



国家能源集团
CHN ENERGY

國電科技環保集團股份有限公司

GUODIAN TECHNOLOGY & ENVIRONMENT GROUP CORPORATION LIMITED*

(於中華人民共和國註冊成立的股份有限公司)
(a joint stock limited liability company incorporated in the People's Republic of China)

Stock Code 股份代號 : 01296
www.01296.hk

2021

INTERIM REPORT
中期報告



*For identification purpose only
僅供識別

MILESTONES IN THE FIRST HALF OF 2021

2021年上半年大事記

1. On 12 January 2021, Guoneng Lucency Environment and Technology Co., Ltd. ("**Lucency**"), a subsidiary of the Group, was approved as the Enterprise Technology Center of Beijing and officially launched as a provincial-and-ministerial-level scientific research platform.
1. 2021年1月12日，本集團附屬公司國能朗新明環保科技有限公司(「**朗新明**」)獲批為北京企業技術中心，並正式落地為省部級科研平台。
2. On 14 January 2021, the international standard – *Technical Specification for Flame Detector System of Boiler* jointly compiled by Yantai Longyuan Power Technology Co., Ltd. ("**Longyuan Technology**"), a subsidiary of the Group, was published on the website of the International Electrotechnical Commission (IEC).
2. 2021年1月14日，由本集團附屬公司煙台龍源電力技術股份有限公司(「**龍源技術**」)聯合主導編寫的國際標準《鍋爐火焰檢測系統技術規範》在國際電工委員會(IEC)官方網站上發佈。
3. On 3 March 2021, the cyber security data acquisition product (HDTR-NFAS-2000) independently developed and produced by Guoneng I&C Interconnection Technology Co., Ltd. ("**Guoneng I&C**"), a subsidiary of the Group, was approved by SASAC and included in the *Product List of Internet Security Situation Awareness Platform For Energy Industry*.
3. 2021年3月3日，本集團附屬公司國能信控互聯技術有限公司(「**國能信控**」)自主研發生產的網絡安全數據採集產品(HDTR-NFAS-2000)獲國資委批准，納入《能源工業互聯網安全態勢感知平台產品名錄》。
4. On 5 March 2021, the project performance evaluation meeting of the *Low-cost and Ultra-low Emission Control Technology and Scale Equipment for Coal-fired Power Plants* project under the National Key R&D Program organized and implemented by Guoneng Longyuan Environmental Engineering Co., Ltd. ("**Longyuan Environmental**") a subsidiary of the Group, was successfully held in Beijing, and the experts unanimously approved the performance review of the six projects.
4. 2021年3月5日，本集團附屬公司國能龍源環保有限公司(「**龍源環保**」)組織實施的國家重點研發計劃「燃煤電站低成本超低排放控制技術及規模裝備」項目所屬課題績效評價會在北京順利召開，與會專家一致通過了6個課題績效考核。
5. On 5 March 2021, the reform case of Longyuan Environmental was included in the *Three-Year Operation Briefing on State-Owned Enterprise Reform* prepared by SASAC of the State Council.
5. 2021年3月5日，龍源環保改革案例入選國務院國資委《國企改革三年行動簡報》。
6. On 22 March 2021, Guoneng Kehuan New Energy Co., Ltd. was officially incorporated as a subsidiary of the Group. Its business scopes include wind power generation, solar power generation, electricity generation, technology development, technology promotion, technical consultation and technical service for new energy projects.
6. 2021年3月22日，本集團附屬公司國能科環新能源有限責任公司正式註冊成立，經營範圍：風電發電；太陽能發電；電力生產；新能源項目的技術開發、技術推廣、技術諮詢、技術服務。
7. On 17 May 2021, the *Remote Management and Control System of Intelligent Production Based on Big Data* won the first prize of "2021 equipment management and technological innovation achievements in the power industry".
7. 2021年5月17日，《基於大數據的智能化生產遠程管控系統》項目獲得「2021電力行業設備管理與技術創新成果」一等獎。
8. On 17 June 2021, Lucency successfully disposed of 70% of the equity in its subsidiary, Guodian Galaxy Water Co., Ltd., ("**Guodian Galaxy Water**") and completed the change of industrial and commercial registration. RMB1.11 billion is expected to be recovered.
8. 2021年6月17日，朗新明成功出售附屬公司國電銀河水務股份有限公司(「**國電銀河水務**」)70%股權並完成工商變更，預計共回收資金人民幣11.1億元。
9. On 18 June 2021, a comprehensive energy cooperation framework agreement was entered into between Guoneng Longyuan Lantian Energy Saving Technology Co., Ltd. ("**Longyuan Energy Saving**"), a subsidiary of the Group, and Shenhua Guoneng Ningxia Coal Power Co., Ltd., pursuant to which both parties plan to carry out in-depth cooperation in fields such as unit flexibility transformation, heating transformation and comprehensive energy supply.
9. 2021年6月18日，本集團附屬公司國能龍源藍天節能技術有限公司(「**龍源節能**」)與神華國能寧夏煤電有限公司簽訂綜合能源合作框架協議，雙方計劃在機組靈活性改造、供熱改造、綜合能源供給等領域開展深度合作。

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CORPORATE INFORMATION

公司資料

Directors

Executive Directors⁽¹⁾

Mr. CHEN Dongqing (*Chairman*)

Non-executive Directors

Mr. WANG Zhongqu

Mr. SONG Chang⁽²⁾

Mr. ZHANG Wenjian

Mr. GU Yuchun

Ms. GE Xiaojing

Independent Non-executive Directors

Mr. SHEN Xiaoliu

Mr. QU Jiuhui

Mr. XIE Qiuye

Mr. YEUNG Chi Tat

Supervisors⁽³⁾

Mr. LUAN Baoxing (*Chairman*)

Ms. CHEN Jing⁽⁴⁾

Mr. WANG Shaoyu

Mr. LI Wei

Ms. QIN Xiangling

Legal Advisors

International

King & Wood Mallesons

13/F, Gloucester Tower

The Landmark

15 Queen's Road Central

Central Hong Kong

PRC

King & Wood Mallesons

20th Floor, East Tower, World Financial Center

1 Dongsanhuan Zhonglu

Chaoyang District, Beijing, PRC

董事

執行董事⁽¹⁾

陳冬青先生(*主席*)

非執行董事

王忠渠先生

宋 暢先生⁽²⁾

張文建先生

顧玉春先生

葛曉菁女士

獨立非執行董事

申曉留先生

曲久輝先生

謝秋野先生

楊志達先生

監事⁽³⁾

樂寶興先生(*主席*)

陳 靜女士⁽⁴⁾

王少玉先生

李 偉先生

秦湘靈女士

法律顧問

國際

金杜律師事務所

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中國

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環球金融中心辦公樓東樓20層

CORPORATE INFORMATION

公司資料

Auditors

International

Ernst & Young
Certified Public Accountants
27/F, One Taikoo Place
979 King's Road
Quarry Bay, Hong Kong

Company Secretary⁽⁵⁾

Mr. LEE Kwok Fai Kenneth

Authorized Representatives

Mr. CHEN Dongqing
Mr. LEE Kwok Fai Kenneth

Legal Address

Suite 1101, 11/F, Building 1
Yard 16, W.4th Ring Middle Road
Haidian District, Beijing, PRC

Head Office in PRC

Building 1
Yard 16, W.4th Ring Middle Road
Haidian District, Beijing, PRC

Principal Place of Business in Hong Kong

31/F, Tower Two, Times Square,
1 Matheson Street, Causeway Bay,
Hong Kong

核數師

國際

安永會計師事務所
執業會計師
香港鰂魚涌
英皇道979號
太古坊一座27樓

公司秘書⁽⁵⁾

李國輝先生

授權代表

陳冬青先生
李國輝先生

法定地址

中國北京市海淀區
西四環中路16號院
1號樓11層1101室

中國主要辦事處

中國北京市海淀區
西四環中路16號院
1號樓

香港主要營業地點

香港
銅鑼灣勿地臣街1號
時代廣場二座31樓

CORPORATE INFORMATION (CONTINUED)

公司資料(續)

Nomination Committee

Mr. XIE Qiuye (*Chairman*)
Mr. QU Jiuhui

Audit Committee

Mr. YEUNG Chi Tat (*Chairman*)
Mr. SHEN Xiaoliu
Mr. ZHANG Wenjian

Remuneration and Appraisal Committee

Mr. QU Jiuhui (*Chairman*)
Mr. XIE Qiuye
Mr. WANG Zhongqu

Strategic Committee

Mr. CHEN Dongqing (*Chairman*)
Mr. SHEN Xiaoliu
Mr. GU Yuchun
Ms. GE Xiaojing

H Share Registrar

Computershare Hong Kong Investor Services Limited

Website Address

www.01296.hk

Principal Banks

Industrial and Commercial Bank of China Limited
(Beijing Cuiwei Road Sub-branch)
Bank of Communications Corporation Limited (Hong Kong Branch)

提名委員會

謝秋野先生(*主席*)
曲久輝先生

審計委員會

楊志達先生(*主席*)
申曉留先生
張文建先生

薪酬與考核委員會

曲久輝先生(*主席*)
謝秋野先生
王忠渠先生

戰略委員會

陳冬青先生(*主席*)
申曉留先生
顧玉春先生
葛曉菁女士

H股證券登記處

香港中央證券登記有限公司

網址

www.01296.hk

主要往來銀行

中國工商銀行股份有限公司
(北京翠微路支行)
交通銀行股份有限公司(香港分行)

CORPORATE INFORMATION (CONTINUED)

公司資料(續)

Note :

- (1) Mr. ZHANG Jun ceased to serve as the Company's executive director, member of the strategy committee and general manager due to work re-designation from 2 June 2021. For details, please refer to the announcement of the Company dated 2 June 2021.

Mr. TANG Chaoxiong ceased to serve as the Company's executive director, member of the nomination committee of the board of directors, vice general manager and chief accountant due to work re-designation from 23 April 2021. For details, please refer to the announcement of the Company dated 23 April 2021.

- (2) Mr. SONG Chang was elected as a non-executive director of the fourth board of directors at the 2020 annual general meeting held on 30 June 2021. For details, please refer to the announcements of the Company dated 25 May 2021 and 30 June 2021.
- (3) Mr. XU Xingzhou ceased to serve as the Company's shareholder representative supervisor from 25 May 2021, as he has attained the age of retirement. For details, please refer to the announcement of the Company dated 25 May 2021.
- (4) Ms. CHEN Jing was elected as a supervisor of the fourth board of supervisors at the 2020 annual general meeting held on 30 June 2021. For details, please refer to the announcements of the Company dated 25 May 2021 and 30 June 2021.
- (5) Mr. CAI Zhaowen resigned as the Company's deputy general manager, secretary to the board of directors, joint company secretary and chief legal counsel due to work adjustment on 22 January 2021. For details, please refer to the announcement of the Company dated 22 January 2021.

附註：

- (1) 因工作調動，張軍先生於2021年6月2日起不再擔任本公司執行董事、戰略委員會成員及總經理職務。有關詳情請參閱本公司日期為2021年6月2日的公告。

因工作調動，唐超雄先生於2021年4月23日起不再擔任本公司執行董事、董事會提名委員會成員、副總經理及總會計師職務。有關詳情請參閱本公司日期為2021年4月23日的公告。

- (2) 宋暢先生於2021年6月30日召開的2020年股東週年大會上獲選舉為第四屆董事會非執行董事。有關詳情請參閱本公司日期為2021年5月25日及2021年6月30日的公告。
- (3) 因年滿退休年齡，許興洲先生於2021年5月25日起不再擔任本公司股東代表監事職務。有關詳情請參閱本公司日期為2021年5月25日的公告。
- (4) 陳靜女士於2021年6月30日召開的2020年股東週年大會上獲選舉為第四屆監事會監事。有關詳情請參閱本公司日期為2021年5月25日及2021年6月30日的公告。
- (5) 因工作調動，蔡兆文先生於2021年1月22日辭去本公司副總經理、董事會秘書、聯席公司秘書及總法律顧問職務，有關詳情請參閱本公司日期為2021年1月22日的公告。

INTERIM RESULTS HIGHLIGHTS

中期業績摘要

- For the six months ended 30 June 2021, the revenue of the Group was approximately RMB4,725.1 million, representing an increase of approximately 6.2% compared to that for the corresponding period last year.
- For the six months ended 30 June 2021, the gross profit of the Group was approximately RMB641.0 million, representing a decrease of approximately 29.9% compared to that for the corresponding period last year.
- For the six months ended 30 June 2021, loss before taxation of the Group was approximately RMB728.6 million, representing an increase of approximately 77.5% compared to that for the corresponding period last year.
- For the six months ended 30 June 2021, loss attributable to equity shareholders of the Company was approximately RMB631.7 million, representing an increase of 56.8% compared to that for the corresponding period last year.
- For the six months ended 30 June 2021, loss per share of the Group (excluding non-controlling interests) was approximately RMB10.42 cents.
- The Board recommends not to distribute any interim dividend for the six months ended 30 June 2021.
- 截至2021年6月30日止6個月，本集團收入約為人民幣4,725.1百萬元，比去年同期增加約6.2%。
- 截至2021年6月30日止6個月，本集團毛利約為人民幣641.0百萬元，比去年同期減少約29.9%。
- 截至2021年6月30日止6個月，本集團稅前虧損約為人民幣728.6百萬元，比去年同期增加約77.5%。
- 截至2021年6月30日止6個月，本公司權益股東應佔虧損約為人民幣631.7百萬元，比去年同期增加56.8%。
- 截至2021年6月30日止6個月，本集團每股虧損(不包括非控股權益)約為人民幣10.42分。
- 董事會建議不派發截至2021年6月30日止6個月的任何中期股息。

INTRODUCTION OF COMPANY

公司介紹

Guodian Technology & Environmental Group Corporation Limited (the “**Company**” or “**Guodian Tech**”), formerly Guodian Technology & Environment Group Co., Ltd., was formally converted into a joint stock limited liability company on 16 May 2011 and listed on the Main Board of the Stock Exchange of Hong Kong Limited (the “**Stock Exchange**”) on 30 December 2011.

The Company is the core enterprise of the scientific and environmental protection industry of China Energy Investment Corporation Limited (“**China Energy**”). Its principal businesses are divided into two categories, namely, the environmental protection and energy conservation solutions business, and the renewable energy equipment manufacturing and services business. In its environmental protection and energy conservation solutions business, the Company and its subsidiaries (collectively, the “**Group**”) is the largest supplier of technology and integrated system solutions to coal-fired power plants in the PRC, providing innovative and advanced technology designed to reduce pollutant emissions and maximize efficiencies in resource utilization, with overall objectives of reducing the environmental impact of coal-fired power generation and maximizing cost- efficiencies and profitability for its customers. With businesses including desulphurisation, denitrification, water treatment, plasma-assisted ignition and combustion stabilization and general contracting for power stations, the Group provides comprehensive environmental protection and energy conservation technologies and solutions for all aspects, namely “one-stop” solutions to its customers tailored for their specific needs. The Group is also one of the leading manufacturers of wind power generation equipment in the PRC in its renewable energy equipment manufacturing and services business with well-established brands, and is well known for its product quality and performance. In line with its strategic focus on providing integrated solutions and services, the Group also provides renewable-energy related services, such as the maintenance and repair of wind turbine generators.

As for the renewable energy equipment manufacturing and service business of the Group, the Company entered into an Equity Transfer and Capital Injection Agreement with China Energy, China Longyuan Power Group Corporation Limited (“**Longyuan Power**”) and Guodian United Power Technology Co., Ltd. (“**United Power**”) on 16 June 2021, pursuant to which the Company’s equity interest in United Power will be diluted from 70% to 30%. Upon the completion of Equity Transfer and Capital Injection, United Power will become the associate of the Company from the subsidiary of the Company. United Power is the main subsidiary of the Group engaging in renewable energy equipment manufacturing and service business. Therefore, from the date of completion, the renewable energy equipment manufacturing and service business ceased to be the Company’s primary business. For details, please see the announcement of the Company dated 16 June 2021 and the circular of the Company dated 30 June 2021.

國電科技環保集團股份有限公司(「**本公司**」或「**國電科環**」)前身為國電科技環保集團有限公司，於2011年5月16日正式改制成為股份有限公司，並於2011年12月30日在香港聯合交易所有限公司(「**聯交所**」)主板上市。

本公司是國家能源投資集團有限責任公司(「**國家能源集團**」)科技環保產業的核心企業，主營業務分為兩部分，即環保節能解決方案業務和可再生能源設備製造及服務業務。於環保節能解決方案業務方面，本公司及其附屬公司(合稱「**本集團**」)為中國最大的燃煤電廠技術及集成系統解決方案供貨商，提供為減少污染物排放及提升資源利用效率而設計的創新和先進的技術，整體目標為減低燃煤發電相關的環境影響，以及提升其客戶的成本效益及盈利能力。具體業務包括脫硫、脫硝、水處理、等離子體點火穩燃及電站建設總承包，為客戶提供「一站式」的全方面綜合環保節能技術及解決方案，量身訂製以滿足客戶的特定需要。本集團亦為中國領先的風力發電設備製造商之一，已建立穩固的品牌，並以其產品質量及性能著稱。與其提供集成解決方案及服務的戰略重點一致，本集團亦致力於可再生能源相關服務，如風力發電機組保養及維修業務。

於可再生能源設備製造及服務業務方面，本公司於2021年6月16日與國家能源集團、龍源電力集團股份有限公司(「**龍源電力**」)及國電聯合動力技術有限公司(「**聯合動力**」)訂立股權轉讓及注資協議，透過股權轉讓及注資的方式，本公司在聯合動力的持股比例從70%稀釋至30%。隨著股權轉讓及注資完成后，聯合動力將由本公司之附屬公司變為聯營公司。由於聯合動力是本集團從事可再生能源設備製造及服務業務的主要附屬公司，自交割完畢之日起，本公司主營業務將不包括可再生能源設備製造及服務業務。有關詳情請見本公司日期為2021年6月16日之公告及2021年6月30日之通函。

INTRODUCTION OF COMPANY (CONTINUED)

公司介紹(續)

The Group, focusing on technological innovation and industrial applications, has a number of technologies leading domestically and internationally, among which the plasma ignition technology is ranked first in the world. In the domestic market, the Group takes a leading position in many technologies, including wet flue gas desulfurization, seawater desulfurization, boiler low-nitrogen combustion and flue gas denitrification. Longyuan Environmental, Longyuan Technology, Guoneng I&C and Guoneng Zhishen have become well-known brands in China. As at 30 June 2021, the Group owned three national scientific research platforms including “National Key Laboratory for Wind Power Equipment and System Technology”, 12 province-level scientific research platforms, one academician workstation and one post-doctoral scientific research workstation. The Group has accumulatively undertaken 22 national scientific and technological projects, and has won five second prizes of the National Science & Technology Progress Award, one second prize of the National Award for Technological Inventions and two gold prizes of the National Patent Award.

Guodian Tech upgrades the Company’s existing business and keeps abreast of future development trend on the basis of intellectualization, which has gradually formed wisdom achievements such as “Smart Enterprise”, “Smart Thermal Power”, “Smart Wind Power” and “Smart Products”. Through the emerging intellectual industries, Guodian Tech has built up its new core competitiveness to effectively serve and secure the safe, efficient, green, low-carbon and sustainable development of China Energy’s main businesses such as coal, thermal power, new energy, hydropower, transport and chemical industries.

The Company believes that its strategic focus on investing in and promoting technological research and development as a core activity to support the development of its various businesses has yielded substantial returns, allowing it to maintain its established position at the forefront of technological advancements in the environmental protection and energy conservation industries, and to develop innovative, practical and cost-efficient solutions and applications and high-quality products in these industries. The Company also believes that these industries are expected to play a key role in the sustainable growth and development of the PRC energy and power sector, which is integral to sustainable economic growth and development in the PRC. Going forward, the Company will strive to become a renowned high-tech company with a leading role domestically and substantial impact and competitiveness internationally.

本集團專注於科技創新和產業化應用，有多項技術達到國際、國內領先水平，其中等離子體點火技術水準居世界第一位，煙氣濕法脫硫、海水脫硫、鍋爐燃燒降氮、煙氣脫硝技術始終保持國內領先地位，龍源環保、龍源技術、國能信控及國能智深已成為享譽中國的知名品牌。截至2021年6月30日，本集團擁有「風電設備及系統技術國家重點實驗室」等3個國家級科研平台、12個省級科研平台、1個院士工作站和1個博士後科研工作站。本集團累計承擔國家級科技項目22項，累計獲得國家科技進步二等獎5項，國家技術發明二等獎1項，國家專利金獎2項。

國電科環以智能化作為公司現有業務升級換代和未來發展的趨勢，逐步形成了「智慧企業」、「智能火電」、「智能風電」和「智能產品」等智慧成果，通過新興智能產業，打造國電科環全新核心競爭力，切實服務和保障國家能源集團煤炭、火電、新能源、水電、運輸、化工等主業的安全、高效、綠色、低碳和可持續發展。

本公司相信，以投資和促進技術研發作為核心活動來支持本公司多元化業務的重點戰略已經得到了重大回報；使其能夠保持在環保及節能行業中技術領先的主導地位；使其研發出在相關行業中具有創新性、實用性、節約成本的解決方案和技術應用以及高質量的產品。本公司也相信，這些行業將對中國能源及電力產業的可持續發展起到關鍵作用，而能源的可持續發展又是中國經濟可持續發展不可或缺的部份。展望未來，本公司將以打造成為在國內保持行業領先、具有國際影響力和競爭力，受人尊敬的高科技產業公司而努力。

MANAGEMENT'S DISCUSSION AND ANALYSIS

管理層討論與分析

Certain statistical data and other information relating to the PRC and the industries in which the Group operates contained in, for instance, the section titled “Key Industry Developments” in this interim report, have been derived from various publicly available official publications. The Company believes that the sources of these information are appropriate sources for such information and has taken reasonable care in extracting and reproducing such information. The Company has no reason to believe that such information is false or misleading or that any fact has been omitted that would render such information false or misleading. The information has not been independently verified by the Company or any other relevant party and no representation is given as to its accuracy. The Company makes no representation as to the accuracy of the information contained in such sources, which may not be consistent with other information compiled within or outside the PRC. Accordingly, the industry information and statistics contained herein may not be accurate and should not be unduly relied upon for your investment in the Company.

This interim report contains certain forward-looking statements and information relating to the Group or the Company that are based on the management's belief and assumptions. The words “anticipate”, “believe”, “expect”, “going forward” and similar expressions, as they relate to the Company, the Group or the Group's management, are intended to identify forward-looking statements. Such statements reflect the current views of the Company's management with respect to future events and are subject to certain risks, uncertainties and assumptions. Should one or more of these risks or uncertainties materialise, or should underlying assumptions prove incorrect, the Group's financial condition may be adversely affected and may vary materially from those described herein as anticipated, believed or expected.

INDUSTRY AND BUSINESS OVERVIEW IN THE FIRST HALF OF 2021

Key Industry Developments

In 2021, facing the challenges and risks under the new normal of economic development, the Chinese government has successively issued new regulations, policies and measures which are suitable for China's electric power and power-related industries.

“China” or “PRC” refers to the People's Republic of China, and only for “China” or “PRC” mentioned in this report, excludes Taiwan, Macao Special Administrative Region and Hong Kong Special Administrative Region.

本中期報告中如「主要行業發展」部分所載有關中國及本集團所經營行業的若干統計數據及其他資料乃摘自不同的官方公開刊物。本公司相信有關資料來源為恰當的資料來源並已合理謹慎地摘錄及轉載有關資料。本公司並無理由相信有關資料屬虛假或誤導性的資料或遺漏任何事實致使該等資料屬虛假或誤導性的資料。有關資料並未經本公司或相關各方獨立核實且並無對其準確性發表任何聲明。本公司並沒有就該等來源所載資料的準確性發表任何聲明，而該等資料可能與中國境內外編製的其他資料不一致。因此，本中期報告所載有關行業資料及統計數據未必準確，閣下投資於本公司時不應過度依賴上述資料和統計數據。

本中期報告載有基於管理層的信念及假設作出有關本集團或本公司的若干前瞻性陳述及資料。「預計」、「相信」、「預期」、「今後」及類似表述，當用於本公司、本集團或本集團管理層時，即指前瞻性陳述。此陳述反映出本公司管理層對未來事件的當前觀點，並受若干風險、不明朗因素及假設的影響。倘一項或多項該等風險或不明朗因素成真，或倘相關假設被證實為不正確，本集團的財務狀況或會受不利影響且可能與本中期報告所述的預計、相信或預期的財務狀況大不相同。

2021年上半年行業和業務回顧

主要行業發展

2021年，面對經濟發展新常態下的風險挑戰，中國政府陸續出台了適用於中國電力及與電力相關行業的新法規、政策及措施。

「中國」是指中華人民共和國，僅就本報告中所提及「中國」，不包括台灣、中國澳門特別行政區及中國香港特別行政區。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

The following are the main regulations, policies and measures promulgated by the Chinese Government and other relevant regulatory authorities, which are expected to have a substantial impact on the business, operation and financial situation of the Group:

1. On 4 January 2021, the National Development and Reform Commission, Ministry of Industry and Information Technology of the People's Republic of China, the Ministry of Finance of the People's Republic of China and 10 other departments jointly issued the Guiding Opinions on Promoting the Utilization of Sewage Resources ("**Guiding Opinions I**").

The Guiding Opinions I clearly states that by 2025, the national sewage collection efficiency will be significantly improved, the sewage treatment capacity of county towns and cities will basically meet the needs of local economic and social development, and the sewage treatment in water environment sensitive areas will be basically upgraded; the utilization rate of reclaimed water in prefecture level and above water-deficient cities in China will be over 25%, and that of Beijing-Tianjin-Hebei region will be over 35%; the reuse of industrial water and utilization level of livestock and poultry manure and fishery tail water will be significantly improved; the policy system and market mechanism of sewage resource utilization will be basically established. By 2035, a systematic, safe, environmentally friendly and economical pattern of sewage resource utilization will be formed.

In order to ensure the effective implementation of sewage resource utilization in key areas, the Guiding Opinions I also deployed implementation of a series of key projects, and proposed to improve the system and mechanism of sewage resource utilization from five aspects: perfecting laws and regulations, constructing policy system, perfecting price mechanism, perfecting financial policies and strengthening scientific and technological support.

The issuance of Guiding Opinions I clearly states the policy direction of sewage treatment in China's environmental protection industry, and the reclaimed water treatment business of the Group's environmental protection industry will continue to maintain a good development trend.

以下為中國政府及其他有關監管機構頒佈的主要法規及政策措施，預期該等法規及政策措施將對本集團的業務、經營和財務狀況產生實質性影響：

1. 2021年1月4日，國家發展和改革委員會、工業和信息化部、財政部等10部門聯合印發《關於推進污水資源化利用的《指導意見》》(「《指導意見一》」)。

《指導意見一》明確指出，到2025年，全國污水收集效能顯著提升，縣城及城市污水處理能力基本滿足當地經濟社會發展需要，水環境敏感地區污水處理基本實現提標升級；全國地級及以上缺水城市再生水利用率達到25%以上，京津冀地區達到35%以上；工業用水重複利用、畜禽糞污和漁業養殖尾水資源化利用水平顯著提升；污水資源化利用政策體系和市場機制基本建立。到2035年，形成系統、安全、環保、經濟的污水資源化利用格局。

為保障重點領域污水資源化利用有效實施，《指導意見一》還部署實施了一系列重點工程，提出從健全法規標準、構建政策體系、健全價格機制、完善財金政策及強化科技支撐五方面完善污水資源化利用體制機制。

《指導意見一》的發佈明確了中國環保產業污水處理的政策方向，本集團環保產業中水處理業務將繼續保持良好的發展態勢。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) 管理層討論與分析(續)

2. On 22 February 2021, the State Council issued the Guiding Opinions on Accelerating the Establishment and Perfection of a Green and Low-carbon Circular Development Economic System ("Guiding Opinions II").

The Guiding Opinions II clearly states that by 2025, the industrial structure, energy structure and transportation structure will be significantly optimized, the proportion of green industries will be increased significantly, the greening level of infrastructure will be continuously improved, the level of cleaner production will be continuously improved, the green transformation of production and lifestyle will have remarkable results, the allocation of energy resources will be more rational and the utilization efficiency will be greatly improved, the total emission of major pollutants will be continuously reduced, the carbon emission intensity will be significantly reduced, the ecological environment will be continuously improved, the market-oriented green technology innovation system will be improved, the laws, regulations and policies will be more effective, and the production system, circulation system and consumption system of green and low-carbon circular development will be initially formed. By 2035, the endogenous driving force of green development will be significantly enhanced, the scale of green industry will reach a new level, the utilization efficiency of energy resources in key industries and key products will reach the international advanced level, and a green production lifestyle will be widely formed. After peaking, carbon emissions will decline steadily, the ecological environment will be fundamentally improved, and the goal of building a beautiful China will be basically achieved.

The enactment of the Guiding Opinions II will bring opportunities for the sustainable and healthy development of the Group's environmental protection and energy-saving solutions business and wind/photovoltaic power plants business.

2. 2021年2月22日，國務院印發《關於加快建立健全綠色低碳循環發展經濟體系的指導意見》(《指導意見二》)。

《指導意見二》明確指出，到2025年，產業結構、能源結構、運輸結構明顯優化，綠色產業比重顯著提升，基礎設施綠色化水平不斷提高，清潔生產水平持續提高，生產生活方式綠色轉型成效顯著，能源資源配置更加合理、利用效率大幅提高，主要污染物排放總量持續減少，碳排放強度明顯降低，生態環境持續改善，市場導向的綠色技術創新體系更加完善，法律法規政策體系更加有效，綠色低碳循環發展的生產體系、流通體系、消費體系初步形成。到2035年，綠色發展內生動力顯著增強，綠色產業規模邁上新台階，重點行業、重點產品能源資源利用效率達到國際先進水平，廣泛形成綠色生產生活方式，碳排放達峰後穩中有降，生態環境根本好轉，美麗中國建設目標基本實現。

《指導意見二》的發佈將為本集團環保及節能解決方案業務、風光電廠運營業務的持續健康發展帶來機遇。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

3. On 11 May 2021, National Energy Administration issued the Notice on Matters Related to the Development and Construction of Wind and Photovoltaic Power Generation in 2021 ("Notice").

The Notice makes general requirements that the objectives of peak carbon dioxide emissions and carbon neutrality need to be achieved, and that non-fossil energy need to account for about 25% of primary energy consumption, and the total installed capacity of wind power and solar power need to reach over 1.2 billion kW by 2030. In 2021, the generating capacities of wind and photovoltaic power generation throughout China should account for about 11% of the total electricity consumption of the society. This ratio should also increase year by year to ensure that non-fossil energy consumption accounts for about 20% of the total primary energy consumption in 2025.

The Notice calls for establishing diversified guarantee mechanisms for grid connection. For new grid-connected projects required to complete the annual minimum non-hydropower utilization responsibility at the provincial (district, municipal) levels, guaranteed grid connection is provided by power grid enterprises, in order to ensure the guaranteed grid-connected scale is not lower than 90 million KW in 2021.

The issuance of the Notice marks a new stage for the development of wind and photovoltaic power generation, and also brings new opportunities for the construction and operation of wind and photovoltaic power plants of the Group.

3. 2021年5月11日，國家能源局印發《關於2021年風電、光伏發電開發建設有關事項的通知》(「《通知》」)。

《通知》提出了總體要求，要落實碳達峰、碳中和目標，以及2030年非化石能源佔一次能源消費比重達到25%左右、風電太陽能發電總裝機容量達到12億千瓦以上等任務。2021年，全國風電、光伏發電發電量佔全社會用電量的比重達到11%左右，後續逐年提高，確保2025年非化石能源消費佔一次能源消費的比重達到20%左右。

《通知》要求建立並網多元保障機制。各省(區、市)完成年度非水電最低消納責任權重所必需的新增並網項目，由電網企業實行保障性並網，2021年保障性並網規模不低於9,000萬千瓦。

《通知》的發佈，標誌着風電、光伏發電進入新發展階段，為本集團風光電廠建設運營帶來新的契機。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) 管理層討論與分析(續)

4. The Ministry of Ecology and Environment issued the Guiding Opinions on Enhanced Control of Ecological and Environmental Pollution Sources for Energy- and Emission-intensive Construction Projects on 30 May 2021 (“**Guiding Opinions III**”).

The Guiding Opinions III states that the ecological environment departments at all levels should strengthen the prevention and control of the ecological environment of the high pollution and high energy-consuming projects from the source. The main tasks are to strengthen the zoning management and control and planning constraints of ecological environment, to strictly implement the review and approval of environmental impact assessment of the high pollution and high energy-consuming projects, and to promote the coordinated control of pollution and carbon reduction in the high pollution and high energy-consuming industries. Particularly, the high pollution and high energy-consuming industries include coal power, petrochemical, chemical, iron & steel, nonferrous metal smelting, and building materials industries.

The Guiding Opinions III calls for improving the level of cleaner production and pollution prevention and control. The newly built and expanded high pollution and high energy-consuming projects should adopt advanced and applicable technologies and equipment; material consumption, energy consumption, and water consumption per unit product should reach the advanced level of cleaner production; measures to prevent and control soil and groundwater pollution should be formulated and strictly implemented in accordance with laws and regulations. If the national or local requirements for ultra-low emissions have been issued, the construction projects in the high pollution and high energy-consuming industries should meet such requirements.

The Guiding Opinions III sets requirements of ultra-low emissions for the high pollution and high energy-consuming industries, which is expected to bring benefits for the environmental protection and energy-saving business of the Group.

4. 2021年5月30日，生態環境部印發《關於加強高耗能、高排放建設項目生態環境源頭防控的指導意見》(《**指導意見三**》)。

《指導意見三》提出各級生態環境部門加強「兩高」項目生態環境源頭防控，主要是加強生態環境分區管控和規劃約束，嚴格「兩高」項目環評審批，推進「兩高」行業減污降碳協同控制。其中，「兩高」項目包括煤電、石化、化工、鋼鐵、有色金屬冶煉、建材等六個行業。

《指導意見三》要求提升清潔生產和污染防治水平。新建、擴建「兩高」項目應採用先進適用的工藝技術和裝備，單位產品物耗、能耗、水耗等達到清潔生產先進水平，依法制定並嚴格落實防治土壤與地下水污染的措施。國家或地方已出台超低排放要求的「兩高」行業建設項目應滿足超低排放要求。

《指導意見三》的發佈設定了「兩高」行業超低排放的要求，預計將對本集團環保節能產業形成利好。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

KEY BUSINESS DEVELOPMENTS

主要業務發展

Environmental Protection Business

環保業務

For the six months ended 30 June 2021, the Group's desulphurisation and denitrification projects under construction were set out as follows:

截至2021年6月30日止6個月，本集團在建脫硫脫硝項目情況如下表所示：

Projects 項目		Number 數量 (個)	Installed Capacity 裝機容量 (MW) (兆瓦)
Desulphurisation projects under construction	在建脫硫項目	18	14,105
Including: Desulphurisation renovation projects	其中：脫硫改造項目	10	6,290
Desulphurisation renovation EPC projects	脫硫改造EPC項目	10	6,290
Newly built desulphurisation projects	脫硫新建項目	8	7,815
Newly built desulphurisation EPC projects	脫硫新建EPC項目	8	7,815
Denitrification projects under construction	在建脫硝項目	12	19,670
Including: Denitrification renovation projects	其中：脫硝改造項目	8	14,350
Denitrification renovation EPC projects	脫硝改造EPC項目	8	14,350
Newly built denitrification projects	脫硝新建項目	4	5,320
Newly built denitrification EPC projects	脫硝新建EPC項目	4	5,320

The models of concession operations of the Group's environmental protection business are categorized into three types: the general concession model, the operation and maintenance model of general contracting for tariff (generating income from tariff on desulphurisation, and assuming the responsibility for the supply of materials and the disposal of desulphurisation by-products in addition to general operation and maintenance) and the operation and maintenance model (generating income from general operation and maintenance). As at 30 June 2021, the operating units of desulphurisation concession operation of the Group had an aggregate installed capacity of 15,740 MW, the operating units of denitrification concession operation had an aggregate installed capacity of 12,540 MW, the desulphurisation generating units under the operation and maintenance model of general contracting for tariff had an installed capacity of 4,040 MW and the desulphurization generating units under the operation and maintenance model had an installed capacity of 18,190 MW.

