prevalent payment trends of the Ministry of Finance. There is no due date for settlement. The trade receivables from the tariff premium are fully recoverable, considering that there were no bad debt experiences with the grid companies in the past and such tariff premium is funded by the PRC government.

The Group has applied the simplified approach to measure the provision for expected credit losses prescribed by IFRS 9, which permits the use of lifetime expected credit loss provision for all trade receivables. To measure the expected credit loss of trade receivables excluding tariff premium receivables, trade receivables have been grouped based on shared credit risk characteristics and the ageing.

Among the accrual of impairment in 2022, RMB34,710,000 was recognised for the trade receivables in relation to the basic electricity sales of the renewable energy plants of the certain subsidiaries. The management assessed the expected credit loss considering the current conditions and forecasts of future economic conditions, as appropriate and recognised impairment in "Impairment losses on financial assets, net".

Among the accrual of impairment in 2021, RMB203,593,000 was recognised for the trade receivables in relation to the connection-to-grid projects of the renewable energy plants. The management assessed that the trade receivables were not expected to be recovered and recognised impairment in "Impairment losses on financial assets, net".

Set out below is the information about the credit risk exposure on the Group's trade receivables:

As at 31 December 2022

	Within 1 year or no invoice date specified	**Between 1 and 2 years**	**Between 2 and 3 years**	**Over 3 years**	**Total**
Expected credit loss rate	**1.02%**	**1.65%**	**0.75%**	**60.95%**	**1.05%**
Gross carrying amount *(RMB'000)*	**27,551,156**	**12,396**	**3,328**	**17,648**	**27,584,528**
Expected credit losses *(RMB'000)*	**279,740**	**204**	**25**	**10,756**	**290,725**

As at 31 December 2021

	Within 1 year or no invoice date specified *(Restated)*	Between 1 and 2 years *(Restated)*	Between 2 and 3 years *(Restated)*	Over 3 years *(Restated)*	Total *(Restated)*
Expected credit loss rate	0.86%	6.50%	18.05%	100.00%	0.91%
Gross carrying amount *(RMB'000)*	30,148,315	4,105	8,776	12,592	30,173,788
Expected credit losses *(RMB'000)*	260,506	267	1,584	12,592	274,949

As at 31 December 2022, bills receivable were all bank acceptance bills and commercial acceptance bills with a maturity of one to twelve months, and management considered the probability of default as minimal.

14 TRADE AND BILLS PAYABLES

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Bills payables	**1,668,779**	3,009,660
Trade payables	**1,129,242**	980,560
Amounts due to associates	**20,851**	24,111
Amounts due to fellow subsidiaries	**117,147**	115,707
	2,936,019	4,130,038

The ageing analysis of trade payables by invoice date is as follows:

	2022	2021
		(Restated)
	RMB'000	*RMB'000*
Within 1 year	**2,768,032**	3,826,278
Between 1 and 2 years	**107,349**	235,939
Between 2 and 3 years	**31,254**	34,039
Over 3 years	**29,384**	33,782
	2,936,019	4,130,038

As at 31 December 2022 and 2021, all trade and bills payables are payable and expected to be settled within one year.

15 DIVIDENDS

On 29 March 2023, the directors of the Company resolved that a dividend of RMB0.1171 per share, amounting to RMB981,528,000 is to be distributed to the shareholders for 2022 subject to approval of the shareholders at the forthcoming Annual General Meeting. The final dividend proposed after the end of the reporting period has not been recognised as a liability at the end of the reporting period. If any circumstances, such as issuance of new shares or share repurchase before the record date for dividend distribution, results in the changes in our total number of shares on record date for dividend distribution, dividend per share shall be adjusted accordingly on the premise that the total dividend amounts remains unchanged.

On 30 March 2022, the directors of the Company resolved that a dividend of RMB0.1470 per share, amounting to RMB1,232,149,000 distributed to the shareholders for 2021, and was approved by the shareholders at the Annual General Meeting on 22 June 2022. The dividend was fully paid in 2022.

On 30 March 2021, the directors of the Company resolved that a dividend of RMB0.1176 per share, amounting to RMB945,079,000 distributed to the shareholders for 2020, and was approved by the shareholders at the Annual General Meeting on 28 May 2021. The dividend was fully paid in 2021.

MANAGEMENT DISCUSSION AND ANALYSIS

(Unless otherwise specified, the following information disclosure was based on financial information prepared in accordance with the International Financial Reporting Standards)

I. INDUSTRY REVIEW

Operational Environment

In 2022, confronting with the volatilities in the international environment and arduous domestic tasks of reform, development and stabilization, all the people of all ethnic groups in China, under the leadership of the Central Committee of the CPC with Comrade Xi Jinping at the core, faced up to difficulties, strengthened the control on macro-economy to achieve stable economic operation, steady improvement in the quality of development, and stability of the overall social situation, and China has made extremely hard-won new achievements in development.

According to the statistics from China Electricity Council, in 2022, power consumption across the country was 8,637.2 billion kWh, representing a year-on-year increase of 3.6%. The total power generation across the country was 8,694.1 billion kWh, representing a year-on-year increase of 3.6%. In particular, the power generation from non-fossil fuels was 3,147.3 billion kWh, representing a year-on-year increase of 8.7%, accounting for 36.2% of the total power generation, with the proportion up by 1.7 percentage points on a year-on-year basis. The on-grid wind power and the on-grid solar power generation amounted to 762.4 billion kWh and 427.6 billion kWh respectively, representing a year-on-year increase of 16.3% and 30.8% respectively, with both proportions of the nationwide power generation up by 1.0 percentage point over last year. The average utilisation hours of power generation facilities of 6,000 kilowatts and above across the country were 3,687 hours, representing a year-on-year decrease of 125 hours. In particular, the average utilisation hours for coal-fired power generation were 4,594 hours, representing a year-on-year decrease of 8 hours; the average utilisation hours for on-grid wind power were 2,221 hours, representing a year-on-year decrease of 9 hours; and the average utilisation hours for on-grid solar power generation were 1,337 hours, representing a year-on-year increase of 56 hours.

As of the end of 2022, the total power generation installed capacity across the country was 2.56 billion kW, representing a year-on-year increase of 7.8%, of which capacity of on-grid wind power was 0.37 billion kW (including 334.98 million kW and 30.46 million kW of onshore wind power and offshore wind power, respectively), accounting for 14.3% of the total installed capacity; capacity of on-grid solar power generation was 0.39 billion kW (including 392.04 million kW and 0.57 million kW of photovoltaic power generation and solar thermal power generation, respectively), accounting for 15.3% of the total installed capacity. In 2022, the newly added power generation capacity of infrastructure construction across the country amounted to 199.74 million kW, of which capacity of on-grid wind power and on-grid solar power generation amounted to 37.63 million kW and 87.41 million kW respectively.

Policy Environment

1. ***Improving Clean Energy Policies and Regulations, and Promoting Carbon Peak and Carbon Neutrality in an Orderly Manner***

   In March 2022, the State Council issued the Opinions on the Division of Key Work in Implementing the Report on the Government Work (《關於落實〈政府工作報告〉重點工作分工的意見》), proposing the orderly promotion of carbon peak and carbon neutrality, promoting the planning and construction of large-scale wind and photovoltaic power bases and their supporting adjustable power supply, strengthening the construction of pumped storage power stations, enhancing the capacity of the grid to consume the electricity generated by renewable energy, promoting the research and development and application of green and low-carbon technologies, building a green manufacturing and service system, improving pollution reduction and carbon reduction incentive restraint policy, developing green finance, and accelerating the formation of a green and low-carbon production mode and lifestyle.

   In March 2022, the NDRC, four departments, the Ministry of Foreign Affairs, the Ministry of Ecology and Environment and the Ministry of Commerce, jointly issued the Opinions on Promoting the Green Development of "The Belt and Road" (《關於推進共建「一帶一路」綠色發展的意見》), proposing to deepen cooperation in green and clean energy, promote green and low-carbon transformation and development through international energy cooperation, encourage solar and wind power generation enterprises to "go global" and promote the completion of a number of green energy best practice projects.

In June 2022, nine governmental departments including the NDRC jointly issued the "14th Five-Year" Plan for Renewable Energy Development (《「十四五」可再生能源發展規劃》). The plan set four major targets on total renewable energy consumption, electricity generation, consumption responsibility weight and non-electricity utilisation, and proposed to optimise the development mode in terms of supply, develop renewable energy on a large scale, improve the mechanism for guaranteeing the consumption of electricity generated from renewable energy sources, strengthen the security of land and environment support for renewable energy, enhance the fiscal policy support for renewable energy and improve the green financial system for renewable energy.

In July 2022, 16 governmental departments including the NDRC jointly issued the Action Plan for Implementing the National Standardization Development Outline (《貫徹實施〈國家標準化發展綱要〉行動計劃》), proposing to introduce the implementation plan for the establishment and improvement of the standard measurement system for carbon peak and carbon neutrality, strengthen the development of standard for new power systems, and improve the standards for the clean and efficient use of wind power, photovoltaic, power transmission and distribution, energy storage, hydrogen energy, advanced nuclear power and fossil energy.

In August 2022, the Ministry of Industry and Information Technology, the NDRC and the Ministry of Ecology and Environment jointly issued the Circular on the Implementation Plan for Carbon Peaking in the Industrial Sector (《關於工業領域碳達峰實施方案的通知》), proposing to guide enterprises and parks to accelerate the development and operation of integrated systems such as distributed photovoltaic, distributed wind power and diversified energy storage, and promote the large-scale and high-proportion consumption of renewable energy in the vicinity.

In October 2022, the National Energy Administration issued the Action Plan for a Higher Degree of Standardization of Carbon Peak and Carbon Neutrality of Energy (《能源碳達峰碳中和標準化提升行動計劃》). The Action Plan proposed that by 2025, a relatively complete energy standard system that may strongly support and lead the green and low-carbon transformation of energy would be initially established, and energy standards would interact well with technological innovation and industrial development, effectively promoting green and low-carbon transformation of energy, energy conservation and carbon reduction, technological innovation, and carbon emission reduction in the industrial chain. By 2030, a structurally optimized, advanced and reasonable energy standards system will be established, energy standards will develop in close synergy with technological innovation and industrial transformation, and carbon peak and carbon neutrality in the energy sector will be strongly supported and guaranteed by energy standardization.

2. Diversifying the Application of New Energy Storage Technologies and Promoting the Efficient Consumption and Use of New Energy

In January 2022, the NDRC and the National Energy Administration issued a Circular on the Publication of the Plan for Modern Energy System during the "14th Five-Year" Period (《關於印發「十四五」現代能源體系規劃的通知》), which provided detailed rules and regulations and implementation paths of policies for the development of various links of power industry. In terms of promoting the building of a new power system, the document highlighted that greater efforts should be made to plan and build a new energy supply and consumption system based on large-scale wind and photovoltaic power bases, supported by clean, efficient and advanced energy-saving coal power in their vicinity and carried by stable, safe and reliable ultra-high voltage transmission and distribution circuits, to actively promote the integrated development of power generation, grid, load and energy storage.

In April 2022, the NDRC issued the essay named Improving the Energy Storage Cost Compensation Mechanism to Help Build a New Power System with New Energy as the Main Body (《完善儲能成本補償機制助力構建以新能源為主體的新型電力系統》), proposing to accelerate the development of cost diversion mechanisms for various types of energy storage in different application scenarios, and focus on the common problems such as poor cost diversion faced by the energy storage industry.

In April 2022, the NDRC published the Power Reliability Management Measures (Interim) (《電力可靠性管理辦法(暫行)》). Since 1 June, large-scale wind, solar and other renewable energy power generation enterprises in desert, gobi and desert areas were required to establish power reliability management systems to match, establish publishing mechanisms for the construction demand of new types of energy storage, and allow various types of energy storage facilities to participate in system operation.

In June 2022, the NDRC and the National Energy Administration issued the Notice on Further Promoting the Participation of New Types of Energy Storage Facilities in the Power Market, Dispatching and Application《關於進一步推動新型儲能參與電力市場和調度運用的通知》, specifying that new types of energy storage facilities could participate in the electricity market as independent energy storage, and encouraging new energy field stations and supporting facilities for energy storage to jointly participate in the market.

In August 2022, nine governmental departments including the Ministry of Science and Technology issued the Implementation Plan for Carbon Peak and Carbon Neutrality Supported by Science and Technology (2022–2030) (《科技支撐碳達峰碳中和實施方案(2022–2030年)》), proposing the scientific and technological innovation actions and safeguard measures to support the achievement of carbon peak by 2030, and the technology research and development reserves to be made for the achievement of carbon neutrality by 2060.

