



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



* For identification purpose only
僅供識別



MILESTONES OF GUODIAN TECH IN THE FIRST HALF OF 2020

國電科環2020年上半年大事記

1. On 26 February 2020, Tianren Company was listed by the Office of the State Council Leading Group for State-owned Reform in the Companies List of “Demonstration Action of Science and Technology Reform”, and the relevant plan was adopted by SASAC for record in April 2020.
1. 2020年2月26日，天仁公司被國務院國企改革領導小組辦公室列入「科改示範行動」企業名單，「科改示範行動」方案於2020年4月通過國資委備案。
2. On 30 April 2020, Guodian Zhishen signed the supply and engineering contract of unit 1 and unit 2 non-security level DCS system of CNNC Zhangzhou Energy Co., Ltd.. DCS products of Guodian Zhishen will be used in the first pile of Hualong fusion technology.
2. 2020年4月30日，國電智深簽訂中核國電漳州能源有限公司#1、#2機組非安全級DCS系統供貨及工程合同，國電智深DCS產品將應用於華龍融合技術的首堆。
3. On 11 May 2020, Lucency won the bid of the EPCO general contracting project of a mine well water extraction treatment project of Shenhua Shendong Coal Group Co., Ltd., with the bid-winning amount of RMB 632 million, and obtaining partial results in the development of coal market.
3. 2020年5月11日，朗新明中標神華神東煤炭集團有限責任公司某礦井水提標治理項目EPCO總承包項目，中標金額為人民幣6.32億元，煤炭市場開拓取得階段性成果。
4. On 27 May 2020, the key project “Technical Development and Industrial Demonstration of Metal Recovery and Carrier Reuse for Waste Environmental Catalysts” under the 2019 national key research and development plan “Solid Waste Recycling” led by Longyuan Environmental was declared by the Ministry of Science and Technology.
4. 2020年5月27日，龍源環保牽頭申報的2019年度國家重點研發計劃「固廢資源化」重點專項的「廢棄環保催化劑金屬回收和載體再用技術研發及工業示範」項目通過國家科技部公示。
5. On 16 June 2020, the international standard IEC61400-5 Turbine Blades for Wind Power Generation System, which was jointly prepared by United Power, was officially issued.
5. 2020年6月16日，聯合動力參與編製的國際標準《IEC61400-5風力發電系統風輪葉片》正式頒佈。
6. Since May 2020, United Power has won the bidding for projects other than China Energy such as China General Nuclear Power Group Co., Ltd., China Energy Construction Group Co., Ltd., China Wind Power Group Co., Ltd., with a total capacity of over 270,000 kW and contract amounts of over RMB1 billion.
6. 2020年5月以來，聯合動力累計中標中國廣核集團有限公司、中國能源建設集團有限公司、中國風電集團有限公司等國家能源集團外項目，共27萬餘千瓦，合同額逾人民幣10億元。



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CORPORATE INFORMATION

公司資料

Directors

Executive Directors

Mr. CHEN Dongqing (*Chairman*)
Mr. ZHANG Jun (*General Manager*)
Mr. TANG Chaoxiong

Non-executive Directors

Mr. WANG Zhongqu
Mr. ZHANG Wenjian
Mr. GU Yuchun
Mr. YAN Andrew Y.⁽¹⁾

Independent Non-executive Directors

Mr. SHEN Xiaoliu
Mr. QU Jiuhui
Mr. XIE Qiuye
Mr. YEUNG Chi Tat

Supervisors

Mr. LUAN Baoxing (*Chairman*)
Mr. XU Xingzhou
Mr. WANG Shaoyu⁽²⁾
Mr. LI Wei
Ms. QIN Xiangling

Legal Advisors

International

Herbert Smith Freehills (as to Hong Kong law)
23/F, Gloucester Tower
15 Queen's Road Central,
Central Hong Kong

PRC

King & Wood Mallesons (as to PRC law)
20th Floor, East Tower, World Financial Center
1, Dongsanhuan Zhonglu,
Chaoyang District, Beijing, PRC

董事

執行董事

陳冬青先生(*主席*)
張軍先生(*總經理*)
唐超雄先生

非執行董事

王忠渠先生
張文建先生
顧玉春先生
閻焱先生⁽¹⁾

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

樂寶興先生(*主席*)
許興洲先生
王少玉先生⁽²⁾
李偉先生
秦湘靈女士

法律顧問

國際

史密夫斐爾律師事務所(有關香港法律)
香港中環
皇后大道中15號
告羅士打大廈23樓

中國

金杜律師事務所(有關中國法律)
中國北京市朝陽區
東三環中路1號
環球金融中心辦公樓東樓20層



CORPORATE INFORMATION (CONTINUED) 公司資料(續)

Auditors

International

Ernst & Young
Certified Public Accountants
22/F, CITIC Tower
1 Tim Mei Avenue
Central, Hong Kong

PRC

ShineWing Certified Public Accountants
(Special General Partnership)
9/F, Block A Fu Hua Mansion
No. 8 Chao Yang Men Bei Da Jie,
Dong Cheng District, Beijing, PRC

Joint Company Secretaries

Mr. CAI Zhaowen⁽³⁾
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

Flat L, 15/F, Hong Kong Mansion
1 Yee Wo Street, Causeway Bay
Hong Kong

核數師

國際

安永會計師事務所
執業會計師
香港中環
添美道1號
中信大廈22樓

中國

信永中和會計師事務所
(特殊普通合伙)
中國北京市東城區
朝陽門北大街8號
富華大廈A座9層

聯席公司秘書

蔡兆文先生⁽³⁾
李國輝先生

授權代表

陳冬青先生
李國輝先生

法定地址

中國北京市海澱區
西四環中路16號院
1號樓11層1101室

中國主要辦事處

中國北京市海澱區
西四環中路16號院
1號樓

香港主要營業地點

香港
銅鑼灣怡和街1號香港大廈
15樓L室



CORPORATE INFORMATION (CONTINUED) 公司資料(續)

Nomination Committee

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

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
Mr. YAN Andrew Y.⁽¹⁾
Mr. ZHANG Jun

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
唐超雄先生

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
閻焱先生⁽¹⁾
張軍先生

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) The term of office of Mr. YAN Andrew Y. expired on 7 August 2020. Due to the adjustment of personal work arrangement, Mr. YAN did not participate in the re-election of the fourth Board of directors.

Ms. GE Xiaojing was elected as a non-executive director of the fourth Board of directors and a member of the strategy committee at the first extraordinary general meeting of shareholders of 2020 held on 7 August 2020. For details, please refer to the announcements of the Company dated 22 July 2020 and 7 August 2020.

- (2) Mr. WANG Shaoyu was elected as the supervisor of the company at the 2019 annual general meeting of shareholders held on 12 June 2020, and his term of office would expire at the third board of supervisors. Subsequently, Mr. WANG was re-elected as a supervisor of the fourth Board of supervisors at the first extraordinary general meeting of shareholders of 2020 held on 7 August 2020. For details, please refer to the announcements of the Company dated 12 June 2020 and 7 August 2020.
- (3) Mr. CAI Zhaowen is qualified to act as the company secretary of the Company under Rule 3.28 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited with effect from 9 June 2020.