本集團環保業務特許經營模式分為三種：一般特許經營模式、電價總包運維模式(獲得脫硫電價收益，除負責一般性運維外還負責物耗供應及脫硫副產物的處置)、運維模式(獲得一般性運維收益)。截至2021年6月30日止，本集團脫硫特許經營在運機組裝機總容量為15,740兆瓦，脫硝特許經營在運機組裝機總容量為12,540兆瓦；電價總包運維模式脫硫機組為4,040兆瓦；運維模式脫硫機組為18,190兆瓦。

As of 31 December 2020, the annual production capacity of denitrification catalysts, the key material for denitrification service of the Group was 19,000 m³. At present, the Group is actively promoting catalyst life cycle management. It has signed technology project contracts for catalyst life cycle management with four power plants, namely, Guoneng Xingyang Thermal Power Company Limited, Guoneng Puyang Thermal Power Company Limited, Guoneng Zhumadian Thermal Power Company Limited, Guoneng Minquan Thermal Power Company Limited (the "four factories in Henan"), and gradually commencing work.

截至2021年6月30日止，本集團脫硝服務的關鍵材料—脫硝催化劑的年產能為19,000立方米。目前本集團正在積極推進催化劑全生命週期管理，已簽訂國能滎陽熱電有限公司、國能濮陽熱電有限公司、國能駐馬店熱電有限公司、國能民權熱電有限公司(「河南四廠」)的催化劑全生命週期管理科技項目合同，正在逐步開展工作。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) 管理層討論與分析(續)

The environmental protection business has been further expanded. The sludge co-processing project is taking shape. Following the successful commencement of the operation of Guoneng Changzhou power plants, Guodian Qingshan thermal power plant project has commenced construction and has signed the sludge processing cooperation agreement with more than ten power plants; the project resource utilization of deactivation of catalyst in Inner Mongolia has completed site selection, and has entered the stage of planning and construction China Energy Group Coal and Coking Co., Ltd. Xilafeng Park volatile organic compounds treatment project was highly appraised; the successful bidding of the newly built desulphurisation engineering for 2×1000MW EPC contracting project in Guoneng Qingyuan Generation Power Company Limited and the newly built seawater desulphurization engineering for 2×1000MW EPC contracting project in Shenhua Guohua Guangtou (Beihai) Power Generation Co., Ltd.; Guoneng Xinjiang Ganquanpu Integrated Energy Co., Ltd., an associate of the Company, has been established, and the incremental distribution grids of power source and grid project have been commenced.

In terms of water treatment, as of 30 June 2021, the Group had processed approximately 82,372,800 tons of sewage (including reclaimed water) and reduced the cumulative COD (chemical oxygen demand) emissions by approximately 21,600 tons.

Lucency implemented upgrading project of mine water in Bulianta Mine in Shendong Coal Group Corporation Limited, and signed the operation and maintenance project of zero wastewater discharge system of Guodian Construction & Investment Inner Mongolia Energy Limited Company and standard treatment project of mine water fluorochemicals in Shendong Shangwan Mine in the first half of 2021. The above projects mark the progress in the development of non-power market.

Energy Conservation Solutions Business

Longyuan Technology established Dongying Longyuan Clean Energy Technology Co., Ltd., a joint venture in March 2021 in order to promote the utilization of geothermal energy. At present, two geothermal heating contracts have been signed, with a total contract amount of about RMB60 million, and more than three geothermal heating contracts are under negotiation; It has obtained the grade III qualification of general contracting of mechanical and electrical engineering construction, which lays a foundation for subcontracting and developing business.

環保業務進一步拓寬，污泥協同處置項目初見規模，繼國能常州電廠項目成功投運後，國電青山熱電廠項目已開工建設，並與十餘家電廠簽訂污泥處置合作協議；內蒙古失活催化劑資源化利用項目完成選址，進入規劃建設階段；國家能源集團煤焦化有限公司西來峰園區揮發性有機化合物治理項目獲得高度評價；國能清遠發電有限責任公司2×1000MW新建工程脫硫EPC總承包項目、神華國華廣投(北海)發電有限責任公司2×1000MW新建工程海水脫硫EPC總承包項目成功中標；參股的國能新疆甘泉堡綜合能源有限公司已經成立，正在開展源網荷儲增量配網項目。

水處理方面，截至2021年6月30日，污水處理(含中水)量約為8,237.28萬噸，COD(化學需氧量)累計減排量約為2.16萬噸。

朗新明2021年上半年實施神東煤炭集團補連塔礦井水提標治理項目，並簽訂國電建設內蒙古能源有限公司廢水零排放系統運行檢修維護項目及神東上灣煤礦礦井水氟化物達標治理運營項目，以上項目標誌着非電市場的開拓取得進展。

節能解決方案業務

龍源技術於2021年3月成立合營公司東營龍源清潔能源科技有限公司，推進地熱能利用。目前已簽約2個地熱供暖項目，總合同額約為人民幣6,000萬元，還有超過3個地熱供暖項目正處於合同談判階段；獲得機電工程施工總承包三級資質，為承攬和開拓業務奠定基礎。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Wind power products and services Business

風電產品及服務業務

The Group's Wind Turbine Generator sales volumes by product type for the six months ended 30 June 2020 and 2021 are set forth below:

本集團於2020年及2021年6月30日止6個月按產品類型劃分的風機銷量如下：

	Completed Sales (units) 完成銷售(套)		Orders (units) 在手訂單(套)		
	2021	2020	Confirmed orders 已確認訂單	Successful biddings 成功競標	
1.5MW	1.5兆瓦	0	0	586	0
1.65 MW	1.65兆瓦	0	0	30	0
2.X MW	2.X兆瓦	12	293	317	0
3.X MW	3.X兆瓦	72	16	259	76
4.X MW	4.X兆瓦	0	0	41	11
Total	總數	84	309	1,233	87

In the first half of 2021, the Group accelerated the research and development of new products and obtained 6 design evaluation certificates and 6 types of approval certificates. The research and development of new products commenced in an orderly manner, which provides a solid guarantee for participating in market bidding and addressing the competition in the industry.

2021年上半年，本集團加快新產品研發，取得設計評估證書6項，型式認證證書6項。新產品研發工作有序開展，為參與市場投標、應對行業競爭提供了堅實保障。

Other Business

其他業務

Distributed Control System ("DCS") project of Unit 2 of Bulian Power Plant in Guodian Investment Inner Mongolia Energy Limited Company implemented by Guoneng Zhishen Control Technology Co., Ltd. ("Guoneng Zhishen"), a subsidiary of the Group, has been connected to the grids on 25 May 2021. It is the first project of the localization of the first set of chips; DCS project of the integration of coal and electricity in China Energy's Inner Mongolia Temple of Shanghai Generation Power Company Limited has completed the field installation of the equipment, which is the first localized DCS 1000MW unit application in infrastructure projects.

本集團附屬公司國能智深控制技術有限公司(「國能智深」)實施的國電建設內蒙古能源有限公司布連電廠2號機組分佈式控制系統(「DCS」)工程已於2021年5月25日並網運行，這是首個首台套芯片國產化項目；國家能源集團內蒙古上海廟發電有限公司煤電一體化DCS工程已完成設備現場安裝，這是首台1,000MW機組國產化DCS在基建項目上應用。

Guoneng Zhishen won the bid for centralized monitoring project of Guodian Enshi Hydropower Development Company Limited in the first half of 2021, which involves monitoring of 40 stations and 8 river basin stations and is the first example of integration of centralized monitor and digitalization, and also the new example of scientific and technological innovation of centralized monitoring of small and medium sized hydropower clusters.

國能智深於2021年上半年中標國電恩施水電開發有限公司水電集中監控項目，此項目涉及40個站8個流域站點的監控，為首例多流域一體化集控與智能化項目，是中小水電集群集控科技創新的新樣版。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) 管理層討論與分析(續)

The application of the mine permanent magnet VFD system of Guoneng Longyuan Electrical Company, a subsidiary of the Group, was demonstrated in Yujialiang Mine of China Shenhua Shendong Coal Mining Group Corporation Limited in early May of 2021. The positioning system of coal mine personnel has obtained the coal safety certificate, which indicates that the positioning system fulfills the requirement for market promotion and downhole.

The market performance was basically stable

In the first half of 2021, affected by the sharp decline in the performance of wind power plants, the Group witnessed a downturn in performance. The total new orders signed (RMB4.865 billion) decreased by 1.94%, compared to the average value of new orders signed in the first half of the five years during the 13th Five-year Plan period. The details are described as follows:

Deeply tapping into thermal power market. In the first half of 2021, new orders of RMB2.738 billion were mainly derived from the thermal power market, accounting for 56.28% of the total orders. Longyuan Environmental signed a contract with Shenhua Guohua Guangtou (Beihai) Power Generation Co., Ltd. for the construction of EPC of 2×1000MW newly built seawater desulfurisation project, with a contract price of about RMB150 million. This is the first desulfurisation project for million level units using the seawater desulfurisation technology. Guoneng Zhishen saw a further promotion in its smart power generation and information security business. It undertook seven projects such as the intelligent DCS in-depth optimization project of #2 unit with Guodian Inner Mongolia Dongsheng Thermal Power Co., Ltd., and the DCS safety protection project of auxiliary units with Hebei Hengfeng Power Generation Co., Ltd.

Continuously expanding the new energy market. Guoneng Zhishen signed an agreement with the Guigang Branch of Guodian Guangxi New Energy Development Co., Ltd. for the intelligent application project in Baihuashan Wind Power Plant to build an intelligent wind power management platform, and phased objectives have been achieved in the wind power sector. Besides, it launched the development of United Power 3MW/4MW wind turbine master control system to continuously promote the domestication of wind power control system. Guoneng I&C signed an agreement with Sany Renewable Energy Co., Ltd. and Zhejiang Windey Co., Ltd. for the variable pitch service contract, with the contract price of about RMB169 million. The contract signing progress of orders for variable pitch service has greatly accelerated.

本集團附屬公司國能龍源電氣有限公司礦用永磁變頻調速系統已於2021年5月初在中國神華神東煤炭分公司榆家梁煤礦開始示範應用。煤礦人員定位系統已取得煤安證書，標誌着定位系統已具備市場推廣與下井條件。

市場業績基本穩定

2021年上半年，受風電業績大幅下滑影響，本集團市場業績有所萎縮，合計新簽訂單人民幣48.65億元，相比於「十三五」曆年上半年新簽訂單均值下降1.94%。其中：

火電市場深耕細作。2021年上半年，火電市場新簽訂單人民幣27.38億元，佔比56.28%。龍源環保簽約神華國華廣投(北海)發電有限責任公司2×1000MW新建工程海水脫硫EPC總承包項目，合同金額約人民幣1.50億元，是龍源環保近5年來首個採用海水脫硫技術的百萬機組脫硫項目；國能智深智能發電和信息安全業務得到進一步推廣，簽約國電內蒙古東勝熱電有限公司#2機智能DCS深度優化、河北衡豐發電有限責任公司輔機DCS安全防護等7個該類項目。

新能源市場不斷開拓。國能智深簽約國電廣西新能源開發有限公司貴港分公司白花山風電場智慧應用項目，打造智能風電管控平台，在風電領域取得階段性成果；啟動聯合動力3MW/4MW風機主控系統開發，持續推進風電控制系統國產化；國能信控簽約三一重能有限公司、浙江運達風電股份有限公司變槳服務項目，合同金額約人民幣1.69億元，變槳外單簽約進度大幅提高。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Sustained efforts in coal and chemical markets. Relying on the scientific research project for Luotuoshan Coal Preparation Plant of Shenhua Wuhai Energy Co., Ltd. and the control system transformation project of Yangchangwan Coal Preparation Plant of Guoneng Ningxia Coal Industry Co., Ltd., Guoneng Zhishen made every effort to promote the domestication of the coal preparation plant control system. Guoneng I&C signed an agreement with Guodian Construction & Investment Inner Mongolia Energy Co., Ltd. for the smart coal preparation plant and smart coal mine construction specification compilation project to build the Smart Mine, making new breakthroughs in the coal industry. Lucency signed an agreement with China Shenhua Xinjiang Energy Co., Ltd. for the EPC of quality improvement project of domestic sewage stations in Hongshaquan and Heishan open-pit coal mines, laying a solid foundation for fully marching into the operation and maintenance market in the coal and coal chemical industries.

Actively Exploring the Overseas Market

In the first half of 2021, the Group steadily promoted its international business while strengthening the prevention and control of the COVID-19 pandemic (the “**Pandemic**”).

We continued to implement the internationalization strategy and tap into markets in Southeast Asia, South Asia, Central and Eastern Europe, Central Asia and Africa:

- Longyuan Environmental took an active part in renovation projects for electric power environmental protection in Indonesia, Bangladesh and Taiwan, and signed a wet desulfurisation project in Indonesia, with a contract price of RMB14.8429 million;
- Longyuan Technology tapped into energy-saving renovation markets in Indonesia, Turkey and Zimbabwe, and explored market opportunities in Russia, Thailand, and Laos;
- United Power continued to implement the subsequent operation and maintenance service for a project of Longyuan Power in De Aar, South Africa. While overcoming the difficulties of the Pandemic, the Company continued to operate at the front line, making great contributions to solving the local electricity crisis in South Africa;
- Guoneng Zhishen took firm steps to implement the automation project of a coal-fired power plant in Pakistan, and steadily expands the electric power automation control system market in Indonesia and Pakistan;
- Lucency continued to implement the sea water desalination project of a coal-fired power plant in Bangladesh and Pakistan.

煤炭、化工等市場持續推進。國能智深依託神華烏海能源有限責任公司駱駝山選煤廠科研項目、國家能源集團寧夏煤業有限責任公司羊場灣選煤廠控制系統改造項目，大力開展選煤廠控制系統國產化的推廣工作；國能信控簽約國電建投內蒙古能源有限公司智慧礦山之一智慧選煤廠和智慧煤礦建設規範編製項目，實現了在煤炭行業的新突破；朗新明簽約神華新疆能源有限責任公司紅沙泉、黑山露天煤礦生活污水站提質改造項目EPC總承包工程，為全面進軍煤炭、煤化工運維市場打下堅實基礎。

積極拓展海外市場

2021年上半年，本公司加強境外新型冠狀病毒肺炎疫情(「**疫情**」)防控工作，穩妥推進國際業務開展。

堅持推動國際化戰略，繼續深耕東南亞、南亞、中東歐、中亞、非洲地區市場：

- 龍源環保積極參與印尼、孟加拉及中國台灣地區電力環保改造項目，簽署印尼某濕法脫硫項目，合同金額為1,484.29萬元人民幣；
- 龍源技術深挖印尼、土耳其、津巴布韋節能改造市場，探索俄羅斯、泰國、老撾市場機遇；
- 龍源電力南非德阿項目後續運維服務。克服疫情困難，堅守一線，為解決南非當地用電危機做出了傑出貢獻；
- 國能智深紮實開展巴基斯坦某燃煤電站自動化項目執行工作，穩步拓展印尼和巴基斯坦電力自動化控制系統市場；
- 朗新明繼續執行孟加拉及巴基斯坦某燃煤電站海水淡化項目。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

ANALYSIS OF FINANCIAL RESULTS FOR THE FIRST HALF OF 2021

Please read this section in conjunction with the consolidated financial statements of the Group for the year ended 30 June 2021.

Analysis on consolidated results

Revenue

The revenue of the Group for the six months ended 30 June 2021 was approximately RMB4,725.1 million, representing an increase of approximately RMB277.3 million, or 6.2% as compared with approximately RMB4,447.8 million for the corresponding period in 2020. As compared with 2020, the increase was mainly due to the increase in revenue from energy conservation solutions business of approximately RMB895.9 million, or 148.3%, mainly due to the release of the general contracting project of the power plant affected by the Pandemic, and the increase in the number of projects. On the other hand, the sales of wind turbines decreased significantly due to the fall of "rush of installation tide", causing a decrease in revenue from wind power products and services by RMB947.8 million or approximately 43.3%. In addition, due to the mitigation of the impacts of the Pandemic and the increase of average unit price of market trading electricity in denitrification for certain subsidiaries, the revenue from environmental protection increased by RMB280.6 million or approximately 18.7%. The integrated effects of the above led to a slight increase in the revenue.

The following table sets out the Group's revenues by segment and as a percentage of the total revenue of the Group for six months ended 30 June 2021 and 2020, respectively:

2021年上半年財務業績分析

閱讀本節時請一併閱讀截至2021年6月30日止6個月本集團的合併財務報表。

合併業績分析

收入

本集團截至2021年6月30日止6個月合併收入約為人民幣4,725.1百萬元，與2020年同期的約人民幣4,447.8百萬元相比，增加約為人民幣277.3百萬元或6.2%。與2020年同期相比，主要由於節能解決方案收入增加人民幣895.9百萬元，增加約148.3%，這是由於電站總承包項目受疫情影響解除，工程數量增加所致。另一方面，因搶裝潮回落，風機銷售數量大幅下降，導致風電產品及服務收入減少人民幣947.8百萬元，減少約43.3%。此外，由於疫情影響因素減弱及某些附屬公司市場化交易電量平均脫硝單價上升，導致環保業務收入增加人民幣280.6百萬元，增加約18.7%。以上綜合作用導致收入微增。

下表分別載列截至2021年及2020年6月30日止6個月按分部劃分的本集團收入及其佔本集團合併收入的百分比：

		For the six months ended 30 June 截至6月30日止6個月			
		2021		2020	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(人民幣百萬元)	%
Environmental protection and energy conservation solutions:	環保及節能解決方案：				
Environmental protection	環保	1,784.2	37.8	1,503.6	33.8
Energy conservation solutions	節能解決方案	1,499.9	31.7	604.0	13.6
Subtotal	合計	3,284.1	69.5	2,107.6	47.4
Renewable energy equipment manufacturing and services:	可再生能源設備製造及服務：				
Wind power products and services	風電產品及服務	1,240.7	26.3	2,188.5	49.2
All others	所有其他	200.3	4.2	151.7	3.4
Total	總計	4,725.1	100.0	4,447.8	100.0

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Cost of sales

For the six months ended 30 June 2021, consolidated cost of sales for the Group amounted to approximately RMB4,084.1 million, representing an increase of approximately RMB551.3 million or 15.6%, as compared to that for the corresponding period in 2020 of approximately RMB3,532.8 million.

The following table sets out the Group's cost of sales by segment and as a percentage of total cost of sales of the Group for the six months ended 30 June 2021 and 2020, respectively:

銷售成本

本集團截至2021年6月30日止6個月合併銷售成本約為人民幣4,084.1百萬元，較2020年同期的約人民幣3,532.8百萬元增加約為人民幣551.3百萬元或15.6%。

下表分別載列截至2021年及2020年6月30日止6個月按分部劃分的本集團銷售成本及其佔本集團合併銷售成本的百分比：

		For the six months ended 30 June			
		2021		2020	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(人民幣百萬元)	%
Environmental protection and energy conservation solutions:	環保及節能解決方案：				
Environmental protection	環保	1,292.7	31.7	1,151.4	32.6
Energy conservation solutions	節能解決方案	1,576.8	38.6	557.1	15.8
Subtotal	合計	2,869.5	70.3	1,708.5	48.4
Renewable energy equipment manufacturing and services:	可再生能源設備製造及服務：				
Wind power products and services	風電產品及服務	1,110.2	27.2	1,752.2	49.6
All others	所有其他	104.4	2.5	72.1	2.0
Total	總計	4,084.1	100.0	3,532.8	100.0

Gross profit and gross profit margin

For the foregoing reasons, gross profit of the Group in the first half of 2021 amounted to approximately RMB641.0 million, representing a decrease of approximately RMB274.0 million, or 29.9%, as compared to that for the corresponding period in 2020 of approximately RMB915.0 million. The average gross profit margin decreased from 20.6% in the first half of 2020 to 13.6% in the corresponding period in 2021, mainly due to the significant decrease in the gross profit margin of two business segments, namely energy conservation solutions and wind power products and services.

毛利及毛利率

鑒於上述原因，本集團2021年上半年的毛利約為人民幣641.0百萬元，與2020年上半年的約人民幣915.0百萬元相比減少約人民幣274.0百萬元或29.9%，平均毛利率從2020年上半年的20.6%減少至本期的13.6%。主要由於節能解決方案及風電產品及服務兩個板塊的毛利大幅降低導致。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) 管理層討論與分析(續)

The following table sets out the Group's gross profit and gross profit margin by segment for the six months ended 30 June 2021 and 2020:

下表分別載列截至2021年及2020年6月30日止上半年按分部劃分的本集團毛利和毛利率：

		For the six months ended 30 June 截至6月30日止6個月			
		2021		2020	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(人民幣百萬元)	%
Environmental protection and energy conservation solutions:	環保及節能解決方案：				
Environmental protection	環保	491.5	27.5	352.2	23.4
Energy conservation solutions	節能解決方案	(76.9)	(5.1)	46.9	7.8
Renewable energy equipment manufacturing and services:	可再生能源設備製造及服務：				
Wind power products and services	風電產品及服務	130.5	10.5	436.3	19.9
All others	所有其他	95.9	47.8	79.6	52.5
Total	總計	641.0	13.6	915.0	20.6

Other revenue

Other revenue of the Group decreased by approximately RMB29.1 million, or 19%, from approximately RMB153.0 million for the six months ended 30 June 2020 to approximately RMB123.9 million for the six months ended 30 June 2021, which was primarily due to the decrease of government subsidies such as value-added tax refund.

Other income

Other income of the Group for the six months ended 30 June 2021 was approximately RMB17.7 million, as compared to the corresponding period in 2020 of approximately RMB4.1 million, representing an increase of approximately RMB13.6 million, or 331.7%, which was primarily due to the increase in rental income as the Pandemic was generally brought under control.

其他收入

截至2021年6月30日止6個月，本集團其他收入約為人民幣123.9百萬元，較截至2020年6月30日止6個月的約人民幣153.0百萬元減少約人民幣29.1百萬元或19%，主要原因是收到的增值稅稅收返還等政府補助減少所致。

其他收益

截至2021年6月30日止6個月，本集團其他收益約人民幣17.7百萬元，較2020年同期的約人民幣4.1百萬元增加約人民幣13.6百萬元或331.7%，主要原因是疫情基本得到控制，租金收入增加。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Other expenses

Other expenses of the Group for the six months ended 30 June 2021 amounted to RMB125.9 million, representing an increase of approximately RMB82.7 million, as compared to that for the corresponding period in 2020 of approximately RMB43.2 million, which was mainly due to the loss of approximately RMB108.2 million recognized by the disposal of Guodian Galaxy Water, a subsidiary of the Company.

Selling and distribution expenses

Selling and distribution expenses of the Group decreased by approximately RMB106.9 million or 18.2%, from approximately RMB586.6 million for the six months ended 30 June 2020 to approximately RMB479.7 million for the six months ended 30 June 2021, which was primarily due to the decrease of sales service fee of wind power products.

Administrative expenses

Administrative expenses of the Group increased by approximately RMB153.2 million or 26.6%, from approximately RMB576.4 million for the six months ended 30 June 2020 to approximately RMB729.6 million for the six months ended 30 June 2021, which was mainly because the Pandemic situation becoming stable in the first half of 2021, and the Group contributed social insurance back to the normal level, together with the slight increase in salary in various subsidiaries.

Operating loss

As a result of the foregoing factors, the operating loss of the Group increased by approximately RMB418.6 million, or 312.2%, from approximately RMB134.1 million for the six months ended 30 June of 2020 to approximately RMB552.7 million for the same period in 2021.

Finance costs

Finance costs of the Group decreased by approximately RMB59.2 million, or 20.4%, from approximately RMB290.8 million for the six months ended 30 June 2020 to approximately RMB231.6 million for the six months ended 30 June 2021, which was mainly due to the decrease in the amount of borrowing in the current period compared with the same period of last year, and the decrease in the comprehensive borrowing interest rate compared with the same period of last year.

Loss before taxation

As a result of foregoing factors, loss before taxation of the Group increased by approximately RMB318.1 million or 77.5%, from approximately RMB410.5 million for the first half of 2020 to approximately RMB728.6 million for the same period in 2021.

其他費用

截至2021年6月30日止6個月，本集團其他費用約人民幣125.9百萬元，較2020年同期的約人民幣43.2百萬元增加約人民幣82.7百萬元，主要原因是出售附屬公司國電銀河水務確認損失約人民幣108.2百萬元。

銷售及分銷開支

截至2021年6月30日止6個月，本集團銷售及分銷開支約人民幣479.7百萬元，較2020年同期的約人民幣586.6百萬元減少約人民幣106.9百萬元或18.2%，主要是由於風機銷售服務費減少。

行政開支

截至2021年6月30日止6個月，本集團行政開支約人民幣729.6百萬元，較2020年同期的約人民幣576.4百萬元增加約人民幣153.2百萬元或26.6%，主要由於2021年上半年隨着疫情的逐漸穩定，本集團恢復正常繳納社會保險和各附屬公司小幅漲薪造成。

經營虧損

鑒於上述原因，本集團由2020年上半年經營虧損約人民幣134.1百萬元增加至2021年同期虧損約人民幣552.7百萬元，增加約人民幣418.6百萬元或312.2%。

財務成本

截至2021年6月30日止6個月，本集團財務成本約人民幣231.6百萬元，較2020年同期的約人民幣290.8百萬元減少約人民幣59.2百萬元或20.4%，減少的原因主要是由於本期借款金額較上年同期減少，綜合借款利率較上年同期下降。

稅前虧損

鑒於上述原因，本集團稅前虧損從2020年上半年的約人民幣410.5百萬元增加至2021年同期的約人民幣728.6百萬元，增加約人民幣318.1百萬元或77.5%。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Income tax

Income tax decreased from approximately RMB115.1 million for the six months ended 30 June 2020 to approximately RMB60.5 million for the same period in 2021, representing a decrease of approximately RMB54.6 million or 47.4%, which was mainly due to the partial reversal of tax recoverable which charged to profit or loss during the first half of 2020.

Loss for the period

As a result of the foregoing factors, the Group recorded loss for the year of approximately RMB789.1 million for the six months ended 30 June 2021, representing an increase of approximately RMB263.5 million, or 50.1%, compared with a loss of RMB525.6 million for the six months ended 30 June 2020.

Loss attributable to non-controlling interests

Loss attributable to non-controlling interests of the Group increased by approximately RMB34.6 million or 28.2%, from RMB122.7 million for the six months ended 30 June 2020 to approximately RMB157.3 million for the six months ended 30 June 2021, which was mainly due to the increase of the loss of the subsidiary that has material non-controlling interest.

Loss attributable to equity shareholders of the Company

As a result of the foregoing factors, loss attributable to equity shareholders of the Company increased by approximately RMB228.8 million or 56.8%, from RMB402.9 million for the six months ended 30 June 2020 to approximately RMB631.7 million for six months ended 30 June 2021.

所得稅

本集團所得稅由2020年6月30日止6個月的約人民幣115.1百萬元減少至2021年同期的約人民幣60.5百萬元，減少約人民幣54.6百萬元或47.4%。主要是由於2020年上半年衝回部分應收所得稅，衝回的應收所得稅計入損益表。

本期虧損

鑒於上述原因，本集團錄得虧損由2020年6月30日止6個月的約人民幣525.6百萬元增加至2021年6月30日止6個月的約人民幣789.1百萬元，增加約人民幣263.5百萬元或50.1%。

歸屬於非控股權益虧損

本集團歸屬於非控股權益虧損由2020年6月30日止6個月的人民幣122.7百萬元增加至2021年6月30日止6個月的約人民幣157.3百萬元，增加約人民幣34.6百萬元或28.2%，主要由於擁有重大非控股權益的附屬公司的虧損增加所致。

歸屬於本公司權益股東虧損

鑒於上述原因，本公司歸屬於本公司權益股東虧損由2020年6月30日止6個月的約人民幣402.9百萬元增加至截至2021年6月30日止6個月的約人民幣631.7百萬元，增加約人民幣228.8百萬元或56.8%。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Analysis of segment results

分部業績分析

The following table sets out the Group's revenue, gross profit and operating profit of each business segment as a percentage of the total revenue, gross profit and operating profit of the Group for the six months ended 30 June 2021 and 2020, respectively:

下表分別載列截至2021年及2020年6月30日止6個月本集團的分部收入、毛利和經營利潤以及各自佔相關期間本集團收入、毛利和經營利潤總額的百分比：

		For the six months ended 30 June			
		截至6月30日止6個月			
		2021		2020	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(人民幣百萬元)	%
Environmental protection and energy conservation solutions	環保及節能解決方案				
Environmental protection:	環保：				
Revenue	收入	1,784.2	37.8	1,503.6	33.8
Gross profit	毛利	491.5	76.7	352.2	38.5
Operating profit	經營利潤	173.6	(31.4)	144.1	(107.5)
Energy conservation solutions:	節能解決方案：				
Revenue	收入	1,499.9	31.7	604.0	13.6
Gross profit	毛利	(76.9)	(12.0)	46.9	5.1
Operating profit	經營利潤	(215.7)	39.0	(44.5)	33.2
Renewable energy equipment manufacturing and services	可再生能源設備				
Wind power products and services:	風電產品及服務：				
Revenue	收入	1,240.7	26.3	2,188.5	49.2
Gross profit	毛利	130.5	20.4	436.3	47.7
Operating profit	經營利潤	(506.1)	91.6	(227.6)	169.7

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

ENVIRONMENTAL PROTECTION AND ENERGY CONSERVATION SOLUTIONS

環保及節能解決方案

Environmental protection

環保

Revenue

收入

Revenue from the environmental protection business increased by approximately RMB280.6 million or 18.7%, from approximately RMB1,503.6 million for the first half of 2020, to approximately RMB1,784.2 million for the first half of 2021. On one hand, the increase in rental and services income from desulfurization and denitrification, is attributable to such business that had been impacted greatly by the Pandemic in the first half of 2020 and the overall business environment has basically been back to normal in this period. On the other hand, the increase in revenue from denitrification EPC business during this period is attributable to the recognition of revenue from the denitrification system and catalyst full-cycle management project of the newly established four factories in Henan.

環保業務收入從2020年上半年的約人民幣1,503.6百萬元增加至2021年上半年的約人民幣1,784.2百萬元，增加約人民幣280.6百萬元或18.7%。一方面是脫硫、脫硝的租賃及勞務收入有所增加，這主要是由於此類項目2020年上半年受新冠肺炎疫情影響較大，而本期影響基本消失所致；另一方面本期脫硝EPC業務收入有所增加，主要為新增河南四廠脫硝系統及催化劑全壽命週期管理項目確認收入所致。

The following table sets out the revenue from each business line of the Group's environmental protection business, and the respective percentage of revenue from such business, for the six months ended 30 June 2021 and 2020, respectively:

下表分別載列截至2021年及2020年6月30日止6個月本集團環保業務中各業務線的收入，以及各自佔該業務收入的百分比。

		For the six months ended 30 June 截至6月30日止6個月			
		2021		2020	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
Desulfurization	脫硫	994.2	55.7	862.9	57.4
Denitrification	脫硝	391.1	21.9	241.5	16.1
Low NOx combustion equipment	低氮燃燒設備	47.6	2.7	6.0	0.4
Water treatment	水處理	331.1	18.6	333.0	22.1
Ash removal	除塵	20.2	1.1	60.2	4.0
Total	總計	1,784.2	100.0	1,503.6	100.0

Cost of sales

銷售成本

Cost of sales for the environmental protection business of the Group increased by approximately RMB141.3 million or 12.3%, from approximately RMB1,151.4 million for the first half of 2020 to approximately RMB1,292.7 million for the first half of 2021.

本集團環保業務的銷售成本從2020年上半年的約人民幣1,151.4百萬元增加至2021年上半年的約人民幣1,292.7百萬元，相比增加了141.3百萬元或12.3%。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Gross profit and gross profit margin

As a result of the foregoing reasons, gross profit attributable to the environmental protection business increased by approximately RMB139.3 million, or 39.6%, from approximately RMB352.2 million for the first half of 2020 to approximately RMB491.5 million for the first half of 2021. The average gross profit margin of this business increased from 23.4% for the first half of 2020 to 27.5% for the first half of 2021. On one hand, the electricity volume of the desulfurisation and denitrification increased as the business returned to normal level in the first half of 2021, and the unit fixed cost decreased, resulting in an increase in the gross profit margin. On the other hand, the settlement unit price of market trading electricity in denitrification revenue had increased significantly over the corresponding period, therefore the gross profit margin increased.

The following table sets out the changes of the gross profit margin for the business lines comprising the Group's environmental protection business for the six months ended 30 June 2021 compared with the six months ended 30 June 2020:

毛利及毛利率

鑒於上述原因，環保業務的毛利從2020年上半年的約人民幣352.2百萬元增加至2021年上半年的約人民幣491.5百萬元，增加約人民幣139.3百萬元或39.6%。此業務平均毛利率從上年同期的23.4%上升至27.5%。一方面是由於2021年上半年業務恢復正常水準後，脫硫和脫硝電量較去年同期增加，單位固定成本下降，導致毛利率上升。另一方面脫硝收益中市場化交易電量的結算單價較同期大幅提高，因此毛利率上升。

下表載列截至2021年6月30日止6個月構成本集團環保業務的業務線毛利率與截至2020年6月30日止6個月相比的變化：

		For the six months ended 30 June	
		截至6月30日止6個月	
		2021	2020
		(%)	(%)
Desulphurization	脫硫	28.7	25.9
Denitrification	脫硝	41.4	22.0
Low NOx combustion equipment	低氮燃燒設備	11.8	11.4
Water treatment	水處理	14.1	22.8
Ash removal	除塵	(18.5)	4.9

Energy conservation solutions

Revenue

Revenue attributable to the energy conservation solutions business increased by approximately RMB895.9 million or 148.3%, from approximately RMB604.0 million for the first half of 2020 to approximately RMB1,499.9 million for the first half of 2021, in which the revenue from the general contracting business of power station construction and the energy conservation business increased, which was due to the slow-down of the progress of most projects due to the impacts of the Pandemic in the first half of 2020. As the impacts of the Pandemic have generally subsided during the first half of 2021, the number and progress of the projects have significantly increased compared with the same period of the previous year.

節能解決方案

收入

節能解決方案業務收入從2020年上半年的約人民幣604.0百萬元增加至2021年上半年的約人民幣1,499.9百萬元，增加約人民幣895.9百萬元或148.3%。其中，電站建設總承包業務線、節能服務業務線收入有所增加，這是由於2020年上半年受疫情影響導致大部分工程進度緩慢，2021年上半年疫情影響緩解，工程數量和進展與去年同期相比有明顯增加。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

The following table sets out the revenue from the business lines of the Group's energy conservation business, each as a percentage of revenue from this business, for the six months ended 30 June 2021 and 2020, respectively:

下表分別載列截至2021年及2020年6月30日止6個月本集團節能業務中各業務線的收入，以及各自佔該業務收入的百分比。

		For the six months ended 30 June			
		截至6月30日止6個月			
		2021		2020	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(人民幣百萬元)	%
Plasma-assisted coal ignition and combustion stabilization	等離子體點火及穩燃	79.1	5.3	46.6	7.7
Energy conservation service	節能服務	34.8	2.3	16.7	2.8
General contracting for power stations	電站建設總承包	1,379.3	92.0	540.7	89.5
Comprehensive utilization and renovation of boiler	鍋爐綜合利用改造	6.7	0.4	-	-
Total	總計	1,499.9	100.0	604.0	100.0

Cost of sales

The cost of sales of the Group's energy conservation solutions business increased by RMB1,019.7 million or 183.0%, from approximately RMB557.1 million for the first half of 2020 to approximately RMB1,576.8 million for the first half of 2021.

銷售成本

本集團節能業務的銷售成本從2020年上半年的約人民幣557.1百萬元增加至2021年上半年的約人民幣1,576.8百萬元，相比增加了1,019.7百萬元或183.0%。

Gross profit and gross profit margins

As a result of the foregoing factors, gross profit attributable to the energy conservation solutions business decreased by approximately RMB123.8 million or 264.0%, from approximately RMB46.9 million for the first half of 2020 to approximately RMB-76.9 million for the first half of 2021. The average gross profit margin dropped from 7.8% for the first half of 2020 to -5.1% for the first half of 2021. This was mainly due to the capturing of market share of general contracting business which accounts for a relatively large proportion of revenue, the gross profit margin of signed and fulfilled EPC projects in 2020 and 2019 were relatively low. Since the tender of order contracts generally occur half a year to a year in advance, the Company estimated certain head room for gross profit for specific projects during the bidding process. However, during the execution in the current period, the prices of craned, high-voltage cabinets and other equipment in wind power station have increased significantly, which led to the significant decrease of gross profit margin compared with the previous year.