3. Promoting Steadily Structural Transformation and Developing Renewable Energy of High Quality

In March 2022, the National Energy Administration published the Guiding Opinions on Energy Work in 2022 (《2022年能源工作指導意見》), proposing to steadily promote structural transformation, so that the proportion of coal consumption would steadily decrease, the proportion of non-fossil energy in total energy consumption would increase to about 17.3%, newly-added alternative output from power generation would reach around 180 billion kWh, and the proportion of wind power and photovoltaic power generation in the total electricity consumption in the society would reach about 12.2%.

In May 2022, the NDRC and the National Energy Administration issued the Implementation Plan for Promoting High-Quality Development of New Energy in the New Era (《關於促進新時代新能源高質量發展的實施方案》), proposing to innovate the mode of new energy development and utilisation, accelerate the construction of large-scale wind power and photovoltaic power bases focusing on desert, gobi and desert areas, guide the whole society to consume new energy and other green power, accelerate the building of new type of power systems to accommodate the gradual increase in the proportion of new energy, comprehensively improve the regulation capability and flexibility of the power system, focus on improving the ability of power distribution networks to accept distributed new energy, steadily promote the participation of new energy in electricity market transactions, and improve the system of weighting responsibility for the consumption of electricity generated from renewable energy.

In June 2022, six governmental departments including the NDRC jointly issued the Industrial Energy Efficiency Improvement Action Plan (《工業能效提升行動計劃》) to support qualified industrial enterprises and industrial parks to build industrial green micro grids, accelerate the development and operation of integrated systems such as distributed photovoltaic, distributed wind power and smart energy management and control, and encourage the priority use of renewable energy to meet the electricity demand of electric energy substitution projects.

In November 2022, three governmental departments including the NDRC issued the Notice on Further Enhancing the Work Related to the Exclusion of New Renewable Energy Consumption from the Total Energy Consumption Control (《關於進一步做好新增可再生能源消費不納入能源消費總量控制有關工作的通知》). The document proposed that the scope of the new renewable energy power consumption shall be accurately defined, and renewable energy that is not included in the total energy consumption mainly includes wind power, solar power generation, hydropower, biomass power generation, geothermal power generation and other renewable energy at this stage.

In November 2022, the National Energy Administration issued the Notice of Grid Connection in Best Effort Regarding the Active Promotion of New Energy Power Generation Projects (《關於積極推動新能源發電項目應併盡併、能併早併有關工作的通知》). It required all grid companies to take effective measures to guarantee the prompt grid connection for the qualified wind power and photovoltaic power generation projects, and allowed grid connection in batches, without taking full capacity completion as a necessary condition for grid connection of new energy projects.

4. *Coordinating the Promotion of Green Power Trading and Building a Unified National Power Market*

In January 2022, seven governmental departments including the NDRC jointly issued the Implementation Plan for Promoting Green Consumption (《促進綠色消費實施方案》), proposing to implement the requirement that new renewable energy and energy used as raw materials should not be included in the total energy consumption control, and to coordinate the promotion of green power trading and green certificate trading. It encouraged the consumption of green power by industry leaders, large state-owned enterprises and multinational companies, and promoted the gradual increase in the proportion of green power consumption in regions with relatively more export-oriented enterprises and stronger economic capacity. It stressed that the minimum proportion of green power in the power consumption by high energy-consuming enterprises could be set by each region according to its actual situation.

In January 2022, the NDRC and the National Energy Administration issued the Guiding Opinions on Accelerating the Building of a Nationwide Unified Power Market System (《關於加快建設全國統一電力市場體系的指導意見》), proposing to improve the operation and management of the electricity trading platform and the cross-provincial and cross-regional market trading mechanism, encourage and support direct trading between power generation enterprises and electricity sales companies and consumers, and enhance the flexibility of the mechanism for the cross-provincial and cross-regional transmission price.

In April 2022, the Opinions of the Central Committee of the Communist Party of China and the State Council on Accelerating the Construction of a Unified National Market (《中共中央、國務院關於加快建設全國統一大市場的意見》) was released, which specified clearly the rules that the establishment of a unified national market system should be accelerated, local protection and market segmentation should be broken, the smooth flow of commodity resources should be promoted on a wider scale, and the construction of an efficient, regulated, fair, competitive and fully open national market should be accelerated.

In April 2022, the Department of Price under the NDRC issued the Letter on the Continuation of the Parity Grid-connection Policies for New Wind Power and Photovoltaic Power Projects in 2022 (《關於2022年新建風電、光伏發電項目延續平價上網政策的函》), specifying that in 2022, the parity grid-connection policies would be continued for newly approved onshore wind power projects, newly filed centralised photovoltaic power plants and distributed photovoltaic projects for industrial and commercial sectors; new projects could voluntarily participate in market-based trading to form on-grid tariff; at the same time, various regions were encouraged to introduce specific support policies.

In November 2022, the Comprehensive Department of the National Energy Administration issued a notice seeking public opinions on the Basic Rules for Power Spot Market (Draft) (《電力現貨市場基本規則(徵求意見稿)》) and Measures for the Supervision of Power Spot Market (Draft) (《電力現貨市場監管辦法(徵求意見稿)》), which proposed to construct the inter-provincial and provincial/regional spot market in accordance with the framework of "unified market and coordinated operation", strengthen the linkage between the medium- and long-term market and the spot market, promote the participation of new energy in the power market in a steady and orderly manner, and explore the establishment of a market-based capacity compensation mechanism.

In December 2022, the NDRC and the National Energy Administration issued the Notice on Signing and Performing Medium and Long Term Electric Power Contract in 2023 (《關於做好2023年電力中長期合同簽訂履約工作的通知》), which proposed to improve the green power price formation mechanism, encouraged power users to sign annual and above green power trading contracts with new energy enterprises to lock in longer-term and stable price levels for new energy enterprises, and encouraged regions with a high proportion of new energy to explore and enrich the type of new energy to participate in market transactions.

5. Implementing Subsidies for Renewable Energy and Vigorously Developing Green Finance

In March 2022, the Ministry of Finance released the Draft about the Implementation of the Central and Local Budgets in 2021 and the Budgets in 2022 (《關於2021年中央和地方預算執行情況與2022年中央和地方預算草案》), proposing to study the establishment of a national low-carbon transformation fund, improve clean energy support policies, vigorously develop renewable energy and promote the resolution of the funding gap of subsidies for renewable energy power generation.

In March 2022, the NDRC, the National Energy Administration and the Ministry of Finance jointly issued the Notice on Launching the Self-inspection in respect of Subsidies for Renewable Energy Power Generation (《關於開展可再生能源發電補貼自查工作的通知》), deciding to launch the nationwide verification in respect of subsidies for renewable energy power generation to further figure out the base of subsidies for renewable energy power generation.

In June 2022, seven governmental departments including the Ministry of Ecology and Environment issued the Implementation Plan for Synergistic Effectiveness in Reducing Pollution and Reducing Carbon Emission (《減污降碳協同增效實施方案》), proposing to vigorously develop green finance, make good use of monetary policy tools for carbon emission reduction, and guide financial institutions and social capital to increase their support for reducing pollution and carbon emission; we should establish green electricity price policies that would be conducive to the green and low-carbon development of enterprises and promote pilot green power trading; we should implement actions in replacement with renewable energy, vigorously develop wind energy, solar energy, biomass, ocean energy and geothermal energy, and continuously increase the proportion of non-fossil energy consumption.

In August 2022, the Ministry of Finance published the Fiscal and Taxation Supporting Programs of the Central Fiscal Department on Promoting Ecological Protection and High-quality Development in the Yellow River Basin (《中央財政關於推動黃河流域生態保護和高質量發展的財稅支持方案》), proposing to promote the innovation and upgrade of the smart photovoltaic industry in the Yellow River Basin and its featured application on the basis of protecting the ecology, and support the continued construction of large-scale wind power and photovoltaic base in the sands, gobi and desert areas in the upper reaches of the Yellow River.

II. BUSINESS REVIEW

Business

In 2022, the Group has always taken "developing clean energy and building a Beautiful China" as our mission all the time, committed itself to building a world-class new energy company with global competitiveness, and contributed to the realization of the national goal of "carbon peak and carbon neutrality". In 2022, the consolidated installed capacity of the Group's newly self-built projects was 2,409.60 MW, of which the consolidated installed capacity of wind power was 534.40 MW, the consolidated installed capacity of photovoltaic was 1,875.20 MW; the consolidated installed capacity of wind power and photovoltaic increased by 1,989.60 MW and 10.00 MW respectively through asset restructuring and mergers and acquisitions. As of 31 December 2022, the consolidated installed capacity of the Group was 31,107.84 MW, among which, the consolidated installed capacity of the wind power, coal-fired power and other renewable energy segments were 26,191.84 MW, 1,875 MW and 3,041.00 MW, respectively. In 2022, the accumulated power generation amounted to 70,633,024 MWh, representing a year-on-year increase of 11.6%, of which wind power generation amounted to 58,308,065 MWh, representing a year-on-year increase of 13.7%; coal power generation amounted to 10,572,663 MWh, representing a year-on-year decrease of 1.9%; other renewable energy power generation amounted to 1,752,296 MWh, representing a year-on-year increase of 44.9%.

1. Empowering Production Management with Digital Intelligence and Preventing Risks to Lay a Solid Foundation

In 2022, the Group accelerated the construction of a digital production safety technology platform and management system, realizing the management of intelligent empowerment. The Group explore the valuation of data profoundly to resolve the trouble which had interrupted the long-cycle operation at equipment, developed a fault warning model and built a full-coverage online vibration monitoring network, changing from "passive overhaul" to "predictive maintenance". The Group swept away the blind spot of safety management by its continuously innovative equipment monitoring methods, deployment of crew cameras, mobile spherical monitors and work recorders new access to the data of 86 vehicles, which realised the real-time positioning of 542 production vehicles and 17 vessels. It implemented the new mode of operation and inspection separation, centralized monitoring and regional maintenance, integrated regional resources, and broke the barriers between stations to solve the imbalance of uneven staff workload and technology. The Group optimised its workflow, achieved standardization of operation, integrated risk pre-control, safety measures, maintenance quality and inspection technology into the whole process of production operation through the implementation of standardized operation "ticket-card bag", and ensured the operation safety and equipment maintenance quality under control.

In 2022, the Group carried out the spirit of important instructions on production safety in depth, formulated and issued the "Implementation Plan for Further Strengthening Production Safety by Implementing the Spirit of Important Instructions from General Secretary Xi Jinping", implemented various tasks around the "Document No. 1" on safety and environmental protection, improved the safety contracting and assurance responsibility system, and strengthened the safety and environmental protection leadership responsibility. The Group improved its system and focused on the significant aspects including production and infrastructure, developed and revised nine management systems for high-risk operations, offshore wind power operations, etc. "Two lists" (problematic hidden dangers and institutional measures) and key projects were basically completed with its in-depth implementation of the special action in "consolidation and upgrading year" for the three-year action plan of the national production safety special rectification. It formulated the power guarantee plan for major festivals and successfully completed various power guarantee tasks for this year. It made efforts to enhance its risk prevention capability, conducted remote inspections on high-risk operations with full coverage throughout the year, issued weekly inspection reports, sent reminders and conducted assessments on typical problems, actively improved the dual prevention mechanism for risks and hazards, clarified the list and procedures for risk identification, and dynamically updated the risk database. In combination with the actual work, the Group revised and released the comprehensive emergency plan for emergencies and 20 special emergency plans for emergencies to ensure scientific and effective emergency disposal.

In 2022, the accumulated power generation of the Group amounted to 70,633,024 MWh, representing a year-on-year increase of 11.6%, of which wind power generation amounted to 58,308,065 MWh, representing a year-on-year increase of 13.7%, mainly due to the impact of factors such as the year-on-year increase in installed capacity of wind power, the year-on-year increase in unit availability and the year-on-year decrease in power curtailment ratio. The average utilisation hours of wind power in 2022 was 2,296 hours, 70 hours less than that in 2021, mainly due to the year-on-year decrease in the average wind velocity in 2022.