附註：

- (1) 閻焱先生的任期於2020年8月7日屆滿。因個人工作安排調整，閻先生並未參與第四屆董事會重選。

葛曉菁女士於2020年8月7日召開的2020年第一次臨時股東大會上獲選舉為第四屆董事會非執行董事及戰略委員會委員。有關詳情請參閱本公司日期為2020年7月22日及2020年8月7日的公告。

- (2) 王少玉先生於本公司2020年6月12日召開的2019年股東週年大會上獲選舉為本公司監事，任期至第三屆監事會任期屆滿。其後，王先生於2020年8月7日召開的2020年第一次臨時股東大會上經重選為第四屆監事會監事。有關詳情請參閱本公司日期為2020年6月12日及2020年8月7日的公告。
- (3) 蔡兆文先生有資格根據香港聯合交易所有限公司證券上市規則第3.28條擔任本公司的公司秘書，自2020年6月9日起生效。



INTERIM RESULTS HIGHLIGHTS

中期業績摘要

- For the six months ended 30 June 2020, the revenue of the Group was approximately RMB4,447.8 million, representing an increase of approximately 8.7% compared to that for the corresponding period last year.
- For the six months ended 30 June 2020, the gross profit of the Group was approximately RMB915.0 million, representing a decrease of approximately 3.1% compared to that for the corresponding period last year.
- For the six months ended 30 June 2020, loss before taxation of the Group was approximately RMB410.5 million, representing an increase of approximately 168.3% compared to that for the corresponding period last year.
- For the six months ended 30 June 2020, loss attributable to equity shareholders of the Company was approximately RMB402.9 million, representing an increase of 102.6% compared to that for the corresponding period last year.
- For the six months ended 30 June 2020, loss per share of the Group (excluding non-controlling interests) was approximately RMB6.64 cents.
- The Board recommends not to distribute any interim dividend for the six months ended 30 June 2020.
- 截至2020年6月30日止6個月，本集團收入約為人民幣4,447.8百萬元，比去年同期增加約8.7%。
- 截至2020年6月30日止6個月，本集團毛利約為人民幣915.0百萬元，比去年同期減少約3.1%。
- 截至2020年6月30日止6個月，本集團稅前虧損約為人民幣410.5百萬元，比去年同期增加約168.3%。
- 截至2020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402.9百萬元，比去年同期增加102.6%。
- 截至2020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6.64分。
- 董事會建議不派發截至2020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, 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 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.

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, United Power, Tianren Company and Guodian Zhishen have become well-known brands in China. As at 30 June 2020, 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.

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日正式改製成為股份有限公司，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。

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、聯合動力、天仁公司、國電智深已成為享譽中國的知名品牌。截至2020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。



INTRODUCTION OF COMPANY (CONTINUED) 公司介紹(續)

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, energy conservation and renewable energy 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.

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、節能和可再生能源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 materialize, 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.

In 2020, facing the challenges and risks under the new normal of economic development, Chinese government has issued new regulations, policies and measures which are suitable for China's electric power and power-related industries one after another.

China refers to the People's Republic of China, and only for purpose of this report, excluding Taiwan, Macao Special Administrative Region and Hong Kong Special Administrative Region.

The following are the main regulations, policies and measures promulgated by 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 23 January 2020, National Energy Administration (“NEA”) issued the Exposure Draft for Matters Concerning the Construction of Wind Power and Photovoltaic (“PV”) Power Generation Projects in 2020 (“Opinion 1”).

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。

2020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，僅就本報告而言，不包括台灣、中國澳門特別行政區及中國香港特別行政區。

以下為中國政府及其他有關監管機構頒布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. 2020年1月23日，國家能源局（「國家能源局」）發佈《2020年風電、光伏（「光伏」）發電項目建設有關事項徵求意見稿》（「《意見一》」）。



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

Among them, the wind power project construction plan in 2020 is proposed as follows:

Actively promote the construction of grid parity project. Based on implementing the construction conditions such as power transmission and consumption, the provincial energy departments shall actively organise and give priority to promoting the construction of wind power projects that are unsubsidised with grid parity. Focus on supporting the voluntary conversion of wind power projects that have been connected to the grid or require state financial subsidies within the approved term of validity to grid parity projects, and implement the policy of supporting the grid parity projects.

Promote the construction of projects that require the state financial subsidies in order. Provincial energy authorities shall organise the construction of wind power projects that require the state financial subsidies in order according to plan and consumption capacity. Implement the total quantity control, and disclose the residual capacity to the public in time. Play an active role of the gateway for grid connection, and reasonably arrange the grid connection timing of the project in strict accordance with the plan and consumption capacity.

Actively support the construction of distributed wind power projects. Encourage provinces (regions and cities) for innovative development, actively promote the participation of distributed wind power in the pilot market-oriented transaction of distributed power generation. Provincial energy authorities shall coordinate power grid enterprises to simplify the grid-connection application procedures of distributed wind power, develop grid-connection plan, provide consultation service, and promptly publish information on the accessible capacity of the distribution network. At the same time, actively implement the project approval commitment system, establish multi-sectional linkage mechanism, set up "one-stop" service system, innovative project package approval and other management modes.

The issuance of Opinion 1 is conducive to the continuous development of wind turbine manufacturing industry.

2. On 18 June 2020, the National Development and Reform Commission and NEA jointly issued the Guidance on Ensuring Energy Security in 2020 ("Opinion 2"). It is pointed out that we shall improve the flexibility of energy system, strengthen the control of energy security risks, and ensure national energy security.

其中，2020年風電項目建設方案提出：

積極推進平價上網項目建設。各省級能源主管部門在落實電力送出和消納等各項建設條件的基礎上，積極組織、優先推進無補貼平價上網風電項目建設。重點支持已併網或在核准有效期、需國家財政補貼的風電項目自願轉為平價上網項目，執行平價上網項目支持政策。

有序推進需國家財政補貼項目建設。各省級能源主管部門要按照規劃和消納能力，有序規範組織需國家財政補貼的風電項目建設。落實規劃總量控制，並及時向社會公佈剩餘容量空間。積極發揮電網併網關口作用，嚴格按照規劃和消納能力合理安排項目併網時序。

積極支持分散式風電項目建設。鼓勵各省(區及市)創新發展方式，積極推動分散式風電參與分佈式發電市場化交易試點。各省級能源主管部門要協調電網企業簡化分散式風電項目併網申請程序，做好併網方案制定和諮詢服務，並及時向社會公佈配電網可接入容量信息。同時，積極落實項目核准承諾制，建立多部門聯動機制，構建「一站式」服務體系，創新項目打包核准等管理模式。

《意見一》的發佈有利於風機製造產業的持續發展。

2. 2020年6月18日，國家發展與改革委員會、國家能源局發佈《關於做好2020年能源安全保障工作的指導意見》(「《意見二》」)，指出要提高能源系統靈活性，強化能源安全風險管控，保障國家能源安全。

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

Opinion 2 proposes to continuously build a diversified pattern of electric power production. Vigorously develop the clean energy power generation, accelerate the decline of subsidies for wind power and PV power generation, promote the completion of wind power and PV power generation projects with grid parity, develop hydropower in key river basins in a scientific and orderly manner, and create the integrated base of water, wind and PV renewable energy. In 2020, the installed capacity of conventional hydropower was about 340 million kW, and the installed capacity of wind power and PV power generation was about 240 million kW.

Opinion 2 calls for promoting clean and efficient utilisation of coal. Promote ultra-low emission and energy conservation transformation of coal-burning power plants, carry out comprehensive improvements in energy conservation and environmental protection for coal-burning boilers, develop clean and efficient utilisation technologies and equipment, accelerate the development and promotion of clean and efficient technologies, promote the classification and utilisation of quality, and further raise the level of clean and efficient use of coal.

Opinion 2 also calls for strengthening energy conservation and improving energy efficiency. Strengthen energy conservation in key fields such as industry, construction, transportation and public institutions, organise the implementation of key energy conservation projects and carry out energy conservation transformation.

The issuance of Opinion 2 will be conducive to the wind turbine manufacturing industry of the Group, environmental protection and energy conservation industries.

3. On 22 June 2020, NEA issued the Guidelines on Energy Work in 2020 ("Opinion 3"). It is pointed out that the installed capacity of non-fossil energy power generation will reach about 900 million kW in 2020.