毛利及毛利率

鑒於上述原因，節能業務的毛利從2020年上半年的約人民幣46.9百萬元大幅減少至2021年上半年的約人民幣-76.9百萬元，減少約人民幣123.8百萬元或264.0%。此業務平均毛利率從2020年上半年的7.8%減少至2021年上半年的-5.1%。這主要是由於收入佔比較大的電站建設總承包業務線為了搶佔市場，2019年和2020年簽訂並且履行的EPC工程毛利率均較低。由於訂單簽約一般都提前半年至一年投標，個別項目投標時公司預計有一定的毛利空間，但本期執行時由於風電場吊車、高壓櫃等設備市場價格較預期大幅上漲，導致實際毛利率較去年大幅下降。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

The following table sets out the changes in gross profit margin for the business lines comprising the Group's energy conservation business for the six months ended 30 June 2021 compared with the six months ended 30 June 2020:

下表載列截至2021年6月30日止6個月構成本集團節能業務的業務線毛利率與截至2020年6月30日止6個月相比的變化：

		For the six months ended 30 June	
		截至6月30日止6個月	
		2021	2020
		(%)	(%)
Plasma-assisted coal ignition and combustion stabilization	等離子體點火及穩燃	24.3	12.5
Energy conservation services	節能服務	(2.4)	26.8
General contracting for power stations	電站建設總承包	(6.8)	6.8
Comprehensive utilization and Renovation of boiler	鍋爐綜合利用改造	(5.7)	—

RENEWABLE ENERGY EQUIPMENT MANUFACTURING AND SERVICES

可再生能源設備製造及服務

Wind power products and services

風電產品及服務

Revenue

收入

Revenue attributable to the wind power products and services business decreased by approximately RMB947.8 million, or 43.3%, from approximately RMB2,188.5 million for the first half of 2020 to approximately RMB1,240.7 million for the first half of 2021. The decrease in the revenue was mainly because the wind turbines sold in the first half of 2020 are mainly sales contracts signed in 2018 and 2019, and under the impact of the "rush of installation tide", many projects were connected to the grid by the end of 2020, contributing to the relatively high revenue of the Company in the first half of 2020. Following the slow-down of the rush of installation tide of the wind power industry, the number of wind turbine sold during the first half of 2021 of the Group decreased.

風電產品及服務業務的收入從2020年上半年的約人民幣2,188.5百萬元減少至2021年上半年的約人民幣1,240.7百萬元，減少約人民幣947.8百萬元或43.3%。減少的主要原因是2020年上半年銷售的風機主要是2018年及2019年簽訂的銷售合同，受搶裝潮影響，大量項目集中搶在2020年底前併網，因此2020年上半年公司收入為較高水平。隨着風電行業搶裝潮回落，致使本集團2021年上半年風機銷售數量減少。

Cost of sales

銷售成本

Cost of sales attributable to the wind power products and services business decreased by approximately RMB642.0 million or 36.6%, from approximately RMB1,752.2 million for the first half of 2020 to approximately RMB1,110.2 million for the first half of 2021.

風電產品及服務業務的銷售成本從2020年上半年的約人民幣1,752.2百萬元減少至2021年上半年的約人民幣1,110.2百萬元，減少約人民幣642.0百萬元或36.6%。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Gross profit and gross profit margin

As a result of the foregoing factors, gross profit attributable to the wind power products and services business decreased by approximately RMB305.8 million or 70.1%, from approximately RMB436.3 million for the first half of 2020 to approximately RMB130.5 million for the first half of 2021. Gross profit margin for this business decreased significantly from 19.9% for the first half of 2020 to 10.5% for the first half of 2021. This is due to the timing difference between the delivery of the wind turbine turbines and the procurement and production of key components. Under the impact of the rush of installation tide, the shortage of key components of wind turbines such as gearboxes, blades, bearings led to a rise in its prices, which cause the cost of wind turbines in the first half of 2021 higher than the same period, and finally led the decrease of gross profit margin.

Liquidity and source of capital

The following table sets out the net cash flows of the Group for the six months ended 30 June 2021 and 2020:

毛利及毛利率

鑒於上述原因，風電產品及服務業務的毛利從2020年上半年的約人民幣436.3百萬元下降至2021年上半年的約人民幣130.5百萬元，減少約人民幣305.8百萬元或70.1%。此業務2021年上半年的毛利率為10.5%，比2020年同期的19.9%大幅下降。這是由於風機交付與關鍵部件的採購生產存在時差。在搶裝潮影響下，2020年風機關鍵部件如齒輪箱、葉片、軸承等短缺而導致其價格上漲，並最終導致2021年上半年風機成本高於同期，毛利率下降。

流動資金和資本來源

下表分別載列截至2021年和2020年6月30日止6個月，本集團的現金流量淨額：

		For the six months ended 30 June	
		截至6月30日止6個月	
		2021	2020
		(RMB million)	(RMB million)
		(人民幣百萬元)	(人民幣百萬元)
Net cash used in operating activities	經營活動使用的現金淨額	(1,865.2)	(600.3)
Net cash generated from/(used in) investing activities	投資活動產生/(使用的)現金淨額	386.8	(104.5)
Net cash generated from financing activities	籌資活動產生的現金淨額	448.9	1,462.7
Cash and cash equivalents as at 30 June	於6月30日的現金及現金等價物	3,343.7	3,903.1

Net cash used in operating activities

Net cash used in the Group's operating activities in the first half of 2021 was approximately RMB1,865.2 million, as compared to the net cash used in the Group's operating activities of approximately RMB600.3 million for the same period in 2020, which was mainly due to the significant increase in the payment of the Group for the procurement of wind power equipment and materials in this period.

經營活動使用的現金淨額

本集團2021年上半年經營活動使用的現金淨額約為人民幣1,865.2百萬元，而2020年同期則約為人民幣600.3百萬元。經營活動使用的現金流量淨額增加主要是由於本集團本期支付的風電設備材料採購款項大幅度增加導致。

Net cash generated from/(used in) investing activities

Net cash generated from the Group's investing activities in the first half of 2021 was approximately RMB386.8 million, as compared to the net cash used in the Group's investing activities of approximately RMB104.5 million for the same period in 2020. The increase in the net cash flow generated from investing activities was mainly due to the current structural deposits of the Group at maturity and the increase in cash received from the disposal of subsidiaries and equity investments.

投資活動產生/(使用的)現金淨額

本集團2021年上半年投資活動產生的現金淨額約為人民幣386.8百萬元，而2020年同期投資活動使用的現金淨額則約為人民幣104.5百萬元。投資活動產生的現金淨額增加，主要是由於本集團本期結構性存款到期及處置附屬公司和權益投資收到的現金增加。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Net cash generated from financing activities

Net cash generated from the Group's financing activities in the first half of 2021 was approximately RMB448.9 million, as compared to the net cash used in the Group's financing activities of approximately RMB1,462.7 million for the same period in 2020. It was mainly due to the decrease in debt financing.

Working capital

As at 30 June 2021, the Group's cash and cash equivalents were approximately RMB3,343.7 million, representing a decrease of approximately RMB1,029.5 million or 23.5%, as compared to approximately RMB4,373.2 million as at 31 December 2020. It was mainly due to the net cash outflow from operating activities.

The Group's liability-to-asset, which is calculated as total liabilities divided by total assets, decreased from 77.9% as at 31 December 2020 to 76.9% as at 30 June 2021.

Net liquidity

As at 30 June 2021, the net liquidity of the Group was approximately RMB2,498.4 million, representing an increase of approximately RMB1,421.2 million, as compared to the net liquidity of approximately RMB1,077.2 million as at 31 December 2020.

As at 30 June 2021, the Group's unutilized banking facilities was approximately RMB5,392.9 million, of which RMB2,900 million is subject to renewal within the next 12 months to meet its future capital commitments and other financial needs. The Directors believe that the Group will have the necessary liquidity to meet its working capital and capital expenditure requirements.

Inventory analysis

The inventories increased by approximately RMB63.2 million, or 1.3%, from approximately RMB4,908.2 million as at 31 December 2020 to approximately RMB4,971.4 million as at 30 June 2021. The increase was mainly attributable to the increase of work-in process and finished goods of environmental protection and energy conservation solutions segments due to the construction and production return to normal level.

Trade and bills receivables

Trade and bills receivables decreased by approximately RMB803.9 million or 9.3% from approximately RMB8,676.8 million as at 31 December 2020 to approximately RMB7,872.9 million as at 30 June 2021. This was primarily due to the decrease in receivables to contract projects and bills and trade receivables to products in current period.

籌資活動產生的現金淨額

本集團2021年上半年籌資活動產生的現金淨額約為人民幣448.9百萬元，而2020年同期籌資活動產生的現金淨額則約為人民幣1,462.7百萬元。主要是由於債務融資減少導致。

運營資金

於2021年6月30日，本集團的現金及現金等價物約為人民幣3,343.7百萬元，較2020年12月31日的約人民幣4,373.2百萬元減少約人民幣1,029.5百萬元或23.5%。主要是由於經營活動呈現現金淨流出狀態所致。

本集團的資產負債率，由總債務除以總資產計算得出，與2020年12月31日的77.9%相比，降低至2021年6月30日的76.9%。

流動資產淨額

於2021年6月30日，本集團流動資產淨額約為人民幣2,498.4百萬元，較2020年12月31日流動資產淨額約人民幣1,077.2百萬元增加約人民幣1,421.2百萬元。

於2021年6月30日，本集團未動用銀行授信約為人民幣5,392.9百萬元，其中人民幣2,900百萬元需於未來的12個月內續期，可滿足其未來資本承諾款項及其他財務需求。董事們認為，本集團將擁有必要的流動資金滿足其營運資金及資本開支要求。

存貨分析

本集團於2021年6月30日存貨約為人民幣4,971.4百萬元，較2020年12月31日的存貨約人民幣4,908.2百萬元增加約人民幣63.2百萬元或1.3%。主要是由於2021年上半年，環保及節能業務板塊施工恢復至正常水準，導致在產品和產成品增加所致。

應收賬款及票據

本集團於2021年6月30日的應收賬款及票據約為人民幣7,872.9百萬元，較2020年12月31日的約人民幣8,676.8百萬元減少約人民幣803.9百萬元或9.3%，主要是由於本期應收合同工程和銷售商品票據及應收款減少。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Deposits, prepayments and other receivables

The Group's deposits, prepayments and other receivables increased by approximately RMB296.7 million or 13.4%, from approximately RMB2,221.9 million as at 31 December 2020 to approximately RMB2,518.6 million as at 30 June 2021, which was mainly due to the disposal of subsidiaries which led to the increase of consideration receivables and advance from third parties.

Trade and bills payables

Trade and bills payables decreased by approximately RMB1,397.6 million or 13% from approximately RMB10,715.3 million as at 31 December 2020 to approximately RMB9,317.7 million as at 30 June 2021. This was primarily attributable to the gradual maturity of bills payable to material suppliers, and the payment for the procurement of wind power equipment and materials in the current period.

Indebtedness

As at 30 June 2021, the Group's total indebtedness decreased by approximately RMB87.2 million or 0.7% from approximately RMB11,968.5 million as at 31 December 2020 to approximately RMB11,881.3 million as at 30 June 2021.

All of the Group's borrowings are denominated in RMB.

The effective interest rate of the Group in the first half of 2021 (determined by dividing total interest expenses by the average of the sums of outstanding borrowings on 1 January 2021 and 30 June 2021) was approximately 3.9%, while the effective interest rate of the Group for the same period in 2020 was approximately 4.7%.

Secured assets

As at 30 June 2021, the secured long-term interest-bearing borrowings of the Group were pledged by the right to collect electricity charges in the future, the secured short-term interest-bearing borrowings of the Group were pledged by the patent right.

Contingent liabilities

The Group's contingent liabilities as at 31 December 2020 increased by approximately RMB6.7 million, or 0.4% from approximately RMB1,520.5 million as at 31 December 2020 to approximately RMB1,527.2 million as at 30 June 2021. The Group's contingent liabilities as at 30 June 2021 primarily were performance guarantees provided by the Group.

按金、預付款項及其他應收款項

本集團的按金、預付款項及其他應收款項從2020年12月31日的約人民幣2,221.9百萬元增加至2021年6月30日的約人民幣2,518.6百萬元，增加約人民幣296.7百萬元或13.4%，主要是由於處置附屬公司導致應收第三方的股權轉讓款和墊款增加所致。

應付賬款及票據

本集團於2021年6月30日的應付賬款及票據約為人民幣9,317.7百萬元，較2020年12月31日的約人民幣10,715.3百萬元減少約人民幣1,397.6百萬元或13.0%，主要是由於本集團應付材料供應商票據陸續到期，本期支付風電設備材料採購款項導致。

債項

本集團於2021年6月30日的總債項約為人民幣11,881.3百萬元，較2020年12月31日的約人民幣11,968.5百萬元減少約人民幣87.2百萬元或0.7%。

本集團所有借款都以人民幣計價。

本集團2021年上半年的實際利率(以總利息開支除以2021年1月1日與2021年6月30日的未償還借款的平均值釐定)約為3.9%，而本集團2020年同期的實際利率約為4.7%。

已抵押資產

於2021年6月30日，本集團抵押的長期帶息借款以未來期間的電費收款權作為質押，本集團抵押的短期帶息借款以專利權作為質押。

或有負債

本集團的或有負債從2020年12月31日的約人民幣1,520.5百萬元增加至2021年6月30日的約人民幣1,527.2百萬元，增加約人民幣6.7百萬元，或0.4%。本集團期末的或有負債主要為履約保函。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Investment for infrastructure and technological renovation

In the first half of 2021, the Group invested a total of RMB81.8 million, including RMB50.3 million for infrastructure, which was used for Wangkui Phase I wind power project, Shanghaimiao Phase II desulfurisation and denitrification franchise project, and desulfurisation and denitrification franchise project in Suizhou, Hubei; and RMB31.5 million for technological renovation, which was mainly used for the renovation and expansion of the workshops of wind turbine blades.

Material acquisition or disposal

Lucency entered into the equity transfer agreement (the "**Transaction Agreement**") with Goldwind Environmental Protection Co., Ltd. ("**Goldwind Environmental**") on 19 April 2021 pursuant to which Lucency agreed to dispose of, and Goldwind Environmental agreed to acquire, 70% of the equity interest in Guodian Galaxy Water Co., Ltd. at a consideration of RMB514,983,000. Please see the Company's announcement dated 20 April 2021 and circular dated 26 May 2021 for details, respectively.

On 16 June 2021, the Company, China Energy, Longyuan Power and United Power, a non wholly-owned subsidiary of the Company, entered into the Equity Transfer and Capital Injection Agreement (the "**Agreement**"), pursuant to which the Company conditionally agreed to dispose of approximately 15.68% equity interest in United Power to China Energy at a consideration of RMB407,681,944 (the "**Equity Transfer**"). Immediately upon completion of the Equity Transfer, China Energy and Longyuan Power will make capital injection of approximately RMB1,474,662,400 and RMB631,998,172 into United Power, respectively (the "**Capital Injection**"), which will result in a further dilution of the Company's equity interest in United Power to 30%. According to the Agreement, the Equity Transfer and the Capital Injection are part and parcel of each other and shall be completed simultaneously. Upon the completion of Equity Transfer and Capital Injection, United Power will become the associate of the Company from the subsidiary of the Company. On 16 July 2021, the first extraordinary general meeting of the Company for the year 2021 has approved the Agreement. Up to the date of this report, the Equity Transfer and the Capital Injection have not been completed, thus United Power is still the subsidiary of the Company. Please see the Company's announcement dated 16 June 2021 and the circular dated 30 June 2021 for details, respectively.

Save as disclosed above, the Group did not have any other material acquisition and disposal during the six months ended 30 June 2021.

基建及技改投資

2021年上半年，本集團完成投資金額共計人民幣81.8百萬元，其中，基建投資金額為人民幣50.3百萬元，用於望奎一期風電項目、上海廟二期脫硫脫硝特許經營及湖北隨州脫硫脫硝特許經營項目；技改投資金額為人民幣31.5百萬元，主要用於風機葉片廠房改擴建等。

重大收購或出售

朗新明於2021年4月19日與金風環保有限公司（「金風環保」）訂立產權交易合同（「交易合同」），據此，朗新明同意出售，而金風環保同意收購國電銀河水務70%股本權益，代價為人民幣514,983,000元。有關詳情請見本公司日期分別為2021年4月20日之公告及2021年5月26日之通函。

2021年6月16日，本公司，國家能源集團，龍源電力及本公司的非全資子公司聯合動力，訂立股權轉讓注資協議（「協議」），本公司有條件同意以人民幣407,681,944元的對價向國家能源集團出售聯合動力約15.68%的股權（「股權轉讓」）。緊接股權轉讓完成後，國家能源集團及龍源電力將分別向聯合動力注資約人民幣1,474,662,400元及人民幣631,998,172元（「注資」），導致本公司於聯合動力的股權進一步攤薄至30%。根據協議，股權轉讓及注資兩者不可分割，並應同時完成。股權轉讓及注資完成後，聯合動力將由本公司之附屬公司變為聯營公司。2021年7月16日，本公司2021年度第一次臨時股東大會審議通過了該協議。截至本報告日，股權轉讓和注資尚未完成，因此聯合動力仍然是本公司的附屬公司。有關詳情請見本公司日期分別為2021年6月16日之公告及2021年6月30日之通函。

除上述披露外，截至2021年6月30日止6個月內，本集團無任何其他重大收購或出售。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) 管理層討論與分析(續)

Risk Factors

The Group is exposed to various risks associated with its business operations, including credit and counterparty risks, interest rate risk, liquidity risk, exchange rate risk, risks affecting the power and related industries within the PRC generally and volatility risk relating to raw materials and components used in its production activities.

Credit and counterparty risks

The Group's credit risks is primarily attributable to its bank deposits, trade and bills receivable, deposits, prepayments and other receivables, contract assets and other non-current assets. The Group has an internal credit policy in place to monitor its exposure to its counterparty credit risk on an ongoing basis.

Substantially all of the Group's cash is deposited in state-owned or state-controlled PRC banking institutions. The Directors consider counterparty risks in transactions with PRC banks insignificant.

The Group performs credit evaluations on all of its customers, and monitors outstanding receivables due from such customers on an ongoing basis. The Group's credit evaluation focuses on a customer's payment history and his ability to pay and takes into account industry and customer-specific considerations, as well as the general macroeconomic circumstance. The Group generally requires its customers to settle progress billings and other debts in accordance with agreed contractual terms.

Interest rate risk

The Company has significant borrowings and its operational activities are significantly dependent on the availability of credit facilities at competitive rates. All of the Company's borrowings are denominated in RMB and are owed to PRC bank lenders and financial institutions, which are subject to adjustments in interest rates based on changes in the applicable regulations of the People's Bank of China. Accordingly, fluctuations in interest rates may have a significant impact on the Group's business, operations and financial conditions.

The Group does not currently hedge its interest rate risks through any derivative instruments or other hedging arrangements. The Board will continue to monitor the interest rate risks and will consider hedging potential material interest rate risks should the need arises.

Liquidity risk

The Group's objective is to ensure continuity of sufficient funding and flexibility by utilising a variety of bank loans and other borrowings with debt maturities spreading over a range of periods, thereby ensuring that the Group's outstanding borrowing obligation is not exposed to excessive repayment risk in any one year.

風險因素

本集團面臨著與其業務經營有關的多種風險，包括信貸和交易對手風險、利率風險、流動資金風險、匯率風險、普遍影響中國電力及相關產業的風險及與生產活動所用原材料和零件相關的波動風險。

信貸和交易對手風險

本集團信貸風險主要歸因於銀行存款、應收賬款及票據、按金、預付款項和其他應收款項、合同資產及其他非流動資產。本集團定有內部信貸政策，並以持續的方式對其交易對手方信貸風險進行監控。

基本上本集團所有現金都存於中國國有或國有控股的銀行機構中。董事認為在與中國銀行的交易中對手風險並不重大。

本集團對其所有客戶進行信用評估，並持續監控應該等客戶的未償還應收款項。本集團的信用評估注重客戶的付款記錄、付款能力，並考慮行業和客戶的具體因素，以及整體宏觀經濟環境。本集團一般要求其客戶按照合約協議條款支付進度付款和其他債務。

利率風險

本公司有重大借款，其經營活動顯著依賴於以具有競爭力的利率獲得信貸。本公司借款全部以人民幣計價，且都是向中國的貸款銀行和金融機構借貸，這些銀行和金融機構根據中國人民銀行的適用政策變化而調整其利率。因此，利率波動可能會對本集團的業務、營運和財務狀況產生重大影響。

本集團目前尚未通過任何衍生工具或其他對沖安排對沖其利率風險。董事會會持續監控利率風險，如有需要將考慮對可能產生的重大利率風險予以對沖。

流動性風險

為保證本集團具有足夠的連續資金以及資金靈活性，本集團採用多元化的銀行貸款及其他借款，債務到期日期較為分散，從而使本集團的還款義務不會過度地集中於任何一個年度。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

The Company is responsible for the Group's overall cash management and the raising of borrowings to cover expected cash demands. The Group's policy is to regularly monitor current and expected liquidity requirements to ensure that it maintains sufficient reserves of cash and adequate committed lines of funding from major financial institutions to meet its liquidity requirements in the short and longer term.

In order to enhance the Group's liquidity and solvency position, the Group has taken a series of measures and the Directors are satisfied that the Group will have necessary liquid funds to finance its working capital and capital expenditure requirements according to the Group's business plan and cash flow forecast. The Directors are of the opinion that the assumptions which are included in the cash flow forecast are reasonable. However, all assumptions, in regard to future events, are subject to inherent limitations and uncertainties and some or all of these assumptions may not be realised.

Exchange risk

The continued development and expansion of the Group's international operations are expected to result in increased exposure to exchange rate risk, arising primarily through export sales which would typically be denominated in foreign currencies. The Group expects that its future export sales will principally be denominated in either United States dollar, Euro or Hong Kong dollar. During the six months ended 30 June 2021, the Group's exchange gain was approximately RMB0.1 million. The Directors consider the exchange rate risk to be insignificant. The Group does not currently hedge its exchange rate risk.

The RMB is not a freely convertible currency, and the PRC government may at its discretion restrict access to foreign currencies for current account transactions in the future. Changes in such foreign exchange controls may adversely affect the Group's international operations and sales, and may prevent the Group from satisfying its foreign exchange denominated obligations. In addition, the Group may be restricted from paying dividends on its listed H-shares to shareholders by any such changes in regulations.

Material litigation

The Company was not involved in any material litigation or arbitration for the six months ended 30 June 2021.

本公司負責本集團的整體現金管理以及滿足所有現金需求的借款事宜。根據本集團的財務政策，本集團定期監控流動資金及預計流動資金的需求性，確保本集團具有足夠的現金儲備，並在主要金融機構中具有適當的資金承諾額度，從而滿足本集團長期以及短期的流動資金需求。

為了增強集團的資金流動性和償債能力，本集團已採取了多重措施。根據本集團的商業計劃和現金流量預測，公司董事同意本集團採用必要的流動資金為其運營資本和資本支出需求提供資金支持。本公司董事們認為，現金流預計的假設條件是合理的。然而，關於未來事件的所有假設條件本身均具有限制性及不確定性，某些或者所有此類假設條件均可能不會實現。

匯率風險

本集團國際業務的持續發展和擴張預計將導致其面臨的匯率風險增加，增加主要來自於通常以外幣計價的出口銷售。本集團預計其未來的出口銷售將主要以美元、歐元或港幣計價。本集團於截至2021年6月30日止6個月發生匯率收益約人民幣0.1百萬元。董事認為匯率風險不重大。本集團目前未對沖其匯率風險。

人民幣並不是自由兌換的貨幣，未來中國政府可能會酌情決定限制經常賬戶交易的外匯準入。對外幣兌換管控的變化可能會對本集團的國際業務和銷售帶來負面影響，也可能會限制本集團滿足其外匯計價義務。此外，由於任何該等法規變化，本集團向其股東支付上市的H股的股息可能會被限制。

重大訴訟

截至2021年6月30日止6個月，本公司並無涉及任何重大訴訟或仲裁。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) 管理層討論與分析(續)

Employees and Remuneration Policy

As at 30 June 2021, the Group had a total of 5,425 employees. The remunerations of employees comprise basic salary, performance payment and bonus payment. Performance payment is made with reference to the Company's financial results and the performance appraisal on the individual employee. The bonus payment is made with reference to the level of completion of the Company's annual major tasks.

Subsequent events

For the details of the Equity Transfer of United Power, please refer to the section of "Material acquisition or disposal" of this report.

On 11 August 2021, the Directors propose to obtain the a general and conditional mandate to be granted by the Shareholders for the possible disposal of up to 41,991,568 shares of Zhonghuan Semiconductor (i.e. half of the 83,983,137 shares of Zhonghuan Semiconductor held by the Group) on open market transactions on the Shenzhen Stock Exchange during the mandate period. Please see the Company's announcement dated 11 August 2021 for details.

As mentioned in the section of "Material acquisition or disposal" of this report, Lucency agreed to dispose of 70% equity interest in Guodian Galaxy Water to Goldwind Environmental, Guodian Galaxy Water has completed the changes in industrial and commercial registration on 7 June 2021. According to the Transaction Agreement, the debts owed by Guodian Galaxy Water to Lucency shall be repaid within one year from the effective date of the Transaction Agreement or pursuant to the terms of the relevant contracts pertaining to the aforesaid debts. On 25 August 2021, Lucency has received the financing debts of RMB370,000,000 from Guodian Galaxy Water.

員工及薪酬政策

於2021年6月30日，本集團共有5,425名員工。員工薪酬由基本工資、績效工資和獎勵工資組成，績效工資依據公司財務業績及員工個人的績效考核情況確定，獎勵工資依據公司年度專項重點工作完成情況確定。

期後事項

有關聯合動力股權出售的詳情請參考本報告「重大收購或出售」章節。

2021年8月11日，董事建議從股東取得一般及有條件授權，以便可能在授權期間於深圳證券交易所公開市場交易中出售本集團持有的最多41,991,568股中環股份之股份（即本集團持有83,983,137股中環股份之股份的一半）。有關詳情請見本公司日期為2021年8月11日之公告。

如本報告「重大收購或出售」章節提及的朗新明同意出售國電銀河水務70%股本權益給金風環保，銀河水務已於2021年6月7日完成工商變更登記。根據交易合同，國電銀河水務欠朗新明的債權需在交易合同生效日期起一年內或根據與債權相關合同條款償還。於2021年8月25日，朗新明已收到國電銀河水務償還的融資類債務人民幣370,000,000元。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED) 管理層討論與分析(續)

BUSINESS PROSPECT FOR THE SECOND HALF OF 2021

Focus on technological independence and self-reliance, and continue to boost corporate innovation

First, accelerate the implementation of technological innovation guidance, and gradually form a new technological R&D system "crossing industries, sectors and businesses" based on the technological development plan of the "14th Five-year Plan". Second, accelerate the improvement of technological innovation system and mechanism and focus on the profound management of research projects to carry out fine management of technological projects in the whole process. Continuously promote the coordination mechanism for major technological projects, instill a process management concept based on milestone point control, and step up on execution efficiency of projects. Third, accelerate the promotion of technological R&D and implement the R&D layout of "a generation for use, a generation under R&D and a generation for reservation". Fourth, strengthen the promotion of major technological projects.

Develop the market effectively, and endeavor to enhance market competitiveness

First, actively play the role of coordination for major scientific and technological projects as well as major engineering projects, and earnestly implement and follow up major projects. Second, comprehensively deepen the integrated development strategy to reveal the achievements of previous strategic cooperation and effectively promote the implementation of projects. Third, actively expand the integrated energy business, such as sludge disposal and incremental distribution network, strengthen internal coordination of the company, and realize the overall implementation of the integrated energy projects. Fourth, conduct in-depth research on the transformation of digital marketing, gradually implement the overall digital management process including project tracking, bidding and implementation, and continuously consummate the digital marketing communication network.

Pay closer attention to asset operation and effectively consolidate the foundation of high-quality development

Develop the new energy operation business by the following means. First, exert efforts to promote the substantial progress of the de facto invested projects and carry forward the construction of the Wangkui Wind Power Project Phase I in a methodical manner. Second, make reasonable arrangements to keep up the great work in the renewable energy projects, and ensure that the wind power and PV projects will be approved. Third, further strengthen its refined management level and comprehensively promote the standardization of project construction.

2021年下半年業務展望

聚焦科技自立自強，持續提升企業創新力

一是加快實施科技創新引領，以「十四五」科技發展規劃為綱，逐步形成「跨行業、跨板塊、跨業務」的新型科技研發體系；二是加快完善科技創新體制機制，以在研項目深度管理為抓手，開展全過程科技項目精細化管理。持續推進重大科技項目協調機制，樹立以里程碑節點控制為基準的過程管理理念，提升項目執行效能；三是加快推動科技研發，落實「使用一代、研發一代、儲備一代」的研發佈局；四是加大重大科技項目推進力度。

切實抓好市場開拓，努力增強市場競爭力

一是積極發揮重大科技項目協調機制和重大工程項目協調機製作用，切實抓好重大項目跟蹤與落實；二是全面深化一體化發展戰略，深入挖掘前期戰略合作成果，切實推進項目落實落地；三是積極拓展污泥處置、增量配網等綜合能源業務，強化公司內部協同，以點帶面實現綜合能源項目落地；四是深入研究數字化營銷轉型，逐步實現銷售項目跟蹤、投標、執行全過程數字化管理，不斷完善數字化營銷傳播網絡。

切實抓好資產運營，有效夯實高質量發展基礎

發展新能源運營業務，一是推動已投資項目取得實質進展，有序推進望奎一期風電項目建設；二是合理佈局，做好新能源項目儲備工作，確保跟蹤的風電、光伏項目獲得核准；三是進一步加強精細化管理水平，全面推進項目建設標準化。

CORPORATE GOVERNANCE

企業管治

The Company has been committed to improving the standard of its corporate governance, which is considered as an essential part to the creation of values for shareholders. The Company has established a modern corporate governance structure, which comprises a number of independently-operated and effectively-balanced bodies, including general meetings of shareholders, the Board of Directors (the “**Board**”), the Board of Supervisors and senior management, by referring to the code provisions as set out in the “Corporate Governance Code and Corporate Governance Report” in Appendix 14 to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited (the “**Listing Rules**”). The Company has adopted the “Corporate Governance Code” as its own corporate governance practices.

The Group had established a standardized and sound corporate governance structure in accordance with the applicable laws and regulations, as well as the requirements of domestic and offshore regulatory authorities, including the “Company Law of the PRC”, “Securities Law of the PRC”, the Listing Rules, and having considered the Company's actual situation, continued its efforts to maintain a high standard of corporate governance with a view to maximize shareholders' benefits in the long term.

(1) Compliance with the Corporate Governance Code

The Group is dedicated to adhering to a high standard of corporate governance, and adopts the best practices for corporate governance set forth in Appendix 14 to the Listing Rules under appropriate circumstances. For the six months ended 30 June 2021, the Group had complied with the principles and code provisions in the “Corporate Governance Code” in Appendix 14 to the Listing Rules.

To promote the long-term and steady development of the Group, the Group has been standardizing its structure of corporate governance based on relevant laws and regulations in the PRC, the requirements of the Stock Exchange, and other regulatory requirements, and has been improving the standard of its corporate governance.

(2) Compliance with the Model Code for Securities Transactions by Directors and Supervisors of the Listed Companies

The Company has adopted a code of conduct prepared in accordance with the “Model Code for Securities Transactions by Directors of Listed Issuers” (“**Model Code**”) set out in Appendix 10 to the Listing Rules as the code of conduct regarding transactions involving securities of the Company by the Directors and Supervisors. The Company has made specific enquiries to all of its Directors and Supervisors, each of whom confirmed that he or she had complied with requirements of the Model Code for the six months ended 30 June 2021. To ensure compliance with the relevant requirements under the Listing Rules and to protect Shareholders' interests, the Board will examine the corporate governance practices and the operations of the Company from time to time.

本公司致力於提升企業管治水平，認為良好企業管治能為股東創造更大價值，本公司參照香港聯合交易所有限公司證券上市規則（「**上市規則**」）附錄十四所載《企業管治守則》及《企業管治報告》所載的守則條文，建立了由股東大會、董事會（「**董事會**」）、監事會及高級管理層等獨立運作、有效制衡的現代公司治理架構。本公司亦採納《企業管治守則》作為本公司的企業管治常規。

本集團按照《中華人民共和國公司法》、《中華人民共和國證券法》、上市規則等相關法律法規和境內外監管機構的規定，結合本公司實際情況已建立規範、完善的公司管治結構，並不斷致力於維持高水平的公司管治以提高股東的長遠利益。

(1) 遵守《企業管治守則》

本集團矢志堅守高水平企業管治，並在適當的情況下採納上市規則附錄十四所載的最佳公司治理常規。截至2021年6月30日止6個月內，本集團一直遵守上市規則附錄十四所載的《企業管治守則》的原則和守則條文。

為了促進本集團長遠、穩定發展，根據中國相關的法律、法規、聯交所的要求以及其他監管要求，本集團不斷規範公司治理結構，不斷提升公司治理水平。

(2) 遵守上市公司董事及監事進行證券交易的標準守則

本公司已採納根據上市規則附錄十《上市發行人董事進行證券交易的標準守則》（「**標準守則**」）而制定的操守守則，作為董事及監事進行涉及本公司證券交易的操守守則。本公司對所有董事及監事作出明確查詢後，截至2021年6月30日止6個月內，全體董事及監事均確認嚴格遵守《標準守則》所訂之標準。董事會將不時檢查本公司的公司治理及運作，以確保符合上市規則有關規定並保障股東的利益。

CORPORATE GOVERNANCE (CONTINUED) 企業管治(續)

(3) Audit Committee

The Group established the Audit Committee (“**Audit Committee**”) according to the Listing Rules, the responsibilities of which include providing suggestions to the appointment, re-appointment and dismissal of external independent auditors, and monitor their work; monitoring completeness, accuracy and impartiality of the financial statements of the Company and the Company’s annual report and interim report and reviewing significant financial reporting opinions contained in them; reviewing the Company’s financial control, internal control and risk management system. The Company has appointed an adequate number of independent non-executive directors with appropriate professional qualification, or appropriate accounting or related financial management expertise according to the Listing Rules. The Audit Committee consisted of two independent non-executive directors and one non-executive director, the members of the Audit Committee are Mr. Yeung Chi Tat (chairman of the Audit Committee, independent non-executive director), Mr. Zhang Wenjian (non-executive director) and Mr. Shen Xiaoliu (independent non-executive director). The Audit Committee has reviewed the unaudited interim report of the Group as at and for the six months ended 30 June 2021 and the unaudited interim financial statements for the six months ended 30 June 2021 prepared in accordance with International Accounting Standard 34 Interim Financial Reporting (“**IAS 34**”).

(4) Disseminating Information through the Internet

In order to enhance the standard of corporate governance and transparency, the Group uses its website (www.01296.hk) as a media to publish information. The Group implements procedures to review information to be published on its website and also monitors its website to ensure that all published information is up-to-date and accurate.

(5) Overseas Regulatory Announcement

As Longyuan Technology, a subsidiary of the Company, is a company listed on the Shenzhen Stock Exchange, the Company has complied with the relevant requirements regarding overseas regulatory announcement in accordance with Rule 13.10(B) of the Listing Rules.

Furthermore, as the corporate bonds of the Company are listed on the Shanghai Stock Exchange, the Company has complied with the relevant requirements regarding overseas regulatory announcement in accordance with Rule 13.10(B) of Listing Rules in this regard.

(3) 審計委員會

本集團已根據上市規則的規定成立審計委員會(「**審計委員會**」)，職責包括就外聘獨立核數師的委任、重新委任及罷免向董事會提出建議，並監督他們的工作；監察本公司財務報表、本公司賬目、年度報告和中期報告的完整性、準確性和公正性，並審查其中重要的財務報告意見；審查本公司的財務控制、內部控制和風險管理系統等。本公司已根據上市規則的規定委任足夠數目、並具備適當的專業資格、或具備適當的會計或相關財務管理專長的獨立非執行董事。審計委員會由兩名獨立非執行董事及一名非執行董事組成。審計委員會委員分別為：楊志達先生(審計委員會主席，獨立非執行董事)、張文建先生(非執行董事)和申曉留先生(獨立非執行董事)。審計委員會已審閱於2021年6月30日及截至該日止6個月本集團未經審核的中期報告，以及按照《國際會計準則》第34號「中期財務報告」的規定編製的截至2021年6月30日止6個月的未經審核中期財務報表。

(4) 互聯網信息發佈的管理工作

為提升企業管治水平和增加企業透明度，本集團將其網站(www.01296.hk)作為發佈信息的媒介，制定程序審閱即將登載在互聯網上的信息，同時監察本集團網站，以確保所有公佈的資料都是最新和正確的。

(5) 海外監管市場公告

由於本公司的附屬公司龍源技術是一家深圳證券交易所的上市公司，本公司已根據上市規則第13.10(B)條遵守關於海外監管公告的相關規定。

此外，由於本公司的公司債券於上海證券交易所上市，本公司已根據上市規則第13.10(B)條遵守關於海外監管公告的相關規定。

(6) Risk Management and Internal Control

The Company places prime importance on risk management and internal control. An internal control system has been established to protect the Shareholders' and the Company's interests.