Geographical breakdown of the consolidated power generation of the Group's wind farms for 2021 and 2022:

Region	2022 *(MWh)*	2021 *(MWh)*	Percentage of change
Heilongjiang	**3,373,653**	2,823,428	19.49%
Jilin	**2,041,863**	1,543,771	32.26%
Liaoning	**3,111,842**	2,343,985	32.76%
Inner Mongolia	**6,835,334**	6,567,889	4.07%
Jiangsu (onshore)	**2,281,530**	2,763,657	(17.45%)
Jiangsu (offshore)	**5,380,629**	4,032,165	33.44%
Zhejiang	**380,131**	384,503	(1.14%)
Fujian	**3,629,312**	2,763,390	31.34%
Hainan	**143,506**	139,125	3.15%
Gansu	**3,217,564**	2,818,883	14.14%
Xinjiang	**3,970,318**	3,936,234	0.87%
Hebei	**3,993,512**	3,657,925	9.17%
Yunnan	**2,624,821**	2,278,336	15.21%
Anhui	**1,718,341**	1,955,551	(12.13%)
Shandong	**1,259,587**	1,281,806	(1.73%)
Tianjin	**967,771**	663,998	45.75%
Shanxi	**2,430,177**	2,433,099	(0.12%)
Ningxia	**1,490,938**	1,726,813	(13.66%)
Guizhou	**1,483,689**	1,442,389	2.86%
Shaanxi	**1,715,468**	1,101,840	55.69%
Tibet	**14,181**	15,078	(5.95%)
Chongqing	**658,655**	692,761	(4.92%)
Shanghai	**115,373**	120,359	(4.14%)
Guangdong	**297,506**	286,879	3.70%
Hunan	**666,490**	600,665	10.96%
Guangxi	**1,901,034**	549,014	246.26%
Jiangxi	**449,517**	426,205	5.47%
Hubei	**230,239**	220,800	4.27%
Qinghai	**274,652**	228,132	20.39%
Henan	**445,643**	362,479	22.94%
Canada	**283,219**	264,574	7.05%
South Africa	**693,043**	783,286	(11.52%)
Ukraine	**228,529**	90,742	151.84%
Total	**58,308,065**	51,299,762	13.66%

Geographical breakdown of the average utilisation hours/load factor of wind power of the Group's wind farms for 2021 and 2022:

Region	**Average utilisation hours of wind power for 2022** *(hour)*	**Average load factor of wind power for 2022**	Average utilisation hours of wind power for 2021 *(hour)*	Average load factor of wind power for 2021	**Percentage of change of the average utilisation hours of wind power**
Heilongjiang	**2,510**	**29%**	2,293	26%	9.46%
Jilin	**2,413**	**28%**	2,324	27%	3.83%
Liaoning	**2,160**	**25%**	2,240	26%	(3.57%)
Inner Mongolia	**2,417**	**28%**	2,482	28%	(2.62%)
Jiangsu (onshore)	**1,692**	**19%**	2,050	23%	(17.46%)
Jiangsu (offshore)	**2,453**	**28%**	2,550	29%	(3.80%)
Zhejiang	**1,656**	**19%**	1,675	19%	(1.13%)
Fujian	**3,340**	**38%**	3,192	36%	4.64%
Hainan	**1,450**	**17%**	1,405	16%	3.20%
Gansu	**2,025**	**23%**	2,186	25%	(7.37%)
Xinjiang	**2,428**	**28%**	2,473	28%	(1.82%)
Hebei	**2,266**	**26%**	2,146	25%	5.59%
Yunnan	**2,459**	**28%**	2,620	30%	(6.15%)
Anhui	**2,124**	**24%**	2,417	28%	(12.12%)
Shandong	**2,317**	**26%**	2,641	30%	(12.27%)
Tianjin	**2,010**	**23%**	2,226	25%	(9.70%)
Shanxi	**1,960**	**22%**	2,404	27%	(18.47%)
Ningxia	**1,921**	**22%**	2,225	25%	(13.66%)
Guizhou	**2,006**	**23%**	1,877	21%	6.87%
Shaanxi	**2,056**	**23%**	2,158	25%	(4.73%)
Tibet	**1,891**	**22%**	2,010	23%	(5.92%)
Chongqing	**2,271**	**26%**	2,389	27%	(4.94%)
Shanghai	**2,429**	**28%**	2,534	29%	(4.14%)
Guangdong	**2,374**	**27%**	2,253	26%	5.37%
Hunan	**2,161**	**25%**	2,262	26%	(4.47%)
Guangxi	**2,568**	**29%**	2,623	30%	(2.10%)
Jiangxi	**2,289**	**26%**	2,340	27%	(2.18%)
Hubei	**2,444**	**28%**	2,631	30%	(7.11%)
Qinghai	**1,831**	**21%**	1,766	20%	3.68%
Henan	**2,566**	**29%**	2,750	31%	(6.69%)
Canada	**2,858**	**33%**	2,670	31%	7.04%
South Africa	**2,835**	**32%**	3,204	37%	(11.52%)
Ukraine	**2,987**	**34%**	1,127	31%	165.04%
Total	**2,296**	**26%**	2,366	27%	(2.96%)

During the reporting period, the consolidated power generation from coal power segment of the Group was 10,572,663 MWh, representing a decrease of 1.9% as compared with 10,776,027 MWh in the corresponding period of 2021, which was primarily due to the year-on-year increase in the times and duration of downtime for dispatching control of coal power units. The average utilisation hours of the Group's coal power segment in 2022 was 5,639 hours, representing a decrease of 108 hours as compared with 5,747 hours in 2021.

2. Continuing to Promote the Acquisition of Resources and Optimizing the New Energy Development Layout

In 2022, the Group strengthened top-level design, enhanced strategic guidance and gave priority to plans, scientifically studied and judged the development situation around the "14th Five-Year" development goal, and fully leveraged the Group's advantages in brand, technology, talents, layout and other aspects to accelerate high-quality development. Taking into account the strategic consistency and flexibility and in accordance with the development spirit of being "Troikas, Dual-core Development, Four Growth Engines", the Group adhered to the policy of "one province, one policy", comprehensively promoted the development of its projects featuring "base-type, station-type and distribution-type"; enhanced its strategic synergy and competed in the initiative for the base development through utilising the strength of the integration of CHN Energy, the industrial supporting advantages of cooperative enterprises and its own professional advantages; adhered to the combination of centralised and distributed operations to promote the efficient and rapid development of PV; deepened policy study and technology research and expanded the development and leading of emerging technologies such as energy storage, hydrogen energy and ammonia energy. The Group continued to plan and promote large base projects in a closely consistent manner with the base project development policy of the NDRC, and planned for extra-high voltage lines and supporting coal power capacity in order to promote large base projects along with the construction of extra-high voltage transmission lines. The Group seized the development opportunities of offshore wind power, expanded the offshore layout, and successfully won the bid for the total capacity of 2,100 MW of offshore wind power and photovoltaic projects.

In 2022, the Group increased its resource reserve by 62 GW (25.63 GW for wind power and 36.37 GW for photovoltaic), representing an increase of 9.8% as compared with 56.46 GW in the corresponding period of last year, all of which are located in regions with better resources. Branches of the Group in 19 provinces including Anhui, Yunnan, Inner Mongolia, Shandong and Hunan all have additional agreed capacity of more than 1 million KW. It obtained more than 18.37 GW of development quota, including 13.14 GW of centralized development quota (4.67 GW of wind power and 8.47 GW of PV) through competitive allocation and other means, and 5.23 GW of distributed PV projects on file.

3. Improving Efficiency in Construction and Creating a Safe and Stable Construction Site

In 2022, the Group promoted the completion of "one person, one machine" configuration of work recorders and real-time positioning of production vehicles and vessels through full implementation in application of video monitoring equipment, resulting in the visualization of the operation site. The Group's construction of the infrastructure high-risk operation video access production control system was accelerated, and the development of six business modules, including construction management, has been completed to completely strengthen the digital management of engineering. The project construction site intelligent management platform was formally launched and steadily operated, with a total of 11 modules including video monitoring, vehicle positioning, work planning, personnel punching, etc. Video monitoring could reflect the construction site in real time and realise remote monitor of the project safety management. The accurate work plan was made through electronic fence, personnel punching and vehicle positioning and other functions to make the construction more methodical and purposeful.

In 2022, the Group vigorously promoted the construction of projects with high standards through linkage throughout the whole process, enhancing engineering design leadership and optimization of construction organization scheme, and achieved a generally stable safety situation of the project construction. All units overcame challenges imposed by extreme weather, put the safety responsibilities at all levels in place, strengthened the on-site emergency management and attached significant importance to the management and control of high-risk operations, intensified inspection on safety inspection and paid special attention on rectification of problems, without any major or above safety accidents and equipment damage accidents throughout the year.

In 2022, the consolidated installed capacity of the Group increased by 4,409.20 MW, including the consolidated installed capacity of self-built projects of 2,409.60 MW (including 10 wind power projects with consolidated installed capacity of 534.40 MW, 61 photovoltaic projects with consolidated installed capacity of 1,875.20 MW), and 36 wind power projects with consolidated installed capacity of 1,989.60 MW and one photovoltaic project with consolidated installed capacity of 10.00 MW through asset restructuring and acquisition and merger. As of 31 December 2022, the consolidated installed capacity of the Group reached 31,107.84 MW, including 26,191.84 MW and 1,875.00 MW of wind power and coal power respectively, and 3,041.00 MW of photovoltaic and other renewable energy.

Geographical breakdown of the consolidated installed capacity of the Group's wind farms as at 31 December 2021 and 31 December 2022 is set out as below:

Region	**2022** *(MW)*	2021 *(MW)*	**Percentage of change**
Heilongjiang	**1,345.70**	1,341.70	0.30%
Jilin	**844.40**	794.90	6.23%
Liaoning	**1,441.70**	1,096.70	31.46%
Inner Mongolia	**3,034.30**	2,685.30	13.00%
Jiangsu (onshore)	**1,338.50**	1,338.50	0.00%
Jiangsu (offshore)	**2,191.60**	2,191.60	0.00%
Zhejiang	**227.90**	227.90	0.00%
Fujian	**1,049.10**	1,049.10	0.00%
Hainan	**99.00**	99.00	0.00%
Gansu	**1,690.80**	1,489.80	13.49%
Xinjiang	**1,640.30**	1,640.30	0.00%
Hebei	**1,770.10**	1,770.10	0.00%
Yunnan	**1,078.70**	869.50	24.06%
Anhui	**821.60**	809.10	1.54%
Shandong	**646.90**	570.40	13.41%
Tianjin	**538.00**	347.50	54.82%
Shanxi	**1,239.75**	1,041.75	19.01%
Ningxia	**774.70**	774.70	0.00%
Guizhou	**789.00**	789.00	0.00%
Shaanxi	**833.85**	584.25	42.72%
Tibet	**7.50**	7.50	0.00%
Chongqing	**289.50**	289.50	0.00%
Shanghai	**47.50**	47.50	0.00%

Region	**2022**	2021	**Percentage of change**
	(MW)	*(MW)*	
Guangdong	**125.74**	125.74	0.00%
Hunan	**308.35**	308.35	0.00%
Guangxi	**933.00**	343.80	171.38%
Jiangxi	**196.40**	196.40	0.00%
Hubei	**94.20**	94.20	0.00%
Qinghai	**150.00**	150.00	0.00%
Henan	**223.65**	173.65	28.79%
Canada	**99.10**	99.10	0.00%
South Africa	**244.50**	244.50	0.00%
Ukraine	**76.50**	76.50	0.00%
Total	**26,191.84**	23,667.84	10.66%

4. *Continuing to Enhance Marketing Efforts to Increase Revenues and Improve Efficiency*

In 2022, the Group sought profit models through multiple channels, organized its branches and subsidiaries to actively participate in green power trading, continuously expanded the scale of trading and improved trading revenue; seized the market factor of high coal power fuel cost, actively launched generation swap transactions between wind power and coal power to enhance synergy and efficiency, and obtained a year-on-year increase in trading revenues; vigorously participated in inter-provincial spot trading to improve the new energy consumption; completed the trading of 466,000 green certificates with a year-on-year increase of 47.5%; constantly boosted its carbon asset management capabilities, and deepened carbon emissions trading work, accomplished the trading of 100,000 tonnes of carbon quota to lay a solid foundation for coal power enterprises to fulfill their contracts, carried out carbon emission reduction actions, and assumed corporate social responsibility.

In 2022, the average on-grid tariffs for overall power generation segments of the Group amounted to RMB468 per MWh (value added tax ("VAT") exclusive), representing a decrease of RMB7 per MWh as compared with RMB475 per MWh (VAT exclusive) in 2021. The average on-grid tariffs for wind power amounted to RMB481 per MWh (VAT exclusive), representing a decrease of RMB13 per MWh as compared with RMB494 per MWh (VAT exclusive) in the corresponding period of 2021, which was mainly due to the expansion of wind power market transaction volume, the increase in parity production projects and structural factors. The average on-grid tariffs for coal power amounted to RMB400 per MWh (VAT exclusive), representing an increase of RMB48 per MWh as compared with the average on-grid tariffs for coal power of RMB352 per MWh (VAT exclusive) in 2021, which was mainly due to the rise of market transaction tariff.