Opinion 3 proposes to pursue clean and low-carbon development, accelerate the clean and efficient use of fossil energy, vigorously promote the development of non-fossil energy, continue to increase the proportion of clean energy consumption, and promote green and low-carbon energy transformation.

Opinion 3 proposes to continuously develop non-fossil energy. Implement the Notice on the Construction of Wind Power and PV Power Generation Projects in 2020, and maintain a reasonable scale and pace of development of wind power and PV power generation. Promote the centralised wind power, PV and offshore wind power construction, and accelerate the development of distributed PV and distributed wind power in the central and eastern regions and the southern regions. Actively promote wind power and PV power grid parity.

《意見二》提出要持續構建多元化電力生產格局。支持清潔能源發電大力發展，加快推動風電、光伏發電補貼退坡，推動建成一批風電、光伏發電平價上網項目，科學有序推進重點流域水電開發，打造水風光一體化可再生能源綜合基地。2020年，常規水電裝機達到3.4億千瓦左右，風電、光伏發電裝機均達到2.4億千瓦左右。

《意見二》要求要推動煤炭清潔高效利用。推進燃煤電廠超低排放和節能改造，實施燃煤鍋爐節能環保綜合改造，創新清潔高效利用技術和裝備，加快清潔高效技術研發和推廣，推進分質分級利用，進一步提高煤炭清潔高效利用水平。

《意見二》還要求要強化節能提高效率。加強工業、建築、交通、公共機構等重點領域節能，組織實施重點節能工程，開展節能改造。

《意見二》的發佈預計將對本集團風機製造產業、環保及節能產業形成利好。

3. 2020年6月22日，國家能源局印發《2020年能源工作指導意見》（「《意見三》」），指出2020年全國非化石能源發電裝機達到9億千瓦左右。

《意見三》指出，堅持以清潔低碳為發展目標，加快化石能源清潔高效利用，大力推動非化石能源發展，持續擴大清潔能源消費佔比，推動能源綠色低碳轉型。

《意見三》指出，持續發展非化石能源。落實《關於2020年風電、光伏項目建設有關事項的通知》，保持風電、光伏發電合理規模和發展節奏。有序推進集中式風電、光伏和海上風電建設，加快中東部和南方地區分佈式光伏、分散式風電發展。積極推進風電、光伏發電平價上網。

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

Opinion 3 proposes to intensify efforts to tackle the weakness of energy technology equipment. Strengthen the construction of an energy technology innovation platform, and organise the selection of a batch of the first set(s) of important technical equipment and promote demonstration. Strengthen organisational coordination, resource allocation, policy support, assessment and adjustment to ensure that the weakness of technical equipment has “subjects to be tackled, projects to be implemented, and traceable progress”. Depend on the construction of demonstration projects, and promote the demonstration application of independent innovation of thermal power Distributed Control System (“DCS”), extra-high voltage AC-DC casing pipe, high temperature material of ultra-supercritical generator set, and high power electronic devices.

The issuance of Opinion 3 is conducive to the development of the clean energy industry and will create a good operating environment to the wind turbine manufacturing industry and electronic information industry of the Group.

《意見三》指出，加大能源技術裝備短板攻關力度。加強能源技術創新平台建設，組織評選一批首台(套)重大技術裝備並推進行示範。加強組織協調、資源配置、政策保障和評估調整，確保各項技術裝備短板「攻關有主體、落地有項目、進度可追蹤」。依託示範項目建設，推動火電分散控制系統(「DCS」)、特高壓交流套管、超超臨界發電機組高溫材料、大功率電力電子器件等自主創新示範應用。

《意見三》的發佈有利於清潔能源產業的發展，將對本集團風機製造產業、電子信息產業帶來良好的經營環境。

Key Business Developments

Environmental Protection Business

As at 30 June 2020, the Group's desulfurisation and denitrification projects under construction were as follows:

主要業務發展

環保業務

截至2020年6月30日，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)
Desulfurisation projects under construction	在建脫硫項目	12	6,385
Including: Desulfurisation reconstruction projects	其中：脫硫改造項目	7	3,065
Desulfurisation reconstruction EPC projects	脫硫改造EPC項目	7	3,065
Newly built desulfurisation projects	脫硫新建項目	5	3,320
Newly built desulfurisation EPC projects	脫硫新建EPC項目	5	3,320
Denitrification projects under construction	在建脫硝項目	15	20,770
Including: Denitrification reconstruction projects	其中：脫硝改造項目	14	18,770
Denitrification reconstruction EPC projects	脫硝改造EPC項目	13	15,450
Denitrification reconstruction concession projects	脫硝改造特許項目	1	3,320
Newly built denitrification projects	脫硝新建項目	1	2,000
Newly built denitrification EPC projects	脫硝新建EPC項目	1	2,000



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

The models of concession operations of the Group's environmental protection business are categorised into three types: general concession model, the operation and maintenance model of general contracting for tariff (generating income from tariff for desulfurisation, and assuming the responsibility for the supply of materials and the disposal of desulfurisation by-products in addition to general operation and maintenance) and the operation and maintenance model (generating income from general operations and maintenance). As of 30 June 2020, the operating units of desulfurisation concession operation of the Group had an aggregate installed capacity of 15,740 MW, and the operating units of denitrification concession operation had an aggregate installed capacity of 11,840 MW; the desulfurisation generating units under the operation and maintenance model of general contracting for tariff had an installed capacity of 4,040 MW; the desulfurisation generating units under the operation and maintenance model had an installed capacity of 11,750 MW.

As of 30 June 2020, the annual production capacity of denitrification catalysts, the key material for denitrification service of the Group was 19,000m³. Currently, the Group is actively promoting the catalyst life cycle management. The scientific research project of catalyst whole-life cycle management in the four power plants of China Energy Investment Corporation Limited ("China Energy") has completed the establishment of China Energy, and the ancillary construction projects are being promoted at the same time.

The environmental protection business has been further expanded, and the commissioning of sludge disposal project of Changzhou Power Plant of China Energy Jiangsu Company has been performed and put into trial operation with mud. This is the first domestic "key technology research of combined with 630 MW large coal-fired units resource disposal for a variety of sludge solid waste and engineering demonstration project".

In terms of water treatment, as of 30 June 2020, the Group processed approximately 87,644,200 tons of sewage (including reclaimed water) and reduced the cumulative COD (chemical oxygen demand) emissions by approximately 26,100 tons.

Energy Conservation Solutions Business

The business scope of Yantai Longyuan Power Technology Co., Ltd. ("**Longyuan Technology**", SZ.300105), a subsidiary of the Company, has been further expanded as the Company successfully obtained the Class B qualification for engineering design environmental engineering (air pollution prevention and control project) and the second class qualification for environmental protection engineering professional contracting.

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、電價總包連維模式(獲得脫硫電價收益，除負責一般性連維外還負責物耗供應及脫硫副產物的處置)、連維模式(獲得一般性連維收益)。截至2020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11,840兆瓦；電價總包連維模式脫硫機組為4,040兆瓦；連維模式脫硫機組為11,750兆瓦。

截至2020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，在國家能源集團四個電廠的催化劑全生命週期管理科研項目已經完成國家能源集團立項，配套工程項目正在同步推進。

環保業務進一步拓寬，國家能源集團江蘇公司常州發電廠污泥處置項目已進行調試，並帶泥試運行。這是國內首個「結合630MW大型燃煤機組資源化處置多種污泥固廢關鍵技術研究及工程示範項目」。

水處理方面，截至2020年6月30日，污水處理(含中水)量約為8,764.42萬噸，COD(化學需氧量)累計減排量約為2.61萬噸。

節能解決方案業務

附屬公司煙台龍源電力技術股份有限公司(「**龍源技術**」，SZ.300105)成功取得工程設計環境工程(大氣污染防治工程)專項乙級和環保工程專業承包二級資質，公司業務範圍進一步擴大，拓寬了業務承攬領域。

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

Beijing Guodian Zhishen Control Technology Co., Ltd. (“**Guodian Zhishen**”), a subsidiary of the Company, entered into the transformation of the DCS system of the power plant provided by the Ordos branch of China Shenhua Coal To Liquid and Chemical Co., Ltd., with a contract amount of RMB11.3 million, which was the first coal chemical industry project undertaken by the company, opening up the DCS transformation market of self-supply power plants in the coal chemical industry.