The Board is responsible for the internal control and risk management systems of the Company and its subsidiaries, reviewing and approving significant policies and reviewing the effectiveness of the internal control and risk management systems. Such systems are designed to mitigate risks inherent in our business faced by the Group to an acceptable level, but not eliminating all risks. Accordingly, such systems can only provide reasonable and not absolute assurance against material misstatement in financial information or financial loss.

Internal Control

The Company has set up a set of internal control rules, including "Rules and Procedures of the General Meeting", "Rules and Procedures of the Board Meeting", "Rules and Procedures of the Supervisor Meeting", "Terms of References for the Strategic Committee of the Board", "Terms of References for the Audit Committee of the Board", "Terms of References for the Nomination Committee of the Board", "Terms of References for the Remuneration and Appraisal Committee of the Board", "Provisions on Information Disclosure", "Administrative Measures on Connected Transactions", "Administrative Measures on Comprehensive Risk", "Internal Control Principle Policy" and "Administrative Measures on Compliance", etc..

The Company has also established the Finance and Property Department, the Enterprise Management Department, the Audit Department and the Discipline Inspection Committee Office (Party Committee Inspection Office) and has sufficient personnel in each department in charge of financial operations, risk management, internal auditing and anti-corruption work. Besides, the Company has provided regular training to the Group's employees whose duties relate to finance, risk management and internal auditing so as to ensure that they are well qualified and experienced.

(6) 風險管理及內部控制

本公司高度重視風險管理及內部控制工作，已建立了一套內部控制體系，以保障股東利益和本公司利益。

董事會對本公司及其附屬公司的內部監控及風險管理系統負有責任，審閱及批准重大政策以及檢討內部監控及風險管理系統的有效性。該等系統旨在緩解本集團在業務中面臨的內在風險至可接受的程度，而非消除所有風險。因此，該等系統僅對可防範財務資料中的重大失實陳述或財務損失提供合理而非絕對保證。

內部控制

本公司建立了一套內部控制制度，包括《股東大會議事規則》、《董事會議事規則》、《監事會議事規則》、《董事會戰略委員會工作細則》、《董事會審計委員會工作細則》、《董事會提名委員會工作細則》、《董事會薪酬與考核委員會工作細則》、《信息披露事務管理規定》、《關連交易管理辦法》、《全面風險管理辦法》、《內部控制基本制度》及《合規管理辦法》等相關制度。

本公司設立有財務產權部、企業管理部、審計部和紀委辦公室(黨委巡察辦)，並為各個部門配備了充足的人員，負責財務運作、風險管理、內部審計、反腐敗等具體工作。此外，本公司已定期為本集團內部負責財務、風險管理、內部審計的員工提供培訓，確保其擁有足夠的資質和經驗。

CORPORATE GOVERNANCE (CONTINUED) 企業管治(續)

Each department of the Company is able to smoothly submit to the Board the information required. Being the most senior point of contact for each department of the Company, the President has the duty to effectively report to the Board in relation to the operations of each department, and to coordinate and mobilize the demands of each department to promote reasonable decision-making within the Company. The Audit Committee is responsible for reviewing the financial control, internal control and risk management systems of the Company; discussing the internal control system with the management to ensure that the management has fulfilled its duties to establish an effective internal control system; taking the initiatives or appointed by the Board to make researches on important findings of and the management's responses on internal control matters.

The Group communicated in time on the identified flaws of significant internal control and carefully assessed the potential risks. The department which was in charge of the supervision put forward corrective actions, and obtained the approval from the leadership prior to its implementation. Leadership and the Audit Department monitored its implementation to ensure monitoring flaws solved timely and properly.

Risk Management

System construction: At present, the Group's comprehensive risk management system pilot construction has completed "three bases, two handbooks, one report, one standard" (that is, risk information database, risk case database, risk index database, risk operation handbook and internal control handbook, internal control evaluation standard and internal control evaluation report), initially realizing the standardization and systematization of risk management and internal control.

Architectural construction: The Group's overall risk management system has extended laterally to every department horizontally and vertically to every affiliate. The Board is the highest decision-making organization in respect of overall risk management. The director of each department is responsible for organizing and carrying out daily work in respect of comprehensive risk management. The Company has set up a leadership group for the construction of risk management system led by the General Manager and composed members of the heads of departments, and also established an overall risk management leadership group at every specific unit, clearly defining the management responsibilities at all levels.

本公司每個部門都能將需要呈交董事會的信息順暢呈交。總經理作為與本公司各部門的最高對接口，有責任將各部門的運作有效地呈報董事會，並配合及調動各部門的需求，推動本公司內部的合理決策。審計委員會負責審查公司的財務控制、內部控制及風險管理制度；與管理層討論內部控制系統，確保管理層已履行職責確立有效的內部控制系統；主動或應董事會的委派，就有關內部控制事宜的重要調查結果及管理層的回應進行研究。

本集團及時就所識別的重大內部監控瑕疵進行溝通，並審慎評估潛在風險。身為監控責任人的部門提出糾正措施，並於實施前獲得領導層批准。領導層及審計部監察實施情況，確保及時妥善解決監控瑕疵。

風險管理

制度建設：目前本集團的全面風險管理體系試點建設已完成了「三庫、兩冊、一報告、一標準」(即風險信息庫、風險案例庫、風險指標庫、風險操作手冊和內部控制手冊、內控評價標準及內部控制評價報告)的編製，初步實現風險管理和內部控制的標準化與體系化。

體系建設：本集團的全面風險管理體系橫向到部門，縱向到各附屬公司。董事會是全面風險管理的最高決策機構，各部門主任負責組織開展全面風險管理日常工作，成立了以總經理為組長、各部門負責人為成員的風險管理體系建設領導小組；同時在附屬公司成立以總經理為組長的全面風險管理領導小組，明確各級管理職責。

CORPORATE GOVERNANCE (CONTINUED) 企業管治(續)

Work implementation:

In the first half of 2021, from the aspects of optimizing the total risk management system, enhancing the working mechanism, strengthening monitoring and early warning, etc., the Company continued to strengthen the mechanism construction, organize annual risk assessment, quarterly risk analysis, and monthly risk monitoring, intensify major risk management and special risk prevention, conscientiously consolidate the results of risk management, keep driving the organic integration of risk management and business management, gradually improve the risk management capabilities, and strengthen the Company's consistent enhancement of operation and management.

Based on the analytic hierarchy process and performing statistics on the results based on different levels and weights, the major risks of the Company in 2021 are: health, safety and environment risk, marketing risk, cash flow risk, operating benefit risk, and reform and business transformation risk. In consideration of the major risks such as strategic implementation risk, legal risk and international operation risk assessed at the level of China Energy, the Group adopts an active identification mechanism focusing on monitoring, timely correction and prevention at all management levels, which covers eight major risks. The Company has worked out the pre-event, mid-event and post-event response measures for the eight major risks, and ensured that the major risks are under control and controllable by regularly summarizing the management of them.

In order to enhance the risk management consciousness of all the staff and promote the conscientiousness and initiative of all staff to participate in risk management, the Group also fostered the risk management culture of participation of all the staff and created good atmosphere of risk management by enhancing risk management knowledge training and multi-channel and multi-media publicity.

In the first half of 2021, the Group carried out internal control evaluation on affiliated companies through independent implementation, covering all major aspects such as financial monitoring, operation monitoring, compliance monitoring and risk management, and promoted the group-wide construction of a comprehensive risk management system. The Group holds a meeting once a year to discuss risk management and internal control system to ensure that the management has fulfilled its duties of establishing an effective system. The Board believes that the Group's current internal control system is effective and adequate, and that the Group has sufficient resources in accounting and financial reporting functions, staff qualifications and experience, staff training plan, and relevant budgets. The Board will continuously monitor the Group's risk management and internal control system.

工作實施：

2021上半年從優化全面風險管理體系、健全完善工作機制、加強監控預警等方面，不斷加強機制建設，組織開展年度風險評估、季度風險分析、月度風險監控，強化重大風險治理和專項風險防範，認真鞏固風險管理工作成果、持續推動風險管理與業務管理的有機融合，風險管理能力逐漸提高，助力本公司經營管理水平持續提升。

本公司2021年風險評估採用層次分析法，按不同層級和權重對結果進行統計，確定公司本年度重大風險分別為：健康安全環保風險、市場營銷風險，現金流風險、經營效益風險和改革與業務轉型風險。結合國家能源集團層面識評估出的戰略實施風險、法律風險和國際化經營風險等重大風險點，本集團全管理級次開展重點監控及時糾偏、預防為主的主動識別的工作機制，共八個重大風險點。本公司針對八個重大風險點制定了相應的事前、事中、事後的應對措施，通過對八個重大風險點管理情況週期性的匯總，確保重大風險在控、可控。

為增強全員風險管理意識，提升全員參與風險管理的自覺性、主動性，本集團還通過加大風險管理知識培訓和多渠道、多媒體宣貫，營造風險管理的良好氛圍，培育全員參與的風險管理文化。

2021年上半年本集團通過自主實施的方式，對附屬公司開展全覆蓋式內部控制評價工作，評價範圍涵蓋財務監控、運作監控、合規監控及風險管理等各項重大方面，並在全集團範圍內推廣全面風險管理體系建設工作。本集團每年召開一次會議討論風險管理及內部監控系統，確保管理層已履行職責建立有效的系統。董事會認為本集團目前的內部監控體系是有效及足夠的，並認為本集團在會計及財務匯報職能方面的資源、員工的資歷和經驗以及員工培訓計劃及有關預算方面是足夠的。董事會將持續監控本集團的風險管理及內部監控系統。

CORPORATE GOVERNANCE (CONTINUED) 企業管治(續)

Management of Inside Information

In order to promote fairness, transparency, accountability and responsibility, which are the core principles of good corporate governance, the Group notifies the Stock Exchange and discloses to Shareholders and other holders of its listed securities the Group's inside information in a timely manner pursuant to the Listing Rules and Part XIV A of the Securities and Futures Ordinance ("SFO").

In order to monitor and regulate potential insider trading activities and ensure the confidentiality of inside information, the Company has established a set of Management Rules on Inside Information of Guodian Technology & Environment Group Corporation Limited in accordance with the Company Law of the PRC, SFO, Listing Rules and other applicable laws and regulations and the requirements of the articles of association. The management of the registration of inside information shall be the responsibility of the Board of Directors; the secretary of the Board of Directors shall organize the implementation of the registration of inside information; the Department of Securities Financing and Legal Affairs (the office of the Board of Directors) ("**the office of the Board of Directors**") shall be responsible for the judgment and disclosure of inside information and improve the management over the registration management of insiders of inside information; and all the departments and subsidiaries shall report matters that may involve inside information to the office of the Board. Once the inside information involves disclosure requirements and has the conditions for disclosure, an announcement will be issued in a timely manner according to the applicable information disclosure procedures and the obligation to disclose information will be fulfilled.

(7) Connected Transaction Management

In order to strengthen the Company's management of connected transactions, the Company has established the "Management Rules on the Conduct of Connected Transactions of Guodian Technology & Environment Group Corporation Limited" and designated the office of the Board of Directors and Finance and Property Division for the management of connected transactions. In order to ensure that the Company's connected transactions are carried out in accordance with the relevant rules and regulations and that the aggregated transaction amounts do not exceed the annual caps, the Company has notified all the departments and subsidiaries regarding the applicable continuing connected transaction caps, allocated monitoring obligations to specific departments and subsidiaries, and required the relevant departments and subsidiaries to report to the senior management regarding the connected transactions without delay. The Group has provided regular training to internal staff in relation to connected transactions from time to time, and has designated specialized personnel to report information to ensure full compliance with the relevant Listing Rules.

內幕消息管理

為推行良好公司管治的核心原則，即公正、透明、問責及負責，本集團會適時根據上市規則及《證券及期貨條例》第XIVA部向聯交所、股東及其上市證券的其他持有人披露本集團的內幕信息。

為監管和規範潛在內幕交易行為，確保內幕信息保密工作，本公司根據《中華人民共和國公司法》、《證券及期貨條例》、上市規則等有關法律法規及《公司章程》的規定，制定《國電科技環保集團股份有限公司內幕信息管理辦法》。內幕信息的登記管理工作由董事會負責，董事會秘書組織實施，由董事會的日常辦事機構證券融資與法律事務部(董事會辦公室)(「**董事會辦公室**」)負責內幕信息的判斷及披露工作，完善內幕信息知情人的登記管理，由各部門及附屬公司向董事會辦公室報送可能涉及內幕信息的事項。一旦內幕信息觸及披露要求、具備披露條件時，將按照信息披露程序及時發佈公告，履行信息披露義務。

(7) 關連交易管理

為強化本公司的關連交易管理，本公司已建立《國電科技環保集團股份有限公司關連交易管理辦法》，並指定董事會辦公室及財務產權部管理關連交易。為確保本公司關連交易乃根據適用條例和法規實施以及交易總額不超過年度上限，本公司已將適用持續關連交易上限通告所有部門及附屬公司，將監控職責落實到各部門及附屬公司，並要求相關部門及附屬公司將涉及的關連交易及時向高級管理層報告。本集團為內部員工提供不時培訓，並指定專人負責信息報送，以確保完全遵守相關上市規則。

OTHER INFORMATION

其他資料

Review of Interim Report

The Audit Committee of the Company has reviewed the Company's interim report. The interim financial report for the six months ended 30 June 2021 was unaudited, but was reviewed by Ernst & Young, in accordance with Hong Kong Standard on Review Engagements 2410 "Review of interim financial information performed by the independent auditor of the entity", issued by the Hong Kong Institute of Certified Public Accountants. A copy of such unmodified review report is included in this interim report.

Share Capital

As at 30 June 2021, the total issued share capital of the Company was RMB6,063,770,000, divided into 6,063,770,000 shares of RMB1.0 each, including 4,754,000,000 domestic shares and 1,309,770,000 H shares. There had been no change in the share capital of the Company during the six months ended 30 June 2021.

Purchase, Sale or Redemption of the Company's Listed Securities

Neither the Company nor any of its subsidiaries had purchased, sold or redeemed any shares of the Company for the six months ended 30 June 2021.

Material Litigation

For the six months ended 30 June 2021, the Company has not been involved in any material litigations or arbitrations.

Interim Dividend

The Board does not recommend the payment of any interim dividend for the six months ended 30 June 2021.

Share Option Scheme

The Company did not adopt any share option scheme

Changes of Information of Directors, Supervisors and Chief Executive

As at the date of this interim report, there is no change of information of the Directors, Supervisors or Chief Executive of the Company which shall be disclosed pursuant to Rule 13.51B(1) of the Listing Rules.

中期報告審閱

本公司審計委員會已對本公司的中期報告進行了審閱。截至2021年6月30日止6個月的中期財務報告未經審核，但已由安永會計師事務所按照香港會計師公會所頒佈的《香港審閱工作準則》第2410號「獨立核數師對中期財務資料的審閱」進行審閱，其不附修訂結論的審閱報告已載列於本中期報告內。

股本

於2021年6月30日，本公司已發行股本總數為人民幣6,063,770,000元，分為6,063,770,000股每股面值人民幣1.0元的股份，其中內資股4,754,000,000股及H股1,309,770,000股。在截至2021年6月30日止6個月期間，本公司股本並未發生變化。

購買、出售或贖回本公司上市證券

截至2021年6月30日止6個月，本公司及其附屬公司並未購買、出售或贖回任何本公司的股份。

重大訴訟

截至2021年6月30日止6個月，本公司並無涉及任何其他重大訴訟或仲裁。

中期股息

董事會建議不派發截至2021年6月30日止6個月的任何中期股息。

購股權計劃

本公司並無採納任何購股權計劃。

董事、監事及最高行政人員資料變動

截止本中期報告日期止，本公司無有關董事、監事及本公司行政總裁之任何資料變動須根據上市規則第13.51B(1)條規定須予披露。

OTHER INFORMATION (CONTINUED) 其他資料(續)

Interests and Short Positions of the Directors, Supervisors and Senior Management in the Shares, Underlying Shares and Debentures

None of the Directors, Supervisors and senior management of the Company had any interests or short positions in the shares, underlying shares and debentures of the Company or any of its associated corporations (within the meaning of Part XV of the SFO) which would have to be notified to the Company and the Stock Exchange pursuant to Divisions 7 and 8 of Part XV of the SFO (including interests or short positions which they were taken or deemed to have under such provisions of the SFO) or which were required, pursuant to Section 352 of the SFO, to be registered in the register referred to therein, or which would fall to be disclosed to the Company and the Stock Exchange pursuant to the Model Code.

Substantial Shareholders' Interests in the Shares

As at 30 June 2021, to the best knowledge of the Directors, the following persons had interests or short positions in the shares or underlying shares of the Company which would fall to be disclosed to the Company pursuant to Divisions 2 and 3 of Part XV of the SFO (the table has been updated according to the records of CCASS and the latest information in the Company's possession):

董事、監事及高級管理人員於股份、相關權證及債券的權益及淡倉

本公司各董事、監事及高級管理人員概無在本公司或其任何相聯法團(定義見《證券及期貨條例》第XV部)的股份、相關股份或債權證中擁有任何根據《證券及期貨條例》第XV部第7及8分部須知會本公司及聯交所的權益或淡倉(包括根據《證券及期貨條例》的該等條文被當作或視為擁有的權益或淡倉)，或根據《證券及期貨條例》第352條登記於該條所指登記冊的權益或淡倉，或根據《標準守則》須知會本公司及聯交所的權益或淡倉。

主要股東於股份之權益

於2021年6月30日，就董事所知，下列人士於本公司股份或相關股份中擁有根據《證券及期貨條例》第XV部第2及3分部須向本公司披露之權益或淡倉(該表已根據中央結算系統持股記錄及本公司掌握最新情況更新)：

Name of Shareholders	Class of Share	Capacity	Number of Shares/ Underlying Shares Held 持有股份/ 相關股份數目 (Share) (股)	Percentage in the Relevant Class of Share Capital ⁽¹⁾ 佔有關股本類別 之百分比 ⁽¹⁾ %	Percentage in the Total Share Capital ⁽¹⁾ 佔股本總數 之百分比 ⁽¹⁾ %
China Energy 國家能源集團	Domestic shares 內資股	Interests of beneficial owner and controlled corporation 實益擁有人及受控公司之權益	4,754,000,000 ⁽²⁾ (Long position) (好倉)	100.00	78.40
Guodian Power Development Co., Ltd. ("Guodian Power") 國電電力發展股份有限公司(國 電電力)	Domestic shares 內資股	Interests of beneficial owner 實益擁有人之權益	2,376,500,000 ⁽²⁾ (Long position) (好倉)	49.99	39.19
Mr. YAN Andrew Y. 閻焱先生	H shares H股	Interests of controlled corporation 受控公司之權益	288,200,000 ⁽³⁾ (Long position) (好倉)	22.00	4.75
SAIF IV GP Capital Ltd.	H shares H股	Interests of controlled corporation 受控公司之權益	288,200,000 ⁽³⁾ (Long position) (好倉)	22.00	4.75

OTHER INFORMATION (CONTINUED) 其他資料(續)

Name of Shareholders 股東姓名／名稱	Class of Share 股份類別	Capacity 身份	Number of Shares/ Underlying Shares Held 持有股份／ 相關股份數目 (Share) (股)	Percentage in the Relevant Class of Share Capital ⁽¹⁾ 佔有關股本類別 之百分比 ⁽¹⁾ %	Percentage in the Total Share Capital ⁽¹⁾ 佔股本總數 之百分比 ⁽¹⁾ %
SAIF IV GP, L.P.	H shares H股	Interests of controlled corporation 受控公司之權益	288,200,000 ⁽³⁾ (Long position) (好倉)	22.00	4.75
SAIF Partners IV L.P.	H shares H股	Interests of beneficial owner 實益擁有人之權益	288,200,000 ⁽³⁾ (Long position) (好倉)	22.00	4.75

Notes:

附註：

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| <p>(1) This percentage is calculated on the basis of the number of underlying shares/total shares that had been issued by the Company as at 30 June 2021. As at 30 June 2021, the total number of shares of the Company is 6,063,770,000, of which 4,754,000,000 shares are domestic shares and 1,309,770,000 shares are H shares.</p> <p>(2) As of June 30, 2021, China Energy has 46.00% of the interests in the total shares of Guodian Power and Guodian Power has 49.99% of the domestic shares of the Company. Therefore, China Energy is holding an aggregate of 4,754,000,000 domestic shares in the Company directly or indirectly, which represent approximately 78.40% of the Company's total issued share capital, and is the controlling shareholder of the Company.</p> <p>(3) Mr. YAN Andrew Y. indirectly held 22.00% interest in the H shares of the Company via SAIF Partners IV L. P. through SAIF IV GP Capital Ltd. and SAIF IV GP, L.P. Mr. YAN Andrew Y. is the controlling shareholder of SAIF IV GP Capital Ltd., SAIF IV GP LP, and SAIF Partners IV L. P. SAIF IV GP Capital Ltd. is the controlling shareholder of SAIF IV GP, L.P., which is the controlling shareholder of SAIF Partners IV L.P.. SAIF Partners IV L.P. held 22.00% interest in the H shares of the Company. Therefore, Mr. YAN Andrew Y., SAIF IV GP Capital Ltd. and SAIF IV GP, L.P. are deemed to be interested in the H shares of the Company held by SAIF Partners IV L.P.</p> | <p>(1) 該百分比是以本公司於2021年6月30日已發行的相關股份數目／總股份數目為基礎計算。於2021年6月30日，本公司之股份總數為6,063,770,000，其中4,754,000,000股為內資股，1,309,770,000股為H股。</p> <p>(2) 於2021年6月30日，國家能源集團於國電電力股份總額中擁有46.00%的權益，國電電力擁有本公司49.99%的內資股。因此，國家能源集團直接或間接持有本公司4,754,000,000股內資股，約佔本公司已發行總股本的78.40%，為本公司控股股東。</p> <p>(3) 閻焱先生透過SAIF IV GP Capital Ltd.及SAIF IV GP LP經SAIF Partners IV L.P.間接持有本公司22.00%的H股。閻焱先生是SAIF IV GP Capital Ltd.、SAIF IV GP LP以及SAIF Partners IV L.P.的控股股東。SAIF IV GP Capital Ltd.是SAIF IV GP LP的控股股東。SAIF IV GP LP是SAIF Partners IV L.P.的控股股東。SAIF Partners IV L.P.擁有本公司22.00%的H股。因此，閻焱先生、SAIF IV GP Capital Ltd.以及SAIF IV GP LP被視作為擁有SAIF Partners IV L.P.所持有本公司H股的權益。</p> |
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OTHER INFORMATION (CONTINUED) 其他資料(續)

Construction of Rule by Law

Under the guidance of Xi Jinping's Thought on Socialism with Chinese Characteristics for a New Era, and in accordance with the requirements of China Energy's constructing enterprises ruled by law, the Company promotes the construction of rule by law. The Company has established securities financing and legal affairs department, and the Group is equipped with more than 30 full-time and part-time legal personnel and has a team responsible for rule by law with high quality and professionalism.

The Company continues to strengthen legal reviews, takes it as the core, establishes a legal review mechanism in respect of the major decisions involving legal issues, economic contracts, rules and regulations, and has achieved 100% legal review rate. The Company has established a database of model contracts, and, through the standardization of commonly used model contracts, assisted subsidiaries in improving the quality of contract signing. For major dispute cases with large amount and complicated details, the Company will appoint special personnel to closely follow up and manage them and participate in case discussion and strategy research. Moreover, the Company strengthens the "Seventh Five-year Plan" law popularization, brings constitution learning into the learning contents of the Company management, carries on the publicity of law popularization to all the staff and creates the atmosphere of the rule by law by means of organizing law lectures, publishing general knowledge about law, etc.

Employees and Remuneration Policy

For details of the employees and remuneration policy, please refer to the section headed "Employees and Remuneration Policy" in page 35 of this report.

法治建設

本公司以習近平新時代中國特色社會主義思想為指導，按照國家能源集團法治企業建設要求，推進法治建設工作。本公司已設立證券融資與法律事務部，本集團配備專兼職法律工作人員30餘人，擁有一支專業素養強、水平高的法治工作隊伍。

本公司不斷強化法律審核把關，將法律審核融入中心工作，建立對涉及法律問題的重要決策、經濟合同、規章制度的法律審核機制，實現法律審核率100%。本公司建立有合同範本庫，通過規範常用合同範本，協助附屬公司提高簽約質量。金額較大、案情複雜的重大糾紛案件委派專人密切跟蹤管理，參與案件討論及處理策略研究。同時，加大「七五」普法工作力度，將憲法學習納入本公司管理層學習內容，通過組織法律講座、發佈法律小知識等方式對全體員工進行普法宣傳，營造法治氛圍。

員工及薪酬政策

有關員工及薪酬政策的詳情，請見本報告第35頁「員工及薪酬政策」一節。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

環境、社會及管治報告

Since its establishment, the Group has been attaching great importance to business operation and the sustainable development of the society and environment, making use of the Company's advantages of technology and environmental protection, actively putting the corporate vision of "Green Technology for A Better World" into practice, and incorporating such conception in the day-to-day operation activities.

自成立以來，本集團一直重視企業經營和社會、環境的可持續發展，利用科技環保企業的優勢，積極踐行「綠色科技全球共享」的企業願景，將這種觀念融入日常經營活動中。

1. Energy Conservation, Environmental Protection and Green Development

1. 節能環保綠色發展

1.1 Exploit the Advantages and Promote the Environmental Industry

1.1 發揮優勢推進環保行業發展

The Group, focusing on two major core business segments, i.e., environmental protection and energy conservation solutions, renewable energy manufacturing and services, was committed to the development direction of efficient and clean use of energy, and made outstanding contributions to the development of green energy.

本集團圍繞環保與節能解決方案、可再生能源製造及服務兩大核心業務板塊，堅持能源高效、清潔利用的產業發展方向，為發展綠色能源做出了傑出貢獻。

1.1.1 Segment of Environmental Protection and Energy Conservation Solutions

1.1.1 環保與節能解決方案分部

Environmental Protection Business

環保業務

Desulfurisation and denitrification: In the first half of 2021, Longyuan Environmental Protection carried out technical transformation on 6 desulfurisation units with a total capacity of 1,570 MW and 13 denitrification units with a total capacity of 5,780 MW. Longyuan Environmental Protection put into operation desulfurisation units of thermal power plants with an installed capacity of 278 million KW and flue gas denitrification units with an installed capacity of 197 million KW.

脫硫脫硝：2021年上半年，龍源環保對6臺容量共1,570兆瓦機組脫硫裝置及13臺容量共5,780兆瓦機組脫硝裝置進行了技術改造。龍源環保累計投運火電廠脫硫裝置裝機容量2.78億千瓦，煙氣脫硝裝置裝機容量1.97億千瓦。

As of 30 June 2021, the total installed capacity of desulfurisation concession projects belonging to Longyuan Environmental Protection was 15,740 MW, that of desulfurisation concession plus operation and maintenance projects was 37,970 MW, and that of denitrification concession projects was 12,540 MW. In the first half of 2021, the total utilization hours of thermal power concession projects were 2,513 hours, the SO₂ emission reduction of concession desulfurisation projects reached 194,100 tons, the SO₂ emission reduction of concession operation and maintenance projects reached 623,100 tons, and the NO_x emission reduction of concession denitrification projects reached 29,600 tons.

截至2021年6月30日，龍源環保所屬脫硫特許經營項目的總裝機容量為15,740兆瓦，脫硫特許經營加運維護項目共37,970兆瓦，脫硝特許經營項目的總裝機容量為12,540兆瓦。2021年上半年，火電特許項目累計完成利用小時2,513小時，特許脫硫項目減排二氧化硫量達到了19.41萬噸，特許加運維護項目減排二氧化硫量達到了62.31萬噸，特許脫硝項目減排氮氧化物2.96萬噸。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

Low NOx combustion: In the first half of 2021, Longyuan Technology built two new boiler combustion nitrogen reduction devices, and put 588 boilers into operation with an installed capacity of 170 million KW. According to about 4,216 average operating hours of thermal power in China in 2020, the emission reduction of NOx was about 337,000 tons in the first half of 2021.

Sewage treatment: As of 30 June 2021, there were 4 sewage treatment plants (stations) operated by Lucency, involving sewage and reclaimed water operations, with a treatment capacity of 200,000 tons/day. As of 30 June 2021, 95.2078 million tons of sewage (including reclaimed water and supplied water) were treated, and the half-year emission reduction of COD (chemical oxygen demand) was 21,600 tons.

Business of Energy Conservation Solutions

Energy conservation: In the first half of 2021, Longyuan Energy Conservation signed 10 new contracts for saving 225,000 tons of standard coal.

Longyuan Technology's fuel-saving ignition products continued to maintain the leading position in the industry, and Longyuan Technology was the only enterprise in the industry with overseas plasma ignition performance. The company continuously optimized the design of miniaturized plasma ignition system, continuously reduced the system cost and enhanced the product competitiveness. Plasma ignition technology has been successfully applied to 913 sets of equipment, with an installed capacity of 400 million kilowatts, a global market share of nearly 90%, and a cumulative fuel saving of over 10 million tons.

低氮燃燒：2021年上半年，龍源技術新建鍋爐燃燒降氮裝置2臺爐，累計投運588臺爐，裝機容量1.7億千瓦。按照2020年全國火電平均運行小時數約4,216小時計算，2021年上半年減排氮氧化物約33.7萬噸。

污水處理：截至2021年6月30日，朗新明運營的污水處理廠(站)有4座，涉及污水、中水運營業務，處理能力20萬噸/天。截至2021年6月30日，處理污水(含中水、供水)9,520.78萬噸，COD(化學需氧量)半年減排量為2.16萬噸。

節能解決方案業務

能源節約：2021年上半年，龍源節能新簽合同10項，新增節約標煤22.5萬噸。

龍源技術節油點火產品繼續保持行業領先地位，是行業內唯一擁有海外等離子體點火業績的企業。該公司持續進行小型化等離子體點火系統設計優化，不斷降低系統成本，提升產品競爭力。等離子點火技術成功應用於913臺設備，裝機容量達4億千瓦，全球市場佔有率近90%，累計節油超千萬噸。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

1.1.2 Renewable Energy Equipment Manufacturing and Service

WTG Products and Services

CO₂ emission reduction: In the first half of 2021, 124 wind turbines were produced by United Power, with a total capacity of 411.2 MW. United Power produced and sold 12,900 wind turbines, with a total capacity of 22,405 MW. According to the 2,097 average operating hours of wind power in China in 2020, in the first half of the year, about 1.509 million tons of standard coal were saved, and about 4.298 million tons of CO₂, 129,000 tons of SO₂, 65,000 tons of NOx and 1.173 million tons of soot were reduced. In the first half of the year, the cumulative wind and photovoltaic power generation of the Group's Chifeng Dayuying Wind and Photovoltaic Power Plant was 176.3049 million kWh, which is equivalent to 176,000 tons of greenhouse gas CO₂ emission reduction.¹

1.1.3 Internationalized Development

At the same time, based on the well-known brand effect, scientific project management and good quality reputation, the Group has steadily made inroads into the international market. The plasma ignition devices of the Company have entered the markets of South Korea, Russia, Indonesia, Turkey, Zimbabwe and Taiwan, etc. The wind turbine equipment of the Company has entered the markets of the United States and South Africa. Its seawater desulfurization devices have entered the markets of Sri Lanka, Philippines, Bangladesh, Cambodia and Indonesia, and its environmental protection devices have entered the markets of Vietnam, Indonesia and Taiwan. Its automatic control systems and engineering services have entered the markets of India, Indonesia, Pakistan and Africa. Its engineering services and water treatment have entered the market in Bangladesh and Pakistan.

1.1.2 可再生能源製造及服務

風機產品及服務業務

二氧化碳減排：2021年上半年，聯合動力生產風機124臺，合計411.2兆瓦。聯合動力累計產銷風機1.29萬臺，合計22,405兆瓦。按照2020年全國風電平均運行小時數2,097小時考慮，上半年節約標煤約150.9萬噸，減排二氧化碳約429.8萬噸，減排二氧化硫約12.9萬噸，減排氮氧化物約6.5萬噸，減排煙塵約117.3萬噸。本集團赤峰大於營風光電場上半年累計風力和光伏發電17,630.49萬千瓦時，相當於減排溫室氣體二氧化碳17.6萬噸。¹

1.1.3 國際化發展

同時，本集團憑藉著名的品牌效應、科學的項目管理及良好的品質信譽穩步邁向國際市場。等離子體點火裝置進入韓國、俄羅斯、印尼、土耳其、津巴布韋及中國台灣地區等市場。風機設備進入美國及南非市場。海水脫硫進入斯里蘭卡、菲律賓、孟加拉、柬埔寨及印尼市場，環保設備進入越南、印尼及中國台灣地區市場。自動化控制系統及工程服務進入印度、印尼、巴基斯坦及非洲市場。工程服務和水處理進入孟加拉、巴基斯坦市場。

¹ According to the latest authoritative data that can be obtained by the public: China Electricity Council's 2021 Annual Development Report of China Electric Power Industry, in 2020, the national emissions of electric power soot, CO₂ and NOx were about 155,000 tons, 780,000 tons and 874,000 tons respectively, down 15.1%, 12.7% and 6.3% respectively from the previous year; the emissions of soot, SO₂ and NOx per unit thermal power generation were 0.032g/kWh, 0.16g/kWh and 0.179g/kWh respectively, down 0.006g/kWh, 0.027g/kWh and 0.016g/kWh respectively from the previous year.

¹ 根據可公開獲取的最新權威數據：中電聯《中國電力行業年度發展報告2021》，2020年全國電力煙塵、二氧化碳、氮氧化物排放量分別約為15.5萬噸、78.0萬噸、87.4萬噸，分別比上邊年下降15.1%、12.7%、6.3%；單位火電發電量煙塵、二氧化硫、氮氧化物排放分別為0.032克/千瓦時、0.16克/千瓦時、0.179克/千瓦時，分別比上年下降0.006克/千瓦時、0.027克/千瓦時、0.016克/千瓦時。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

1.2 Energy-saving and Consumption-reducing to Build an Economical Enterprise

As an advanced environmental protection service enterprise, in its development process, the Group strictly complies with the Environmental Protection Law of the People's Republic of China, Energy Conservation Law of the People's Republic of China and other applicable laws and regulations, and requires its subsidiaries to reasonably and effectively use energy to reduce the cost, take improving the comprehensive benefit as the management target and establish their own energy-saving management system on the basis of their own business characteristics, including the Energy Conservation and Consumption Reduction Management System developed by United Power, and the Resource and Energy Conservation Management System developed by Chifeng Wind Power. The scope of these systems cover power saving, fuel saving, water saving and other management measures, and implementing the management of energy conservation and consumption reduction according to health, safety and environment management system ("HSE Management System"). By virtue of rules and regulations, the Group effectively stimulated saving actions, restrained waste, and continuously optimized the external and internal environment for the construction of a conservation-oriented enterprise, thus forming a long-term mechanism for resource conservation and ensuring continuous deepening of the construction of a conservation-oriented enterprise.

1.2.1 Energy Management

The Group's energy consumption in the production and operation processes mainly includes: power, gasoline, diesel and natural gas, etc. Power was mainly consumed in the production processes of wind turbines, blades, desulfurization catalysts and other products; commissioning of large automation systems and other equipment; running of project construction lighting system, motors and welding machines; operation of the wind farm equipment and office power supply, etc. Gasoline was mainly consumed in the use and maintenance of commercial vehicles and equipment inspection and repair vehicles. Diesel was mainly consumed by vehicles that transport wind turbines, blades, desulfurization catalysts and so on, and during the running of power station diesel generators. Natural gas was mainly consumed by the blade production workshop for heating and paint baking, and the canteen of the Company for preparing daily food.