5. Optimising Capital Efficiency Model to Reduce Overall Capital Costs

In 2022, the Group paid close attention to the policy orientation, fully utilized the green finance policy, continuously optimized the financing structure, and proactively carried out the replacement of existing loans to reduce the capital cost of existing loans. By leveraging its credit advantages, the Group increased the frequency of capital market financing and successfully completed the registration of DFI (Debt Financing Instrument for Non-financial Enterprises) this year to ensure smooth financing channels for the ultra-short-term financing bonds, short-term financing bonds, and medium-term notes. The Group insisted on the rigid management of capital plan and adopted measures such as fund collection and centralized deployment to increase the frequency of capital utilisation and maximize the time value of capital.

In 2022, the Group successfully issued twenty-five tranches of ultra-short-term financing bonds, one tranche of short-term financing bonds and one tranche of medium-term notes, maintaining its advantages in the industry in terms of capital cost, and successfully issued one tranche of green medium-term notes, not only does it reduce the capital costs, but also represent the Group's responsibility for "Carbon Peak and Carbon Neutrality".

6. ***Comprehensively Strengthening Scientific and Technological Innovation and Deepening the Innovation-driven Strategy***

In 2022, the Group made new breakthroughs in science and technology innovation, including the on-grid operation of the Company's first wind storage demonstration power station; the full-capacity grid-connected generation of the country's first solar-tidal intelligent photovoltaic power plant; the approval of the first domestic industry standard in the field of smart wind power; the completion of the construction and online operation of the first three-dimensional digital wind power design platform in China; the completion of the Company's wind power anti-icing technology filled the industry gap; the online operation of the Company's first independently controllable safety production monitoring system; the commencement of the world's first floating wind power and grid box breeding integration project; and the conclusion of the compilation of the "History of China's Electric Power Industry – Volume for Renewable Energy Power Generation" led by the Group. This year, 44 invention patents and 36 utility model patents were applied for, and the number of invention patent applications reached a record high.

In 2022, the Group completed the Xi'an base of National Energy Wind Power Operation R&D (Experiment) Center, expanded the electric control laboratory, oil and fluid laboratory and vibration laboratory. 11 science and technology projects were completed, of which 3 achievements were certified as international leading level and 3 achievements were certified as domestic leading level; 2 awards of excellence, 3 second-class awards and 5 third-class awards for industry science and technology innovation were obtained.

7. *Strengthening Foreign Asset Management in Response to International Environment Challenges*

In 2022, the Group successfully completed the tender for a 30MW photovoltaic project in Brunei; actively participated in the tender for the low-carbon electricity import project in Singapore and made it to the second round; led a consortium to pass the pre-qualification for the 1.5 GW hydropower project in Pandacuva, Mozambique. Facing with the challenges and risks arising from the outbreak of the Russian- Ukrainian conflict, the Group activated the emergency plan immediately, took measures to evacuate the Chinese staff in a timely and safe manner, and maintained the normal operation of the affiliated project in Uzhny. Meanwhile, the Group has coordinated the operation and management of overseas projects, optimised the construction of the overseas risk control compliance system, and successfully realised the efficient management and sharing of overseas business data. The Group increased its efforts to study the investment opportunities in Southern Africa, Southeast Asia, SCO, and other countries along the "Belt and Road". The Group tracked the market dynamics closely, focused on key country-specific projects, and strived to achieve regional rolling development and breakthroughs in emerging markets.

In 2022, the Group continued to strengthen overseas asset management, deepened cooperation and exchange and operated all in-service projects well. As of 31 December 2022, Canada Dufferin Wind Farm of the Group recorded total power generation of 283.22 GWh; its utilization hours reached 2,858 hours, and it has maintained safe production for 2,952 consecutive days. The wind power projects in De Aar of South Africa recorded the power generation of 693.04 GWh in total, the utilization hours reached 2,835 hours, and maintained its accumulated safe production for 1,887 days. The wind power projects in Uzhny, Ukraine recorded the accumulated power generation of 228.53 GWh, the utilization hours reached 2,987 hours, and maintained its accumulated safe production for 506 days.

8. *Improving the Quality of Carbon Emission Data and Proactively Expanding the Trading Business*

In 2022, the Group built a carbon asset management network driven by professional carbon asset management institutions; continued efforts to enhance carbon emission data quality, carbon emission monitoring technology research, carbon emission reduction project development, carbon trading system construction, and carbon management mechanism innovation; actively expanded the business of the national carbon emission trading market and the international voluntary emission reduction market, completed the development of international projects under the Verified Carbon Standard (VCS) with over 15 million tons of emission reduction, carried out the collection of funds for projects under China Certified Emission Reduction (CCER), and ensured that all projects qualified for CCER filing were applied for. The Group took the lead in building a digital control system for carbon inventory to sort out the necessary on-site visits, evidence checks, and material inspections, made the process of carbon inventory standardized, digitalized, and informationized, and the software copyright and patents of the project have been authorized by the state. The Group has always attached importance to the prevention and control of carbon trading risks, consolidated the foundation of carbon trading management, and promoted the upgrade of the carbon asset trading platform system, to realize intelligent trading operation, automatic risk control, and visualization of index analysis. With multiple measures implemented together to speed up the research of carbon emission projects, the Group has improved the accuracy of carbon data, strictly controlled the quality of data, and successfully developed the first online carbon emission monitoring system for the fuel end of coal power plants.

Core competitiveness analysis

1. *Continuous leadership in resource acquisition*

In 2022 the Group actively leveraged its advantages of being a good brand, low debt ratio, extensive project layout, leading technology management and sufficient professional staff to expedite the acquisition of quality resources. It innovated its project cooperation mode and has been cooperating with various parties in an all-round, wide-ranging and multi-level manner based on the principles of "complementing advantages, mutual benefit and win-win situation, resource sharing and common development", gradually forming a clear overall development strategy. It further promoted the development of "base-type, station-type and distribution-type" projects, advanced the layout of desert, gobi and offshore-base projects, actively and orderly developed distributed photovoltaic projects, and strived for qualification for competitive allocation. The Group strengthened the strategic cooperation and leveraged the industrial supporting advantages of cooperative enterprises and its own professional advantages to strive for the dominant position in base development. The Group seized the opportunity of offshore wind power development, expanded the offshore layout, and fully participated in the competitive bidding of offshore wind power and photovoltaic. The Group adhered to the combination of centralised and distributed operations to promote the efficient and rapid development of PV.

2. *Overall strengthening of risk prevention and control*

Focusing on the five major objectives of strategic development, operational performance, financial reporting, asset security and legal compliance, in 2022 the Group continued to improve the internal control system, build information technology platforms and establish the new pattern of internal control risk management. The Group completed the internal control process and risk point control audit of 115 core systems with the emphasis on auditing the effectiveness of the internal control process and risk control of the system business, and embedded the internal control risks into the daily management to provide standard guidelines for the Company to operate in compliance with the law. The Group took the construction of the internal control risk compliance management system as an opportunity to comprehensively refine the risk-oriented internal control matrix, evaluation standards, early warning indicators and other operational mechanisms to promote the integration, online monitoring and dynamic updating of the internal control management system. The Group reinforced the regular audit supervision, updated the audit mode to realise "multiple items in one audit" and "multiple results in one audit"; strengthened overseas risk control and established an integrated overseas financial information system; coordinated the work of network security, complaints and proposals stability, security and confidentiality, etc, to satisfactorily complete various power security tasks; insisted on "seeking legal advice before making major decisions" and deepened the legal decision-making review mechanism to make legal audit necessary in the management process, and to ensure that the rate of legal audit for major decisions, contracts and systems remained 100%; strictly enforced the compliance system in key areas such as the Integrity and Compliance Manual and the Overseas Compliance Management Measures, and the compliance commitment rate reached 100%; optimized the organization and implementation mechanism to ensure that the corresponding system was continuously improved and the relevant work was effectively implemented.

3. Steady improvement in marketing management

The Group adhered to "one plant, one policy" to deepen the management of power curtailment, strengthened the analysis of power curtailment information, tracked and collected information on power installations, grid operation mode, grid structure, load consumption, and major policy changes, and scientifically predicted the risks and trends of power restrictions in the region, which led to a year-on-year decrease in the proportion of power curtailment and the successful completion of the annual target. The Group has deepened its business philosophy of "integration, price, cost and profit", accurately grasped the pace of the power market and trading, adhered to the market-oriented direction and the principle of volume and price synergy, thoroughly analyzed the base power situation, supply and demand balance adjustment, grid structure and transmission conditions in each province and district, and continued to optimize and improve the trading strategy in accordance with local conditions. The Group strengthened the management of inter-provincial power spot trading, paid close attention to the progress of the construction of the spot market and inter-provincial spot participation in each province and region, established a decision-making mechanism with clear authority and responsibility, flexibility, and efficiency to continue improving the ability to create efficiency in operation. The Group strengthened the management of green power trading, continued to expand the scale of trading, and broadened the profit model of grid parity projects to improve trading revenue. The Group also enhanced the team building of trading personnel and cultivated a group of backbone forces with high technical levels and strong market awareness to improve the overall level of market trading.

4. In-depth promotion of technology applications

In 2022, the Group applied the distributed intelligent algorithm platform on a large scale across the country, which combined video, audio, and other data with safety production to continuously improve the level of intelligent surveillance. Digital management for construction has been strengthened continuously. By building a GIS (Geographic Information System) platform, remote monitoring of infrastructure sites has been realized to significantly reduce safety hazards. The Group actively optimized its technological innovation system, enhanced its technological innovation capability, and drove high-quality development of technological innovation. Focusing on the pivotal points and difficulties of scientific and technological innovation, the Group has improved the system and mechanism of scientific and technological innovation and made systematic revisions to the management system, such as "Administrative Measures for Science and Technology Innovation Projects" and "Incentive Measures on Scientific Technology". With a deep understanding of the spirit of the important instruction of General Secretary Xi Jinping on the "in-depth implementation of the strategy of revitalizing the country through science and education, the strategy on developing a quality workforce, and the strategy on innovation-driven development", the Company revised its "14th Five-Year Plan" for science and technology innovation to further clarify the development path, goals and implementation measures for science and technology innovation of the Company during the period of 2023–2025, and to ensure "a step in each year and a jump in three years".

5. Mature tax management model

The Group has been improving the information database of tax policies and providing guidance to its branches and subsidiaries to make full use of and ensure the adequate payment and enjoyment of preferential tax policies, so as to realize the full return of preferential tax amount and the value creation of tax management under the premise of legal compliance and risk prevention; meanwhile, the Group conducts tax analysis and research on key businesses and key tax types to eliminate risk points and continuously improve the ability of tax risk prevention and control. The Group has launched a special campaign to promote the "Year of Financial Digital Intelligence Transformation", established a unified digital intelligence platform and management accounting standards, and improved its data analysis capabilities by developing business intelligence (BI) studies and building business analysis models. The Group has a relatively low asset-liability ratio compared with its peers, and a high credit facility. In addition, it insists on lean capital management, maintains a leading edge in the capital, and carries out financing through multiple channels and methods, with good credit ratings and AAA ratings from several domestic rating agencies, including China Chengxin International Credit Rating Co., Ltd. (中誠信國際信用評級有限責任公司) and Dagong Global Credit Rating Co., Ltd. (大公國際資信評估有限公司), and S&P's rating of A- and Moody's rating of A3.

6. Continuous improvement of talent team construction

The Group has more than 500 chief talents at four levels and 40 professional directions, giving full play to the technical leadership role. Through the establishment of the "1+2+N" (1 new energy training centre, 2 company-level training bases and N provincial-level training bases) training base system and the continuous implementation of the "Leadership (Craftsmanship) Training Camp", the Group has cultivated and reserved a number of outstanding wind power management and production talents, with a total of 214 trainees in the leadership training class and 280 trainees in the craftsmanship training class. The Group has 454 employees possessing senior titles and 2,172 possessing mid-level titles. The majority of the senior management team has been in the power industry for over 20 years, with extensive experience and an international perspective in new energy management.

III. RESULTS OF OPERATIONS AND ANALYSIS THEREOF

Profit or loss and other comprehensive income

In 2022, the net profit of the Group amounted to RMB6,129 million, representing a decrease of 27.2% as compared to RMB8,421 million in 2021. Net profit attributable to equity holders of the Company amounted to RMB5,132 million, representing a decrease of 31.0% as compared to RMB7,433 million in 2021. Earnings per share amounted to RMB58.63 cents, representing a decrease of RMB30.69 cents as compared to RMB89.32 cents in 2021.