附屬公司北京國電智深控制技術有限公司(「**國電智深**」)簽訂了中國神華煤制油化工有限公司鄂爾多斯煤制油分公司自備電廠DCS系統改造合同，合同額達人民幣1,130萬元，這是該公司簽訂的首個煤化工領域項目，開拓了煤化工自備電廠DCS改造市場。

Wind Power Products and Services Business

風電產品及服務業務

The Group's wind turbine generator (“**WTG**”) sales volumes by product during the periods for the six months ended 30 June 2019 and 2020 are set forth below:

本集團於2019年及2020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 (Unit) 完成銷售(套)		Orders (Unit) 在手訂單(套) As at 30 June 2020 2020年6月30日止	
		2020 2020年	2019 2019年	Confirmed orders 已確認訂單	Successful tenders 成功競標
1.5MW	1.5兆瓦	—	—	597	—
1.65MW	1.65兆瓦	—	—	30	—
2.XMW	2.X兆瓦	293	222	598	—
3.XMW	3.X兆瓦	16	—	266	8
Total	總數	309	222	1,491	8

In the first half of the year, the wind power products and service business were under great pressure due to the dual impacts of rush of installation and the epidemic of the novel coronavirus disease (COVID-19) (the “**Epidemic**”). The Group continued to strengthen the guarantee of production and supply. The blade with impeller diameter of 141m was officially put into production, and the first set of blade with impeller diameter of 156m commenced trial production. The predetermined target of expansion and construction of production base plant has been completed, creating conditions for supply in the second half of the year.

上半年，受到行業搶裝潮和新型冠狀病毒(COVID-19)肺炎疫情(「**疫情**」)雙重衝擊，風電產品及服務業務經營壓力巨大，本集團持續加強生產供貨保障。葉輪直徑為141米的葉片正式投產，首套葉輪直徑為156米的葉片開始試生產，生產基地廠房改擴建施工完成預定目標，為下半年供貨創造條件。

The Group accelerates the research and development of new products. In the first half of this year, design certification of 2.2MW-130 model, 3.6MW-141 model and 4.8MW-156 model were obtained, while six types certification of 3.0/3.2/3.4MW -156 models with 95m/100m tower cylinder series were obtained, and all design of 4.5MW-156 model was completed, laying a solid foundation for development in the next two to three years.

本集團加快新產品研發。上半年取得了2.2MW-130機型、3.6MW-141機型以及4.8MW-156機型設計認證，取得了3.0/3.2/3.4MW-156搭配95m/100m塔筒系列6款機型型式認證，完成了4.5MW-156機型全部設計，奠定了未來兩至三年發展的堅實基礎。

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

The Group has comprehensively improved quality services. During the Epidemic, the Group closely monitored the quality of production at the front line, and found 59 problems in total, 58 of which have been rectified, with a completion rate of 98%. We strengthened the quality control at the source, and carried out the quality supervision of the supplier's production process. For the 58 suppliers that have already put into production, 29 suppliers have been supervised on site and 29 suppliers have been supervised online. We strengthened the monitoring of the operation of units, and the daily failure rate of the units in operation was 0.008 times/unit/day.

Other Business

Beijing Huadian Tianren Electricity Control Technology Co., Ltd. ("**Tianren Company**"), a subsidiary of the Company, independently developed the power trading support system, the integrated power trading management system and other core products. In the first half of this year, the construction of the system framework of China Energy's power spot market transaction management and control system was completed, and we continued to optimise the integrated power marketing platform according to customers' needs.

The results of the first stage of the multi-system coal mine safety monitoring and control system of Guodian Longyuan Electrical Co., Ltd., a subsidiary of the Company, were successfully accepted by the expert group of the coal mine safety monitoring and control system of China Energy on 7 May 2020. After eight months of harsh environment of underground mines since 2019, the system has met the design requirements in terms of safety, stability and reliability, and some control indexes have reached the advanced level of the industry. The overall operation has shown remarkable results.

Improving Steadily in Market Performance

In the first half of 2020, the Group coped with Epidemic actively, and overcame difficulties and worked hard to make progress. New contracts of RMB5.842 billion were signed in this period, marking the highest in five years with a year-on-year increase of 49%. The details are as follows:

- The exploitation of new market continues to develop rapidly. Beijing Guodian Longyuan Environmental Engineering Co., Ltd. ("**Longyuan Environmental**"), a subsidiary of the Company, successfully signed the EPC project of a chemical thermoelectric technical innovation project of Sinopec Ningbo Engineering Co., Ltd., with the contract amount of RMB41.39 million. Guodian United Power Technology Co., Ltd. ("**United Power**"), a subsidiary of the Company, was awarded several new market projects outside the system, such as China General Nuclear Power Group Co., Ltd., China Energy Construction Group Co., Ltd., and China Wind Power Group Co., Ltd., with the bid-winning capacity of 273,100 kW, and the bid-winning amount of RMB1.016 billion. Tianren Company signed the first regional smart enterprise project – the smart Jiangsu construction project of Jiangsu Electric Power Co., Ltd. under China Energy, and the smart power station construction project of Taizhou Power Generation Co., Ltd. under China Energy, with the contract amount of RMB75.43 million.

本集團全面提升質量服務。疫情期間緊抓生產一線質量監督，累計發現問題59項，已整改完成58項，整改完成率98%。強化源頭質量管控，開展供應商生產過程質量監督，針對已投產的58家供應商，到場監造29家，線上監造29家。加強機組運行監控，在運機組日均故障率0.008次/台/天。

其他業務

附屬公司北京華電天仁電力控制技術有限公司(「天仁公司」)自主研發了電力交易支持系統、發售一體電力交易管理系統等核心產品，上半年完成了國家能源集團電力現貨市場交易管控系統的系統框架搭建，並根據客戶需求對電力營銷一體化平台進行了持續優化。

附屬公司國電龍源電氣有限公司多系統融合的煤礦安全監控系統一階段成果於2020年5月7日順利通過國家能源集團煤礦安全監控系統專家組驗收。該系統自2019年經過八個月井下嚴苛環境的考驗，在安全性、穩定性、可靠性方面達到了設計要求，部分控制指標達到了行業先進水平，整體運行效果良好。

市場業績穩步提升

2020年上半年，本集團積極應對疫情，克服困難、努力進取，上半年新簽合同額達人民幣58.42億元，創五年來新高，同比增長49%。其中：

- 新市場開拓繼續高歌猛進。附屬公司北京國電龍源環保工程有限公司(「龍源環保」)成功簽約中石化寧波工程有限公司某化工熱電技改工程EPC項目，合同金額為人民幣4,139萬元；附屬公司國電聯合動力技術有限公司(「聯合動力」)獲得中國廣核集團有限公司、中國能源建設集團有限公司、中國風電集團有限公司等系統外新市場項目，中標容量達27.31萬千瓦，中標金額達人民幣10.16億元；天仁公司簽約首個區域級智慧企業項目—國家能源集團江蘇電力有限公司智慧江蘇建設項目及國家能源集團泰州發電有限公司智能電站建設項目合同，合同金額為人民幣7,543萬元。