1.2 節能降耗建設節約型企業

本集團作為先進的環保服務企業，在發展中嚴格遵守《中華人民共和國環境保護法》、《中華人民共和國節約能源法》等法規，要求各附屬公司合理、有效地利用能源降低成本，提高綜合效益為管理目標，結合自身業務特點制定節能管理制度：聯合動力制定有《節能降耗管理制度》，赤峰風電制訂有《資源及能源節約使用管理制度》，內容涵蓋節電、節油、節水等管理措施，並根據健康、安全、環境三位一體管理體系（「HSE管理體系」）要求實施節能降耗管理。本集團通過制度有效地激勵節約，遏止浪費，不斷優化建設節約型企業的外部 and 內部環境，從而形成節約資源的長效機制，保證節約型企業建設工作持續深入開展。

1.2.1 能源管理

本集團在生產運營過程中消耗的能源主要包括：電、汽油、柴油和天然氣等。電耗主要來自於風機、葉片及脫硫催化劑等產品生產過程；大型自動化控制系統等設備調試；項目施工照明、電動機和電焊機運轉；風電場設備運行和辦公室用電等。汽油消耗主要來自於商務車和設備檢修車使用和維護。柴油消耗主要來自於風機、葉片及脫硫催化劑等產品運輸車輛和電場柴油發電機運轉。天然氣消耗主要來自於葉片生產車間取暖及烤漆，以及公司食堂日常餐飲使用。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

Each subsidiary of the Group, in order to strictly implement the energy management system, has established relevant responsible departments to manage energy and developed its energy management plan according to its own actual conditions. For example, Jiangsu Longyuan Catalyst Co., Ltd. (“**Longyuan Catalyst**”) conducted the daily statistics of electricity and steam consumption, analyzed abnormal dosage, and found out the reason to solve it in time. The company continuously optimized the furnace firing control, reduced the furnace production power consumption.

1.2.2 Water Resource Management

The water consumed by the Group and each subsidiary is mainly the production water for technological process, equipment cleaning, etc., domestic water for catering, toilets, bathroom, etc., and water for lawns and fire control. The Group has not identified significant risks of water shortages in terms of seeking suitable sources of water.

According to the requirements of the Company's water resource management system, the Group Office is responsible for the water resource management of the Group. In respect of water conservation, the Group mainly takes the following measures: to raise employees' awareness of water conservation by training and education; to increase the recovery and utilization of wastewater, for example, the industrial wastewater from desulfurization catalyst plant after the removal of pollutants can be used as the water for ammonia scrubber and steam condensate water can be used in production process and mixing pit cleaning and washing; to strengthen daily maintenance and management of water consuming equipment; to maintain the damaged water supply facilities in time; to regularly inspect and replace water supply apparatus such as tap, pipe valve and flushing valve, etc.

各附屬公司為嚴格執行能源管理制度，均設立相關責任部門進行能源管理工作，並根據各附屬公司具體情況制定管理方案。例如江蘇龍源催化劑有限公司(「**龍源催化劑**」)每天統計電和蒸汽的消耗量，對用量異常進行分析，查明原因及時解決。並不斷優化窯爐燒成控制，持續降低窯爐生產電耗。

1.2.2 水資源管理

本集團及各附屬公司主要耗水產生在工藝及清洗設備等生產用水，餐飲、廁所及澡堂等生活用水及澆灌草坪和消防用水等。在求取適用水源方面，本集團尚未發現水資源短缺的重大風險。

根據公司水資源管理制度的要求，本集團辦公室負責本集團水資源管理工作。在節約用水方面，本集團的主要措施包括：培訓及宣傳提高員工節約用水意識；提高廢水的回收利用，例如脫硫催化劑廠區工業廢水經去除污染物後可用作氨洗滌塔的補水，蒸汽冷凝水可用於生產工藝流程和混煉地坑清潔沖洗等；加強用水設備的日常維護和管理，及時維修損壞的供水設施，定期檢查更換水龍頭、管道閥門及沖水閥等供水器具。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

1.2.3 Use of Packaging Materials

The packaging waste produced during the operation of the Group includes woven fabric, carton, plastic film, fixed steel supporting structure, wooden box, batten, ceramic fiber product and winding film, etc.

Every subsidiary of the Group, in respect of the management of packaging materials, has established relevant management rules and regulations, such as the Packaging Materials Management System developed by United Power, the Packaging Use Management System developed by Longyuan Electrical, and the Management System for the Use of Packaging Materials developed by Longyuan Catalyst. These systems cover procurement management, goods warehousing acceptance, storage and keeping, material requisition and replacement of old production consumables with the new ones and so on.

1.3 Being Clean and Environment-friendly, Reducing Pollutant Emission

The Group strictly abides by the Environmental Protection Law of the People's Republic of China, Law on the Prevention and Control of Environmental Pollution by Solid Wastes of the People's Republic of China, Air Pollution Prevention and Control Law of the People's Republic of China and other applicable laws and regulations. The Company strives to reduce the impact of various kinds of waste on the environment, strictly regulates waste emission management, and reasonably carries out recycling and utilization and safe disposal of waste with the ultimate goal of reducing waste emission. In the first half of 2021, there were no environmental violations that had a significant impact on the Group.

1.2.3 包裝物使用

本集團運營過程中產生的包裝廢棄物包括：編織物、紙箱、塑膠薄膜、固定支撐鋼結構、木箱、木方、陶瓷纖維製品及纏繞膜等。

本集團各附屬公司針對包裝材料的管理，制定了相關管理制度，如聯合動力制定的《包裝材料管理制度》，龍源電氣制定的《包裝使用管理制度》、龍源催化劑制定的《包裝物的使用管理制度》等，內容包括採購管理、物品入庫驗收、倉庫保管、物料領用及生產耗材的以舊換新等制度。

1.3 清潔環保減少污染物排放

本集團嚴格遵守《中華人民共和國環境保護法》、《中華人民共和國固體廢物污染環境防治法》、《中華人民共和國大氣污染防治法》等法規，高度重視各類廢棄物對環境的影響，嚴格規範廢棄物的排放管理，以減少廢棄物排放為最終目標，合理開展廢物回收利用和安全處置工作，2021年上半年，未發生對本集團有重大影響的環境違規事件。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

1.3.1 Hazardous Waste Management

The main hazardous waste produced in the production and operation of the Group includes waste lubricant, grease, coolant, emulsion, hydraulic oil, vacuum pump oil, waste paint barrel, waste circuit board and waste toner, ink cartridge and scrapped office electronics, etc..

In terms of the above hazardous waste, every subsidiary of the Group establishes relevant management rules and regulations, such as the Waste Management System developed by Longyuan Catalyst, the Management Methods for Solid Waste developed by Guoneng Zhishen and the Implementation Rules for Waste Management developed by Chifeng Wind Power. The relevant department of each subsidiary is responsible for the specific management of waste.

1.3.2 Non-hazardous Waste Management

The non-hazardous waste produced in the operation of the Group includes domestic waste, sludge produced in the production process of sewage treatment plants, steel scrap and iron chip produced by mechanical processing, packaging waste and industrial sewage pollutant from the production of catalysts.

For example, steel scraps and iron chips produced by mechanical processing are stored in designated areas and managed by designated personnel, and are regularly handed over to metal recovery units for recycling and reuse. The sludge of the wastewater treatment plant is dewatered first, then composted or landfilled after the moisture content fell below 80%.

1.3.1 有害廢棄物管理

本集團在生產運營中產生的主要有害廢棄物包括：廢潤滑油、潤滑脂、冷卻液、乳化液、液壓油、真空泵油、廢油漆桶、廢電路板及辦公產生的廢硒鼓、墨水匣、報廢的辦公電子產品等。

針對以上有害廢棄物，本集團各附屬公司建立相關的管理制度和辦法，如龍源催化劑制訂的《廢棄物管理制度》，國能智深制訂的《固體廢棄物管理辦法》，赤峰風電編製的《廢棄物管理實施細則》等，並由各附屬公司相關部門負責廢棄物的具體管理。

1.3.2 無害廢棄物管理

本集團在運行過程中產生的無害廢棄物包括：生活垃圾、污水處理廠生產過程中產生的污泥、鋼材下腳料和機械加工產生的鐵屑、包裝廢棄物及催化劑生產的工業污水污染物。

如將鋼材下腳料和機械加工產生的鐵屑存放在指定區域，設專人管理，定期交由金屬回收單位進行回收再利用。污水廠的污泥先進行脫水處理，含水率降至80%以下後進行堆肥或填埋處理。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

1.3.3 Exhaust Gas Management

The Group produces a small amount of waste gas during its operation, including SO₂², NO_x³, particulate matter⁴ and VOCs (non-methane total hydrocarbons, benzene, toluene and xylene).

In the process of blade surface painting, United Power produces a small amount of VOCs process waste gas, mainly including non-methane total hydrocarbons, benzene, toluene and xylene, which are tested regularly every year, and all the test results meet the standards; when producing wind power blades in winter, it is necessary to burn natural gas in the spray booth to heat and dry the paint on the blade surface, which will produce natural gas combustion waste gas in this process. The main components in waste gas include particulate matter, SO₂ and NO_x. In the manufacturing process of wind power blades, it is necessary to cut and polish the semi-finished blades after solidification, which will produce particulate matter. After being collected and treated, waste gas can meet the emission standards of air pollutants before being discharged into the atmosphere.

1.3.3 廢氣管理

本集團在運營過程中會產生少量的廢氣，包括：二氧化硫、氮氧化物、顆粒物和VOCs(非甲烷總烴、苯、甲苯、二甲苯)。

聯合動力在葉片表面塗裝過程中，產生少量VOCs工藝廢氣，主要包括非甲烷總烴、苯、甲苯、二甲苯，每年進行定期檢測，檢測結果全部達標；在冬季生產風力發電葉片時，需要在噴烤漆房中燃燒天然氣加熱，將葉片表面塗裝漆烘乾，在此過程中會產生天然氣燃燒廢氣。廢氣中的主要成分包括：顆粒物、二氧化硫和氮氧化物。在風力發電葉片生產製造過程中，需對固化成型後的葉片半成品進行切割打磨修整，會產生顆粒物。廢氣經收集處理後，可滿足大氣污染物排放標準排放入大氣。

2. Employee Care and Common Growth

The Group always insists that employees are the most precious wealth and the source for the sustainable development of the enterprise. Therefore, the Group actively creates favorable conditions for the career development and physical and mental health of the employees.

2.1 Employment, Remuneration and Welfare

According to the relevant laws and regulations and relevant regulations of China Energy, the Group has established a clear and transparent human resources system, including more than 40 human resources systems such as organization establishment, personnel management, salary management, labour employment, education and training, and cadre management. In the first half of 2021, the Personnel Department (Human Resources Department) formulated and revised four systems, including the Interim Measures for Salary Management of the Ministry (Fourth Edition), Regulations on Organization Management, Guiding Opinions for Graduates of Enterprises in Beijing to Stay in Collective Dormitories (Trial), and Administrative Measures for the Introduction of Scientific and Technological Talents (Trial).

² SO₂ mainly came from the tail gas emitted from company vehicles.

³ The emission of NO_x mainly came from the production of United Power, excluding the emission of tail gas.

⁴ The emission of particulate matters mainly came from the production of United Power and Longyuan catalyst, excluding vehicle exhaust emission.

2. 關愛員工共同成長

本集團始終堅信員工是最寶貴的財富，是企業可持續發展的源泉，積極為員工的事業發展和身心健康創造良好的條件。

2.1 員工僱傭及薪酬福利

依據相關法律法規及國家能源集團相關規定，本集團建立了清晰透明的人力資源制度，包括機構編製、人事管理、薪酬管理、勞働用工、教育培訓、幹部管理等人力資源制度40餘項。2021年上半年，本部組織人事部(人力資源部)制定及修訂了《本部薪酬管理暫行辦法(第四版)》《組織機構管理規定》《在京企業應屆畢業生入住集體宿舍指導意見(試行)》《科技人才引進管理辦法(試行)》等4項制度。

² 二氧化硫主要來自於公司車輛使用的尾氣排放。

³ 氮氧化物主要來自於聯合動力生產排放，不包含車輛尾氣排放。

⁴ 顆粒物主要來自於聯合動力和龍源催化劑生產排放，不包含車輛尾氣排放。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED) 環境、社會及管治報告(續)

As of 30 June 2021, the Group had 5,425 employees, 2,368 managers, 1,494 technicians, 1,529 skilled operators and 34 other employees; 3,800 male employees, accounting for 70% of the total number of employees, and 1,625 female employees, accounting for 30%; about 38% of female employees in management; 2,383 employees aged 35 and below, accounting for 43.9% of the total number of employees, 1,947 employees aged 36–45, accounting for 35.9%, 882 employees aged 46–55, accounting for 16.3%, and 213 employees aged over 56, accounting for 3.9%; except for one employee who works in Hong Kong, the other 5,424 employees were in mainland China.

Employ according to Laws

In terms of staff employment, the Group insists on the principle of employment according to law. In accordance with Labor Law of the PRC, Labor Contract Law of the PRC and other applicable laws and regulations, the Group has strictly managed employment and formulated the Measures Governing Employment and Appointment (Tentative), etc., so as to practically protect the legal rights and interests of employees.

In terms of avoiding child labor and forced labor, the Group improves staff employment system and eliminates entirely illegal employment according to the applicable national rules and regulations: It checks the identity information of staff according to the national Regulations For bidding the Use of Child Workers, effectively avoiding child labor; Employment Contract entered into with staff sets forth "The fixed-time work system is executed; the average weekly working hours shall not be more than 40 hours and the daily working hours shall not be more than 8 hours", effectively protecting the legal rights and interests of the staff and avoiding the phenomenon of forced labor. At the same time, the Group advocates equal employment policy and provides equal employment opportunities and labor security for employees of different nationalities, races, genders, religious beliefs and cultural backgrounds. In the first half of 2021, there were no labor disputes caused by violation of laws and regulations.

截至2021年6月30日，本集團共有員工5,425人，管理人員2,368人，技術人員1,494人，技能操作人員1,529人，其他僱員34人；男性員工3,800人，佔員工總數的70%，女性員工1,625人，佔30%；管理層中，女性約佔38%；35歲及以下員工2,383人，佔員工總數的43.9%，36-45歲員工1,947人，佔35.9%，46-55歲員工882人，佔16.3%，56歲以上員工213人，佔3.9%，年齡構成比較合理；除1位員工在香港辦公外，其餘5,424名員工均在中國大陸。

依法僱傭

本集團在員工僱傭方面堅持依法僱傭的原則，按照國家《勞動法》及《勞動合同法》等相關法律法規的要求嚴格僱傭管理，制訂了《用人用工管理辦法(試行)》等，切實保障員工的合法權益。

在防止僱傭童工和強制勞工方面，我們依據國家相關規定完善用工制度，從源頭上消除違規隱患：嚴格按照國家《禁止使用童工規定》的要求核定員工身份資訊，有效地避免了童工問題；在與員工簽訂的《勞動合同書》中，約定「執行定時工作制，平均每週工作不超過四十小時，每天工作不超過八小時」，有效地保障了員工合法權益，避免出現強制勞動現象。同時，本集團宣導平等用工政策，為不同國籍、種族、性別、宗教信仰和文化背景的員工提供平等的就業機會和勞動保障。2021年上半年未發生因違法違規引起的勞動糾紛。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

Remuneration Management

In order to adapt to the requirements of the transformation and development, the Group has established and improved the total wages management system orienting market value and based on performance evaluation. According to the applicable national regulations and the relevant measures of China Energy, the Group has established and implemented Interim Measures Governing Total Payroll and Interim Measures for the Management of Annual Salary System for Enterprise Leaders, standardized salary payment, laid emphasis on value creation and the principle of “more pay for more work”.

Welfare System

The Group has established various systems in respect of social insurance, housing fund, enterprise annuity and supplementary medical insurance in strict accordance with the applicable policies and regulations of the national and local governments to ensure employees to be treated equally in terms of endowment, medical treatment, and work-related injury, unemployment and birth and other aspects in accordance with the law. In the first half of 2021, no social insurance violations and defaults of payment occurred.

The Group schedules the working hours and leaves of staff in accordance with the applicable national regulations, and implements the system of paid annual leave. The Group formulated the relevant management measures to implement the relevant policies of the State Council and China Energy and to actively solve the problem of employees visiting relatives in different places for long term.

2.2 Occupational Health and Safety Guarantee

The Group always regards the occupational health and safety protection of employees as the top priority, and always strictly enforces the applicable laws and regulations, such as the Work Safety Law of the PRC and the Law of the PRC on the Prevention and Control of Occupational Diseases, etc., and continuously improves and perfects the work environment management and occupational health and safety management system.

Health Protection

The main occupational hazards of the Group include dust, noise, welding soot, toxic and harmful chemical substances. All relevant subsidiaries set up occupational disease prevention and control leading groups to supervise the implementation of occupational disease prevention and control measures, provide effective personal protection equipment (PPE)

薪酬管理

為適應轉型發展的要求，本集團建立和完善了以市場價值為導向、以績效考核為基礎的工資總額管理體系，根據國家有關規定和國家能源集團相關辦法，制定並施行《工資總額管理暫行辦法》及《企業領導人員年薪制管理暫行辦法》，規範薪酬支付，突出價值創造及多勞多得導向原則。

福利制度

本集團嚴格按照國家和地方政府有關政策法規建立了各項社會保險、住房公積金、企業年金和補充醫療保險制度，確保員工在養老、醫療、工傷、失業及生育等方面依法享有平等的權利。2021年上半年未發生任何社會保險違規及欠繳現象。

本集團依照國家規定安排員工工作時數及休假，並實施帶薪年假制度。通過制定相關管理辦法落實國務院及國家能源集團的相關政策，積極解決員工同親屬長期遠居兩地的探親問題。

2.2 職業健康及安全保障

本集團始終視員工的職業健康和安全保障為重中之重，一貫嚴格執行國家《安全生產法》及《職業病防治法》等相關法律法規，不斷健全和完善工作環境管理和職業健康安全體系。

健康保護

本集團主要的職業病危害包括粉塵、雜訊、電焊煙塵及有毒有害化學物質等，各有關附屬公司均成立了職業病防治領導小組，監督職業病防治措施的落實，配備有效個人防護用品，監督勞動者在上崗時配戴。定期由合作

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

and supervise the workers to wear the personal protection equipment in work. The occupational hazard factors in the factory shall be tested by a third-party testing organization at regular intervals. The Group has established the before-work and after-work occupational disease notification system, and made full use of occupational disease notification board to strengthen the knowledge publicity and education in respect of occupational disease. All units voluntarily accepted the supervision and inspection of occupational health supervision agencies, and promptly corrected problems according to the opinions and suggestions put forward by occupational health supervision agencies. The Group organizes occupational health inspections of relevant workers every year, strengthens inspection and maintenance of workplaces with occupational disease hazards, ensures the normal operation of occupational disease protection facilities and carries out before-post, on- post and after-post physical check. The occupational care and health monitoring archives have been established, with one archive for one person. In the first half of 2021, no occupational disease incident occurred in the Group, and the coverage rate of occupational health examination was 100%.

Safety Guarantee

At present, the Group has established 34 safety production related systems, mainly including Safety Production Management Regulations, Safety Production Responsibility System, Safety Education and Training System, etc., and established a Safety Production Management Committee to ensure the implementation of the safety system.

In the first half of 2021, the headquarters of the Group carried out two major safety inspections in spring and safety month, covering seven tertiary company headquarters, four production projects, 12 infrastructure projects and six manufacturing projects. A total of 419 potential safety hazards were investigated and eliminated in time. In the first half of the year, the headquarters held two safety committee meetings.

In the first half of 2021, both of the number of work-related deaths and the death rate for employees of the Group were 0.

2.3 Employee Care and Team Building

In the course of driving the reform and shaping the culture, the Group adheres to the people-oriented management concept, eliminates the worries for the employees, provides care for the employees, and lays the foundation for the harmonious, stable and healthy development of the enterprise.

廠商檢測機構對廠區職業危害因素進行檢測。建立班前班後職業病告知制度，並充分利用職業病告知牌，加強職業病知識宣傳、教育。各單位自覺接受職業衛生監督機構的監督檢查，對監督部門提出的意見和建議，及時予以改正。本集團每年組織相關勞動者的職業健康檢查，加強對有職業病危害因素作業場所的檢查維護，保證職業病防護設施正常運轉，並進行崗前、崗中、離崗體檢；建立職業衛生和職業健康監護檔案，一人一檔。2021年上半年，本集團未發生一起職業病事件，職業健康體檢覆蓋率100%。

安全保障

本集團目前編製有34個安全生產相關制度，主要有《安全生產管理規定》、《安全生產責任制度》及《安全教育培訓制度》等，並成立了安全生產管理委員會以保障安全制度的貫徹實施。

2021年上半年，本集團本部開展了春季、安全月共2次安全大檢查工作，共計對7個三級公司本部、4個生產項目、12個基建項目、6個製造業項目進行檢查。累計排查安全隱患419項，及時排除安全隱患。上半年本部共召開2次安全委員會會議。

2021年上半年，本集團員工因工死亡人數及死亡率均為0。

2.3 員工關懷及團隊建設

在驅動變革及塑造文化的徵程中，本集團秉承以人為本的管理理念，為員工解憂，為員工送去關愛，為企業和諧穩定健康發展奠定基礎。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

The Group pays attention to perfecting the democratic management system of enterprises, deepening the “Benefiting the People Project”, guiding subsidiaries to establish special funds for assistance to employees in difficulty, and increasing assistance to employees in difficulty. The Group bought condolences for employees of headquarters on New Year’s Day, Spring Festival, Tomb-Sweeping Day, Dragon Boat Festival, Labour Day and “Cool in Summer”, with a total of 960 person-times and RMB0.4 million; The Group handled park annual tickets, movie tickets and birthday cards for employees, with a total of 480 person-times and RMB0.163 million; the Group condoled with 30 sick, hospitalized, married and retired workers, totalling RMB87,000. During the normalization of the Pandemic, the trade unions of the Group purchased 240,000 disposable medical masks and distributed masks to employees.

The Group takes serving the needs of employees as the foundation, pays close attention to the physical and mental health of employees, and strengthens the linkage between upper and lower levels. The headquarters of the Group and its subsidiaries held spring outing activities, and jointly held badminton competitions with the trade unions of its subsidiaries, which were well received by employees. The Group held a popular online prize-winning answering activity to welcome the New Year, a brisk walking activity “Walk 10,000 steps a day and spend the New Year in Beijing” to fight against the Pandemic in Beijing, a festival activity for female employees to be the most beautiful women in Kehuan on Women’s Day, and a spring outing and spring fun sports meeting in 2021, with a total of 500 participants.

本集團注重健全完善企業民主管理體系，深化「惠民工程」，指導附屬公司建立困難幫扶專項資金，加大困難職工幫扶力度。為本部職工購買元旦、春節、清明節、端午節、五一勞動節日和「夏送清涼」慰問品，共計960人次，人民幣逾40萬元；為員工辦理公園年票、電影票、生日卡，共計480人次，約人民幣16.3萬元；慰問生病住院、婚喪嫁娶及退休職工30人，共計人民幣8.7萬元。疫情常態化期間，本集團工會採購一次性醫用口罩24萬隻，長期為員工發放。

本集團以服務職工需求為根本，高度關注員工身心健康，強化上下聯動，本集團本部及各附屬公司舉辦春遊活動，與各附屬公司工會聯合舉辦了羽毛球比賽，深受職工歡迎。舉辦了職工喜聞樂見的迎新春在線有獎答題活動，在京抗疫「日行一萬步，在京過大年」健步走活動，「三八婦女節做最美科環女性」女職工節日活動、2021年春遊暨春季趣味運動會活動，共計500人次。

3. Innovative Operation and High-quality Service

3.1 Fight Corruption and Promote Clean Governance according to Law

In the first half of 2021, the Group focused on the strategic goal of creating a world-class enterprise, focused on the central task of the Company’s reform and development, comprehensively strengthened daily supervision and inspection, continuously rectified the style and discipline, constantly improved and perfected the clean government operation system with strong supervision, and made great efforts to promote the high-quality development of anti-corruption work.

3. 創新經營、高質服務

3.1 依法依規反腐倡廉

2021年上半年，本集團緊緊圍繞創建世界一流示範企業戰略目標，聚焦公司改革發展中心任務，全面加強日常監督檢查，持續正風肅紀，不斷健全完善監督有力的廉政運行體系，著力推動反腐敗工作高質量發展。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

In order to standardize employees' professional behaviour and prevent corruption, the annual work points were formulated and issued, and 26 annual tasks in 6 aspects were defined. Combined with the actual situation, a total of 34 measures to promote anti-corruption were issued in six aspects and implementation opinions on high-quality development of work were issued, which continuously promotes the anti-corruption work of the company to a higher level.

The Group kept improving the supervision system and promoting the high quality of daily supervision. The Group dealt with the emerging and tendentious problems found in the process of supervision and management in a timely manner, promoted the solution of the problems, and effectively improved the supervision efficiency. The Group kept a close eye on corruption-prone areas and key links, and signed clean and co-construction agreements with cooperative units in key areas such as engineering projects and material procurement to build a clean and "firewall". The Group strictly controlled the integrity of cadres, strictly implemented pre-appointment integrity inspection, integrity reply, integrity examination and integrity talk, improved and dynamically updated the integrity files of leading cadres, and continuously improved the standardization level of cadre supervision and management. On the eve of traditional festivals, by issuing files, posting announcements, pushing WeChat articles, etc., the Group urged employees to take incorruptible holidays. The Group produced incorruptible micro-videos and scroll them in elevators and other multimedia, integrating incorruptible education into daily life, further enhancing employees' awareness of discipline and rules, and creating a good political ecology of being clean and upright, respecting honesty and being honest, having an enterprising spirit and abiding by laws and regulations. In the first half of 2021, the Group had no any corruption lawsuits filed and concluded against the Company and its employees.

3.2 Promote Development Innovation to Increase Benefits

As the practitioner of green energy reform, the Group inherits the gene of innovative culture, fully exerts the inherent power of market-oriented scientific and technological innovation, and establishes a strong and powerful technology research and development system with rational division of labor and clear architecture.

為規範員工的職業行為，預防腐敗問題發生，制定印發年度工作要點，明確6個方面26項年度任務，並結合實際印發推動反腐敗從6個方面制訂構建工作舉措共計34條，工作高質量發展實施意見，持續推動公司反腐敗工作向更高水平更高層次邁進。

本集團持續推進完善監督體系建設，推動日常監督高質量。對在監督、管理過程中發現的苗頭性、傾向性問題及時處置，推動問題解決，切實提升監督效能。緊盯腐敗易發領域和關鍵環節，在工程項目、物資採購等重點領域，與合作單位簽訂廉潔共建協議，共築廉潔「防火牆」。嚴把幹部廉潔關，嚴格執行任前廉政考察、廉政回函、廉政考試、廉政談話，完善並動態更新領導幹部廉政檔案，不斷提升幹部監督管理規範化水平。在傳統節日前夕，通過印發檔、張貼公告、推送微信、等方式督促員工廉潔過節，製作廉潔微視頻在電梯間等多媒體滾動播放，將廉潔教育融入日常，進一步增強員工紀律和規矩意識，營造風清氣正、崇廉尚實、幹事創業、遵紀守法的良好政治生態。2021年上半年，本集團未發生對公司及員工提出並已審結的貪污訴訟案件。

3.2 推動發展創新增效

作為能源綠色變革的踐行者，本集團傳承創新文化基因，充分發揮以市場為導向的科技創新內在動力，建立堅強有力、分工合理、層次清晰的技術研發體系。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

Intellectual property: The Group pays attention to innovation incentive and intellectual property protection, requires each subsidiary to formulate relevant intellectual property management and protection measures and sign confidentiality agreement with technical personnel in intellectual property owned by the enterprise, reward the technical personnel in respect of intellectual property, improving the enthusiasm of the staff in invention and creation while protecting the technology.

190 patents have been awarded to the Group, including 36 national invention patents. The Group has acquired 2,785 patents in the first half of 2021, including 21 international invention patents and 626 national invention patents.

Achievement transformation: As of 30 June 2021, the Group has created a total of over 100 mature technologies around the core business. In the recent three years, the industrialization of over 30 new technologies has realized operating revenues of RMB4.4 billion, and scientific and technological innovation has provided the source and motive force for the sustainable development of the Group.

知識產權：本集團注重創新激勵和知識產權保護，要求各附屬公司制定相關的知識產權管理及保護辦法，與技術人員簽訂保密協定，知識產權歸屬權為企業所有，同時對技術人員進行相應的知識產權獎勵，在保護技術的同時加大了員工發明創造的積極性。

2021年本集團累計獲得專利190項，其中國家發明專利36項。本集團歷史累計獲得專利2,785項，其中國際發明專利21項、國家發明專利626項。

成果轉化：截至2021年6月30日，本集團圍繞核心業務共形成了100餘項成熟技術。近三年來形成的30餘項新技術產業化實現營業收入44億元，科技創新為本集團的持續發展提供了源泉和動力。

4. Win-win Cooperation and Contribution to the Society

4.1 Supplier Cooperation and Management

The Group strictly implements the Tendering and Bidding Law of the People's Republic of China and other applicable national regulations and the relevant provisions of the National Energy Group, following the four unified requirements of China Energy on procurement: unified plan, unified standard, unified process and unified platform. The Group actively implements the requirements of China Energy on the procurement control system to ensure the smooth implementation of procurement. In the first half of 2021, 9 measures were revised according to the procurement system requirements of China Energy, and instruct the subsidiaries to revise in time. A professional agency was responsible for the organization of bid evaluation committee and the evaluation group, and implementing the China Energy's regulations on supervision, confidentiality discipline and application challenge regulations. The Group continues to learn advanced experience in the industry to promote the quality of equipment products.

4. 攜手共贏奉獻社會

4.1 供應商合作與管理

本集團嚴格執行《中華人民共和國招標投標法》等相關國家法規和國家能源集團相關規定，堅持國家能源集團採購工作的四個統一要求：統一計劃、統一標準、統一流程、統一平台，積極落實國家能源集團採購管控體系要求，確保採購工作順利執行。2021年上半年按照國家能源集團採購制度要求修編9項制度，並指導各附屬公司及時修編。由專業代理公司負責評標委員會、評審小組成員組建，並執行國家能源集團相關監督規定、保密紀律和申請迴避規定。不斷學習行業內先進經驗，促進裝備產品品質提升。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

4.2 Establish Good Customer Relationships

The Group's main customers include thermal power and wind power generation enterprises, and the coal, coal chemical, steel and iron, chemical equivalent enterprises requiring energy conservation and environmental protection, as well as local governments with municipal water operation requirements.

The Group packs and marks products strictly according to the applicable national standards; and it strictly observes the Advertising Law of the PRC in publicity in order to ensure authentic contents and protect the legal rights and interests of customers. If necessary, both parties shall abide by the confidentiality provisions as stipulated in the contract. For a long time, the Group has maintained a good relationship with customers, and its customer satisfaction has kept improving. In the first half of 2021, there was no violations that had a significant impact on the Group.

4.3 Fulfill Corporate Social Responsibility

The Group actively participates in the local government-enterprise co-construction, science, education, health, donation and other social public welfare activities, promoting the social harmony of the region where it is located.

In 2014, the Group established the "Green Ribbon" Youth Volunteer Association to be committed to creating the characteristic voluntary service activities, spreading the concept of green energy, and establishing a good corporate image. At present, three series of voluntary service brands have come into, that is, "Energy Knowledge into Campus", "Reunite Love, Seed Love" and "Green Ribbon Superobject Everywhere". In the first half of 2021, the Group organized its subsidiaries to go to Beijing No.8 Middle School to carry out the activity of popularizing energy knowledge in campus, popularize green energy knowledge for students in school, and make wind turbine models with students. The Youth League Committee of the Group and the "Green Ribbon" Volunteers Association organized the volunteer service activity of "Youth Dedicating a New Era to the Party" to learn from Lei Feng on Lei Feng Learning Day, and set up "Energy Knowledge Sharing Station", "Hot Water Service Station", "Garbage Classification Publicity Station" and "Love Donation Station" to learn from Comrade Lei Feng, practice Lei Feng spirit and promote volunteer culture. "Green Ribbon" volunteers donated more than RMB13,700 for study and daily necessities to more than 145 students in primary and secondary schools in Nierong County, Tibet.

In the future, the "Green Ribbon" Youth Volunteer Association will continue to spread the excellent Chinese traditional culture including the concepts of unity, harmony, relief from distress, etc., constantly hold the "Light up Micro-wish with Youth" activity, "One-to-One" student aid, caring empty nesters, constructing love bookstore, "Learning Lei Feng" youth activity and other activities.

4.2 構建良好客戶關係

本集團主要客戶為從事火電、風電業務的發電企業，有節能環保需求的煤炭、煤化工、鋼鐵、化工類企業，以及有市政水務運營需求的地方政府。

本集團嚴格按照國家標準進行包裝、標識，在宣傳中嚴守《中華人民共和國廣告法》要求，確保內容真實，保護客戶合法權益。如需要，雙方按照合同約定遵守保密相關條例。長期以來，本集團與客戶保持了良好的關係，客戶滿意度持續提高。2021年上半年，未發生對本集團有重大影響的違規事件。

4.3 踐行企業社會責任

本集團積極參與所在地區的地企共建、科教衛生、捐資助學等社會公益活動，促進了所在地區的社會和諧。

2014年，本集團成立了「綠絲帶」青年志願者協會，致力於創建富有本企業特色的志願服務活動，傳播綠色能源理念，樹立良好的企業形象。目前已形成了「能源知識進校園」「團聚愛播種愛」及「無處不在的綠絲帶超體」三大系列志願服務品牌。2021年上半年，本集團組織附屬公司赴北京八中等學校開展能源知識進校園活動，為在校學生普及綠色能源知識，與學生們一起製作風機模型。本集團團委、「綠絲帶」志願者協會在學雷鋒日組織開展「青春心向党奉獻新時代」學雷鋒志願服務活動，設立「能源知識分享站」「熱水服務站」「垃圾分類宣傳站」「愛心捐助站」向雷鋒同志學習，踐行雷鋒精神，弘揚志願文化。「綠絲帶」志願者為西藏聶榮縣中小學的145餘名學生捐贈人民幣1.37萬餘元的學習和生活用品。

未來，「綠絲帶」志願者協會將繼續傳播團結和睦、扶危濟困等觀念的中華優秀傳統文化，持續開展「青春點亮微心願」、「一對一」助學、關愛空巢老人、建立愛心書屋及學雷鋒青年行等系列活動。

INDEPENDENT REVIEW REPORT

審閱報告



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To the board of directors of Guodian Technology & Environment Group Corporation Limited

(Established in the People's Republic of China with limited liability)

致國電科技環保集團股份有限公司董事會

(於中華人民共和國註冊成立的股份有限公司)

Introduction

We have reviewed the interim financial information set out on pages 64 to 121, which comprises the interim condensed consolidated statement of financial position of Guodian Technology & Environment Group Corporation Limited (the "Company") and its subsidiaries (collectively, the "Group") as at 30 June 2021 and the related interim condensed consolidated statements of profit or loss, profit or loss and other comprehensive income, changes in equity and cash flows for the six-month period then ended, and explanatory notes. The Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited require the preparation of a report on interim financial information to be in compliance with the relevant provisions thereof and International Accounting Standard 34 Interim Financial Reporting ("IAS 34") issued by the International Accounting Standards Board ("IASB"). The directors of the Company are responsible for the preparation and presentation of this interim financial information in accordance with IAS 34. Our responsibility is to express a conclusion on this interim financial information based on our review. Our report is made solely to you, as a body, in accordance with our agreed terms of engagement, and for no other purpose. We do not assume responsibility towards or accept liability to any other person for the contents of this report.

Scope of Review

We conducted our review in accordance with Hong Kong Standard on Review Engagements 2410 Review of Interim Financial Information Performed by the Independent Auditor of the Entity issued by the Hong Kong Institute of Certified Public Accountants. A review of interim financial information consists of making inquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Hong Kong Standards on Auditing and consequently does not enable us to obtain assurance that we would become aware of all significant matters that might be identified in an audit. Accordingly, we do not express an audit opinion.

引言

我們已審閱列載於第64頁至第121頁國電科技環保集團股份有限公司(「貴公司」)及其附屬公司(合稱「貴集團」)的中期財務資料，此中期財務資料包括於2021年6月30日的中期簡要合併財務狀況表與截至該日止6個月期間的中期簡要合併損益表、簡要合併損益及其他綜合收益表、簡要合併權益變動表和簡要合併現金流量表以及附註解釋。根據《香港聯合交易所有限公司證券上市規則》，上市公司必須符合其相關規定和國際會計準則理事會頒佈的《國際會計準則》第34號「中期財務報告」的規定編製中期財務報告。董事須負責根據《國際會計準則》第34號編製及列報中期財務資料。我們的責任是根據我們的審閱對中期財務資料作出結論，並按照我們雙方所協議的業務條款，僅向全體董事會報告我們的結論。除此以外，我們的報告書不可用作其他用途。我們概不就本報告書的內容，對任何其他人士負責或承擔法律責任。

審閱範圍

我們已根據香港會計師公會頒佈的《香港審閱工作準則》第2410號「獨立核數師對中期財務資料的審閱」進行審閱。中期財務資料審閱工作包括向主要負責財務會計事項的人員詢問，並實施分析和其他審閱程序。由於審閱的範圍遠較按照《香港審計準則》進行審核的範圍小，所以不能保證我們會注意到在審核中可能會被發現的所有重大事項。因此，我們不發表任何審核意見。

INDEPENDENT REVIEW REPORT(CONTINUED)

審閱報告(續)

Conclusion

Based on our review, nothing has come to our attention that causes us to believe that the interim financial information is not prepared, in all material respects, in accordance with IAS 34.