Operating revenue

In 2022, the operating revenue of the Group amounted to RMB39,862 million, representing a decrease of RMB10 million as compared to RMB39,872 million in 2021. The decrease of operating revenue was mainly due to: (1) revenue from electricity sales and other revenue of wind power segment in 2022 was RMB27,191 million, representing an increase of RMB651 million or 2.5% as compared to RMB26,540 million in 2021, which was primarily due to greater increases in electricity sales volume of wind power segment than decreases in the average electricity sales unit price; (2) the revenue from service concession construction of wind power segment in 2022 was RMB57 million, representing a decrease of RMB114 million or 66.7% as compared to RMB171 million in 2021, which was primarily due to concession projects under construction in 2022 being close to completion; (3) coal sales revenue of the coal power segment in 2022 was RMB6,423 million, representing a decrease of RMB1,272 million or 16.5% as compared to RMB7,695 million in 2021, which was mainly due to greater decreases in sales volume of coal than increases in the unit selling price of coal; revenue from sales of steam amounted to RMB849 million, representing an increase of RMB55 million or 6.9% as compared to RMB794 million in 2021, which was mainly due to greater increases in unit price of sales of steam than decreases in sales volume of steam; (4) revenue from sales of electricity of the coal power segment for 2022 was RMB4,069 million, representing an increase of RMB553 million or 15.7% as compared to RMB3,516 million in 2021, which was mainly due to increases in unit price of electricity sales of coal power; and (5) revenue from renewable electricity sales of other segments in 2022 was RMB704 million, representing an increase of RMB118 million or 20.1% as compared to RMB586 million in 2021, which was mainly due to the increase in sales volume of photovoltaic power.

Operating revenue of each segment and their respective proportions are set out in the table below:

Operating revenue	**2022** Amount *(RMB million)*	**2022** Proportion	2021 Amount *(RMB million)*	2021 Proportion
Electricity sales and others of wind power segment	**27,191**	**68.3%**	26,540	66.6%
Electricity sales of coal power segment	**4,069**	**10.2%**	3,516	8.8%
Steam sales of coal power segment	**849**	**2.1%**	794	2.0%
Coal sales	**6,423**	**16.1%**	7,695	19.3%
Electricity sales of other renewable energy business	**704**	**1.8%**	586	1.5%
Service concession construction revenue	**57**	**0.1%**	171	0.4%
Others	**569**	**1.4%**	570	1.4%
Total	**39,862**	**100.0%**	39,872	100.0%

Other net income

In 2022, other net income of the Group amounted to RMB1,206 million, representing an increase of 0.4% as compared to RMB1,201 million in 2021, mainly due to: (1) a decrease of RMB7 million in net gains from acquisition of subsidiaries as compared to 2021; (2) an increase of RMB61 million in government grants as compared to 2021; and (3) a decrease of RMB49 million in income from insurance claims as compared to 2021.

The breakdown of other net income items and their respective proportions are set out in the table below:

Other net income	2022 Amount (RMB million)	2022 Proportion	2021 Amount (RMB million)	2021 Proportion
Government grants	**1,103**	**91.5%**	1,042	86.8%
Others	**103**	**8.5%**	159	13.2%
Total	**1,206**	**100.0%**	1,201	100.0%

Operating expenses

Operating expenses of the Group amounted to RMB29,165 million in 2022, representing an increase of 8.4% as compared to RMB26,898 million in 2021, primarily due to: (1) an increase of RMB1,117 million in depreciation and amortisation expenses, a decrease of RMB114 million in service concession construction costs and an increase of RMB315 million in personnel costs in the wind power segment; (2) a decrease of RMB1,244 million in the cost of coal sales and an increase of RMB252 million in the cost of coal consumption in the coal power segment; and (3) the provision of RMB2,045 million made for the impairment in 2022, representing an increase of RMB1,594 million as compared to RMB451 million in 2021.

Depreciation and amortisation expenses

Depreciation and amortisation expenses of the Group amounted to RMB10,260 million in 2022, representing an increase of 13.8% as compared to RMB9,015 million in 2021, primarily due to: (1) an increase of RMB1,117 million or 13.0% in depreciation and amortisation expenses in the wind power segment as compared to 2021 as a result of the effect of expansion in the installed capacity of wind power projects; (2) an increase 25 million or 8.9% in depreciation and amortisation expenses of the coal power segment as compared to 2021; and (3) an increase of RMB92 million, or 60.4% in depreciation and amortisation expenses of the photovoltaic power business in other segments as compared to 2021.

Coal consumption costs

Coal consumption costs of the Group amounted to RMB3,558 million in 2022, representing an increase of 7.6% as compared to RMB3,306 million in 2021, which was primarily due to: (1) a decrease in the consumption of standard coal by 3.0% as a result of the combined effect of the decrease in power generation and the decrease in heat sales; and (2) an increase of approximately 11.0% in the average unit price of standard coal for power generation and heat supply as affected by the increase in coal price in 2022.

Coal sales costs

Coal sales costs of the Group in 2022 amounted to RMB6,275 million, representing a decrease of 16.5% as compared to RMB7,519 million in 2021, which was primarily due to: (1) an increase of 17.8% in the average purchase price of coal in 2022 as compared to 2021; and (2) a decrease of 29.1% in the sales volume of coal in 2022 as compared to 2021.

Service concession construction costs

The Group's service concession construction costs in 2022 amounted to RMB57 million, representing a decrease of 66.7% as compared to RMB171 million in 2021, which was primarily due to concession projects under construction in 2022 being close to completion.

Personnel costs

Personnel costs of the Group amounted to RMB3,577 million in 2022, representing an increase of 12.0% as compared to RMB3,195 million in 2021, which was primarily due to: (1) an increase in headcounts as a result of expansion in the installed capacity of wind power and photovoltaic projects, resulting in an increase in the salary level of staff; and (2) the fact that a portion of the personnel costs were expensed instead of being capitalised as more projects commenced operation.

Material costs

Material costs of the Group amounted to RMB254 million in 2022, representing an increase of 46.8% as compared to RMB173 million in 2021, which was primarily due to (1) a decrease in material consumption as a result of the decrease in biomass power generation; (2) an increase in procured materials for the thermal power generation segment to commence unit insulation works; and (3) an increase in procured materials for other segments.

Repair and maintenance expenses

The repair and maintenance expenses of the Group amounted to RMB1,011 million in 2022, representing a decrease of 3.2% as compared to RMB1,044 million in 2021, primarily due to less significant maintenance in 2022.

Administrative expenses

Administrative expenses of the Group amounted to RMB766 million in 2022, representing a decrease of 3.5% as compared to RMB794 million in 2021, which was primarily due to the large audit consulting fees incurred for the "Acquisition I".

Other operating expenses

Other operating expenses of the Group amounted to RMB3,416 million in 2022, representing an increase of 129.6% as compared to RMB1,488 million in 2021, which was primarily due to: (1) the provision for impairment of RMB 2,053 million in 2022 , representing an increase of RMB1,797 million as compared with the provision for impairment of RMB256 million in 2021; and (2) with the wind power projects' being transferred to fixed asset in 2022, technical service expenses and purchase of electricity charge amounted to RMB389 million, representing an increase of RMB116 million as compared with RMB273 million in 2021.

Operating profit

In 2022, the operating profit of the Group amounted to RMB11,903 million, representing a decrease of RMB2,271 million or 16.0% as compared to RMB14,174 million in 2021, which was primarily due to: (1) a decrease of RMB2,266 million in operating profit of wind power segment as a result of the increase in depreciation and amortisation of the wind power segment and the increase in asset impairment losses; and (2) an increase of RMB90 million in operating profit of coal power segment as a result of the combined effect of the increase in average unit price of electricity sales and unit price of heat sales and the increase in average purchase price of coal.

Net finance expenses

Net finance expenses of the Group amounted to RMB3,800 million in 2022, representing an increase of RMB222 million or 6.2% as compared to RMB3,578 million in 2021. The change was primarily due to: (1) an increase of RMB68 million in the interest expense of the Group in 2022 as compared with 2021 due to the increase in the balance of borrowings; (2) an increase of RMB370 million in the net foreign exchange gains and losses incurred by the Group in 2022 as compared with 2021; (3) an increase of RMB12 million in gains from changes in fair value of interest rate swap agreements as compared with 2021; (4) the fact that the Group reduced various securitization business of trade receivable, resulting in a decrease of RMB465 million of related charges in 2022 as compared with 2021; (5) an increase of RMB305 million in the unrealized losses recognized for trading securities held in 2022 as compared with 2021; (6) an increase of RMB28 million in interest and dividend income from financial assets in 2022 as compared with 2021; (7) a decrease of RMB29 million in other charges in 2022 as compared with 2021; and (8) a decrease of RMB13 million in cash discount received by the Group in 2022 as compared with 2021.

Share of profits less losses of associates and joint ventures

The Group's share of losses of associates and joint ventures amounted to RMB419 million in 2022, representing a decrease of RMB158 million or 27.4% as compared to share of losses of RMB577 million in 2021, which was primarily due to the substantial increase in operating profit from the continuous expansion of offshore wind power projects by Jiangsu Longyuan Zhenhua Offshore Engineering Co., Ltd. as compared with 2021.

Income tax

In 2022, the income tax of the Group amounted to RMB1,554 million, representing a decrease of 2.8% as compared to RMB1,599 million in 2021, which was mainly due to: (1) a decrease of 23.3% in profit before tax in 2022; and (2) the fact that certain items had passed the expiry of the tax holiday and the 50% relief period under the "three-year full exemption and three-year 50% exemption" preferential policy.

Net profit

In 2022, the net profit of the Group amounted to RMB6,129 million, representing a decrease of 27.2% as compared to RMB8,421 million in 2021, which was mainly due to the combined effect from the decrease in net profit of wind power segment and the increase in net profit of coal power segment.

Net profit attributable to equity holders of the Company

In 2022, the net profit attributable to equity holders of the Company amounted to RMB5,132 million, representing a decrease of 31.0% as compared to RMB7,433 million in 2021, mainly attributable to the combined effect from the decrease in net profit of wind power segment and the increase in net profit of coal power segment.

Segment results of operations

Wind power segment

Operating revenue

In 2022, the operating revenue of the wind power segment of the Group amounted to RMB27,248 million, representing an increase of 2.0% as compared to RMB26,711 million in 2021, primarily due to the combined effect from the increase in revenue from electricity sales in the wind power segment resulting from the increase in installed capacity, and increase in amount of electricity sales and the decrease in revenue from service concession construction.

Operating revenue in the wind power segment and proportions are set out in the table below:

	2022		2021	
Operating revenue	**Amount** *(RMB million)*	**Proportion**	Amount *(RMB million)*	Proportion
Revenue from electricity sales	**27,102**	**99.5%**	26,509	99.3%
Service concession construction revenue	**57**	**0.2%**	171	0.6%
Others	**89**	**0.3%**	31	0.1%
Total	**27,248**	**100.0%**	26,711	100.0%

Operating profit

In 2022, the operating profit in the wind power segment of the Group amounted to RMB11,622 million, representing a decrease of 16.3% as compared to RMB13,888 million in 2021, which was mainly attributable to the decrease in operating profit in the wind power segment resulting from the increase in depreciation amortisation and asset impairment losses in the wind power segment for the year.

Coal power segment

Operating revenue

In 2022, operating revenue of the coal power segment of the Group amounted to RMB11,716 million, representing a decrease of 6.0% as compared to RMB12,461 million in 2021, primarily due to: (1) an increase of RMB553 million in electricity sales revenue of coal power segment as compared to 2021 as affected by the increase in the average unit price of electricity sales of coal power segment in 2022; and (2) a decrease of RMB1,272 million in revenue of coal sales as compared to 2021 resulting from the impact of a decrease in sales volume of coal and an increase in average unit selling price of coal in 2022.

Operating revenue of the coal power segment and proportions are set out in the table below:

	2022		2021	
Operating revenue	**Amount** *(RMB million)*	**Amount**	Proportion *(RMB million)*	Amount
Revenue from electricity sales	**4,069**	**34.8%**	3,516	28.2%
Revenue from sales of steam	**849**	**7.2%**	794	6.4%
Revenue from coal trading	**6,423**	**54.8%**	7,695	61.8%
Others	**375**	**3.2%**	456	3.6%
Total	**11,716**	**100.0%**	12,461	100.0%

Operating profit

In 2022, the operating profit of coal power segment of the Group amounted to RMB441 million, representing an increase of 25.6% as compared to RMB351 million in 2021, which was mainly attributable to the combined effect of the increase in average unit price of electricity sales, unit selling price of steam as well as average purchase price of coal.

Other segments

Operating revenue

In 2022, the operating revenue of other segments of the Group amounted to RMB1,555 million, representing an increase of 27.9% as compared to RMB1,216 million in 2021, which was mainly attributable to (1) an increase in revenue from electricity sales of RMB198 million resulting from the increase in electricity volume generated from photovoltaic power; (2) a decrease in revenue from electricity sales of RMB78 million resulting from the decrease in electricity volume generated from biomass power; and (3) an increase of RMB265 million in consulting and design services in other segments and a decrease of RMB42 million in revenue from the Engineering Procurement Construction ("EPC") as a result of the decrease in EPC services provided.