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

- New achievement has been made in the development of new industries. Guodian Zhishen signed the supply and engineering contract of unit 1 and unit 2 non-safety DCS system with CNNC Zhangzhou Energy Co., Ltd., with the contract amount of RMB149 million. Beijing Lucency Environment and Technology Co., Ltd. ("Lucency") won the bid of the EPCO (Engineering Procurement Construction, Operation) general contracting project of a well water extraction treatment project of Shenhua Shendong Coal Group Co., Ltd. ("Shendong Coal"), with the bid-winning amount of RMB630 million. Guodian Longyuan Energy Saving Technology Co., Ltd. signed the pulverised coal furnace project of Shendong Coal, with the contract amount of RMB81.82 million.
- 新行業開拓不斷取得新成績。國電智深簽約中核國電漳州能源有限公司#1、#2機組非安全級DCS系統供貨及工程合同，合同金額1.49億元；附屬公司北京朗新明環保科技有限公司(「朗新明」)中標神華神東煤炭集團有限責任公司(「神東煤炭」)某礦井水提標治理項目EPCO(設計—採購—施工，運維)總承包項目，中標金額為人民幣6.3億元；附屬公司國電龍源節能技術有限公司簽約神東煤炭煤粉爐項目，金額為人民幣8,182萬元。

Actively Exploring the Overseas Market

In the first half of 2020, the Company explored overseas power market actively while focusing on the Epidemic prevention and control. The Company developed strategic cooperation with subsidiaries of China National Nuclear Corporation to carry out in-depth cooperation in the overseas nuclear energy and new energy markets in the future.

It continues to promote the internationalisation strategy, and develop markets in Southeast Asia, South Asia, Central and Eastern Europe, Central Asia and Africa:

- Longyuan Environmental actively participated in the renovation project of electric power environmental protection in Indonesia, Bangladesh and Taiwan, China;
- Longyuan Technology further developed the energy conservation renovation market in India, Turkey and Zimbabwe, and seeks the market opportunities in South Africa;
- United Power continues to perform the follow-up Operation and Maintenance services of the De Aar Wind Power project (South Africa) of Longyuan Power Group Co., Ltd.. During the outbreak of COVID-19 in South Africa, the relevant personnel of United Power stuck to serve at the first front, and made outstanding contributions to solving the local electricity crisis;
- Guodian Zhishen actively prepared for an automation project of a coal-fired power station in Pakistan, and steadily expanded the power automation control system market in Indonesia and Pakistan;
- Lucency continues to implement the sea water desalination project of a coal-fired power plant in Pakistan;
- Guodian Longyuan Power Technology & Engineering Co., Ltd., a subsidiary of the Company, explored a new mode of international business which integrates the industry, investment, construction and operation.
- 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；
- 龍源技術深挖印度、土耳其、津巴布韋節能改造市場，探索南非市場機遇；
- 聯合動力繼續執行龍源電力集團股份有限公司南非德阿項目後續運維服務。在南非疫情大爆發時仍堅守在第一線，為解決當地用電危機做出了傑出貢獻；
- 國電智深積極開展巴基斯坦某燃煤電站自動化項目準備工作，穩步拓展印尼和巴基斯坦電力自動化控制系統市場；
- 朗新明繼續執行巴基斯坦某燃煤電站海水淡化項目；
- 附屬公司國電龍源電力技術工程有限責任公司探索中亞區域產投建營一體化國際業務新模式。

積極拓展海外市場

2020年上半年，本公司在抓好疫情防控的同時，積極開拓海外電力市場。與中國核工業集團有限公司附屬公司達成戰略合作，未來將就海外市場核能及新能源業務領域開展深度合作。

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：

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

ANALYSIS OF FINANCIAL RESULTS FOR THE FIRST HALF OF 2020

2020年上半年財務業績分析

Please read this section in conjunction with the consolidated financial statements of the Group for the six months ended 30 June 2020.

閱讀本節時請一併閱讀截至2020年6月30日止6個月本集團的合併財務報表。

Analysis of Consolidated Results

合併業績分析

Revenue

收入

Consolidated revenue of the Group was approximately RMB4,447.8 million for the six months ended 30 June 2020, representing an increase of approximately RMB357.5 million, or 8.7% as compared to approximately RMB4,090.3 million for the corresponding period in 2019. As compared to the corresponding period in 2019, revenues from wind power products and services business increased by RMB590.8 million or approximately 37.0%, which was primarily due to an increase in sales of wind turbines, and revenues from environmental protection decreased by RMB270.7 million or approximately 15.3%, which was primarily due to the delayed progress of certain EPC projects arising from the impact of the Epidemic.

本集團截至2020年6月30日止6個月本集團合併收入約為人民幣4,447.8百萬元，與2019年同期的約人民幣4,090.3百萬元相比，約增加約為人民幣357.5百萬元或8.7%。與2019年同期相比，風電產品及服務業務收入增加人民幣590.8百萬元，增長約37.0%，主要由於風機銷售數量增長所致；環保收入減少人民幣270.7百萬元，減少約15.3%，主要是由於受疫情影響，部分EPC項目進度推遲。

The following table sets out the Group's revenues by segments and as percentages of total consolidated revenue of the Group for the six months ended 30 June 2020 and 2019 respectively:

下表分別載列截至2020年及2019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			
		2020 2020年		2019 2019年	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
Environmental Protection and Energy	環保及節能解決方案：				
Conservation Solutions:					
Environmental protection	環保	1,503.6	33.8	1,774.3	43.4
Energy conservation solutions	節能解決方案	604.0	13.6	586.9	14.3
Sub-total	合計	2,107.6	47.4	2,361.2	57.7
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	2,188.5	49.2	1,597.7	39.1
All others	所有其他	151.7	3.4	131.4	3.2
Total	總計	4,447.8	100.0	4,090.3	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 2020, consolidated cost of sales for the Group increased by approximately RMB386.8 million, or 12.3%, from approximately RMB3,146.0 million for the corresponding period in 2019 to approximately RMB3,532.8 million. The increase was primarily due to an increase in the cost of purchasing raw materials and some key parts of wind power products and services business, which led to the increase in the cost of sales.

The following table sets out the Group's costs of sales by segments and as percentages of total consolidated cost of sales of the Group for the six months ended 30 June 2020 and 2019 respectively:

銷售成本

本集團截至2020年6月30日止6個月本集團合併銷售成本約為人民幣3,532.8百萬元，較2019年同期的約人民幣3,146.0百萬元增加約為人民幣386.8百萬元或12.3%。增加的主要原因是由於風電產品及服務業務的原材料及部分關鍵部件採購成本上升，導致銷售成本增加。

下表分別載列截至2020年及2019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			
		截至6月30日止6個月		2019	
		2020		2019	
		2020年	%	2019年	%
		(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	1,151.4	32.6	1,361.5	43.3
Energy conservation solutions	節能解決方案	557.1	15.8	520.8	16.5
Sub-total	合計	1,708.5	48.4	1,882.3	59.8
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	1,752.2	49.6	1,195.1	38.0
All others	所有其他	72.1	2.0	68.6	2.2
Total	總計	3,532.8	100.0	3,146.0	100.0

Gross profit and gross profit margin

For the foregoing reasons, consolidated gross profit of the Group decreased by approximately RMB29.3 million, or 3.1%, from approximately RMB944.3 million in the first half of 2019 to approximately RMB915.0 million for the six months ended 30 June 2020. The average gross profit margin decreased from 23.1% from the first half of 2019 to 20.6% for the corresponding period in 2020. The decrease in gross profit margin was primarily attributable to the decrease in gross profit of wind power products and services business, which was due to a year-on-year increase of raw materials for wind turbines due to rush of installation.