Ernst & Young
Certified Public Accountants
Hong Kong

27 August 2021

結論

根據我們的審閱工作，我們並沒有注意到任何事項使我們相信於2021年6月30日的中期財務資料在所有重大方面沒有按照《國際會計準則》第34號「中期財務報告」的規定編製。

安永會計師事務所
執業會計師
香港

2021年8月27日



INTERIM CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS

中期簡要合併損益表

FOR THE SIX MONTHS ENDED 30 June 2021 截至2021年6月30日止6個月期間

(Amounts expressed in Renminbi ("RMB") unless otherwise stated) (除非另有說明，以人民幣列示)

		Six months ended 30 June		
		截至6月30日止6個月		
		2021	2020	
		RMB'000	RMB'000	
		人民幣千元	人民幣千元	
		(Unaudited)	(Unaudited)	
		(未經審計)	(未經審計)	
Revenue	收入	5	4,725,066	4,447,784
Cost of sales	銷售成本		(4,084,093)	(3,532,785)
Gross profit	毛利		640,973	914,999
Other revenue	其他收入	6	123,864	153,041
Other income	其他收益	6	17,672	4,094
Other expense	其他費用	6	(125,857)	(43,187)
Selling and distribution expenses	銷售及分銷開支		(479,689)	(586,601)
Administrative expenses	行政開支		(729,632)	(576,449)
Loss from operations	經營虧損		(552,669)	(134,103)
Finance costs	財務成本	7	(231,565)	(290,769)
Share of profits less losses of associates	應佔聯營公司利潤減虧損		55,648	14,365
Loss before taxation	稅前虧損	8	(728,586)	(410,507)
Income tax	所得稅	9	(60,488)	(115,124)
Loss for the period	本期虧損		(789,074)	(525,631)
Attributable to:	歸屬於：			
Equity shareholders of the Company	本公司權益股東	10	(631,729)	(402,914)
Non-controlling interests	非控股權益		(157,345)	(122,717)
Loss for the period	本期虧損		(789,074)	(525,631)
Basic and diluted loss per share	每股基本及攤薄虧損			
(expressed in RMB cent)	(以人民幣分列示)	10	(10.42)	(6.64)

The notes on pages 72 to 121 form part of this interim financial information.

第72頁至第121頁的附註為本中期財務資料的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

中期簡要合併損益及其他綜合收益表

For the six months ended 30 June 2021 截至2021年6月30日止6個月期間
(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

		Six months ended 30 June 截至6月30日止6個月	
		2021 RMB'000 人民幣千元 (Unaudited) (未經審計)	2020 RMB'000 人民幣千元 (Unaudited) (未經審計)
Loss for the period	本期虧損	(789,074)	(525,631)
Other comprehensive income for the period:	本期其他綜合收益		
Items that will not be reclassified to profit or loss:	不會重分類計入損益的項目：		
– equity investments at fair value through other comprehensive income (“FVOCI”):	– 以公允價值計量且其變動計入其他綜合收益的股權投資：		
– changes in fair value	– 公允價值變動	1,230,372	741,449
– income tax effect	– 所得稅影響	(297,113)	(185,362)
Items that will not be reclassified to profit or loss, net of tax	稅後不將重分類計入損益的項目：	933,259	556,087
Items that may be reclassified subsequently to profit or loss:	最終將重分類計入損益的項目：		
– exchange differences on translation of financial statements of operations outside the People’s Republic of China (“PRC”)	– 換算中華人民共和國(「中國」)境外業務財務報表產生的匯兌差額	(568)	(666)
Other comprehensive income for the period, net of tax	稅後本期其他綜合收益	932,691	555,421
Total comprehensive income for the period	本期綜合收益總額	143,617	29,790
Attributable to:	歸屬於：		
Equity shareholders of the Company	本公司權益股東	300,962	152,507
Non-controlling interests	非控股權益	(157,345)	(122,717)
Total comprehensive income for the period	本期綜合收益總額	143,617	29,790

The notes on pages 72 to 121 form part of this interim financial information.

第72頁至第121頁的附註為本中期財務資料的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION

中期簡要合併財務狀況表

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

			At 30 June 2021	At 31 December 2020
			於2021年 6月30日	於2020年 12月31日
		<i>Notes</i>	RMB'000	RMB'000
		<i>附註</i>	人民幣千元	人民幣千元
			(Unaudited)	(Audited)
			(未經審計)	(經審計)
Non-current assets	非流動資產			
Property, plant and equipment	物業、廠房及設備	11	4,873,872	4,631,720
Investment properties	投資性物業		206,006	209,501
Intangible assets	無形資產		423,357	824,062
Goodwill	商譽		5,304	57,591
Interests in associates	對聯營公司的投資		526,338	484,699
Other equity investments	其他權益工具	12	3,409,372	2,227,673
Restricted deposits	受限制存款		8,573	11,812
Other non-current assets	其他非流動資產	13	2,597,608	4,094,876
Deferred tax assets	遞延所得稅資產		672,631	691,521
Total non-current assets	非流動資產總額		12,723,061	13,233,455
Current assets	流動資產			
Inventories	存貨		4,971,381	4,908,220
Contract assets	合同資產		2,496,008	1,979,535
Trade and bills receivables	應收賬款及票據	14	7,872,871	8,676,786
Deposits, prepayments and other receivables	按金、預付款項及其他應收款項		2,518,619	2,221,853
Tax recoverable	可收回稅項		73,129	71,128
Restricted deposits	受限制存款		266,539	408,556
Cash at bank and in hand	銀行存款及庫存現金	15	4,127,728	5,283,197
Total current assets	流動資產總額		22,326,275	23,549,275
Current liabilities	流動負債			
Borrowings	借款	16	6,603,373	7,400,446
Trade and bills payables	應付賬款及票據	17	9,317,656	10,715,283
Other payables and accruals	其他應付款項		1,284,293	1,333,670
Contract liabilities	合同負債		2,306,250	2,596,279
Income tax payable	應付所得稅		18,963	44,726
Provision for warranty	質保金撥備		297,350	381,661
Total current liabilities	流動負債總額		19,827,885	22,472,065
Net current assets	流動資產淨額		2,498,390	1,077,210
Total assets less current liabilities	總資產減流動負債		15,221,451	14,310,665

The notes on pages 72 to 121 form part of this interim financial information.

第72頁至第121頁的附註為本中期財務資料的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION (CONTINUED)

中期簡要合併財務狀況表(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

		Notes	At 30 June 2021 於2021年 6月30日 RMB'000 人民幣千元 (Unaudited) (未經審計)	At 31 December 2020 於2020年 12月31日 RMB'000 人民幣千元 (Audited) (經審計)
Non-current liabilities	非流動負債			
Borrowings	借款	16	5,121,356	4,435,119
Deferred income	遞延收益		300,115	298,177
Deferred tax liabilities	遞延所得稅負債		665,876	501,984
Lease liabilities	租賃負債		114,329	70,846
Provision for warranty	質保金撥備		247,466	184,726
Other non-current liabilities	其他非流動負債		678,399	675,675
Total non-current liabilities	非流動負債總額		7,127,541	6,166,527
NET ASSETS	資產淨額		8,093,910	8,144,138
CAPITAL AND RESERVES	資本及儲備			
Share capital	股本		6,063,770	6,063,770
Reserves	儲備		(190,106)	(486,320)
Total equity attributable to equity shareholders of the Company	歸屬於本公司權益股東的權益總額		5,873,664	5,577,450
Non-controlling interests	非控股權益		2,220,246	2,566,688
TOTAL EQUITY	權益總額		8,093,910	8,144,138

Approved and authorised for issue by the board of directors on 27 August 2021.

董事會於2021年8月27日批准及授權刊發。

Mr. CHEN Dongqing

陳冬青

Executive Director

授權董事

The notes on pages 72 to 121 form part of this interim financial information.

第72頁至第121頁的附註為本中期財務資料的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

中期簡要合併權益變動表

For the six months ended 30 June 2021 截至2021年6月30日止6個月期間

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

		Attributable to equity shareholders of the Company 歸屬於本公司權益股東									
		Share capital	Treasury shares	Capital reserve	PRC statutory reserve	Exchange reserve	Fair value reserve (non-recycling)	Accumulated losses	Sub-total	Non-controlling interests	Total equity
		股本	庫存股	資本儲備	中國法定公積	匯兌儲備	(不重新計入)	累計虧損	小計	非控股權益	權益總額
		RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000
		人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)
Balance at 1 January 2021	2021年1月1日結餘	6,063,770	-	1,057,753	129,332	1,229	1,002,553	(2,677,187)	5,577,450	2,566,688	8,144,138
Changes in equity for the six months ended 30 June 2021:	截止2021年6月30日止6個月權益變動：										
Loss for the period	本期虧損	-	-	-	-	-	-	(631,729)	(631,729)	(157,345)	(789,074)
Other comprehensive income	其他綜合收益	-	-	-	-	(568)	933,259	-	932,691	-	932,691
Total comprehensive income	本期綜合收益總額	-	-	-	-	(568)	933,259	(631,729)	300,962	(157,345)	143,617
Capital injection from non-controlling interest (Note 19)	非控股股東注資(附註19)	-	-	2,817	-	-	-	-	2,817	104,267	107,084
Disposal of subsidiaries (Note 20)	處置附屬公司(附註20)	-	-	-	-	-	-	-	-	(261,342)	(261,342)
Equity-settled share option arrangements*	以權益結算的購股權安排*	-	(34,366)	26,801	-	-	-	-	(7,565)	7,565	-
Dividends paid by subsidiaries to non-controlling equity owners	附屬公司支付給非控股股東的股利	-	-	-	-	-	-	-	-	(39,587)	(39,587)
Transfer of fair value reserve upon the disposal of equity movement of FVOCI	以公允價值計量且其變動計入其他綜合收益的權益投資因處置而轉出公允價值儲備	-	-	-	-	-	(41,923)	41,923	-	-	-
Balance at 30 June 2021	2021年6月30日結餘	6,063,770	(34,366)	1,087,371	129,332	661	1,893,889	(3,266,993)	5,873,664	2,220,246	8,093,910

* On 25 February 2021, Yantai Longyuan Power Technology Co., Ltd ("Longyuan Technology"), a subsidiary of the Company, granted 9,364,000 restricted shares to incentive participants at the grant price of RMB3.67 per share ("Restricted Shares Incentive Plan"). According to the Restricted Shares Incentive Plan, Longyuan Technology should repurchase the restricted shares from participants if the performance assessment target is not achieved in a certain period of the sales restriction release period. The Group recognized the repurchase obligation on the date of the receiving the share subscription amounting to approximately RMB34,366,000 from the participants. Upon the completion of the share subscription by the participants, the share of the interest by the Company in Longyuan Technology was diluted from 23.25% to 22.83% (Note 19).

* 2021年2月25日，本公司的子公司煙臺龍源電力技術股份有限公司(「龍源技術」)以每股人民幣3.67元的授予價格向激勵對象授予限制性股票9,364,000股(「限制性股票激勵計劃」)。根據限制性股票激勵計劃，如果在某個解除限售期業績考核未達標，龍源技術需回購當期所有未解除限售的限制性股票。本集團在收到被激勵對象約人民幣34,366,000元的股票認購款時確認了對應的回購義務負債。隨著被激勵對象繳納股票認購款的完成，本公司在龍源技術的持股比例從23.25%稀釋至22.83%(附註19)。

The notes on pages 72 to 121 form part of this interim financial information.

第72頁至第121頁的附註為本中期財務資料的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (CONTINUED)

中期簡要合併權益變動表(續)

For the six months ended 30 June 2021 截至2021年6月30日止6個月期間
(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

		Attributable to equity shareholders of the Company 歸屬於本公司權益股東								
		Share capital	Capital reserve	PRC statutory reserve	Exchange reserve	Fair value reserve (non-recycling)	Accumulated losses	Sub-total	Non-controlling interests	Total equity
		股本	資本儲備	中國法定公積	匯兌儲備	公允價值儲備 (不重新計入)	累計虧損	小計	非控股權益	權益總額
		RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000
		人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)
Balance at 1 January 2020	2020年1月1日結餘	6,063,770	1,053,550	129,332	2,498	254,148	(2,737,184)	4,766,114	2,795,604	7,561,718
Changes in equity for the six months ended 30 June 2020:	截止2020年6月30日止6個月權益變動：									
Loss for the period	本期虧損	-	-	-	-	-	(402,914)	(402,914)	(122,717)	(525,631)
Other comprehensive income	其他綜合收益	-	-	-	(666)	556,087	-	555,421	-	555,421
Total comprehensive income	本期綜合收益總額	-	-	-	(666)	556,087	(402,914)	152,507	(122,717)	29,790
Capital injection from non-controlling interest	非控股股東注資	-	-	-	-	-	-	-	17,500	17,500
Dividends paid by subsidiaries to non-controlling equity owners	附屬公司支付給非控股股東的股利	-	-	-	-	-	-	-	(78,773)	(78,773)
Acquisition of a non-controlling interest in a subsidiary*	收購少數股東附屬公司權益*	-	4,203	-	-	-	-	4,203	(31,314)	(27,111)
Balance at 30 June 2020	2020年6月30日結餘	6,063,770	1,057,753	129,332	1,832	810,235	(3,140,098)	4,922,824	2,580,300	7,503,124

* The Company and Beijing Huadian Tiande Assets Operation Co., Ltd. ("Huadian Tiande") held 90% and 10% equity interests of Guoneng I&C Interconnection Technology Co., Ltd., ("Guoneng I&C") respectively. On 10 January 2020, pursuant to the equity transfer agreement, the Company acquired 10% equity interest of Guoneng I&C from Huadian Tiande at a consideration of RMB27,111,294. The acquisition was completed on 21 April 2020, upon which, Guoneng I&C became a wholly owned subsidiary of the Company.

* 本公司和北京華電天德資產經營有限公司(「華電天德」)分別持有國能信控互聯技術有限公司(「國能信控」)90%和10%的股權。2020年1月10日，根據股權轉讓協議，本公司以人民幣27,111,294元從華電天德收購國能信控的10%股權。收購於2020年4月21日完成，至此國能信控成為本公司的全資子公司。

The notes on pages 72 to 121 form part of this interim financial information.

第72頁至第121頁的附註為本中期財務資料的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS

中期簡要合併現金流量表

For the six months ended 30 June 2021 截至2021年6月30日止6個月期間

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

		Six months ended 30 June 截至6月30日止6個月	
		2021 RMB'000 人民幣千元 (Unaudited) (未經審計)	2020 RMB'000 人民幣千元 (Unaudited) (未經審計)
		Notes 附註	
Operating activities		經營活動	
Cash used in operations	經營中使用的現金	(1,786,292)	(513,197)
Income tax paid	已付所得稅	(78,914)	(87,150)
Net cash used in operating activities	經營活動使用的淨現金	(1,865,206)	(600,347)
Investing activities		投資活動	
Payment for purchase of property, plant and equipment and intangible assets	採購物業、廠房及設備及無形資產支出	(162,986)	(159,015)
Disposals of a subsidiary, net of cash disposed of	處置子公司的現金淨額	20	264,743
Proceeds of disposal of an associate	出售聯營公司之款項收回	50,000	–
Payment for purchase of deposits with banks	支付從銀行購買的存款	(784,000)	(1,055,000)
Redemption of deposits with banks	贖回銀行存款	910,000	1,141,500
Purchase of a short-term investment	購買短期投資	–	(215,000)
Proceeds from a short-term investment	短期投資之收回	50,000	150,000
Proceeds from disposal of equity investments designated at FVOCI	處置指定為以公允價值計量且其變動計入其他綜合收益的股權投資	46,923	–
Other cash flows arising from investing activities	來自投資活動的其他現金流	12,112	32,982
Net cash from/(used in) investing activities	投資活動產生/(使用)的淨現金	386,792	(104,533)

The notes on pages 72 to 121 form part of this interim financial information.

第72頁至第121頁的附註為本中期財務資料的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS (CONTINUED)

中期簡要合併現金流量表(續)

For the six months ended 30 June 2021 截至2021年6月30日止6個月期間
(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

		Six months ended 30 June 截至6月30日止6個月	
		2021 RMB'000 人民幣千元 (Unaudited) (未經審計)	2020 RMB'000 人民幣千元 (Unaudited) (未經審計)
	Notes 附註		
Financing activities	籌資活動		
Proceeds from borrowings	借款所得款項	3,290,600	7,639,000
Repayment of borrowings	償還借款	(2,957,000)	(6,227,130)
Capital injection from non-controlling equity owner	非控股股東的資本投入	141,450	-
Decrease in restricted deposits	受限制存款的減少	360,851	481,831
Increase in restricted deposits	受限制存款的增加	(215,595)	(165,682)
Payments for acquisition of non-controlling interest in a subsidiary	支付收購附屬公司非控股權益	-	(27,111)
Dividends paid by subsidiaries to non-controlling equity owners	附屬公司支付給非控股股東的股利	(39,587)	(81,836)
Interest paid	已付利息	(111,551)	(148,896)
Principal portion of lease payments	支付租賃本金部分	(20,242)	(7,429)
Net cash generated from financing activities	籌資活動產生的淨現金	448,926	1,462,747
Net (decrease)/increase in cash and cash equivalents	現金及現金等價物的淨(減少)/增加額	(1,029,488)	757,867
Cash and cash equivalents at 1 January	於1月1日的現金及現金等價物	4,373,197	3,145,422
Effect of foreign exchanges rate changes	外匯匯率變動的影響	19	(177)
Cash and cash equivalents at 30 June	於6月30日的現金及現金等價物	3,343,728	3,903,112

The notes on pages 72 to 121 form part of this interim financial information.

第72頁至第121頁的附註為本中期財務資料的組成部分。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION

中期簡要合併財務資料附註

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

1 Principal activities and organisation

Guodian Technology & Environment Group Corporation Limited (the “**Company**”) was established on 6 April 2001 in the People’s Republic of China (the “**PRC**”) as a state-owned enterprise with limited liability. The Company was converted to a joint stock company with limited liability in the PRC on 16 May 2011. On 30 December 2011, the Company’s H shares were listed on The Stock Exchange of Hong Kong Limited (the “**Stock Exchange**”). The registered office address of the Company is Suite 1101, 11/F, Building 1 Yard 16, W.4th Ring Middle Road Haidian District, Beijing, PRC.

The Company is an investment holding company. The Company’s subsidiaries are involved in the following principal activities:

- environmental protection solutions
- energy conservation solutions
- wind power products and services
- all others, including wind and solar power generation and sale of electric power control system related products.

The directors consider that the ultimate holding company and parent of the Company is China Energy Investment Corporation Limited (“**China Energy**”), a company registered in the PRC and controlled by State-owned Assets Supervision and Administration Commission.

2 Basis of preparation

This interim condensed consolidated financial information for the six months ended 30 June 2021 (“**interim financial information**”) has been prepared in accordance with the applicable disclosure provisions of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited, including compliance with International Accounting Standard 34 Interim Financial Reporting (“**IAS 34**”), issued by the International Accounting Standards Board (“**IASB**”).

The interim financial information has been prepared in accordance with the same accounting policies adopted in the 2020 annual consolidated financial statements, except for the accounting policy changes that are expected to be reflected in the 2021 annual consolidated financial statements. Details of any changes in accounting policies are set out in note 3 to the interim financial information.

1 主要業務及組織

國電科技環保集團股份有限公司(「**本公司**」)前身為國電科技環保集團有限公司，成立於2001年4月6日，為國有有限責任企業。本公司於2011年5月16日轉制為中國股份有限公司。2011年12月30日，本公司的H股在香港聯合交易所有限公司(「**香港聯交所**」)上市。本公司註冊地址為北京市海澱區西四環中路16號院1樓11層1101。

本公司為投資控股公司。本公司的附屬公司主要參與以下業務：

- 環保
- 節能解決方案
- 風電產品及服務
- 所有其他，包括風力和太陽能發電以及電力控制系統相關產品的銷售

董事認為本公司的最終控股公司及母公司為國家能源投資集團有限責任公司(「**國家能源集團**」)，一家註冊地在中國並且由國有資產監督管理委員會控制的公司。

2 編製基礎

本截至2021年6月30日止6個月期間的中期簡要合併財務資料(「**中期財務資料**」)乃按《香港聯合交易所有限公司證券上市規則》的適用披露規定編製，並符合由國際會計準則理事會頒佈的《國際會計準則》第34號「中期財務報告」。

除預計將在2021年年度合併財務報表中體現的會計政策變化外，本中期財務資料的編製依據為2020年年度合併財務報告所採納的相同會計政策。有關會計政策變化詳情，請參見中期財務資料的附註3。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

2 Basis of preparation (continued)

The preparation of the interim financial information in conformity with IAS 34 requires management to make judgements, estimates and assumptions that affect the application of policies and reported amounts of assets and liabilities, income and expenses on a year to date basis. Actual results may differ from these estimates.

This interim financial information contains condensed consolidated financial information and selected explanatory notes. The notes include an explanation of events and transactions that are significant to an understanding of the changes in financial position and performance of the Company and its subsidiaries since the 2020 annual consolidated financial statements. The interim condensed consolidated financial information and notes thereon do not include all of the information required for a full set of financial statements prepared in accordance with International Financial Reporting Standards (“IFRSs”) issued by the IASB, and should be read in conjunction with the Group’s annual consolidated financial statements for the year ended 31 December 2020.

This interim financial information has been prepared assuming the Group will continue as a going concern notwithstanding the net loss of RMB789,074,000 and the net cash used in operating activities of RMB1,865,206,000 for the six months ended 30 June 2021. The Group has unutilised banking facilities of RMB5,392,851,718 as at 30 June 2021 to fulfil its future capital commitments and other financial requirements, of which RMB2,900,000,000 would be renewed within 12 months. The directors are satisfied that the Group will have necessary liquid funds to finance its working capital and capital expenditure requirements. Accordingly, the directors are of the opinion that it is appropriate to prepare the interim financial information on a going concern basis.

2 編製基礎(續)

按照《國際會計準則》第34號編製中期財務資料要求管理層作出判斷、估計和假設，而該等判斷、估計和假設會影響政策的應用、資產、負債、今年迄今為止的收入與支出的呈報金額。實際結果可能有別於該等估計。

本中期財務資料內含簡要合併財務資料及選定的解釋性附註。附註包括對瞭解本集團自2020年度合併財務報表以來財務狀況和經營情況變動有重要作用的各項事件和交易所作的說明。中期簡要合併財務資料及其附註並未將根據國際會計準則理事會發佈的《國際財務報告準則》編製的完整財務報表所需的全部資料包括在內，且應與2020年年度合併財務報表一併閱讀。

儘管本集團截至2021年6月30日止6個月期間淨虧損為人民幣789,074,000元，以及在經營活動中使用的淨現金為人民幣1,865,206,000元，本中期財務資料仍以假設本集團持續經營的基礎編製。於2021年6月30日，本集團擁有金額為人民幣5,392,851,718元的未動用銀行授信以滿足其未來的資本需求及其他財務需要，其中人民幣2,900,000,000元需於未來的12個月內續期。董事們認為，本集團將擁有能滿足其營運資金及資本開支需要所必需的流動資金。因此，董事們認為基於持續經營假設基礎編製中期財務資料是恰當的。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

3 Changes in accounting policies and disclosures

The accounting policies adopted in the preparation of the interim condensed consolidated financial statements are consistent with those applied in the preparation of the Group's annual consolidated financial statements for the year ended 31 December 2020, except for the adoption of the following revised IFRSs for the first time for the current period's financial information.

Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16

Interest Rate Benchmark Reform – Phase 2

Amendment to IFRS 16

Covid-19-Related Rent Concessions

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

- (a) Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 address issues not dealt with in the previous amendments which affect financial reporting when an existing interest rate benchmark is replaced with an alternative risk-free rate (“RFR”). The phase 2 amendments provide a practical expedient to allow the effective interest rate to be updated without adjusting the carrying amount of financial assets and liabilities when accounting for changes in the basis for determining the contractual cash flows of financial assets and liabilities, if the change is a direct consequence of the interest rate benchmark reform and the new basis for determining the contractual cash flows is economically equivalent to the previous basis immediately preceding the change. In addition, the amendments permit changes required by the interest rate benchmark reform to be made to hedge designations and hedge documentation without the hedging relationship being discontinued. Any gains or losses that could arise on transition are dealt with through the normal requirements of IFRS 9 to measure and recognise hedge ineffectiveness. The amendments also provide a temporary relief to entities from having to meet the separately identifiable requirement when an RFR is designated as a risk component. The relief allows an entity, upon designation of the hedge, to assume that the separately identifiable requirement is met, provided the entity reasonably expects the RFR risk component to become separately identifiable within the next 24 months. Furthermore, the amendments require an entity to disclose additional information to enable users of financial statements to understand the effect of interest rate benchmark reform on an entity's financial instruments and risk management strategy. These amendments had no material impact on the interim condensed consolidated financial statements of the Group.

3 會計政策與披露變更

編製本中期財務資料時採用的會計政策與編製截至2020年12月31日止年度的本集團年度合併財務報表時所採用會計政策一致，但本期財務資訊首次採用以下修訂後的國際財務報告準則。

國際財務報告準則第9號、*利率基準改革—第二階段*
國際會計準則第39號國
際財務報告準則第7號、*段*
國際財務報告準則第4號
及國際財務報告準則第
16號之修訂

國際財務報告準則第16號 *新冠肺炎疫情相關租金減讓*
之修訂

經修訂國際財務報告準則的性質及影響如下：

- (a) 該等修訂旨在解決此前修訂中未涉及的問題，即以無風險利率(RFR)替代現行利率基準時對財務報告的影響。該等修訂提供了一項實用變通方法，即在不調整帳面價值的情況下，更新確認金融資產和金融負債合同現金流量的實際利率，前提是該變更是利率基準改革所要求的直接後果，且用於確定合同現金流量的新基準與舊基準在經濟上相當。此外，該等修訂指出僅因利率基準改革而對套期指定和套期進行的修改不會導致套期會計的終止。過渡期間可能產生的任何損益均按照現行國際財務報告準則第9號的規定處理，以衡量和確認套期無效性。該等修訂還提供了暫時性方案以解決在RFR被指定為風險成分的情況下，實體必須滿足可單獨識別的要求。當實體合理預期替代基準利率將自其被指定為非合同明確的風險成分之日起24個月內滿足「可單獨識別」的，視同其滿足「可單獨識別」的要求；此外，該修訂還要求實體披露其他資訊，以使財務報表的使用者能夠瞭解利率基準改革對實體的金融工具和風險管理策略的影響。該修訂案對貴集團的財務狀況和業績沒有重大影響。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

3 Changes in accounting policies and disclosures (continued)

(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 amendment did not have any impact on the financial position and performance of the Group as there were no lease payments reduced or waived by the lessors as a result of the covid-19 pandemic during the period.

4 Operating segment information

The Group manages its businesses by subsidiaries, which are organized by business lines (products and services). In a manner 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 four reportable segments.

- Environmental protection segment: this segment provides environmental protection products and services which mainly consists of sulfur oxide control technologies, nitrogen oxide control technologies, operation of desulphurization and denitrification facilities, ash removal with filter bag, water treatment related technologies and products.
- Energy conservation solutions segment: this segment provides energy saving products and services which mainly consists of plasma ignition and micro-oil ignition equipment and gas turbine improvement services and construction services to energy-efficient power plants.
- Wind power products and services segment: this segment produces and sells wind turbine and its components, and provides related system solutions and services to wind power operators.

3 會計政策與披露變更(續)

(b) 2021年4月頒佈的國際財務報告準則第16號之修訂，將承租人可選擇簡化方法而不採用租賃變更的方法來核算因新冠疫情直接導致的租金減讓延長了12個月。因此，在滿足應用簡化方法的其他條件下，簡化方法適用於租金的減免為原定於2022年6月30日前到期的租賃付款額。該修訂案使用於2021年4月1日或之後開始的年度，且應追溯應用，並將首日執行該修訂與現行準則的差異追溯調整本期期初留存收益。該修訂允許提前適用。鑒於本期本集團未發生租金減讓事件，修訂案對本集團中期簡要合併財務資料沒有任何影響。

4 經營分部信息

本集團以附屬公司管理其業務，該等附屬公司以業務線(產品和服務)進行組織。為了分配資源、評估業績之目的，保持向本集團最高級行政管理人員進行內部彙報相一致的方式，本集團提出了下列四個應報告的分部。

- 環保分部：本分部提供環保產品和服務，主要包括脫硫技術、脫硝技術、脫硫脫硝設施運營、濾袋式除塵、水處理相關技術和產品。
- 節能解決方案分部：本分部提供節能產品及服務，主要包括等離子點火、微油點火設施、汽輪機改造服務及節能電站之建造。
- 風電產品及服務分部：本分部生產和銷售風機及其元件，向風電運營商提供相關系統解決方案和服務。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

4 Operating segment information (continued)

- The Group combined other business activities that are not reportable in "All others". Revenue included in this category is mainly from the wind and solar power generation and sale of electric power control system related products.

(i) Segment results, assets and liabilities

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

Segment assets include all assets with the exception of interests in associates, other equity investments, tax recoverable, deferred tax assets and other corporate assets. Segment liabilities include all liabilities with the exception of income tax payable, deferred tax liabilities and other corporate liabilities.

Revenue and expenses are allocated to the reportable segments with reference to revenue generated by those segments and the expenses incurred by those segments.

The measure used for reporting segment profit is the gross profit. In addition to receiving segment information concerning the gross profit, management is also provided with segment information concerning depreciation and amortisation, interest income, finance costs, impairment of assets and additions to segment non-current assets.

4 經營分部信息(續)

- 本集團將未呈報的其他經營業務歸為「所有其他」。在此類別中的收入主要源於風力、太陽能發電及銷售電力控制系統相關產品。

(i) 分部業績、資產及負債

為評估分部業績及在分部間分配資源，本集團最高級行政管理人員按以下基準對各可呈報分部的應佔業績、資產和負債進行監控：

分部資產包括所有資產，對聯營公司的投資、其他權益投資、可收回稅項、遞延稅項資產和其他行政資產除外。分部負債包括所有負債，應付所得稅、遞延稅項負債和其他行政負債除外。

收入和費用乃參考各可呈報分部產生的收入和發生的開支分配給各可呈報分部。

用於衡量可呈報分部利潤的指標為毛利。除了收到有關毛利的分部信息外，管理人員還收到有關折舊及攤銷、利息收入、財務成本、資產減值和添置分部非流動資產的分部信息。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

4 Operating segment information (continued)

4 經營分部信息(續)

(i) Segment results, assets and liabilities (continued)

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 six months ended 30 June 2021 and 2020 is set out below:

(i) 分部業績、資產及負債(續)

提供給本集團最高級行政管理人員用作進行資源配置並對截至2021年和2020年6月30日止6個月的分部業績作出評估的關於本集團可呈報分部的信息如下：

		As at/for the six months ended 30 June 2021 於2021年6月30日/截至2021年6月30日止6個月				
		Environmental protection 環保 RMB'000 人民幣千元 (Unaudited) (未經審計)	Energy conservation solutions 節能解決方案 RMB'000 人民幣千元 (Unaudited) (未經審計)	Wind power products and services 風電產品及服務 RMB'000 人民幣千元 (Unaudited) (未經審計)	All others 所有其他 RMB'000 人民幣千元 (Unaudited) (未經審計)	Total 總計 RMB'000 人民幣千元 (Unaudited) (未經審計)
Disaggregated by timing of revenue recognition	按收入確認時點分類					
Point in time	在單個時點確認	175,059	79,060	1,232,379	189,659	1,676,157
Over time	在一段時間確認	1,609,187	1,420,828	8,300	10,594	3,048,909
Revenue from external customers	外部客戶收入	1,784,246	1,499,888	1,240,679	200,253	4,725,066
Inter-segment revenue	分部間收入	17,667	71,394	18,036	20,308	127,405
Reportable segment revenue	可呈報分部收入	1,801,913	1,571,282	1,258,715	220,561	4,852,471
Reportable segment profit (gross profit)	可呈報分部利潤(毛利)	485,004	(76,974)	137,496	101,837	647,363
Depreciation and amortisation	折舊及攤銷	96,026	11,839	78,430	50,443	236,738
Impairment/(reversal of impairment) of trade and bill receivables	應收賬款及票據減值計提/(轉回)	1,314	2,883	31,127	(1,663)	33,661
Impairment of other receivables	其他應收款項減值計提	19,757	16	-	-	19,773
Interest income	利息收入	16,107	17,845	7,433	1,278	42,663
Finance costs	財務成本	13,905	261	49,963	167,436	231,565
Reportable segment assets	可呈報分部資產	9,967,117	5,007,206	12,428,774	2,771,806	30,174,903
Additions to reportable segment non-current assets during the period*	本期內添置可呈報分部非流動資產*	69,148	6,786	333,006	59,515	468,455
Reportable segment liabilities	可呈報分部負債	6,730,986	3,106,283	11,633,493	706,553	22,177,315

* The amount consists of additions to property, plant and equipment and intangible assets.

* 此金額包括物業、廠房及設備及無形資產的增加。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

4 Operating segment information (continued)

4 經營分部信息(續)

(i) Segment results, assets and liabilities (continued)

(i) 分部業績、資產及負債(續)

		As at/for the six months ended 30 June 2020 於2020年6月30日/截至2020年6月30日止6個月				
		Environmental protection 環保	Energy conservation 節能解決方案	Wind power products and services 風電產品及服務	All others 所有其他	Total 總計
		RMB'000 人民幣千元	RMB'000 人民幣千元	RMB'000 人民幣千元	RMB'000 人民幣千元	RMB'000 人民幣千元
		(Unaudited) (未經審計)	(Unaudited) (未經審計)	(Unaudited) (未經審計)	(Unaudited) (未經審計)	(Unaudited) (未經審計)
Disaggregated by timing of revenue recognition	按收入確認時點分類					
Point in time	在單個時點確認	105,787	46,574	2,173,617	149,605	2,475,583
Over time	在一段時間確認	1,397,852	557,450	14,912	1,987	1,972,201
Revenue from external customers	外部客戶收入					
Inter-segment revenue	分部間收入	1,503,639	604,024	2,188,529	151,592	4,447,784
		6,987	249,218	50,031	566	306,802
Reportable segment revenue	可呈報分部收入	1,510,626	853,242	2,238,560	152,158	4,754,586
Reportable segment profit (gross profit)	可呈報分部利潤(毛利)	346,972	64,065	435,726	74,175	920,938
Depreciation and amortisation	折舊及攤銷	83,046	9,571	68,451	62,530	223,598
Impairment of Inventory	存貨撇減	322	190	-	-	512
Impairment/(reversal of impairment) of trade and other receivables	應收賬款及其他應收款項減值計提/(轉回)	233	9,681	-	(15,352)	(5,438)
Interest income	利息收入	19,088	14,112	8,400	436	42,036
Finance costs	財務成本	29,496	3,209	66,251	2,355	101,311
Reportable segment assets	可呈報分部資產	11,762,723	3,897,297	13,810,094	2,817,730	32,287,844
Additions to reportable segment non-current assets during the period*	本期內添置可呈報分部非流動資產*	27,553	5,360	114,879	12,483	160,275
Reportable segment liabilities	可呈報分部負債	7,609,063	2,457,335	12,440,528	580,413	23,087,339

* The amount consists of additions to property, plant and equipment and intangible assets.