Operating revenue of other segments and proportions are set out in the table below:

	2022		2021	
Operating revenue	**Amount** ***(RMB million)***	**Proportion**	Amount *(RMB million)*	Proportion
Revenue from electricity sales	**704**	**45.3%**	586	48.20%
Revenue from EPC	**27**	**1.7%**	69	5.70%
Revenue from other sales	**774**	**49.8%**	509	41.90%
Others	**50**	**3.2%**	52	4.20%
Total	**1,555**	**100.0%**	1,216	100.0%

Operating profit

In 2022, the operating loss of other segments of the Group amounted to RMB613 million, representing a decrease of RMB736 million as compared to RMB123 million of operating profit in 2021, which was mainly attributable to the combined effect of the increase of RMB899 million in the provision for asset impairment and credit impairment losses of other segments in 2022 as compared to 2021.

Assets and liabilities

As at 31 December 2022, total assets of the Group amounted to RMB223,219 million, representing an increase of RMB17,524 million as compared with total assets of RMB205,695 million as at 31 December 2021. This was primarily due to (1) an increase of RMB13,141 million in current assets including bank deposits and cash; and (2) an increase of RMB4,383 million in non-current assets including property, plant and equipment.

As at 31 December 2022, total liabilities of the Group amounted to RMB143,476 million, representing an increase of RMB15,805 million as compared to total liabilities of RMB127,671 million as at 31 December 2021. This was primarily due to (1) an increase of RMB4,017 million in non-current liabilities including long-term borrowings; and (2) an increase of RMB11,788 million in current liabilities including short-term borrowings.

As at 31 December 2022, equity attributable to equity holders of the Company amounted to RMB68,448 million, representing an increase of RMB360 million as compared with RMB68,088 million as at 31 December 2021, which was mainly due to (1) a decrease of RMB2,263 million in the absorption and merger through share swap, asset sales and cash purchase of assets for the year; (2) an increase of RMB5,132 million in earnings from business for the year; (3) a decrease of RMB1,232 million in dividend distribution; and (4) a decrease of RMB1,000 million in redemption of perpetual medium-term notes.

Details of assets and liabilities are set out in the tables below:

Assets	2022 Amount (RMB million)	2021 Amount (RMB million)
Property, plant and equipment	**151,600**	145,929
Investment properties	**7**	8
Right-of-use assets	**3,802**	3,734
Intangible assets and goodwill	**6,483**	7,101
Other non-current assets	**8,462**	9,199
Current assets	**52,865**	39,724
Total	**223,219**	205,695

Liabilities	2022 Amount (RMB million)	2021 Amount (RMB million)
Long-term borrowings	**66,359**	61,166
Deferred income and deferred tax liabilities	**1,225**	1,303
Lease liabilities (long-term)	**711**	1,287
Other non-current liabilities	**1,154**	1,676
Current liabilities	**74,027**	62,239
Total	**143,476**	127,671

Capital liquidity

As at 31 December 2022, current assets of the Group amounted to RMB52,865 million, representing an increase of RMB13,141 million as compared with the current assets of RMB39,724 million as at 31 December 2021. It was mainly attributable to the increase in cash at banks and on hand and restricted deposits.

Current assets by item and proportions are set out in the table below:

Current assets	**2022** Amount *(RMB million)*	Proportion	2021 Amount *(RMB million)*	Proportion
Trade and bills receivables	**27,658**	**52.3%**	30,250	76.2%
Prepayments and other current assets	**3,428**	**6.5%**	3,663	9.2%
Cash at banks and on hand and restricted deposits	**20,476**	**38.7%**	4,175	10.5%
Others	**1,303**	**2.5%**	1,636	4.1%
Total	**52,865**	**100.0%**	39,724	100.0%

As at 31 December 2022, current liabilities of the Group amounted to RMB74,027 million, representing an increase of RMB11,788 million as compared with the current liabilities of RMB62,239 million as at 31 December 2021, which was mainly attributable to the increase in short-term borrowings and other current liabilities.

Current liabilities by item and proportions are set out in the table below:

Current liabilities	**2022** Amount *(RMB million)*	Proportion	2021 Amount *(RMB million)*	Proportion
Short-term borrowings	**53,279**	**72.0%**	42,403	68.1%
Trade and bills payables	**2,936**	**4.0%**	4,130	6.6%
Other current liabilities	**17,132**	**23.0%**	15,348	24.7%
Lease liabilities (short-term)	**267**	**0.4%**	37	0.1%
Tax payable	**413**	**0.6%**	321	0.5%
Total	**74,027**	**100.0%**	62,239	100.0%

As at 31 December 2022, net current liabilities of the Group amounted to RMB21,162 million, representing a decrease of RMB1,353 million as compared with the net current liabilities of RMB22,515 million as at 31 December 2021. The liquidity ratio was 0.71 as at 31 December 2022, representing an increase of 0.07 as compared with the liquidity ratio of 0.64 as at 31 December 2021. The increase was mainly attributable to the cash at banks and on hand and restricted deposits during the year.

Restricted deposits amounted to RMB2,137 million, which were mainly time deposits with original maturities of more than three months deposited in China Energy Finance Co., Ltd. and monetary funds used to repay bank loans.

Borrowings and bills payables

As at 31 December 2022, the Group's balance of the borrowings and bills payables amounted to RMB121,308 million, representing an increase of RMB14,729 million as compared with the balance of RMB106,579 million as at 31 December 2021. As at 31 December 2022, the Group's outstanding borrowings and bills included short-term borrowings and bills payables of RMB54,949 million (including long-term borrowings due within one year of RMB19,874 million and bills payables of RMB1,669 million) and long-term borrowings amounting to RMB66,359 million (including debentures payables of RMB10,917 million). The above-mentioned borrowings included borrowings denominated in Renminbi of RMB113,237 million, borrowings denominated in U.S. dollars of RMB2,675 million and borrowings denominated in other foreign currencies of RMB3,727 million. As at 31 December 2022, the long-term liabilities with fixed interest rates of the Group included long-term borrowings with fixed interest rates of RMB1,793 million and corporate bonds with fixed interest rates of RMB10,917 million. As at 31 December 2022, the balance of bills payables issued by the Group amounted to RMB1,669 million.

Borrowings and bills payables by type and proportions are set out in the table below:

	2022		2021	
Borrowings and bills payables	**Amount** ***(RMB million)***	**Proportion**	Amount *(RMB million)*	Proportion
Bank loans	**68,726**	**56.7%**	64,748	60.8%
Loans from fellow subsidiaries	**17,835**	**14.7%**	7,772	7.3%
Loans from an associated company	**100**	**0.1%**	133	0.1%
Corporate bonds	**32,978**	**27.2%**	30,916	29.1%
Bills payables	**1,669**	**1.3%**	3,010	2.7%
Total	**121,308**	**100.0%**	106,579	100.0%

Borrowings and bills payables by term and proportions are set out in the table below:

Borrowings and bills payables	**2022** **Amount** ***(RMB million)***	**Proportion**	2021 Amount *(RMB million)*	Proportion
Within 1 year	**54,949**	**45.3%**	45,413	42.6%
1-2 years	**15,901**	**13.1%**	13,863	13.0%
2-5 years	**17,528**	**14.4%**	22,077	20.7%
Over 5 years	**32,930**	**27.2%**	25,226	23.7%
Total	**121,308**	**100.0%**	106,579	100.0%

The types of interest rate structure of borrowings and bills payables and their respective proportions are set out in the table below:

Borrowings and bills payables	**2022** **Amount** ***(RMB million)***	**Proportion**	2021 Amount *(RMB million)*	Proportion
Bills payables	**1,669**	**1.4%**	3,010	2.8%
Fixed rate borrowings	**42,555**	**35.1%**	42,248	39.6%
Floating rate borrowings	**77,084**	**63.5%**	61,321	57.6%
Total	**121,308**	**100.0%**	106,579	100.0%

Capital expenditures

The capital expenditures of the Group amounted to RMB17,585 million in 2022, representing a decrease of 14.7% as compared to RMB20,605 million in 2021, among which, the expenditures for the construction of wind power projects amounted to RMB10,047 million, and the expenditures for the construction of other renewable energy projects amounted to RMB7,101 million. The sources of funds mainly included self-owned funds, the borrowings from banks and the proceeds from the issuance of bonds.

Capital expenditures classified by use and proportions are set out in the table below:

Capital expenditures	**2022** Amount *(RMB million)*	**2022** Proportion	2021 Amount *(RMB million)*	2021 Proportion
Wind power projects	**10,047**	**57.1%**	18,088	87.8%
Other renewable energy projects	**7,101**	**40.4%**	2,081	10.1%
Others	**437**	**2.5%**	436	2.1%
Total	**17,585**	**100.0%**	20,605	100.0%

Net gearing ratio

As at 31 December 2022, the net gearing ratio of the Group, which is calculated by dividing net debt (the sum of total borrowings and lease liabilities less cash and cash equivalents) by the sum of net debt and total equity, was 56.19%, representing a decrease of 0.22 percentage point from 56.41% as at 31 December 2021. This was primarily due to the increase in debt being lower than the increase in total equity during 2022.

Major investments

The Group made no major investment in 2022.

Material acquisitions and disposals

References are made to the announcements of the Company dated 15 January 2021, 18 June 2021, 23 July 2021 and 20 January 2022 and the circular (the "**Circular**") of the Company dated 8 July 2021 in relation to, among others, the absorption and merger of Inner Mongolia Pingzhuang Energy Co., Ltd. (內蒙古平莊能源股份有限公司, "**Pingzhuang Energy**") through share swap by the Company, disposal of material assets, purchase of assets through cash payment (the "**Transaction**") and matters in relation to the Issuance of A shares. Unless otherwise defined, capitalised terms used in this section shall have the same meanings as those defined in the Circular. On 15 January 2021 and 18 June 2021, the Company and subsidiaries of CHN Energy entered into the Agreement on Purchase of Assets through Cash Payment and its supplemental agreement, respectively, pursuant to which the Company acquired the following target assets:

No.	**Counterparty**	**Target assets**	**Transaction price** *(RMB 0'000)*
1.	Northeast Electric Power	100% equity interest in Northeast New Energy *(Note 1)*	79,400.00
2.	Shaanxi Electric Power	100% equity interest in Dingbian New Energy *(Note 1)*	81,600.00
3.	Guangxi Electric Power	100% equity interest in Guangxi New Energy *(Note 1)*	98,600.00
4.	Yunnan Electric Power	100% equity interest in Yunnan New Energy *(Note 1)*	75,200.00
5.	Gansu Electric Power	100% equity interest in Gansu New Energy *(Note 3)*	44,200.00
6.	North China Electric Power	100% equity interest in Tianjin Jieneng *(Note 3)*	60,000.00
7.	North China Electric Power	100% equity interest in Inner Mongolia New Energy *(Note 1)*	79,100.00
8.	North China Electric Power	100% equity interest in Shanxi Jieneng *(Note 2)*	59,300.00

Notes:

1. As relevant entities were controlled by CHN Energy both before and after the transaction and such control was not temporary, the transaction was business combinations under common control. According to the Agreement on Purchase of Assets through Cash Payment and its supplemental agreement, the closing date of the equity interest as agreed by the parties was 4 January 2022. On 4 January 2022, the transferee had effectively obtained the control over the transferred equity interest and assets, therefore the merger date was determined to be 4 January 2022.

2. As relevant entities were controlled by CHN Energy both before and after the transaction and such control was not temporary, the transaction was business combinations under common control. According to the Agreement on Purchase of Assets through Cash Payment and its supplemental agreement, the closing date of the equity interest as agreed by the parties was 5 January 2022. On 5 January 2022, the transferee had effectively obtained the control over the transferred equity interest and assets, therefore the merger date was determined to be 5 January 2022.

3. As relevant entities were controlled by CHN Energy both before and after the transaction and such control was not temporary, the transaction was business combinations under common control. According to the Agreement on Purchase of Assets through Cash Payment and its supplemental agreement, the closing date of the equity interest as agreed by the parties was 6 January 2022. On 6 January 2022, the transferee had effectively obtained the control over the transferred equity interest and assets, therefore the merger date was determined to be 6 January 2022.

Upon the completion of the Merger, Pingzhuang Energy ceased to be listed. As the surviving company, the Company will inherit and take over all the remaining assets and liabilities of Pingzhuang Energy after the disposal of its assets. At the same time, the A shares issued by the Company for the Merger and its original domestic shares were listed and traded on the Main Board of the Shenzhen Stock Exchange ("**SZSE**"). On 21 January 2022, the Company issued 345,574,164 A shares on the Main Board of the SZSE to absorb and merge Pingzhuang Energy through share swap. On 24 January 2021, the A shares and the original domestic shares issued by the Company for the Merger were listed on the Main Board of the SZSE (SZSE: 001289). Upon the completion of the issuance and listing of the A shares, the total number of issued shares of the Company was 8,381,963,164, comprising 5,041,934,164 A shares and 3,340,029,000 H shares. For details of the above transactions, please refer to the Circular.