毛利及毛利率

鑒於上述原因，本集團2020年上半年的毛利約為人民幣915.0百萬元，與2019年上半年的約人民幣944.3百萬元相比減少約人民幣29.3百萬元或3.1%，平均毛利率從2019年上半年的23.1%減少至2020年同期的20.6%。主要由於風電產品及服務業務毛利減少，這是搶裝潮導致風機原材料價格同比增加所致。

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 margins by segments for the six months ended 30 June 2020 and 2019 respectively:

下表分別載列截至2020年及2019年6月30日止6個月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			
		2020		2019	
		2020年		2019年	
		(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	352.2	23.4	412.8	23.3
Energy conservation solutions	節能解決方案	46.9	7.8	66.1	11.3
Sub-total	合計	399.1		478.9	
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	436.3	19.9	402.6	25.2
All others	所有其他	79.6	52.5	62.8	47.8
Total	總計	915.0	20.6	944.3	23.1

Other revenue

Other revenue of the Group increased by approximately RMB51.1 million, or 50.1%, from approximately RMB101.9 million for the six months ended 30 June 2019 to approximately RMB153.0 million for the six months ended 30 June 2020, which was primarily due to the receipt of government subsidies such as value-added tax rebates, and the increase in interest income from wealth management products.

Other income

The other income of the Group was approximately RMB4.1 million for the six months ended 30 June 2020, representing a decrease of approximately RMB0.7 million, or 14.6%, from approximately RMB4.8 million for the corresponding period in 2019, which was mainly attributable to the decrease in the net gain on sales of raw materials in the period.

Other expense

The other expense of the Group was approximately RMB43.2 million for the six months ended 30 June 2020, representing an increase of approximately RMB43.1 million, from approximately RMB0.1 million for the corresponding period in 2019, which was mainly attributable to the increase in the provision for an arbitration with a third party in the period.

其他收入

截至2020年6月30日止6個月，本集團其他收入約為人民幣153.0百萬元，較截至2019年6月30日止6個月的約人民幣101.9百萬元增加約人民幣51.1百萬元或50.1%，主要原因是收到增值稅退稅等政府補助，及理財產品利息收入增加。

其他收益

截至2020年6月30日止6個月，本集團其他收益約人民幣4.1百萬元，較2019年同期的約人民幣4.8百萬元減少約人民幣0.7百萬元或14.6%，主要原因是本期原材料銷售收益淨額減少。

其他費用

截至2020年6月30日止6個月，本集團其他費用約人民幣43.2百萬元，較2019年同期的約人民幣0.1百萬元增加約人民幣43.1百萬元，主要原因是本期為仲裁計提的應付第三方款項增加。



MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Selling and distribution expenses

The selling and distribution expenses of the Group increased by approximately RMB191.2 million, or 48.4%, from approximately RMB395.4 million for the corresponding period in 2019 to approximately RMB586.6 million for the six months ended 30 June 2020, which was primarily attributable to the increase in sales service expense of wind turbines.

Administrative expenses

The administrative expenses of the Group increased by approximately RMB32.2 million, or 5.9%, from approximately RMB544.2 million for the corresponding period in 2019 to approximately RMB576.4 million for the six months ended 30 June 2020, which was primarily due to the reversal of the impairment losses of larger amount of trade receivables during the last period.

Operating profit/loss

As a result of the foregoing reasons, the operating profit of the Group decreased by approximately RMB245.5 million, or 220.4%, the operating profit from approximately RMB111.4 million for the first half of 2019 to an operating loss of approximately RMB134.1 million for the corresponding period in 2020.

Finance costs

The finance costs of the Group increased by approximately RMB9.7 million, or 3.5%, from approximately RMB281.1 million for the corresponding period in 2019 to approximately RMB290.8 million for the six months ended 30 June 2020, which was primarily due to the corresponding increase in interests due to the increase in bank and other borrowings.

Loss before taxation

As a result of the foregoing reasons, loss before taxation of the Group's continuing operations increased by approximately RMB257.5 million, or 168.3%, from approximately RMB153.0 million for the first half of 2019 to approximately RMB410.5 million for the corresponding period in 2020.

Income tax

The income tax of the Group decreased by approximately RMB42.1 million, or 26.8%, from approximately RMB157.2 million for the six months ended 30 June 2019 to approximately RMB115.1 million for the corresponding period in 2020.

銷售及分銷開支

截至2020年6月30日止6個月，本集團銷售及分銷開支約人民幣586.6百萬元，較2019年同期的約人民幣395.4百萬元增加約人民幣191.2百萬元或48.4%，主要是由於風機銷售服務費增加。

行政開支

截至2020年6月30日止6個月，本集團行政開支約人民幣576.4百萬元，較2019年同期的約人民幣544.2百萬元增加約人民幣32.2百萬元或5.9%，主要由於2019年同期有較大金額應收款項減值損失的轉回。

經營利潤或虧損

鑒於上述原因，本集團由2019年上半年經營利潤約人民幣111.4百萬元減少至2020年同期虧損約人民幣134.1百萬元，減少約人民幣245.5百萬元或220.4%。

財務成本

截至2020年6月30日止6個月，本集團財務成本約人民幣290.8百萬元，較2019年同期的約人民幣281.1百萬元增加約人民幣9.7百萬元或3.5%，增加的原因主要是由於銀行及其他借款增加導致利息相應增加。

稅前虧損

鑒於上述原因，本集團持續經營業務的稅前虧損從2019年上半年的約人民幣153.0百萬元增加至2020年同期的約人民幣410.5百萬元，增加約人民幣257.5百萬元或168.3%。

所得稅

本集團持續經營業務的所得稅由2019年6月30日止6個月的約人民幣157.2百萬元減少至2020年同期的約人民幣115.1百萬元，減少約人民幣42.1百萬元或26.8%。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Loss for the period

As a result of the foregoing reasons, the Group recorded a loss increased from approximately RMB310.3 million for the six months ended 30 June 2019 to approximately RMB525.6 million for the six months ended 30 June 2020, representing an increase of approximately RMB215.3 million or 69.4%.

Loss attributable to non-controlling interests

Loss attributable to non-controlling interests of the Group increased from RMB111.4 million for the six months ended 30 Jun 2019 by approximately RMB11.3 million, or 10.1%, to approximately RMB122.7 million for the six months ended 30 June 2020.

Loss attributable to equity shareholders of the Company

As a result of the foregoing reasons, the loss attributable to the equity shareholders of the Company increased from approximately RMB198.9 million for the six months ended 30 June 2019 by approximately RMB204.0 million, or 102.6%, to approximately RMB402.9 million for the six months ended 30 June 2020.

Analysis of Segment Results

The following table sets out the Group's segment revenues, gross profit and operating profit or loss for the six months ended 30 June 2020 and 2019 respectively, and each as a percentage of total revenues, gross profit, and operating profit or loss of the Group for such periods:

本期虧損

鑒於上述原因，本集團錄得虧損由2019年6月30日止6個月的約人民幣310.3百萬元增加至2020年6月30日止6個月的約人民幣525.6百萬元，增加約人民幣215.3百萬元或69.4%。

歸屬於非控股權益虧損

本集團歸屬於非控股權益虧損由2019年6月30日止6個月的人民幣111.4百萬元增加至2020年6月30日止6個月的約人民幣122.7百萬元，增加約人民幣11.3百萬元或10.1%。

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2019年6月30日止6個月的約人民幣198.9百萬元增加至截至2020年6月30日止6個月的約人民幣402.9百萬元，增加約人民幣204.0百萬元或102.6%。