* 此金額包括物業、廠房及設備及無形資產的增加。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

4 Operating segment information (continued)

4 經營分部信息(續)

(ii) Reconciliations of reportable segment revenues, profit or loss, assets and liabilities

(ii) 可呈報分部收入、利潤、資產和負債的調節

		Six months ended 30 June 截至6月30止6個月	
		2021 RMB'000 人民幣千元 (Unaudited) (未經審計)	2020 RMB'000 人民幣千元 (Unaudited) (未經審計)
Revenue	收入		
Reportable segment revenue	可呈報分部收入	4,852,471	4,754,586
Elimination of inter-segment revenue	分部間收入抵銷	(127,405)	(306,802)
Revenue	收入	4,725,066	4,447,784
Profit	利潤		
Reportable segment profit	可呈報分部利潤	647,363	920,938
Elimination of inter-segment (profit)	分部間(利潤)	(6,390)	(5,939)
Gross profit	毛利	640,973	914,999
Other revenue	其他收入	123,864	153,041
Other income	其他收益	17,672	4,094
Other expense	其他費用	(125,857)	(43,187)
Selling and distribution expenses	銷售及分銷開支	(479,689)	(586,601)
Administrative expenses	行政開支	(729,632)	(576,449)
Finance costs	財務成本	(231,565)	(290,769)
Share of profits less losses of associates	應佔聯營公司利潤減虧損	55,648	14,365
Loss before taxation	稅前虧損	(728,586)	(410,507)

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

4 Operating segment information (continued)

4 經營分部信息(續)

(ii) Reconciliations of reportable segment revenues, profit or loss, assets and liabilities (continued)

(ii) 可呈報分部收入、利潤、資產和負債的調節(續)

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Assets	資產		
Total reportable segment assets	可呈報分部資產	30,174,903	32,825,206
Inter-segment elimination	分部間抵銷	(611,327)	(556,425)
		29,563,576	32,268,781
Interests in associates	對聯營公司的投資	526,338	484,699
Other equity investments	其他權益投資	3,409,372	2,227,673
Tax recoverable	可收回稅項	73,129	71,128
Deferred tax assets	遞延稅項資產	672,631	691,521
Unallocated head office and corporate assets	未分配總部及行政資產	804,290	1,038,928
Total assets	資產總額	35,049,336	36,782,730
Liabilities	負債		
Total reportable segment liabilities	可呈報分部負債	22,177,315	23,083,500
Inter-segment elimination	分部間抵銷	(604,358)	(520,674)
		21,572,957	22,562,826
Income tax payable	應付所得稅	18,963	44,726
Deferred tax liabilities	遞延稅項負債	665,876	501,984
Unallocated head office and corporate liabilities	未分配總部及行政負債	4,697,630	5,529,056
Total liabilities	負債總額	26,955,426	28,638,592

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

4 Operating segment information (continued)

(iii) Major customers

For the six months ended 30 June 2021, revenue of approximately RMB3,408,369,000, which accounted for 72% of the total revenue of the Group, (six months ended 30 June 2020: RMB3,045,906,000, 68%) was derived from related parties under China Energy and relating to the environmental protection segment, the energy conservation solutions segment, the wind power products and services segment and the all others segment of the Group.

5 Revenue

An analysis of revenue is as follows:

		Six months ended 30 June 截至6月30日止6個月	
		2021 RMB'000 人民幣千元 (Unaudited) (未經審計)	2020 RMB'000 人民幣千元 (Unaudited) (未經審計)
Revenue from contracts with customers	客戶合約收入	4,413,941	4,185,316
Revenue from other sources	其他收入來源		
– Gross rental income from operating leases (Note)	– 來自經營租賃的租賃收入(附註)	311,125	262,468
		4,725,066	4,447,784

Note:

The amount mainly represents income related to service arrangements entered into by the Group with power plants to operate the desulphurisation and denitrification facilities for the treatment of sulphur oxide and nitrogen oxide generated by power plants during their electricity generation. The Group acquires or constructs the facilities and then maintains and operates the facilities to provide pollutant treatment services to power plants during the useful lives of power plants. The service charge is based on the volume of electricity sold by the power plant and a tariff determined by the National Development and Reform Commission of the PRC. These arrangements are not in the legal form of leases, but are deemed as operating leases based on their terms and conditions and are continued to accounted for as such by applying the transition practical expedients under IFRS16.

4 經營分部信息(續)

(iii) 主要客戶

截至2021年6月30日止6個月，從國家能源集團下屬的關聯方取得的來自環保、節能解決方案、風電產品及服務和所有其他分部的收入金額為人民幣3,408,369,000元，占集團總收入的72%。(截至2020年6月30日止6個月：人民幣3,045,906,000元，68%)。

5 收入

收入分析如下：

附註：

該金額主要為與本集團與電廠簽訂的負責脫硫及脫硝設施的運行工作以在發電過程中處理電廠生成的二氧化硫及氮氧化物之服務安排所相關的收入。本集團購買或建造設施，之後在電廠運行期負責運行設施以向電廠提供污染物處理服務。根據電廠售出的電量以及國家發展和改革委員會製定的收費標準收取服務費用。此等安排雖並不是法律形式上的租賃，但根據其條款與條件被視同為經營租賃，並繼續通過應用國際財務報告準則第16號下的過渡安排進行核算。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

5 Revenue (continued)

Disaggregated revenue information

Revenue from contracts with customers for the six months ended 30 June 2021

5 收入(續)

分拆收入信息

截至2021年6月30日止年度的客戶合約收入

Segments	分部	For the six months ended 30 June 2021 截至2021年6月30日止6個月				
		Environmental protection 環保 RMB'000 人民幣千元 (Unaudited) (未經審計)	Energy conservation solutions 節能解決方案 RMB'000 人民幣千元 (Unaudited) (未經審計)	Wind power products and services 風電產品及服務 RMB'000 人民幣千元 (Unaudited) (未經審計)	All others 所有其他 RMB'000 人民幣千元 (Unaudited) (未經審計)	Total 總計 RMB'000 人民幣千元 (Unaudited) (未經審計)
Type of goods or services	商品及服務類別					
Sale of industrial products	銷售商品	175,059	79,060	1,232,379	189,659	1,676,157
Revenue from construction contracts	建造合同收入	687,283	1,420,828	–	9,240	2,117,351
Rendering of services	提供服務	477,769	–	8,300	1,354	487,423
Service concession arrangement revenue	服務特許權協定收入	133,010	–	–	–	133,010
Total	總計	1,473,121	1,499,888	1,240,679	200,253	4,413,941
Geographical markets	地域市場					
Mainland China	中國大陸	1,473,121	1,499,888	1,240,679	200,253	4,413,941
Total	總計	1,473,121	1,499,888	1,240,679	200,253	4,413,941

The revenue information above is based on the geographical location of the customers where to sign the contracts or agreements.

上述收入信息是基於簽訂合同或協議的客戶所在的地理位置。

	收入確認時間					
Timing of revenue recognition						
Goods transferred at a point in time	於某一時點轉讓的商品	175,059	79,060	1,232,379	189,659	1,676,157
Services transferred over time	隨時間轉讓的服務	1,298,062	1,420,828	8,300	10,594	2,737,784
Total	總計	1,473,121	1,499,888	1,240,679	200,253	4,413,941

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

5 Revenue (continued)

5 收入(續)

Disaggregated revenue information (continued)

分拆收入信息(續)

Revenue from contracts with customers for the six months ended 30 June 2020

截至2020年6月30日止年度的客戶合約收入

		For the six months ended 30 June 2020 截至2020年6月30日止6個月				
Segments	分部	Environmental protection 環保 RMB'000 人民幣千元 (Unaudited) (未經審計)	Energy conservation solutions 節能解決方案 RMB'000 人民幣千元 (Unaudited) (未經審計)	Wind power products and services 風電產品及服務 RMB'000 人民幣千元 (Unaudited) (未經審計)	All others 所有其他 RMB'000 人民幣千元 (Unaudited) (未經審計)	Total 總計 RMB'000 人民幣千元 (Unaudited) (未經審計)
Type of goods or services	商品及服務類別					
Sale of industrial products	銷售商品	105,787	46,574	2,173,617	149,605	2,475,583
Revenue from construction contracts	建造合同收入	657,472	557,450	-	-	1,214,922
Rendering of services	提供服務	346,239	-	14,912	1,987	363,138
Service concession arrangement revenue	服務特許權協定收入	131,673	-	-	-	131,673
Total	總計	1,241,171	604,024	2,188,529	151,592	4,185,316
Geographical markets	地域市場					
Mainland China	中國大陸	1,241,171	604,024	2,188,529	151,592	4,185,316
Total	總計	1,241,171	604,024	2,188,529	151,592	4,185,316

The revenue information above is based on the geographical location of the customers where to sign the contracts or agreements.

上述收入信息是基於簽訂合同或協議的客戶所在的地理位置。

Timing of revenue recognition	收入確認時間					
Goods transferred at a point in time	於某一時點轉讓的商品	105,787	46,574	2,173,617	149,605	2,475,583
Services transferred over time	隨時間轉讓的服務	1,135,384	557,450	14,912	1,987	1,709,733
Total	總計	1,241,171	604,024	2,188,529	151,592	4,185,316

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

5 Revenue (continued)

Disaggregated revenue information (continued)

Set out below is the reconciliation of the revenue from contracts with customers to the amounts disclosed in the segment information:

		For the six months ended 30 June 2021 截至2021年6月30日止6個月				
Segments	分部	Environmental protection 環保 RMB'000 人民幣千元 (Unaudited) (未經審計)	Energy conservation solutions 節能解決方案 RMB'000 人民幣千元 (Unaudited) (未經審計)	Wind power products and services 風電產品及服務 RMB'000 人民幣千元 (Unaudited) (未經審計)	All others 所有其他 RMB'000 人民幣千元 (Unaudited) (未經審計)	Total 總計 RMB'000 人民幣千元 (Unaudited) (未經審計)
Revenue from contracts with customers	來自客戶合約收入	1,473,121	1,499,888	1,240,679	200,253	4,413,941
Gross rental income from operating leases	來自經營租賃的租賃收入	311,125	-	-	-	311,125
Total	總計	1,784,246	1,499,888	1,240,679	200,253	4,725,066

		For the six months ended 30 June 2020 截至2020年6月30日止6個月				
Segments	分部	Environmental protection 環保 RMB'000 人民幣千元 (Unaudited) (未經審計)	Energy conservation solutions 節能解決方案 RMB'000 人民幣千元 (Unaudited) (未經審計)	Wind power products and services 風電產品及服務 RMB'000 人民幣千元 (Unaudited) (未經審計)	All others 所有其他 RMB'000 人民幣千元 (Unaudited) (未經審計)	Total 總計 RMB'000 人民幣千元 (Unaudited) (未經審計)
Revenue from contracts with customers	來自客戶合約收入	1,241,171	604,024	2,188,529	151,592	4,185,316
Gross rental income from operating leases	來自經營租賃的租賃收入	262,468	-	-	-	262,468
Total	總計	1,503,639	604,024	2,188,529	151,592	4,447,784

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

6 Other revenue, other income and other expense 6 其他收入，其他收益及其他費用

		Six months ended 30 June 截至6月30日止6個月	
		2021 RMB'000 人民幣千元 (Unaudited) (未經審計)	2020 RMB'000 人民幣千元 (Unaudited) (未經審計)
Other revenue	其他收入		
Government grants	政府補助	60,883	80,368
Interest income	利息收入	42,663	42,856
Others	其他	20,318	29,817
		123,864	153,041
Other income	其他收益		
Net gains on sales of raw materials	原材料銷售收益淨額	1,033	1,945
Net gains on disposals of property, plant and equipment	出售物業、廠房及設備收益淨額	-	140
Net foreign exchange gains	匯兌收益淨額	70	497
Others	其他	16,569	1,512
		17,672	4,094
Other expense	其他費用		
Net loss on disposal of subsidiaries (Note (i))	出售附屬公司損失淨額(附註(i))	112,079	-
Loss on disposal of property, plant and equipment and intangible assets	出售物業、廠房及設備損失淨額	1,126	-
Others (Note(ii))	其他(附註(ii))	12,652	43,187
		125,857	43,187

Notes:

- (i) Net loss on disposal of subsidiaries for the six months ended 30 June 2021 represented the net loss on disposal of Guodian Galaxy Water Co., Ltd. ("Guodian Galaxy Water") and Taiyuan Lucency Sewage Treatment Co., Ltd. ("Taiyuan Lucency") (Note 20).
- (ii) Others included in other expense for the six months ended 30 June 2021 and 2020 represented the provision for an arbitration with a third party.

附註：

- (i) 截至2021年6月30日止6個月出售附屬公司損失淨額為出售國電銀河水務股份有限公司(「國電銀河水務」)和太原朗新明污水處理有限公司(「太原朗新明」)的損失淨額(附註20)。
- (ii) 截至2021年6月30日止6個月和截至2020年6月30日止6個月其他費用為為仲裁計提的其他應付款項。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

7 Finance costs

7 財務成本

		Six months ended 30 June 截至6月30日止6個月	
		2021	2020
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Interest on bank and other borrowings	銀行及其他借款利息	232,446	287,957
Interest on lease liabilities	租賃負債利息	2,304	2,812
Less: Interest expenses capitalised into property, plant and equipment	減：資本化在物業、廠房及設備中的利息開支	(3,185)	–
		231,565	290,769

8 Loss before taxation

8 稅前虧損

Loss before taxation is arrived at after charging/(crediting):

稅前虧損已扣除/(計入)：

(a) Personnel costs

(a) 員工成本

		Six months ended 30 June 截至6月30日止6個月	
		2021	2020
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Salaries, wages and other benefits	薪金、工資及其他福利	566,255	549,216
Contributions to defined contribution retirement plan	界定供款退休計劃的供款	77,468	40,658
		643,723	589,874

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

8 Loss before taxation (continued)

8 稅前虧損(續)

(b) Other items

(b) 其他項目

		Six months ended 30 June	
		截至6月30日止6個月	
		2021	2020
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Amortisation	攤銷		
– intangible assets	– 無形資產	48,064	39,810
Depreciation	折舊		
– investment properties	– 投資性物業	3,495	4,673
– property, plant and equipment	– 物業、廠房及設備	185,179	179,115
Impairment/(reversal of impairment) of	減值虧損/(減值轉回)		
– inventories	– 存貨	–	512
– trade and bills receivables and other receivables	– 應收賬款及票據和其他應 收款項	53,434	(5,438)
Research and development costs	研發成本	91,599	66,008
Cost of inventories	存貨成本	1,406,799	1,964,963

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

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9 Income tax

9 所得稅

		Six months ended 30 June 截至6月30日止6個月	
		2021 RMB'000 人民幣千元 (Unaudited) (未經審計)	2020 RMB'000 人民幣千元 (Unaudited) (未經審計)
Current tax	本期稅額		
Provision for the period	本期撥備	50,921	89,757
Under provision in respect of prior years	過往年度撥備不足	1,591	13,688
		52,512	103,445
Deferred tax	遞延稅項		
Origination and reversal of temporary differences	暫時性差異的產生及轉回	7,976	11,679
		60,488	115,124

The charge for PRC enterprise income tax for the Group's subsidiaries established in Mainland China is calculated at the statutory rate of 25% (six months ended 30 June 2020: 25%) on the estimated assessable profit of the period determined in accordance with relevant enterprise income tax rules and regulations. Certain of the Group's subsidiaries in Mainland China were designated as "High New Technology Enterprise" and were entitled to a preferential tax rate of 15%.

Hanchuan Longyuan Boqi Environmental Technology Co., Ltd., a subsidiary of the Company, is engaged in pollution prevention and control projects as a qualified third-party enterprise, which was entitled to a preferential rate of 15% (six months ended 30 June 2020: 15%).

Besides, a subsidiary of the Group which is a small-scale enterprise subject to enterprise income tax at 20% (six months ended 30 June 2020: 20%).

The Group has not recognised deferred tax assets in respect of unused tax losses and certain deductible temporary differences as it is not probable that future taxable profits against which the losses or the temporary differences can be utilised will be available in the relevant tax jurisdictions and entities.

本集團於中國成立的附屬公司之企業所得稅支出是以根據相關企業所得稅法規規定的期間估計應繳稅利潤按法定稅率25%(截至2020年6月30日止6個月: 25%)計算，本集團若干位於中國大陸被認為「高新技術企業」的附屬公司按15%優惠稅率徵稅。

本公司之附屬公司漢川龍源博奇環保科技有限公司屬於符合條件的從事污染防治項目的第三方企業，按15%(截至2020年6月30日止6個月: 15%)的優惠稅率徵收企業所得稅。

除此之外，本集團一家附屬公司屬於小型企業並按20%(截至2020年6月30日止6個月: 20%)徵收企業所得稅。

本集團針對部分未利用的稅項虧損與某些可抵扣的暫時性差異未確認遞延稅項資產，因為在相關稅務管轄區域及實體內，將來不是很可能產生可以使用此等未利用稅項虧損或暫時性差異的應納稅利潤。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

10 Loss per share

The calculation of basic loss per share is based on the loss attributable to equity shareholders of the Company of RMB631,729,000 (six months ended 30 June 2020: RMB402,914,000) and the weighted average of 6,063,770,000 ordinary shares (six months ended 30 June 2020: 6,063,770,000 ordinary shares) in issue during the period.

There were no dilutive potential ordinary shares in existence during the six months ended 30 June 2021 and 2020.

11 Property, plant and equipment

Items of property, plant and equipment with a net book value of RMB2,891,000 were disposed of during the six months ended 30 June 2021 (six month ended 30 June 2020: RMB1,155,000), resulting in a loss on disposal of RMB1,126,000 (six months ended on June 2020: a gain of RMB140,000), which is included in "Other expenses" in the unaudited interim condensed consolidated statement of profit or loss.

12 Other equity investments

10 每股虧損

每股基本虧損的計算依據為歸屬於本公司股東的虧損人民幣631,729,000元(截至2020年6月30日止6個月：虧損人民幣402,914,000元)以及本期內發行在外普通股的加權平均數6,063,770,000股(截至2020年6月30日止6個月：6,063,770,000股普通股)。

截至2021年及2020年6月30日止6個月，本公司不存在稀釋性潛在普通股。

11 物業、廠房及設備

本期處置的物業、廠房及設備的賬面淨值為人民幣2,891,000元(截至2020年6月30日止6個月：人民幣1,155,000元)，處置損失為人民幣1,126,000元(截至2020年6月30日止6個月：收益人民幣140,000元)並計入未經審計中期簡要合併損益表中的「其他費用」。

12 其他權益工具

	At 30 June 2021	At 31 December 2020
	於2021年 6月30日	於2020年 12月31日
	RMB'000	RMB'000
	人民幣千元	人民幣千元
	(Unaudited)	(Audited)
	(未經審計)	(經審計)
Equity securities designated at FVOCI (non-recycling)		
		按公允價值計量且其變動計入其他綜合收益的權益證券投資(不重新計入)
– listed equity securities (Note)	3,209,332	1,970,244
– unlisted equity securities	200,040	257,429
	3,409,372	2,227,673

Note:

It represents the 2.77% equity investment (namely 83,983,137 shares) of Tianjin Zhonghuan Semiconductor Co., Ltd. ("Zhonghuan Semiconductor").

附註：

上市權益證券指的是對天津中環半導體股份有限公司(「中環股份」)2.77%的股權投資(所持股數為83,983,137股)。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

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13 Other non-current assets

13 其他非流動資產

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Long-term trade receivables due from: – related parties under China Energy	長期應收賬款 – 國家能源集團下屬關聯方	260	36,641
Long-term service concession receivables due from third parties	應收第三方服務特許權長期應收款項	162,452	700,970
Less: Loss allowance	減：壞賬準備	(1,641)	(4,473)
		161,071	733,138
Advance to third parties	長期應收第三方款項	167,186	161,991
Less: Loss allowance	減：壞賬準備	(14,926)	(14,926)
		152,260	147,065
Contract assets (Note)	合同資產(附註)	2,011,975	3,012,197
Long-term prepayments	長期預付款	10,720	17,131
Deductible Value-added tax	可抵扣增值稅	261,582	185,345
		2,597,608	4,094,876

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

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13 Other non-current assets (continued)

As of the end of the reporting period, the ageing analysis of long-term trade receivables and long-term service concession receivables, based on invoice date (or date of revenue recognition, if earlier) and net of loss allowances is as follows:

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Within 1 year	1年以內	–	9,733
Between 2 and 3 years	2至3年內	–	–
Over 3 years	3年以上	161,071	723,405
		161,071	733,138

Note:

Contract assets represent the retentions of sales of industrial products and provision of construction services which will be received after one year which is in line with the end of the retention period and the consideration for construction service during the construction or upgrade period under the service concession arrangement, which will be reclassified to long-term service concession receivables after the construction services are satisfied.

13 其他非流動資產(續)

於報告期末，本集團基於開立發票日期(或收入確認日，兩者孰早)的長期應收賬款及服務特許權長期應收款項(扣除壞賬撥備)的賬齡分析如下：

附註：

合同資產代表產品銷售及建造服務質保金，隨著質保期的結束，將在一年以後收回，以及根據服務特許安排在建造或改造期提供的建造服務對價，該對價在建造服務完成後將重分類至服務特許權長期應收款項。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

14 Trade and bills receivables

14 應收賬款及票據

	At 30 June 2021	At 31 December 2020
	於2021年 6月30日	於2020年 12月31日
	RMB'000	RMB'000
	人民幣千元	人民幣千元
	(Unaudited)	(Audited)
	(未經審計)	(經審計)
Trade receivables for contract work due from: 合同工程的應收賬款：		
– related parties under China Energy – 國家能源集團下屬的關聯方	2,279,518	2,027,582
– associates – 聯營公司	147	147
– third parties – 第三方	1,959,846	2,171,050
	4,239,511	4,198,779
Trade receivables for operating leases due from: 經營租賃的應收賬款：		
– related parties under China Energy – 國家能源集團下屬的關聯方	86,571	67,369
	86,571	67,369
Trade receivables for sale of goods and rendering of services due from: 銷售商品及提供服務的應收賬款：		
– China Energy – 國家能源集團	–	1,740
– related parties under China Energy – 國家能源集團下屬的關聯方	1,692,214	1,872,899
– associates – 聯營公司	16,009	26,765
– third parties – 第三方	2,237,586	2,280,813
	3,945,809	4,182,217
	8,271,891	8,448,365
Less: Loss allowance 減：壞賬撥備	(1,755,558)	(1,725,017)
	6,516,333	6,723,348

NOTES TO THE INTERIM CONDENSED CONSOLIDATED
FINANCIAL INFORMATION (CONTINUED)
中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

14 Trade and bills receivables (continued)

14 應收賬款及票據(續)

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Bills receivable for contract work due from:	合同工程的應收票據：		
– related parties under China Energy	– 國家能源集團下屬的關聯方	362,185	583,040
– third parties	– 第三方	339,273	419,063
		701,458	1,002,103
Bills receivable for sale of goods and rendering of services due from:	銷售商品及提供服務的應收票據：		
– related parties under China Energy	– 國家能源集團下屬的關聯方	102,995	246,845
– third parties	– 第三方	559,086	711,221
		662,081	958,066
		1,363,539	1,960,169
Less: Loss allowance	減：壞賬撥備	(7,001)	(6,731)
		1,356,538	1,953,438
Net value of trade and bills receivables	應收賬款及應收票據淨值	7,872,871	8,676,786

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

14 Trade and bills receivables (continued)

All trade and bills receivables (net of impairment losses) are expected to be recovered within one year.

As of the end of the reporting period, the ageing analysis of trade receivables, based on invoice date (or date of revenue recognition, if earlier) and net of loss allowance, is as follows:

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Within 1 year	1年以內	3,366,371	3,856,040
Between 1 and 2 years	1至2年內	1,360,345	1,321,999
Between 2 and 3 years	2至3年內	554,709	568,487
Over 3 years	3年以上	1,234,908	976,822
		6,516,333	6,723,348

The movements in the loss allowance of trade receivables for the period/year are as follows:

所有應收賬款及票據(扣除壞賬的減值虧損)預計將於一年之內收回。

於報告期末，基於發票日期(或收入確認之日，以較早者為準)的應收賬款(扣除壞賬準備)的賬齡分析如下：

本期/上年度有關應收賬款的壞賬撥備的變動如下：

		Six months ended 30 June 2021	Year ended 31 December 2020
		截至6月30日 止6個月2021	截至12月31日 止年度2020
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
At 1 January	於1月1日結餘	(1,725,017)	(2,001,070)
(Impairment)/reversal of impairment losses, net	確認的減值虧損淨值	(33,391)	188,171
Uncollectible amounts written off	核銷金額	2,850	87,882
At 30 June/31 December	於6月30日/12月31日結餘	(1,755,558)	(1,725,017)

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

15 Cash at bank and in hand

15 銀行存款及庫存現金

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Cash at bank	銀行存款	1,642,284	1,397,587
Cash at a related party under China Energy (Note)	於國家能源集團下屬的關聯方存放 的現金(附註)	2,485,444	3,885,610
		4,127,728	5,283,197
Representing:	包括：		
– cash and cash equivalents as stated in the statement of cash flows	– 現金流量表中現金及現金等價 物餘額	3,343,728	4,373,197
– deposits with banks with original maturity of over three months	– 初始到期日三個月以上的銀行 存款	784,000	910,000
Cash at bank and in hand as stated in the statement of financial position	財務狀況表中銀行存款及庫存現金 餘額	4,127,728	5,283,197

Note:

Cash at a related party under China Energy represents the deposits in China Energy Finance Co., Ltd (“**China Energy Finance**”), a registered financial institution in the PRC.

附註：

於國家能源集團下屬的關聯方存放的現金指於國家能源集團財務有限公司(「**國家能源財務**」)的存款，該公司為在中國經註冊的金融機構。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

16 Borrowings

16 借款

(a) The long-term interest-bearing borrowings comprise:

(a) 長期帶息借款包括：

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Bank loans	銀行貸款		
– secured (Note (i))	– 抵押 (附註(i))	245,700	14,692
– unsecured	– 無抵押	487,500	851,600
Other loans	其他貸款		
– financial institutions (secured)	– 來自金融機構的其他貸款 (抵押)	–	304,852
– a related party under China Energy (unsecured) (Note (ii))	– 來自國家能源集團下屬的關聯 方的其他貸款(無抵押)(附註 (ii))	900,000	–
Private placement notes (Note (iii))	私人配售債務融資工具(無抵押) (附註(iii))	2,064,102	2,012,930
Corporate bonds (Note (iv))	公司債券(附註(iv))	3,016,427	2,945,491
		6,713,729	6,129,565
Less: Current portion of long-term borrowings	減：長期借款的即期部分	(1,592,373)	(1,694,446)
		5,121,356	4,435,119

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

16 Borrowings (continued)

16 借款(續)

(a) The long-term interest-bearing borrowings comprise: (continued)

(a) 長期帶息借款包括：(續)

Notes:

附註：

- (i) Secured long-term interest-bearing bank borrowings as at 30 June 2021 were secured by the rights of receipt of electricity tariff.
- (ii) Other loans from a related party under China Energy as at 30 June 2021 are all from China Energy Finance with an interest rate of 3.60% per annum.
- (iii) In November 2018, the Company issued 3-year private placement notes with a face value of RMB1,000,000,000 at par and with a coupon rate of 6% per annum. The effective interest rate of the private placement notes is 6.15%.

- (i) 於2021年6月30日，抵押的長期帶息銀行借款以電費收費權為質押。
- (ii) 於2021年6月30日，來自國家能源集團下屬的關聯方無抵押的其他貸款全部為向國家能源財務借款，年利率為3.60%。
- (iii) 於2018年11月，本公司發行了面值總額為人民幣1,000,000,000元，期限為三年的定向債券融資工具。票面年利率和實際年利率分別為6%和6.15%。

In October 2019, the Company issued 3-year targeted debit financing instruments with a face value of RMB1,000,000,000 at par and with a coupon rate of 4.05% per annum. The effective interest rate of the targeted financial instruments is 4.37%. The targeted financial instruments are guaranteed by China Energy and GD Power Development Co., Ltd. ("Guodian Power") provides China Energy with counter-guarantee according to its shares in the Company. At the same time, Guoneng Longyuan Environmental Engineering Co., Ltd. ("Longyuan Environmental", formerly known as Beijing Guodian Longyuan Environmental Engineering Co., Ltd.) provides a counter-guarantee of the same amount for Guodian Power in the form of a letter of counter-guarantee.

於2019年10月，本公司發行了面值總額為人民幣1,000,000,000元，期限為三年的定向債券融資工具。票面年利率和實際年利率分別為4.05%和4.37%。該定向債券融資工具由國家能源集團擔保以及國電電力發展股份有限公司(「國電電力」)根據所持股份向國家能源集團提供反擔保。同時由本公司一家全資附屬公司國能龍源環保有限公司(「龍源環保」，原名為北京國電龍源環保工程有限公司)以反擔保函形式向國電電力提供同等金額反擔保。

- (iv) In August 2012, the Company issued corporate bonds of RMB4,000,000,000, which comprise 10-year corporate bonds of RMB2,000,000,000 issued at par and with a coupon rate of 5.15% per annum. The effective interest rate of the bonds is 5.24% per annum respectively. The corporate bonds are guaranteed by China Energy.

- (iv) 於2012年8月，本公司發行公司債券人民幣4,000,000,000元，包括按面值發行的十年期公司債券人民幣2,000,000,000元，票面年利率為5.15%。此等債券的實際年利率為5.24%。該公司債券由國家能源集團擔保。

In September 2019, the Company issued 5-year corporate bonds of RMB900,000,000 with a coupon rate of 3.97% per annum. The effective interest rate of the bonds is 4.05% per annum. The corporate bonds are guaranteed by China Energy and Guodian Power provides counter guarantee to China Energy according to its shares in the Company. At the same time, Longyuan Environmental provides a counter-guarantee of the same amount for Guodian Power in the form of a letter of counter-guarantee.

於2019年9月，本公司發行五年期公司債券人民幣900,000,000元，票面年利率為3.97%。實際票面年利率為4.05%。該公司債券由國家能源集團擔保以及國電電力根據所持股份向國家能源集團提供反擔保。同時由龍源環保以反擔保函形式向國電電力提供同等金額反擔保。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

16 Borrowings (continued)

16 借款(續)

(b) The short-term interest-bearing borrowings comprise:

(b) 短期帶息借款包括：

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Bank loans	銀行貸款		
– Secured (<i>Note</i>)	– 抵押(附註)	10,000	–
– unsecured	– 無抵押	4,086,000	5,106,000
Other loans	其他貸款		
– China Energy (unsecured)	– 國家能源集團(無抵押)	600,000	600,000
– a related party under China Energy (unsecured)	– 國家能源集團下屬的關聯方(無抵押)	315,000	–
Current portion of long-term borrowings	長期借款的即期部分	1,592,373	1,694,446
		6,603,373	7,400,446

Note:

Secured short-term interest-bearing bank loans as at 30 June 2021 were secured by the patent right.

附註：

於2021年6月30日，抵押的短息帶息銀行借款以專利權為質押。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

17 Trade and bills payables

17 應付賬款及票據

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Bills payable to:	應付票據：		
– sub-contractors and equipment suppliers	– 分包商及設備供應商	362,717	265,405
– raw material suppliers	– 原材料供應商	966,365	2,052,838
		1,329,082	2,318,243
Trade payables to:	應付賬款：		
– sub-contractors and equipment suppliers:	– 分包商及設備供應商：		
– related parties under China Energy	– 國家能源集團下屬的關聯方	31,783	66,536
– associates	– 聯營公司	–	667
– third parties	– 第三方	3,678,273	3,902,637
		3,710,056	3,969,840
– raw material suppliers:	– 原材料供應商：		
– related parties under China Energy	– 國家能源集團下屬的關聯方	61,829	23,480
– associates	– 聯營公司	4,215	4,215
– third parties	– 第三方	4,212,474	4,399,505
		4,278,518	4,427,200
		9,317,656	10,715,283

As at 30 June 2021 and 31 December 2020, the trade and bills payables of the Group were generally repayable within three months. All trade and bills payables were expected to be settled within one year.

於2021年6月30日及2020年12月31日，本集團的應付賬款及應付票據一般於三個月內償還。所有應付賬款和票據預計將在一年內結清。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

17 Trade and bills payables (continued)

An ageing analysis of the trade and bills payables as at the end of the reporting period, based on the invoice date, is as follows:

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Within 1 year	1年以內	7,309,376	8,887,058
1 to 2 years	1至2年內	1,461,173	649,520
2 to 3 years	2至3年內	78,281	346,479
Over 3 years	3年以上	468,826	832,226
		9,317,656	10,715,283

17 應付賬款及票據(續)

於報告期末，基於發票日期的應付賬款及票據的賬齡分析如下：

18 Dividends

(a) Dividend payable to equity shareholders in respect of the interim periods

The board of directors of the Company did not recommend the payment of any interim dividend for the six months ended 30 June 2021 and 2020.

(b) Dividends payable to equity shareholders in respect of the previous financial periods, approved during the interim period

The board of directors of the Company did not approve or pay any dividend in respect of the previous financial periods during the six months ended 30 June 2021.

18 股息

(a) 就中期應向權益股東支付的股息

截至2021年及2020年6月30日止6個月，本公司董事會不建議派發任何中期股息。

(b) 於中期經批准的就上一個財年應向權益股東支付的股息

截至2021年6月30日止6個月，本公司董事會未批准或派發任何以前年度相關的股息。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

19 SHARE AWARD SCHEME

(a) Restricted Shares Incentive Plan by Longyuan Technology

On 25 February 2021, Longyuan Technology, granted 9,364,000 restricted shares to incentive participants including directors (excluding independent directors), senior management and core technological backbones serving in Longyuan Technology at the grant price of RMB3.67 per share. The source of the stock is the additional issuance of A-share ordinary shares of Longyuan Technology to the incentive participants. The validity period of this Restricted Shares Incentive Plan shall be from the date of resolution resolved of the general meeting of shareholders of Longyuan Technology to the date when all the restricted shares are released or repurchased, which shall be no more than 62 months. The restricted shares granted by this Restricted Shares Incentive Plan will be unlocked in three batches within 24 months to 60 months after the completion of the grant registration if the performance assessment target is satisfied. Besides, according to the Restricted Shares Incentive Plan, if the performance assessment target of the restricted shares in a certain period of the sales restriction release period is not achieved, the restricted shares of all incentive participants in the current period cannot be lifted, and Longyuan Technology will repurchase such restricted shares at the lower of granted price and the market price on the date of the repurchase.

At the grant date, the fair value of the granted restricted shares is approximately RMB1,592,000. The equity-settled share based payment expenses for the six month ended 30 June 2021 is immaterial.

19 股權激勵計劃

(a) 龍源技術限制性股票激勵計劃

2021年2月25日，龍源技術向激勵對象(包含在龍源技術任職的董事(不包含獨立董事)、高級管理人員及核心技術骨幹)授予9,364,000股限制性股票，授予價格為人民幣3.67元/股。股票來源為向激勵對象定向增發龍源技術A股普通股股票。該限制性股票激勵計劃的有效期自龍源技術股東大會通過之日起至激勵對象獲授的限制性股票全部解除限售或回購註銷之日止，最長不超過62個月。如果業績考核目標達成，該限制性股票激勵計劃授予的限制性股票將在授予登記完成之日起的24個月至60個月內分三批解鎖。此外，根據限制性股票激勵計劃，如果在某個解除限售期業績考核目標未達成，則所有激勵對象當期限制性股票不可解除限售，龍源技術需按照授予價格和回購日的股票市場價格孰低進行回購。

在授予日，限制性股票的公允價值約為人民幣1,592,000元。截至2021年6月30日止6個月，該以權益結算的股份支付費用金額並不重大。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

19 SHARE AWARD SCHEME (continued)

(b) Share Award Scheme by Longyuan Environmental

On 25 May 2021, the Board of the directors of the Company approved the share award scheme (“**Share Award Scheme**”) of Longyuan Environmental. According to the Share Award Scheme, Longyuan Environmental intends to award an aggregate of 84,894,737 shares, representing 5% of its total issued share capital immediately upon completion of the capital injection, to the employee shareholding platform, through which the grantees will hold their shares in Longyuan Environmental. On 26 May 2021, Beijing Xinyuan Juhe Management Technical Center Partnership, as the employee shareholding platform, signed the capital injection agreement (the “**Agreement**”) with the Company and Longyuan Environmental. According to the Agreement, the employee shareholding platform will inject a total cash of RMB135,368,421 by installment. Up to 30 June 2021, the employees shareholding platform has injected approximately RMB107,084,000. Upon the completion of first installment, the share of the interest by the Company in Longyuan Environmental was diluted from 100% to 96%.

Since the grant price of shares awarded to the grantees was determined according to the fair value of net assets per share of Longyuan Environmental, the difference between the grant price of awarded shares and the fair value of the awarded shares is almost zero.