Pledged assets

As at 31 December 2022, general banking facilities and bonds amounting to RMB8,410 million are secured by property, plant and equipment with net carrying amount of RMB3,847 million, inventories with net carrying amount of RMB3 million and trade debtors' beneficial rights arising from future electricity sales.

Contingent liabilities/Guarantees

As at 31 December 2022, the Group issued a counter-guarantee of no more than RMB15 million to the controlling shareholder of an associate. As at 31 December 2022, the bank loan balance for which the Group provided the counter-guarantee amounted to RMB7 million.

Cash flow analysis

As at 31 December 2022, bank deposits and cash held by the Group amounted to RMB18,338 million, representing an increase of RMB14,425 million as compared to RMB3,913 million as at 31 December 2021. The principal sources of funds of the Group mainly included self-owned funds and external borrowings. The Group mainly used the funds for capital turnovers and the construction of projects.

The net cash inflow from the Group's operating activities amounted to RMB29,606 million in 2022, representing an increase of RMB11,486 million as compared to RMB18,120 million in 2021, which was mainly attributable to the collection of electricity sales subsidies receivable and the repayment of borrowings.

The net cash outflow from investing activities of the Group was RMB19,009 million in 2022. The cash outflow from investing activities was mainly used for the construction for wind power projects and photovoltaic projects.

The net cash inflow from financing activities of the Group was RMB3,839 million in 2022. The cash inflow from financing activities was mainly generated from the proceeds from the issuance of corporate bonds and bank loans. The cash outflow from financing activities was primarily used for the repayment of borrowings and payments of interest of borrowings.

IV. RISK FACTORS AND RISK MANAGEMENT

1. Policy risk and countermeasures

In 2022, the power market-oriented reform continued to advance and the trading scale of the new energy market continued to expand. In the Guiding Opinions on Accelerating the Building of a Nationwide Unified Electricity Market System promulgated by the NDRC and National Energy Administration, it was proposed to further encourage clean energy to participate in market-based trading and expand the scale of green power trading. Since this year, the number of regions participating in new energy market-based trading has continued to expand, and the proportion of electricity traded in new energy market-based trading has increased. In the future, the region will face the risk of lower electricity prices and lower revenue.

In April 2022, Northeast China Energy Regulatory Bureau of National Energy Administration issued the Notice on Adjusting the Operation Rules of the Northeast Power Auxiliary Services Market (《關於調整東北電力輔助服務市場運營規則的通知》), which stipulates the scale of auxiliary services to be apportioned by new energy enterprises in the northeast region having increased, which may continue to affect the apportionment of auxiliary service fees in the future.

The Group will continue to track relevant national policies, study and judge the impact of the policies, take effective measures to overcome the resistance to the rise of new energy trading prices, guide the implementation of favorable policies, actively strive for high-quality medium and long-term transactions, and lock in the income from electricity sales; sort out the market mechanism and policies of auxiliary services issued by various provinces and regions, study the active response measures, and reduce expenses by means of inter-provincial spot trading and other means.

2. **Climatic risk and countermeasures**

The major climatic risk confronted by the wind power industry is the annual fluctuation of wind and solar resources, which is represented by the higher power generation in years of high wind velocity and the lower power generation in years of low wind velocity than that in normal years. On the vast territory of our nation which covers a wide span of areas, there is a great variation in climate conditions in different regions. To be specific, the regions have different climatic characteristics of the years of high and low wind velocity in the same period. In 2022, the average wind velocity of most provinces (including autonomous regions and municipalities) in our nation is close to the normal annual level, and the power generation standards are on the normal condition. In response to different climate conditions in different regions, the Group carried out the nationwide dispersed layout to reduce investment risks. As of the end of 2022, the Group had substantial projects in 32 provinces, autonomous regions and municipalities in China, covering all regions except for Hong Kong, Macau and Taiwan and formulating an increasingly optimized and rational project layout. In the future, the Group will further balance the project development ratio in the regions subject to the impact of different climatic conditions.

3. **Risks relating to power grids and countermeasures**

In 2022, the continuous increase in the installed capacity of new energy brought a great test to the transmission capacity of the power grid. In some regions, the risk existed to intensify the structural constraints of the power grid and the insufficient transmission capacity, and power rationing for new energy was still under great pressure. The Group will continue to strengthen communication with the competent government departments and power grid dispatching in combination with the different characteristics and situations of different regions, and strive for favorable policies and power generation space. At the same time, we will actively expand consumption channels and actively promote the improvement of local power grid structure.

4. Internationalization risks and countermeasures

At present, the drastic changes in the international situation, fierce competition in the industry and global financial turmoil, the risks of international operation and the uncertainty of international investment faced by the Company's overseas investment are mainly affected by the host country's political, legal and economic environment, local culture and other factors. The Group will do a good job in analyzing the situation of the country where the investment is located and screening the projects with comprehensive evaluation in risks of international operation from politic and economy to effectively guard against systemic risks. The Group will reduce the uncertainty of overseas investment by strengthening its study, conducting risk investigation on a regular basis as well as lowering risks for projects with investment risks through project insurance.

5. Risk in interest rate and countermeasures

Changes in macro-economic environment at home and abroad, national economic policies and other factors caused the change in market interest rate, and the fluctuation of market interest rate had a certain impact on loans of the Company and the issuance interest rate of relevant bonds. Keeping abreast of market changes, the Group established financial market information sharing mechanism with several financial institutions, focused on macro environment, fiscal and monetary policies, specific operations of the central bank, and market risk events, and selected a favorable issue window to avoid the risk in interest rate resulting from the acute market volatility; the Group continued to increase the type of financing, did well in setting product terms and quotas, and matching long-term and short-term so as to ensure the stabilities of overall interest rate; the Group kept close cooperation with the financial institutions, to guarantee that issuance interest rate can be at a comparable low level in the degree of marketization.

6. Risk in currency exchange rate and countermeasures

The Group's foreign exchange management principles are not involved in any speculative arbitrage, but for the purpose of risk aversion. Foreign exchange risk management runs through the whole lifetime cycle of the Company. In the preliminary investigation and preparation stage of new overseas projects, the Group shall propose suggestions on prevention and control of foreign exchange risk according to relevant data such as new project feasibility report, after consulting with professional financial institutions for external opinions, taking into consideration local overall social and economical situation, so as to avoid the potential foreign exchange risk that may appear in the construction period. In the start-up stage of new projects, the relevant foreign exchange risk items shall be reviewed mainly through the data reported by overseas subsidiaries. Meanwhile, the Group has continuously strengthened the management of overseas financial personnel. Once the foreign exchange risk exposure caused by currency mismatch and other factors of overseas subsidiaries is found, we will immediately verify the relevant potential risks. Upon confirmation, we will gather all financial institutions in Hong Kong to set up a temporary risk control team with overseas companies involved in risks and the Finance Department of the Company to study, judge and put forward relevant hedging plans. After the plans are approved, all parties shall strictly implement them to ensure that foreign exchange risks are under control.

7. Risk in fuel prices and countermeasures

The Group has two coal power plants with a consolidated installed capacity of 1,875 MW. The fluctuations in coal price will affect the operating results of the Group's coal power business. At present, the main risk is that the coal price rises and maintains at a high level. In 2022, the Group made every effort to complete the full coverage of the annual long-term agreement on coal supply, and signed the annual long-term agreement with CHN Energy. Meanwhile, the Group made good efforts in securing annual quotas for imported coal, paid close attention to changes in coal prices and freight rates to increase the purchase volume at low cost.

V. OUTLOOK IN 2023

Outlook for Business Environment at Home and Abroad

After the country proposed the “3060” target of carbon peak and carbon neutrality, the new energy development guarantee system has been gradually improved with the introduction of relevant policies. In terms of planning, the top-level design for the new energy system has been basically completed with the promulgation of a series of documents such as the “Plan for Modern Energy System during the 14th Five Year Period”. Based on the principle of creating a new model before abandoning the old model, the incremental dominant position of new energy in the future power installation structure will be further clarified, the predominant position of new energy storage in the power system will be established, resulting in its gradually clear business model and supporting electricity price policy. Although the policy system is conducive to the development and growth of the new energy industry, competition among new energy enterprises has further intensified, with enterprises competing to be the first to carry out the energy structure adjustment and transformation with wind power and photovoltaic as the core basis and “New Energy+” new industries, new business types and new model development as the main path, at the same time, in the process of the allocation of indicators, energy supply capacity, bundled regulation of power supply with the delivery, the introduction of supporting industry landing and other preconditions are increasing. As a specialized new energy company, the Group needs to combine more internal and external resources to obtain development indicators, which makes project development more difficult.

The challenges and opportunities of overseas new energy market coexist with the complex and changeable external environment and exacerbated competition of overseas new energy industry. The Russia-Ukraine conflict has led to a volatile world situation and as the conflict between Russia and Ukraine continues to escalate, the reshaping of the international structure accelerated. High inflation caused by energy crisis, and a boom in the development of new energy markets triggered by the influx of a large number of emerging buyers will lead the competition in overseas energy markets become increasingly intense. The Chinese enterprises will face greater challenges as international traditional energy industry giants and internet companies have increased their efforts in new energy transformation and actively seized the global high-quality wind and photovoltaic resources. On the other hand, with a new round of spreading energy crisis around the world, energy security has become the focus again. Green and low-carbon transformation is becoming a new driving force for countries to stimulate economic growth and achieve green recovery, which brings opportunities for international new energy development and provides a wide market for the Chinese enterprises to “go global”. The Group will continue to closely follow the international situation, continuously strengthen the guidance and management of overseas business, and continuously and efficiently control overseas risks. At the same time, the Group will adopt a diversified investment model to steadily promote its internationalization strategy with its adherence to the main development line of “developing wind and solar power simultaneously, multi-energy complementing each other”.

Operation Targets of the Group in 2023

In 2023, the Group will be guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, comprehensively implement the spirit of the 20th National Congress of the Communist Party of China, adhere to the general keynote of securing steady progress, fully, accurately and comprehensively implement the new development concept to speed up constructing a new development pattern and promote high-quality development. The Group will implement the great call of "socialism is the result of work" in depth, completely carry out the development strategy of "One Goal, Three Orientations, Five Variations and Seven World-Class Competitiveness", unwaveringly put "Six Commitments" into practice, fully enhance six kinds of thinking, firmly establish the strategic goal of the world's leading new energy enterprises, adhere to steady growth and sustainable development, and focus on six aspects of work, such as ensuring safety, promoting development, stabilizing growth, seeking innovation, pushing reform and strengthening party building to hasten to build a leading new energy enterprise in the world as well as make every effort in building a new Longyuan that is "inherently safe, doubling in scale, transforming digitally and progressing healthily". The Group will focus on the following six areas of work:

1. Fully improve the intrinsic safety standard and closely follow the "lifeline" of development

2. Improve the development ability in an all-round way and continuously consolidate the leading position

3. Comprehensively implement quality and efficiency improvement to ensure steady growth of performance

4. Comprehensively strengthen innovation guidance and enhance the Company's core competitiveness

5. Extensively expand the depth of reform and accelerate the construction of first-class enterprises

6. Fully strengthen the Party's leadership and constantly gather the strength to forge ahead

The Group's operation targets and capital expenditure plans for 2023 are subject to factors such as changes in the scope of the consolidated financial statements, risks, uncertainties and assumptions, and the actual results may differ materially from those described above. Such statements do not constitute actual commitments to investors. Investors should be aware that undue reliance on or use of such information may lead to risks of investment.

SUBSEQUENT EVENTS

1. Issuance of shares and bonds

On 13 January 2023, the Company issued the Ultra short-term Debentures Phase I amounting to RMB2 billion, the proceeds raised from the Ultra Short-term Debentures will be mainly used to repay the interest-bearing debt and replenish working capital of the issuer and its subsidiaries; On 18 January 2023, the Company issued the Ultra short-term Debentures Phase II amounting to RMB2 billion, the proceeds raised from the Ultra Short-term Debentures will be mainly used to repay the interest-bearing debt and replenish working capital of the issuer and its subsidiaries; On 13 February 2023, the Company issued the Ultra short-term Debentures Phase III amounting to RMB2 billion, the proceeds raised from the Ultra Short-term Debentures will be mainly used to repay the interest-bearing debt and replenish working capital of the issuer and its subsidiaries; On 13 March 2023, the Company issued the Ultra short-term Debentures Phase IV amounting to RMB2 billion, the proceeds raised from the Ultra Short-term Debentures will be mainly used to replenish daily working capital and repay the interest-bearing debt of the issuer and its subsidiaries.