分部業績分析

下表分別載列截至2020年及2019年6月30日止6個月本集團的分部收入、毛利和經營利潤或虧損以及各自佔相關期間本集團收入、毛利和經營利潤或虧損總額的百分比：

		For the six months ended 30 June 截至6月30日止6個月			
		2020 2020年	%	2019 2019年	%
		(RMB million) (人民幣百萬元)	%	(RMB million) (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	1,503.6	33.8	1,774.3	43.4
Gross profit	毛利	352.2	38.5	412.8	43.7
Operating profit	經營利潤	144.1	(107.5)	300.9	270.1
Energy conservation solutions:	節能解決方案：				
Revenue	收入	604.0	13.6	586.9	14.3
Gross profit	毛利	46.9	5.1	66.1	7.0
Operating loss	經營虧損	(44.5)	33.2	(19.2)	(17.2)
Renewable Energy Equipment	可再生能源設備				
Wind power products and services:	風電產品及服務：				
Revenue	收入	2,188.5	49.2	1,597.7	39.1
Gross profit	毛利	436.3	47.7	402.6	42.6
Operating loss	經營虧損	(227.6)	169.7	(157.6)	(141.5)

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 was approximately RMB1,503.6 million in the first half of 2020, representing a decrease of approximately RMB270.7 million, or 15.3%, as compared to approximately RMB1,774.3 million for the corresponding period in 2019. The decrease was mainly attributable to the decrease in the market orders and delayed project commencement affected by the Epidemic.

環保業務收入從2019年上半年的約人民幣1,774.3百萬元減少至2020年上半年的約人民幣1,503.6百萬元，減少約人民幣270.7百萬元或15.3%。這主要是由於受疫情影響，市場訂單減少，項目開工延遲所致。

The following table sets out the revenues from the business lines in the Group's environmental protection business and each as a percentage of the revenue from this business for the six months ended 30 June 2019 and 2020.

下表分別載列截至2020年及2019年6月30日止六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			
		2020		2019	
		2020年		2019年	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(人民幣百萬元)	%
Desulfurisation	脫硫	862.9	57.4	843.8	47.6
Denitrification	脫硝	241.5	16.1	277.0	15.6
Low NO _x combustion equipment	低氮燃燒設備	6.0	0.4	8.8	0.5
Water treatment	水處理	333.0	22.1	407.1	22.9
Ash removal	除塵	60.2	4.0	170.2	9.6
Coal yard renovation and smoke plume treatment	煤場改造及煙羽治理	-	-	67.4	3.8
Total	總計	1,503.6	100.0	1,774.3	100.0

Cost of sales

銷售成本

Cost of sales for the environmental protection business of the Group decreased from approximately RMB1,361.5 million in the first half of 2019 by RMB210.1 million, or 15.4% to approximately RMB1,151.4 million in the first half of 2020. The decrease was consistent with the decrease in revenue generated from the business.

本集團環保業務的銷售成本從2019年上半年的約人民幣1,361.5百萬元減少至2020年上半年的約人民幣1,151.4百萬元，相比減少了人民幣210.1百萬元或15.4%。這與該業務線的收入減少一致。

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 decreased by approximately RMB60.6 million, or 14.7%, from approximately RMB412.8 million for the six months ended 30 June 2019 to approximately RMB352.2 million for the six months ended 30 June 2020. The gross profit margin of this business was 23.4% which is basically flat as compared to 23.3% for the same period last year.

The following table sets out the changes in gross profit margins for the business lines included in the Group's environmental protection business for the six months ended 30 June 2020 as compared with the six months ended 30 June 2019:

		For the six months ended 30 June	
		截至6月30日止6個月	
		2020	2019
		2020年	2019年
		(%)	(%)
Desulfurisation	脫硫	25.9	25.9
Denitrification	脫硝	22.0	23.0
Low NO _x combustion equipment	低氮燃燒設備	11.4	13.6
Water treatment	水處理	22.8	26.6
Ash removal	除塵	4.9	8.6
Coal yard renovation and smoke plume treatment	煤場改造及煙羽治理	-	24.5

Energy Conservation Solutions

Revenue

Revenue from energy conservation business increased by approximately RMB17.1 million, or 2.9%, from approximately RMB586.9 million in the first half of 2019 to approximately RMB604.0 million in the first half of 2020. This was due to an increase in revenue from the general contracting business line of power station construction, which was partially offset by a decrease in revenue from the business line of energy conservation services business line. The decrease in revenue from our energy conservation services was due to the general lag of the commencement of projects impacted by the Epidemic.

毛利及毛利率

鑒於上述原因，環保業務的毛利從2019年上半年的約人民幣412.8百萬元減少至2020年上半年的約人民幣352.2百萬元，減少約人民幣60.6百萬元或14.7%。此業務平均毛利率23.4%與上年同期的23.3%基本持平。

下表載列截至2020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2019年6月30日止6個月相比的變化：

節能解決方案

收入

節能業務收入從2019年上半年的約人民幣586.9百萬元增加至2020年上半年的約人民幣604.0百萬元，增加約人民幣17.1百萬元或2.9%。這是由於電站建設總承包業務線收入有所增加，但被節能服務業務線收入減少部分抵銷。節能服務業務線收入減少的原因是受疫情影響，項目工期普遍滯後。



MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

The following table sets out the revenues from the business lines in the Group's energy conservation business and each as a percentage of the revenue from this business for the six months ended 30 June 2020 and 2019.

下表分別載列截至2020年及2019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		2019	
		2020		2019	
		2020年		2019年	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(人民幣百萬元)	%
Plasma-assisted coal ignition and combustion stabilisation	等離子體點火及穩燃	46.6	7.7	60.6	10.3
Energy conservation services	節能服務	16.7	2.8	80.1	13.7
General contracting for power stations	電站建設總承包	540.7	89.5	433.0	73.8
Comprehensive utilization and renovation of boiler	鍋爐綜合利用改造	-	-	13.2	2.2
Total	總計	604.0	100.0	586.9	100.0

Cost of sales

The cost of sales of the Group's energy conservation business increased by approximately RMB36.3 million, or 7.0%, from approximately RMB520.8 million in the first half of 30 June 2019 to approximately RMB557.1 million in the first half of 2020, and the growth was significant. This was due to the impact of the Epidemic, the prolonged general contracting business of power station and the increase in cost.

銷售成本

本集團節能業務的銷售成本從2019年上半年的約人民幣520.8百萬元增加至2020年上半年的約人民幣557.1百萬元，相比增加了人民幣36.3百萬元或7.0%，且增長幅度較大。這是由於受疫情影響，電站總承包業務工期延長，成本增加。

Gross profit and gross profit margins

As a result of the foregoing reasons, gross profit attributable to the energy conservation business decreased by approximately RMB19.2 million, or 29.0%, from approximately RMB66.1 million for the first half of 2019 to approximately RMB46.9 million for the first half year of 2020. This was mainly due to the fact that the power station construction general contracting business line was affected by the Epidemic; the construction progress was delayed; the confirmation of production value was lagging; and ultimately the gross profit of projects was less confirmed. The average gross profit margin of this business decreased from 11.3% in the first half of 2019 to 7.8% in the first half of 2020.

毛利及毛利率

鑒於上述原因，節能業務的毛利從2019年上半年的約人民幣66.1百萬元減少至2020年上半年的約人民幣46.9百萬元，減少約人民幣19.2百萬元或29.0%。這主要是由於電站建設總承包業務線受疫情影響，工程施工進度延遲，產值確認滯後，項目毛利確認較少所致。此業務平均毛利率從2019年上半年的11.3%減少至2020年上半年的7.8%。

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 margins for the business lines comprising the Group's energy conservation business for the six months ended 30 June 2020 as compared with the six months ended 30 June 2019:

下表載列截至2020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2019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	
		2020	2019
		2020年	2019年
		(%)	(%)
Plasma-assisted coal ignition and combustion stabilisation	等離子體點火及穩燃	12.5	15.7
Energy conservation services	節能服務	26.8	26.5
General contracting for power stations	電站建設總承包	6.8	7.9
Comprehensive utilisation and renovation of boiler	鍋爐綜合利用改造	-	31.8

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

Revenue

收入

Revenue from the wind power products and services business increased by approximately RMB590.8 million, or 37.0%, from approximately RMB1,597.7 million in the first half of 2019 to approximately RMB2,188.5 million in the first half of 2020. The increase was mainly due to the increase of sales volume of wind turbines as a result of the rush of installation in the wind power industry.