20 Disposal of Subsidiaries

- (a) On 19 April 2021, Guoneng Lucency Environment and Technology Co., Ltd. (“**Lucency**”), a wholly-owned subsidiary of the Company, and Goldwind Environmental Protection Co., Ltd. (“**Goldwind Environmental**”) entered into the equity transfer transaction agreement (the “**Transaction Agreement**”), pursuant to which Lucency agreed to dispose of, and Goldwind Environmental agreed to acquire, 70% of the equity interest in Guodian Galaxy Water at a consideration of RMB514,983,000 (the “**Disposal**”). According to the Transaction Agreement, 55% of the consideration, being RMB283,240,650 shall be paid to Lucency within three business days after completing the changes in industrial and commercial registration of Guodian Galaxy Water. The remaining 45% of the consideration, being RMB231,742,350, together with interest thereon (if any) calculated based on the current benchmark interest rate for loans at the time of signing the Transaction Agreement and up to the relevant settlement date shall be paid to Lucency within one year from the effective date of the Transaction Agreement. Goldwind Environmental should provide the legitimate and effective guarantee for Lucency for the remaining 45% of the consideration and the related interest.

19 股權激勵計劃(續)

(b) 龍源環保股權激勵計劃

2021年5月25日，本公司董事會批准了龍源環保的股權激勵計劃(「**股權激勵計劃**」)。根據股權激勵計劃，龍源環保擬透過注資向員工持股平臺授出合共84,894,737股股份，佔緊隨注資完成後其已發行股本總額的5%。被授與人將透過員工持股平臺持有其於龍源環保的股份。2021年5月26日，北京欣源聚合管理技術中心(有限合夥)，作為員工持股平臺，與本公司及龍源環保簽訂了增資協議(「**協議**」)。根據協議，員工持股平臺將會以現金方式分期繳付出資總共人民幣135,368,421元。截至2021年6月30日，員工持股平臺已實際注資約人民幣107,084,000元。第一期出資完成後，本公司在龍源環保的持股比例從100%稀釋至96%。

由於股份的授予價格是依據龍源環保每股資產淨值的公允價值來定，因此股份的授予價格和股份的公允價值之間的差異幾乎為零。

20 出售子公司

- (a) 2021年4月19日，本公司全資附屬公司國能朗新明環保科技有限公司(「**朗新明**」)與金風環保有限公司(「**金風環保**」)簽訂產權交易合同(「**交易合同**」)，據此，朗新明同意出售，而金風環保同意收購國電銀河水務70%股權，對價為人民幣514,983,000元(「**出售事項**」)。根據交易合同，對價的55%，即人民幣283,240,650元，須於國電銀河水務完成工商登記變更後三個營業日內支付給朗新明。剩餘45%的對價，即人民幣231,742,350元，連同其利息(如有)，並按簽訂交易合同時的同期貸款基準利率計算，計算直至相關結算日期，須於交易合同生效日期起計一年內支付給朗新明。金風環保應對上述剩餘45%股權轉讓對價及相關利息向朗新明提供合法有效的擔保。

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中期簡要合併財務資料附註(續)

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

20 Disposal of Subsidiaries (continued)

Besides, pursuant to the Transaction Agreement, as at 31 March 2021, Guodian Galaxy Water owed Lucency financing debts of RMB579,500,000, project quality guarantee funds of RMB9,578,800, interests on shareholder's loans of RMB8,732,900 and project management service fees of RMB1,000,000. The aforesaid amounts shall be repaid by Guodian Galaxy Water or Goldwind Environmental within one year from the effective date of the Transaction Agreement or pursuant to the terms of the relevant contracts pertaining to the aforesaid amounts. Goldwind Environmental should also provide the legitimate and effective guarantee for Lucency for the aforesaid amounts.

On 3 June 2021, Xinjiang Goldwind Finance Co., Ltd. (“**Goldwind Finance**”), which was under common control of the immediate holding company of Goldwind Environmental, provided the guarantee for Lucency with a total amount of RMB830,901,100 (including the guarantee for the remaining 45% of the consideration and related interest of RMB241,823,100 and the guarantee for the aforesaid various debts of RMB589,078,800).

The Disposal was completed on 7 June 2021 and a loss of RMB108,155,000 was recognized by the Group upon the completion of the Disposal.

20 出售子公司(續)

此外，根據交易合同，於2021年3月15日，國電銀河水務欠朗新明融資債務人民幣579,500,000元、工程質量保證金人民幣9,578,800元、股東借款利息人民幣8,732,900元及項目管理服務費人民幣1,000,000元。上述金額須由國電銀河水務或金風環保自交易合同生效日期起一年內或根據與上述金額相關的合同條款償還。金風環保應對上述金額向朗新明提供合法有效的擔保。

2021年6月3日，同受金風環保直接控股母公司控制的新疆金風科技集團財務有限公司(「**金風財務**」)，向朗新明實際提供總金額為人民幣830,901,100元的擔保(包含對剩餘45%的對價及相關利息的擔保金額人民幣241,823,100元和對上述債務的擔保金額人民幣589,078,800元)。

出售事項於2021年6月7日完成，隨著出售事項的完成，本集團確認人民幣108,155,000元的損失。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

20 Disposal of Subsidiaries (continued)

20 處置子公司(續)

		As at 31 May 2021 於2021年5月31日 RMB'000 人民幣千元 (Unaudited) (未經審計)
Net assets disposed of:	處置淨資產：	
Property, plant and equipment	物業、廠房及設備	7,417
Intangible assets	無形資產	354,223
Interests in an associate	對聯營公司的投資	16,834
Other non-current assets	其他非流動資產	1,359,011
Deferred tax assets	遞延所得稅資產	7,232
Inventories	存貨	6,231
Trade and bills receivables	應收賬款及票據	277,635
Deposits, prepayments and other receivables	按金、預付款項及其他應收款項	65,811
Cash at bank and in hand	銀行存款及庫存現金	18,498
Short-term borrowings	短期借款	(719,487)
Trade and bills payables	應付賬款及票據	(48,993)
Other payables and contract liabilities	其他應付款項	(13,894)
Income tax payable	應付所得稅	(1,030)
Long-term borrowings	長期借款	(428,987)
Deferred tax liabilities	遞延所得稅負債	(129,538)
Non-controlling interests	非控股權益	(231,289)
		539,674
Advance Payment by Lucency (Note (i))	朗新明代墊款(附註(i))	31,177
Goodwill (Note (ii))	商譽(附註(ii))	52,287
		623,138
Loss on disposal of a subsidiary	處置子公司損失	(108,155)
		514,983
Satisfied by:	對價形式：	
Cash	現金	514,983

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

20 Disposal of Subsidiaries (continued)

Notes:

- (i) Advance payment by Lucency represented the payment made by Lucency on the behalf of Guodian Galaxy Water for acquiring 38% of the equity interest of an associate of Guodian Galaxy Water in the year of 2012. The interests in an associate was also disposed in line with the disposal of Guodian Galaxy Water, such advance payment was recognized into loss on disposal of a subsidiary upon the completion of the Disposal.
- (ii) Goodwill represented the goodwill arising from the acquisition of 70% of the equity interest of Guodian Galaxy Water by Lucency during the year of 2012.

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

20 處置子公司(續)

附註：

- (i) 朗新明代墊款是指朗新明在2012年替國電銀河水務支付的為獲取國電銀河水務聯營公司38%股權的款項。由於國電銀河水務已處置，該聯營公司的股權也隨之被處置，該代墊款隨著出售事項的完成而直接計入處置子公司損失。
- (ii) 商譽是指2012年朗新明收購銀河水務70%股權時產生。

處置子公司的現金和現金等價物的淨流入如下：

		At 30 June 2021 於2021年6月30日 RMB'000 人民幣千元 (Unaudited) (未經審計)
Cash consideration received	收到的現金對價	283,241
Cash and bank balances disposed of	處置子公司的現金流出	(18,498)
Net inflow of cash and cash equivalents in respect of the disposal of a subsidiary	處置子公司的現金及現金等價物淨流入	264,743

(b) Deregistration of Taiyuan Lucency

Lucency held 80% equity interest of Taiyuan Lucency. In January 2021, Taiyuan Lucency was deregistered, from which the Group recorded a loss of RMB3,924,000.

(b) 註銷太原朗新明

朗新明持有太原朗新明80%股權。在2021年1月，太原朗新明註銷，本集團確認人民幣3,924,000元的損失。

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中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

21 Contingent liabilities

(a) Guarantees issued

As of the end of the reporting period, the Group provided bid and performance guarantees to customers for construction contracts, sale of wind turbines and other industrial products and financial guarantees to banks and other financial institution in respect of the loans granted to a former subsidiary as follows:

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Bid guarantees provided to:	向如下公司提供的投標擔保：		
– third parties	– 第三方	–	500
Performance guarantees provided to:	向如下公司提供的履約擔保：		
– related parties under China Energy	– 國家能源集團下屬的關聯方	649,450	1,054,062
– third parties	– 第三方	624,336	465,897
Financial guarantees to banks and other financial institution for:	就如下公司向銀行和其他金融機構提供的財務擔保：		
– a third party (Note)	– 第三方(附註)	253,400	–
		1,527,186	1,520,459

At the end of the reporting period, the directors did not consider it is probable that a claim will be made against the Group under any of the guarantees.

Note:

The financial guarantees to banks and other financial institution for a third party represented the guarantees for Guodian Galaxy Water, a former subsidiary, all of which have been released in July and August of 2021 respectively.

21 或有負債

(a) 擔保款項

於報告期末，本集團關於建造合同，風機和其他商品銷售而向客戶作出的投標及履約擔保以及對前附屬公司的貸款向銀行和其他金融機構作出的財務擔保，如下所述：

於報告期末，董事們認為根據所提供的任何擔保向本集團或本公司提出索賠的機會不大。

附註：

對第三方的貸款向銀行和其他金融機構提供的財務擔保為向前附屬公司國電銀河水務提供的擔保，該擔保金額已經在2021年7月和8月分別全部解除。

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中期簡要合併財務資料附註(續)

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21 Contingent liabilities (continued)

(b) Litigation contingencies

The Group is the defendant in certain lawsuits as well as the plaintiff in other proceedings arising in the ordinary course of business.

While the outcomes of the above contingencies lawsuits or other proceedings cannot be determined at present, management believes that any results will not have a material adverse effect on the financial position, operating results and business of the Group. No provision has been recognised by the Group for these litigation contingencies.

22 Commitments

The Group had the following capital commitments at the end of the reporting period:

21 或有負債(續)

(b) 訴訟或有事項

本集團還是某些法律訴訟的被告，以及產生於日常經營過程中的其他訴訟程序的原告。

雖然上述訴訟或有事項或其他法律程序的結果目前仍無法確定，但管理層相信任何因此產生的結果不會對本集團的財務狀況，經營業績及業務產生重大不利影響。本集團未因上述訴訟或有事項確認預計負債。

22 承諾

於報告期末，本集團作出以下資本承諾：

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Contracted, but not provided for Property, plant and equipment	已訂約但未撥備予物業、 廠房及設備	779,958	152,027
Capital contributions payable to associates	已訂約但未撥備予應付聯營 公司的出資	21,200	21,200
		801,158	173,227

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

23 Related party transactions

(a) Transactions with related parties

The Group is part of a large group of companies under China Energy and has significant transactions and relationships with China Energy and related parties under China Energy.

Principal transactions which were carried out in the ordinary course of business are as follows:

23 重大關聯方交易

(a) 與關聯方交易

本集團是國家能源集團下屬的眾多公司的一部分，與國家能源集團及國家能源集團下屬的關聯方之間具有重大交易量及重要關係。

在正常業務過程中與關聯方的主要交易如下所述：

		Six months ended 30 June	
		截至6月30日止6個月	
		2021	2020
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Sales of goods to	出售貨物予		
– related parties under China Energy	– 國家能源集團下屬的關聯方	1,455,374	1,579,816
– associates	– 聯營公司	47	6,639
Construction services provided to	提供建造服務予		
– related parties under China Energy	– 國家能源集團下屬的關聯方	1,174,501	884,161
– associates	– 聯營公司	1,877	527
Services provided to	提供服務予		
– related parties under China Energy	– 國家能源集團下屬的關聯方	484,633	336,601
Leases to	出租予		
– related parties under China Energy	– 國家能源集團下屬的關聯方	293,861	245,328
Leases from	授租自		
– related parties under China Energy	– 國家能源集團下屬的關聯方	5,489	5,452
Purchases of goods from	購買商品自		
– related parties under China Energy	– 國家能源集團下屬的關聯方	193,529	82,734
– associates	– 聯營公司	–	2,185
Services provided by	服務提供自		
– related parties under China Energy	– 國家能源集團下屬的關聯方	17,533	7,703
Interest expenses	利息費用		
– China Energy	– 國家能源集團	–	10,806
– related parties under China Energy	– 國家能源集團下屬的關聯方	5,612	11,992
Interest income	利息收入		
– related parties under China Energy	– 國家能源集團下屬的關聯方	1,475	3,244
– associates	– 聯營公司	83	–

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23 Related party transactions (Continued)

23 關聯方交易(續)

(a) Transactions with related parties (Continued)

(a) 與關聯方交易(續)

		Six months ended 30 June	
		截至6月30日止6個月	
		2021	2020
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Working capital provided to – associates	提供周轉資金予 – 聯營公司	300	11,000
Working capital repaid from – associates	償還周轉資金自 – 聯營公司	–	11,000
Loans received from – related parties under China Energy	貸款借取自 – 國家能源集團下屬的關聯方	1,215,000	1,470,000
Loans repaid to – related parties under China Energy	償還貸款於 – 國家能源集團下屬的關聯方	–	1,520,000
Net deposits change in – related parties under China Energy	存款變動淨額 – 國家能源集團下屬的關聯方	(1,400,166)	195,812
Dividends received from – related parties under China Energy – associates	收取股息自 – 國家能源集團下屬的關聯方 – 聯營公司	3,577	–
		–	14,150

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23 Related party transactions (continued)

(b) Outstanding balances with related parties

Except as disclosed in notes 14, 15, 16 and 17 in the interim financial information, at the end of the reporting period, the Group's significant balances with related parties are as follows:

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Other non-current assets	其他非流動資產		
– Related parties under China Energy	– 國家能源集團下屬的關聯方	1,374,600	1,625,043
Contract assets	合同資產		
– Related parties under China Energy	– 國家能源集團下屬的關聯方	1,498,608	1,006,019
Deposits, prepayments and other receivables	按金、預付款項及其他應收款項		
– Related parties under China Energy	– 國家能源集團下屬的關聯方	447,009	518,113
– Associates	– 聯營公司	4,118	24,446
Lease liabilities	租賃負債		
– Related parties under China Energy	– 國家能源集團下屬的關聯方	54,195	46,452
Other payables	其他應付款項		
– China Energy	– 國家能源集團	600,031	600,014
– Related parties under China Energy	– 國家能源集團下屬的關聯方	41,132	55,710
Contract liabilities	合同負債		
– Related parties under China Energy	– 國家能源集團下屬的關聯方	907,960	2,073,100

(c) Contributions to defined contribution retirement plans

The Group participates in various defined contribution retirement plans organised by China Energy for its staff. As at 30 June 2021 and 31 December 2020, there was no material outstanding contribution to post-employment benefit plans. The Group's contributions to defined contribution retirement plans for the six months ended 30 June 2021 amounted to RMB21,629,000 (six months ended 30 June 2020: RMB19,873,000).

23 重大關聯方交易(續)

(b) 與關聯方的餘額

除本中期財務資料附註14、15、16和17的披露外，於報告期末，本集團與關聯方的重大餘額如下：

(c) 界定供款退休計劃的供款

本集團參加了國家能源集團內部組織的各種界定供款退休計劃。於2021年6月30日和2020年12月31日，在退休福利計劃項下，沒有重大未支付供款。截至2021年6月30日止6個月，本集團對界定供款退休計劃的供款金額為人民幣21,629,000元(2020年6月30日止6個月：人民幣19,873,000元)。

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30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

23 Related party transactions (continued)

(d) Transactions with other government-related entities in the PRC

The Group operates in an economic regime currently dominated by entities directly or indirectly controlled, jointly controlled or significantly influenced by the PRC government and numerous government authorities and agencies (collectively referred to as “**government-related entities**”). China Energy, the parent and ultimate holding company of the Company, is a PRC state-owned enterprise and these government-related entities are also considered as related parties of the Group in this respect.

Apart from transactions with China Energy and related parties under China Energy mentioned above, the Group conducts a majority of its business activities with other government-related entities in the ordinary course of business. These transactions are carried out at terms similar to those that would be entered into with non-government-related entities.

The Group prices its services and products based on the commercial negotiations. The Group has also established its approval process for sales of goods, provision of services, purchases of products and services and its financing policy for borrowings. Such approval process and financing policy do not depend on whether the counterparties are government-related entities or not.

23 重大關聯方交易(續)

(d) 與中國其他政府相關實體之間的交易

在本集團目前從業的經濟體制下，主導企業是由中國政府及各種政府機關及機構直接或間接控制、共同控制或重大影響的實體(合稱為「**政府相關實體**」)。國家能源集團(本公司的母公司及最終控股公司)是中國的國有企業，此等政府相關實體因此也視為本集團的關聯方。

除上述與國家能源集團及國家能源集團下屬關聯方之間的交易外，在正常業務過程中，本集團大部分業務活動是與其他政府相關實體交易的。此等交易的執行條款與非政府相關實體的交易條款相似。

本集團根據市場談判條件對服務及產品定價。關於貨物銷售、服務提供、產品及服務的購買，本集團已建立了審批程序，並建立了關於借款方面的融資政策。此等審批程序及融資政策並不考慮交易對方是否是政府相關實體。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

23 Related party transactions (continued)

(d) Transactions with other government-related entities in the PRC (continued)

Having considered the potential for transactions to be impacted by related party relationships, the Group's approval processes and financing policy, and what information would be necessary for an understanding of the potential effect of the relationship on these financial statements, the directors of the Company are of the opinion that further information about the following transactions that are collectively significant is required for disclosure:

– **Sale of goods and provision of construction services**

The Group sells its goods and provides construction services to a wide range of government-related power companies and manufacturing enterprises.

– **Deposits and borrowings**

The Group deposits most of its cash in government-related financial institutions, and also obtains short-term and long-term loans from these financial institutions in the ordinary course of business. The interest rates of the bank deposits and loans are regulated by the People's Bank of China.

– **Purchases of materials and receipt of construction services**

The Group purchases materials and receives construction services from a wide range of government-related manufacturing enterprises and construction contractors.

– **Service concession arrangements**

The Group entered into a number of service concession agreements with local governments to construct and operate water treatment plants during the concession period. All transactions under the service concession arrangements were made with local governments and carried out at terms set out in the respective service concession arrangements.

23 重大關聯方交易(續)

(d) 與中國其他政府相關實體之間的交易(續)

考慮到關聯方關係對交易的潛在影響、本集團的審批程序以及融資政策，以及為瞭解關聯關係對本中期財務資料的潛在影響而需要的資料，董事們認為，對於整體而言重大的如下交易，需要披露進一步的詳細資料：

– **貨物銷售及建造服務的提供**

本集團向各種政府相關電力公司及製造企業銷售貨物並提供建造服務。

– **存款及借款**

本集團的大部分現金存於政府相關的金融機構，且在正常業務過程中也從此等金融機構獲取短期及長期貸款。銀行存款及貸款利率由中國人民銀行制定。

– **材料購買及獲得建造服務**

本集團向各種政府相關製造企業購買材料並向各種政府相關建造承包商獲取建造服務。

– **服務特許權安排**

本集團已與當地政府簽訂了多項服務特許權協定，在特許期限之內，負責建設以及經營水處理廠。服務特許權安排下的所有交易均與地方政府作出，且在各自的服務特許權安排中規定了交易執行條款。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

23 Related party transactions (continued)

(e) Key management personnel remuneration

Key management personnel are those persons holding positions with authority and responsibility for planning, directing and controlling the activities of the Group, directly or indirectly, including the Company's directors.

Remuneration for key management personnel, including amounts paid to the Company's directors and supervisors, is as follows:

23 重大關聯方交易(續)

(e) 主要管理人員薪酬

主要管理人員指對其所處職位具有權利與責任、可直接或間接地規劃、領導以及控制本集團的活動的個人，包括本公司董事們。

主要管理人員薪酬(包括支付給本公司董事和監事們的費用)的詳情如下：

		Six months ended 30 June	
		截至6月30日止6個月	
		2021	2020
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Salaries and other emoluments	工資和其他酬金	3,729	2,465
Retirement scheme contributions	退休計劃供款	445	293
		4,174	2,758

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中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

24 Fair value measurement of financial instruments

(a) Fair values of financial assets and liabilities carried at cost or amortised cost

The carrying amounts of the Group's financial instruments carried at cost or amortised cost were not materially different from their fair values as at 30 June 2021 and 31 December 2020 except for the following financial instruments, for which their carrying amounts and fair values are disclosed below:

24 金融工具的公允價值計量

(a) 按成本或攤餘成本列賬的金融資產和金融負債的公允價值

於2021年6月30日和2020年12月31日，按成本或攤餘成本入賬的本集團金融工具的賬面金額與其公允價值並無重大差異，惟以下各項金融工具外，該等金融工具的賬面金額及公允價值披露如下：

		At 30 June 2021 於2021年6月30日		At 31 December 2020 於2020年12月31日	
		Carrying amount 賬面金額 RMB'000 人民幣千元 (Unaudited) (未經審計)	Fair value 公允價值 RMB'000 人民幣千元 (Unaudited) (未經審計)	Carrying amount 賬面金額 RMB'000 人民幣千元 (Audited) (經審計)	Fair value 公允價值 RMB'000 人民幣千元 (Audited) (經審計)
Fixed rate long-term bank loans	固定利率長期銀行貸款	900,000	862,539	1,171,144	1,092,653
Private placement notes and corporate bonds	私人配售債務融資工具和公司債券	5,080,529	5,065,017	4,958,421	4,942,269

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

24 Fair value measurement of financial instruments (continued)

24 金融工具的公允價值計量(續)

(b) Financial assets and liabilities measured at fair value

(b) 按公允價值計量的金融資產及負債

(i) Fair value hierarchy

(i) 公允價值層級

The Group's financial instruments measured at the end of the reporting period on a recurring basis at fair value are categorised into the three-level fair value hierarchy as defined in IFRS 13 Fair Value Measurement. The level into which a fair value measurement is classified is determined with reference to the observability and significance of the inputs used in the valuation technique as follows:

下表呈列本集團於報告期末按經常基準所計量的金融工具公允價值。該等金融工具已歸入《國際財務報告準則》第13號「公允價值計量」所界定的三個公允價值層級。本集團參照以下估值方法所採用的輸入值的可觀察程度和重要性，從而釐定公允價值計量數值所應歸屬的層級：

- Level 1 valuation: Fair value measured using only Level 1 inputs, i.e., unadjusted quoted prices in active markets for identical assets or liabilities at the measurement date
- Level 2 valuation: Fair value measured using Level 2 inputs, i.e., observable inputs which fail to meet Level 1, and not using significant unobservable inputs. Unobservable inputs are inputs for which market data are not available
- Level 3 valuation: Fair value measured using significant unobservable inputs

- 第1層級估值：僅使用1級輸入資料進行計量的公允價值，即計量之日相同資產或負債的活躍市場中未經調整的報價。
- 第2層級估值：使用2級輸入資料進行計量的公允價值，即不符合1級要求且未使用不可觀察的重要輸入資料的可觀察輸入資料。不可觀察輸入資料是不存在市場資料的輸入資料。
- 第3層級估值：使用不可觀察的重要輸入資料進行計量的公允價值。

The Group's finance department headed by the finance manager is responsible for determining the policies and procedures for the fair value measurement of financial instruments. At each interim and annual reporting dates, the finance department analyses the movements in the values of financial instruments and determines the major inputs applied in the valuation. The valuation is reviewed and approved by the chief financial officer.

本集團財務部門在財務經理指引下，負責確定金融工具的公允價值評估政策及流程。於各中期及年度報告日，財務部門分析金融工具價值的變動並確定評估模型適用的主要參數。估值結果由首席財務官進行審閱並批准。

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30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

24 Fair value measurement of financial instruments (continued)

24 金融工具的公允價值計量(續)

(b) Financial assets and liabilities measured at fair value (Continued)

(b) 按公允價值計量的金融資產及負債(續)

(i) Fair value hierarchy (Continued)

(i) 公允價值層級(續)

The following table presents the financial instruments of the Group that are measured at fair value as at 30 June 2021:

下表列示於2021年6月30日本集團按公允價值計量的金融工具：

	Fair value at 30 June 2021 於2021年6月30日 的公允價值	Fair value measurements as at 30 June 2021 categorised into 於2021年6月30日歸屬以下層級 公允價值計量數值		
		Level 1 第1層級	Level 2 第2層級	Level 3 第3層級
	RMB'000 人民幣千元 (Unaudited) (未經審計)	RMB'000 人民幣千元 (Unaudited) (未經審計)	RMB'000 人民幣千元 (Unaudited) (未經審計)	RMB'000 人民幣千元 (Unaudited) (未經審計)
Financial assets: 金融資產：				
Bills receivable 應收票據	1,356,538	-	1,356,538	-
Equity investments in a listed company 對上市公司的權益投資	3,209,332	3,209,332	-	-
Equity investments in unlisted companies 對非上市公司的權益投資	200,040	-	-	200,040

The following table presents the financial instruments of the Group that are measured at fair value as at 31 December 2020:

下表列示於2020年12月31日本集團按公允價值計量的金融工具：

	Fair value at 31 December 2020 於2020年12月31日 的公允價值	Fair value measurements as at 31 December 2020 categorised into 於2020年12月31日歸屬以下層級 公允價值計量數值		
		Level 1 第1層級	Level 2 第2層級	Level 3 第3層級
	RMB'000 人民幣千元 (Audited) (經審計)	RMB'000 人民幣千元 (Audited) (經審計)	RMB'000 人民幣千元 (Audited) (經審計)	RMB'000 人民幣千元 (Audited) (經審計)
Financial assets: 金融資產：				
Bills receivable 應收票據	1,953,438	-	1,953,438	-
Equity investments in a listed company 對上市公司的權益投資	1,970,244	1,970,244	-	-
Equity investments in unlisted companies 對非上市公司的權益投資	257,429	-	-	257,429

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

24 Fair value measurement of financial instruments (continued)

(b) Financial assets and liabilities measured at fair value (Continued)

(i) Fair value hierarchy (Continued)

During the six months ended 30 June 2021 and 2020, there were no transfers between Level 1 and Level 2, or transfers into or out of Level 3.

(ii) Information about Level 2 and Level 3 fair value measurements

The fair values of bills receivables were measured using the discounted cash flow model. The significant observable input used when measuring the fair values of bills receivables is the benchmark interest rate for one-year loans.

The fair values of unlisted equity investments designated at fair value through other comprehensive income have been estimated using a market-based valuation technique based on assumptions that are not supported by observable market prices or rates. The valuation requires the directors to determine comparable public companies (peers) based on industry, size, leverage and strategy, and to calculate an appropriate price multiple, such as the price/earnings (“P/E”) multiple, price/book value (“P/B”) multiple, enterprise value to sales (“EV/Sales”) multiple, enterprise value to earnings before interest, tax depreciation and amortisation (“EV/EBITDA”) multiple, for each comparable company identified. The multiple is calculated by dividing the enterprise value of the comparable company by an earnings measure. The trading multiple is then discounted for considerations such as illiquidity and size differences between the comparable companies based on company-specific facts and circumstances. The discounted multiple is applied to the corresponding earnings measure of the unlisted equity investments to measure the fair value. The directors believe that the estimated fair values resulting from the valuation technique, which are recorded in the consolidated statement of financial position, and the related changes in fair values, which are recorded in other comprehensive income, are reasonable, and that they were the most appropriate values at the end of the reporting period.

24 金融工具的公允價值計量(續)

(b) 按公允價值計量的金融資產及負債 (續)

(i) 公允價值層級(續)

於截至2020年及2021年6月30日止6個月期間，本集團未發生第1、2層級之間的轉換，或由第3層級轉入或轉出。

(ii) 公允價值層級第二層級和第三層級所計量公允價值的資料

應收票據的公允價值採用折現現金流量模型進行計算。在計量應收票據的公允價值時使用的重要可觀察輸入資料為一年內到期的借款的基準利率。

指定為以公允價值計量且其變動計入其他綜合收益的非上市股權投資的公允價值，是基於未得到可觀察市場價格支持的假設，採用基於市場的估值技術進行估計的。估值要求董事基於行業、規模、槓桿比率及策略確定可比上市公司(同行)，並就所找到的每家可比公司計算出一個適當的價格乘數，例如市場價格與盈利的比率(「市盈率」)，價格與賬面值的比率(「市淨率」)，企業價值與收入的比率(「企業價值與收入比率」)，或企業價值與利息、稅費、折舊與攤銷之前與利潤的比率(「企業價值與息稅前利潤比率」)。該乘數按可比公司的企業價值除以盈利計算。然後，根據公司的具體情況並考慮到缺乏流動性及可比公司間的規模差異等因素，對交易乘數進行折現。將折現後的乘數應用於非上市股權投資相應的盈利指標以計量其公允價值。董事認為，通過估值技術得出的估計公允價值(計入綜合財務狀況表)以及公允價值變動(計入其他綜合收益)屬合理，且於報告期末有關估值屬最為恰當之估值。

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(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

24 Fair value measurement of financial instruments (continued) (Continued)

(b) Financial assets and liabilities measured at fair value (Continued)

(ii) Information about Level 2 and Level 3 fair value measurements (Continued)

For the six months ended 30 June 2021, the P/B multiple was 1.1 (31 December 2020: 1.1). The EV/EBITDA multiple used for the year end 31 December 2020 was 10.7 while such multiple was not applicable for the six months ended 30 June 2021 when making valuation. The discount rate for lack of marketability was 30% (31 December 2020: 30%).

24 金融工具的公允價值計量(續)

(b) 按公允價值計量的金融資產及負債(續)

(ii) 公允價值層級第二層級和第三層級所計量公允價值的資料(續)

於截至2021年6月30日止6個月期間，市淨率為1.1(2020年12月31日：1.1)。2020年12月31日企業價值與息稅攤折前利潤率為10.7，而該乘數於截至2021年6月30日止6個月期間估值時並不適用。就缺乏市場流通性折讓的範圍為30%(2020年12月31日：30%)。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

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24 Fair value measurement of financial instruments (continued) (Continued)

24 金融工具的公允價值計量(續)

(b) Financial assets and liabilities measured at fair value (Continued)

(b) 按公允價值計量的金融資產及負債 (續)

(ii) Information about Level 2 and Level 3 fair value measurements (Continued)

(ii) 公允價值層級第二層級和第三 層級所計量公允價值的資料 (續)

The movements during the period in the balance of the Level 3 fair value measurements are as follows:

本期第3層級公允價值計量下的結餘變動如下：

		At 30 June 2021	At 31 December 2020
		於2021年 6月30日	於2020年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Audited)
		(未經審計)	(經審計)
Unlisted equity securities	非上市權益證券		
At 1 January	於1月1日	257,429	347,062
Changes in fair value recognised in other comprehensive income	於其他綜合收益內確認的 公允價值變動	(8,716)	(89,633)
Disposals	處置	(48,673)	-
At 30 June/31 December	於6月30日/12月31日	200,040	257,429

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

25 Events after the reporting period

- (a) On 16 June 2021, the Company, China Energy, China Longyuan Power Group Corporation Limited (“**Longyuan Power**”) and Guodian United Power Technology Co., Ltd. (“**United Power**”), a non wholly-owned subsidiary of the Company, entered into the Equity Transfer and Capital Injection Agreement (the “**Agreement**”), pursuant to which the Company conditionally agreed to dispose of approximately 15.68% equity interest in United Power to China Energy at a consideration of RMB407,681,944 (the “**Equity Transfer**”). Immediately upon completion of the Equity Transfer, China Energy and Longyuan Power will make capital injection of approximately RMB1,474,662,400 and RMB631,998,172 into United Power, respectively (the “**Capital Injection**”), which will result in a further dilution of the Company’s equity interest in United Power to 30%.

According to the Agreement, the Equity Transfer and the Capital Injection are part and parcel of each other and shall be completed simultaneously. Upon the completion of Equity Transfer and Capital Injection, United Power will become the associate of the Company from the subsidiary of the Company.

On 16 July 2021, the first extraordinary general meeting of the Company for the year 2021 has approved the Agreement. Up to the date of this report, the Equity Transfer and the Capital Injection have not been completed, thus United Power is still the subsidiary of the Company.

- (b) On 11 August 2021, the directors of the Company propose to obtain the a general and conditional mandate to be granted by the Shareholders for the possible disposal of up to 41,991,568 shares of Zhonghuan Semiconductor (i.e. half of the 83,983,137 shares of Zhonghuan Semiconductor held by the Group) on open market transactions on the Shenzhen Stock Exchange during the mandate period (the “**Disposal Mandate**”). The mandate period is 12 months from the date of the circular of the Company in relation to, among other things, the Disposal Mandate and the disposal. According to the International Financial Reporting Standards, the shares of Zhonghuan Semiconductor held by the Group are measured at fair value, and the change in fair value is included in other comprehensive income and cannot be reversed to the income statement. Therefore, the difference between the selling price and the cost is directly transferred from the other comprehensive income to undistributed profits upon the disposal. The effect of the actual amount of proceeds, related transaction costs, taxes and tax surcharges on the net assets and earnings of the Group will depend on the actual selling price of the 41,991,568 shares of Zhonghuan Semiconductor under the Disposal Mandate. Up to the date of this report, the directors of the Company have not obtained the Disposal Mandate.

25 期後事項

- (a) 2021年6月16日，本公司、國家能源集團、龍源電力集團股份有限公司(「**龍源電力**」)及本公司的非全資子公司國電聯合動力技術有限公司(「**聯合動力**」)，訂立股權轉讓注資協議(「**協議**」)，據此，本公司有條件同意以人民幣407,681,944元的對價向國家能源集團出售聯合動力約15.68%的股權(「**股權轉讓**」)。緊接股權轉讓完成後，國家能源集團及龍源電力將分別向聯合動力注資約人民幣1,474,6162,400元及人民幣631,998,172元(「**注資**」)，導致本公司於聯合動力的股權進一步攤薄至30%。

根據協議，股權轉讓與注資兩者不可分割，並應同時完成。股權轉讓與注資完成後，聯合動力將由本公司之附屬公司變為聯營公司。

2021年7月16日，本公司2021年度第一次臨時股東大會審議通過了該協議。截至本報告日，股權轉讓和注資尚未完成，因此聯合動力仍然是本公司的附屬公司。

- (b) 2021年8月11日，本公司董事建議從股東取得一般及有條件授權，以便可能在授權期間於深圳證券交易所公開市場交易中出售本集團持有的最多41,991,568股中環股份之股份(即本集團持有83,983,137股中環股份之股份的一半)(「**出售授權**」)。授權期限自本公司刊發有關(其中包括)出售授權及出售事項的通函之日起計12個月內。按照國際財務報告準則，集團持有的中環股份之股份按照公允價值計量，公允價值變動計入其他綜合收益且不能轉回至利潤表，因此出售價款與成本之間的差異，在出售時直接從其他綜合收益轉入未分配利潤。實際所得款項金額、相關交易成本、稅費及附加稅項對本集團資產淨額及盈利之影響將取決於本次出售授權項下之41,991,568股中環股份之股份的實際售價。截止本報告日，本公司董事尚未取得股東的出售授權。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED) 中期簡要合併財務資料附註(續)

30 June 2021 2021年6月30日

(Amounts expressed in RMB unless otherwise stated) (除非另有說明，以人民幣列示)

25 Events after the reporting period (continued)

- (c) As disclosed in Note 20, Lucency has completed the disposal of 70% of the equity interest in Guodian Galaxy Water on 7 June 2021, according to the Transaction Agreement, the debts owed by Guodian Galaxy Water to Lucency shall be repaid within one year from the effective date of the Transaction Agreement or pursuant to the terms of the relevant contracts pertaining to the aforesaid debts. On 25 August 2021, Lucency has received the financing debts of RMB370,000,000 from Guodian Galaxy Water.

26 Approval of the financial information

The interim condensed consolidated financial information were approved and authorized for issue by the Board on 27 August 2021.

25 期後事項(續)

- (c) 如附註20披露，朗新明已於2021年6月7日完成對國電銀河水務70%股權的處置，根據交易合同，國電銀河水務欠朗新明的債權需在交易合同生效日期起一年內或根據與債權相關的合同條款償還。於2021年8月25日，朗新明已收到國電銀河水務償還的融資類債務人民幣370,000,000元。

26 批准財務資料

本中期簡要合併財務資料於2021年8月27日被董事會批准發佈。



国家能源集团
CHN ENERGY

國電科技環保集團股份有限公司

GUODIAN TECHNOLOGY & ENVIRONMENT GROUP CORPORATION LIMITED*

(於中華人民共和國註冊成立的股份有限公司)
(a joint stock limited liability company incorporated in the People's Republic of China)

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