2. Capital increase by related parties

On 15 February 2023, the Company convened the first meeting of the fifth session of the Board in 2023 and unanimously passed the "Proposal on Increase of Registered Capital for Guoneng Financial Leasing Co., Ltd by Hero Asia (BVI) Company Limited". The Hero Asia (BVI) Company Limited (the "**Hero Asia Company**"), as a wholly-owned subsidiary of the Company, participates in Guoneng Financial Leasing Co., Ltd (the "**Guoneng Financial**"), and holds 49% of the equity interest in the Guoneng Financial. The Hero Asia Company intends to increase the registered capital of the Guoneng Financial by RMB1,960 million in proportion to its shareholding, and China Energy Capital Holdings Co., Ltd., the controlling shareholder of the Guoneng Financial, will increase the registered capital by RMB2,040 million in the same proportion. Upon completion of the capital increase, the proportion of equity interest in the Guoneng Financial held by the Hero Asia Company will remain unchanged.

As at the date of this announcement, the Company, except for the above events, has no other material subsequent events.

PURCHASE, SALE OR REDEMPTION OF THE COMPANY'S LISTED SECURITIES

On 24 January 2022, the Company absorbed and merged Pinzhuang Energy through share swap by issuing 345,574,164 A shares (SZSE:001289) with par value of RMB1 per share on the Main Board of Shenzhen Stock Exchange. As at 15 January 2021, being the date of the agreement on absorption and merger through share swap, the closing price of the H shares of the Company was HK$10.32. The issue price of the A shares of the Company was RMB11.42 per share and adjusted to RMB11.30 per share. Upon the completion of the merger, Pingzhuang Energy ceased to be listed. The Company, as the surviving company, undertakes all the remaining assets and liabilities after the sale of assets by Pingzhuang Energy. At the same time, the Company listed and circulated the A shares and original domestic shares in the Main Board of Shenzhen Stock Exchange. The A shares issued were all used for the absorption and merger through share swap of Pingzhuang Energy and no funds were raised. Upon completion of the listing of the A shares, the total number of issued shares of the Company was 8,381,963,164, including 5,041,934,164 A shares and 3,340,029,000 H shares.

The share swap, absorption merger is in line with the national new energy development strategy and was beneficial to the consolidation and enhance of the Company's leading position in the industry and international competitiveness, as well as widening financing channels, enhancing the Company's competitive advantages, reducing inter-sectoral competition and achieve resource integration. For further details, please refer to the announcements dated 15 January 2021, 4 June 2021, 18 June 2021, 23 July 2021, 8 December 2021, 20 January 2022 and the circular dated 8 July 2021 of the Company.

Save as disclosed in this results announcement, neither the Company nor any of its subsidiaries purchased, sold or redeemed any of the Company's listed securities during the year ended 31 December 2022.

FINAL DIVIDEND

The Board recommends the distribution of a final dividend of RMB0.1171 per share (tax inclusive) in cash for the year ended 31 December 2022 to shareholders whose names appear on the Company's register of members as at Tuesday, 27 June 2023. The abovementioned dividend will be subject to shareholders' approval at the Annual General Meeting of the Company to be held on Thursday, 15 June 2023, and is expected to be paid on Monday, 14 August 2023. Details of the dividend payment will be announced after holding of the Annual General Meeting.

Pursuant to the Enterprise Income Tax Law of the People's Republic of China and its implementation rules, which came into force on 1 January 2008 and other relevant rules, where the Company distributes the proposed 2022 final dividend to non-resident enterprise shareholders whose names appear on the register of members for H shares of the Company, it is required to withhold and pay enterprise income tax at the rate of 10%. Any H shares registered in the name of non-individual registered shareholders, including HKSCC Nominees Limited (香港中央結算(代理人)有限公司), other nominees or trustees, or other organisations and groups, will be treated as shares being held by non-resident enterprise shareholders, and consequently will be subject to the withholding of the enterprise income tax. According to regulations by the State Administration of Taxation (Guo Shui Han [2011] No.348) and relevant laws and regulations, if the individual H-share shareholders are residents of Hong Kong or Macau or those countries which have entered into a tax treaty with the PRC stipulating a dividend tax rate of 10%, the Company will withhold and pay individual income tax at the rate of 10% on behalf of these shareholders. If the individual H-share shareholders are residents of those countries which have entered into a tax treaty with the PRC stipulating a dividend tax rate of less than 10%, the individual H-share shareholders should take the initiative to submit statements to the Company to enjoy the agreed treatment, and keep relevant data for future reference. If the information provided is complete, the Company will withhold it in accordance with regulations of the PRC tax laws and agreements. If the individual H-share shareholders are residents of those countries which have entered into a tax treaty with the PRC stipulating a dividend tax rate of more than 10% but less than 20%, the Company will withhold and pay individual income tax at the actual tax rate stipulated in the relevant tax treaty. If the individual H-share shareholders are residents of those countries which have entered into a tax treaty with the PRC stipulating a dividend tax rate of 20%, or those countries which have not entered into any tax treaties with the PRC, or under any other circumstances, the Company will withhold and pay individual income tax at the rate of 20% on behalf of these shareholders.

For the Hong Kong Stock Connect shareholders, in accordance with the relevant requirements of China Securities Depository and Clearing Corporation Limited, Shanghai Branch and Shenzhen Branch of China Securities Depository and Clearing Corporation Limited, as the nominee of the Hong Kong Stock Connect shareholders for Shanghai market and Shenzhen market, respectively, will receive cash dividends distributed by the Company and distribute the cash dividends to the relevant Hong Kong Stock Connect shareholders through its depository and clearing system.

The cash dividends for the investors of H shares of Hong Kong Stock Connect will be paid in Renminbi whilst that paid to holders of A shares and holders of H shares will be in Renminbi and in Hong Kong dollar respectively. Pursuant to the relevant provisions of the Notice on the Tax Policies Related to the Pilot Program of the Shanghai-Hong Kong Stock Connect (Caishui [2014] No. 81) (《關於滬港股票市場交易互聯互通機制試點有關稅收政策的通知》(財稅[2014]81號)) and Notice on the Tax Policies Related to the Pilot Program of the Shenzhen-Hong Kong Stock Connect (Caishui [2016] No. 127) (《關於深港股票市場交易互聯互通機制試點有關稅收政策的通知》(財稅[2016]127號)), for dividends received by domestic individual investors from investing in H shares listed on the Hong Kong Stock Exchange through Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect, the company of such H shares shall withhold and pay individual income tax at the rate of 20% on behalf of the investors. For dividends received by domestic securities investment funds from investing in H shares listed on the Hong Kong Stock Exchange through Shanghai-Hong Kong Stock Connect and Shenzhen-Hong Kong Stock Connect, the tax payable shall be the same as that for individual investors. The company of such H shares will not withhold and pay the income tax of dividends for domestic enterprise investors and those domestic enterprise investors shall report and pay the relevant tax themselves.

The record date and the date of distribution of cash dividends and other arrangements for the investors of Hong Kong Stock Connect will be the same as those for the holders of H shares of the Company.

The Company will determine the resident status of the individual H-share shareholders based on the registered address as recorded in the register of members of the Company on Tuesday, 27 June 2023 (the "**Registered Address**"). If the resident status of any individual H-share shareholder is not in consistency with that indicated by the Registered Address, such individual H-share shareholder shall notify the Company's H share registrar not later than 4:30 p.m. on Wednesday, 21 June 2023, and provide relevant supporting documents to the Company's H share registrar, Computershare Hong Kong Investor Services Limited at 17M Floor, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong. Any individual H-share shareholder who fails to provide relevant supporting documents within the time period stated above, may either personally or appoint an agent to attend to the relevant procedures in accordance with the requirements under the tax treaty notice.

The Company assumes no responsibility and disclaims all liabilities whatsoever in relation to the tax status or tax treatment of the individual H-share shareholders and for any claims arising from any delay in or inaccurate determination of the tax status or tax treatment of the individual H-share shareholders or any disputes over the withholding mechanism or arrangements.

CLOSURE OF REGISTER OF H SHARE MEMBERS

In order to determine the holders of H shares who are eligible to attend and vote at the Annual General Meeting to be held on Thursday, 15 June 2023, the register of H share members of the Company will be closed from Monday, 12 June 2023 to Thursday, 15 June 2023, both days inclusive. To be eligible to attend and vote at the said Annual General Meeting, unregistered holders of H shares of the Company shall lodge relevant share transfer documents with the Company's H share registrar, Computershare Hong Kong Investor Services Limited at Shops 1712–1716, 17th Floor, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong for registration not later than 4:30 p.m. on Friday, 9 June 2023.

In order to determine the holders of H shares who are eligible to receive the foresaid final dividend, the register of H share members of the Company will be closed from Thursday, 22 June 2023 to Tuesday, 27 June 2023, both days inclusive. To be eligible to receive the final dividend for the year ended 31 December 2022 (subject to the approval by shareholders of the Company), unregistered holders of H shares of the Company shall lodge relevant share transfer documents with the Company's H share registrar, Computershare Hong Kong Investor Services Limited at Shops 1712–1716, 17th Floor, Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong for registration not later than 4:30 p.m. on Wednesday, 21 June 2023.

COMPLIANCE WITH THE CORPORATE GOVERNANCE CODE

As a company listed on the Hong Kong Stock Exchange, the Company has been committed to maintaining a high standard of corporate governance practices.

For the year ended 31 December 2022, save as disclosed below, the Company complied with all the code provisions set out in the Corporate Governance Code contained in Appendix 14 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the "**Listing Rules**"), and, where appropriate, adopted the recommended best practices.

In respect of provision F.2.2 of the Corporate Governance Code as set out in Appendix 14 to the Listing Rules , Mr. Li Zhongjun[Note], the chairman of the Company, was unable to attend the 2021 annual general meeting of the Company held on 22 June 2022 due to work reasons.

Note: Mr. Li Zhongjun resigned as chairman and executive director of the Company on 27 July 2022.

COMPLIANCE WITH THE CODE FOR SECURITIES TRANSACTIONS

The Company has adopted the Model Code for Securities Transactions by Directors of Listed Issuers (the "**Model Code**") set out in Appendix 10 to the Listing Rules as the code of conduct governing dealings by its directors and supervisors in the securities of the Company. Having made specific enquiry of the directors and supervisors of the Company, all directors and supervisors have confirmed that they have strictly complied with the required standard set out in the Model Code during 2022. The Company has also set up guidelines in respect of the dealings by its relevant employees (as defined in the Listing Rules) in the Company's securities, which are on no less exacting terms than the Model Code. The Company is not aware of any breach of the guidelines by its relevant employees.

The Board will examine the corporate governance practices and operation of the Company from time to time so as to ensure compliance with relevant requirements under the Listing Rules and to protect shareholders' interests.

AUDITORS

Ernst & Young (安永會計師事務所) and Da Hua Certified Public Accountants (Special General Partnership) (大華會計師事務所(特殊普通合夥)) were appointed as the Company's auditors for the financial statements prepared in accordance with the IFRSs and China Accounting Standards for Business Enterprises, respectively, for the year ended 31 December 2022. The financial statements of the Company for 2022 prepared in accordance with the IFRSs have been audited by Ernst & Young.

The Company has appointed Ernst & Young as its auditor since 20 June 2017. The term of service of Baker Tilly China Certified Public Accountants LLP (天職國際會計師事務所(特殊普通合夥)), the former PRC auditor of the Company, has expired at the conclusion of the 2020 annual general meeting of the Company. As approved at the first extraordinary general meeting of the Company in 2022 held on 14 January 2022, the Company has appointed Da Hua Certified Public Accountants (Special General Partnership) (大華會計師事務所(特殊普通合夥)) as the PRC auditor of the Company from 14 January 2022.

AUDIT COMMITTEE

The 2022 annual results of the Group and the financial statements for the year ended 31 December 2022 prepared in accordance with the IFRSs have been reviewed by the audit committee of the Company.

PUBLICATION OF THE ANNUAL RESULTS AND THE ANNUAL REPORT

This results announcement is published on the website of "**HKExnews**" of the Hong Kong Stock Exchange at http://www.hkexnews.hk and the Company's website at http://www.clypg.com.cn.

The Company's 2022 annual report containing all the information required under the Listing Rules will be despatched to the shareholders and will be published on the websites of the Company and the Hong Kong Stock Exchange in due course.

By order of the Board
China Longyuan Power Group Corporation Limited*
Tang Jian
Chairman

Beijing, the PRC, 29 March 2023

As at the date of this announcement, the executive director of the Company is Mr. Tang Jian; the non-executive directors are Mr. Tian Shaolin, Mr. Tang Chaoxiong, Mr. Wang Yiguo and Mr. Ma Bingyan; and the independent non-executive directors are Mr. Michael Ngai Ming Tak, Mr. Gao Debu and Ms. Zhao Feng.

* *For identification purpose only*