風電產品及服務業務的收入從2019年上半年的約人民幣1,597.7百萬元增加至2020年上半年的約人民幣2,188.5百萬元，增加約人民幣590.8百萬元或37.0%。增加的主要原因是風電行業搶裝潮帶來的風機銷售數量增加。

Cost of sales

銷售成本

The cost of sales of our wind power products and services business increased by approximately RMB557.1 million, or 46.6%, from approximately RMB1,195.1 million in the six months ended 30 June 2019 to approximately RMB1,752.2 million in the first half of 2020. This trend was in line with the increasing trend of revenue from these businesses, and the growth was relatively substantial. This was due to the increase in the price of domestic wind power components as the rush of installation in the wind power industry, which increased the cost of raw materials for wind turbines.

風電產品及服務業務的銷售成本從2019年上半年的約人民幣1,195.1百萬元增加至2020年上半年的約人民幣1,752.2百萬元，增加約人民幣557.1百萬元或46.6%，這與該等業務的收入增加趨勢一致，且增長幅度較大。這是由於風電搶裝潮導致國內風電部件價格上漲，使風機原材料成本增加。

Gross profit and gross profit margin

毛利及毛利率

As a result of the foregoing reasons, gross profit attributable to the wind power products and services business increased by approximately RMB33.7 million, or 8.4%, from approximately RMB402.6 million in the first half of 2019 to approximately RMB436.3 million for the corresponding period in 2020. Gross profit margin for this business for the first half of 2020 was approximately 19.9%, representing a decrease as compared with 25.2% for the corresponding period in 2019.

鑒於上述原因，風電產品及服務業務的毛利從2019年上半年的約人民幣402.6百萬元上升至2020年上半年的約人民幣436.3百萬元，增加約人民幣33.7百萬元或8.4%。此業務2020年上半年的毛利率為19.9%，較2019年同期的25.2%下降。



MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Liquidity and Source of Capital

The following table sets out the net cash flows of the Group for the six months ended 30 June 2020 and 2019 respectively:

流動資金和資本來源

下表分別載列截至2020年和2019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	
		2020	2019
		2020	2019
		(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	(600.3)	(198.6)
Net cash used in investing activities	投資活動使用的現金淨額	(104.5)	(897.8)
Net cash generated from/(used in) financing activities	籌資活動產生/(使用)的現金淨額	1,462.7	(475.4)
Cash and cash equivalents as at 30 June	於6月30日的現金及現金等價物	3,903.1	1,864.7

Net cash used in operating activities

In the first half of 2020, net cash used in operating activities of the Group was approximately RMB600.3 million, while that of the corresponding period in 2019 was approximately RMB198.6 million. The increase in the net cash flow used in operating activities was mainly due to the increase of payment for purchase of materials for wind turbines and equipment for EPC project for the period as compared with that of the same period of last year.

經營活動使用的現金淨額

本集團2020年上半年經營活動使用的現金淨額約為人民幣600.3百萬元，而2019年同期則約為人民幣198.6百萬元。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電機材料採購款及EPC設備款金額較去年同期有所增加導致。

Net cash used in investing activities

In the first half of 2020, net cash used in investing activities of the Group was approximately RMB104.5 million, while that of the corresponding period in 2019 was approximately RMB897.8 million. The decrease in the net cash flow used in investing activities was mainly due to the withdrawal of the structural deposits purchased in the prior period.

投資活動使用的現金淨額

本集團2020年上半年投資活動使用的現金淨額約為人民幣104.5百萬元，而2019年同期投資活動使用的現金淨額則約為人民幣897.8百萬元。投資活動使用的現金淨額減少，主要是由於本集團本期收回前期購買的結構性存款導致。

Net cash generated from/(used in) financing activities

Net cash generated from financing activities of the Group for the first half of 2020 was approximately RMB1,462.7 million, while net cash used in financing activities for the same period in 2019 was approximately RMB475.4 million. It was mainly due to the repayment of private placement notes in the prior period by the Group.

籌資活動產生/(使用)現金淨額

本集團2020年上半年籌資活動產生的現金淨額約為人民幣1,462.7百萬元，而2019年同期籌資活動使用的現金淨額則約為人民幣475.4百萬元。主要是由於本集團上期償還私人配售債務融資工具所致。

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



Working capital

As at 30 June 2020, the Group's cash and cash equivalents were approximately RMB3,903.1 million, representing an increase of approximately RMB757.7 million, or 24.1%, as compared to approximately RMB3,145.4 million as at 31 December 2019. It was mainly attributable to the net cash inflow from financing activities.

The Group's gearing ratio, which is calculated by dividing total debt by the total assets, increased to 79.1% as at 30 June 2020 as compared to that of 78.3% as at 31 December 2019.

Net current assets

As at 30 June 2020, the Group's net current assets were approximately RMB2,607.7 million, representing an increase of approximately RMB1.7 million, as compared to net current assets of approximately RMB2,606.0 million as at 31 December 2019.

As at 30 June 2020, the unutilised banking facilities were approximately RMB8,084.9 million, of which RMB5,802.8 million would be renewed within 12 months, which could fulfill its future capital commitments for payment and other financial needs. The Directors are of opinion that the Group will possess necessary working capital to meet its working capital and capital expenditure requirements.

Inventory analysis

The inventories of the Group were approximately RMB4,333.6 million as at 30 June 2020, which increased by approximately RMB185.7 million, or 4.5%, from approximately RMB4,147.9 million as at 31 December 2019, which was mainly attributable to the increase of work-in process and finished goods of environmental protection and energy conservation solutions segments due to the delayed delivery arising from the impact of the Epidemic.

Trade and bills receivables

Trade and bills receivables of the Group decreased by approximately RMB518.1 million, or 5.3%, from approximately RMB9,809.3 million as at 31 December 2019 to approximately RMB9,291.2 million as at 30 June 2020. It was primarily due to the decrease in bills receivable for sales of goods and services provided by Longyuan Environmental during the period.

運營資金

於2020年6月30日，本集團的現金及現金等價物約為人民幣3,903.1百萬元，較2019年12月31日的約人民幣3,145.4百萬元增加約人民幣757.7百萬元或24.1%。主要是由於籌資活動呈現現金淨流入狀態所致。

本集團的資產負債率，由總債務除以總資產計算得出，與2019年12月31日的78.3%相比，上升至2020年6月30日的79.1%。

流動資產淨額

於2020年6月30日，本集團流動資產淨額約為人民幣2,607.7百萬元，較2019年12月31日流動資產淨額約人民幣2,606.0百萬元增加約人民幣1.7百萬元。

於2020年6月30日，本集團未動用銀行授信約為人民幣8,084.9百萬元，其中人民幣5,802.8百萬元需於未來的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2020年6月30日存貨約為人民幣4,333.6百萬元，較2019年12月31日的存貨約人民幣4,147.9百萬元增加約人民幣185.7百萬元或4.5%。主要是由於疫情的影響，環保及節能業務板塊的產品延期交付導致在產品和產成品增加所致。

應收賬款及票據

本集團於2020年6月30日的應收賬款及票據約為人民幣9,291.2百萬元，較2019年12月31日的約人民幣9,809.3百萬元減少約人民幣518.1百萬元或5.3%，主要是由於本期龍源環保銷售商品及提供服務的應收票據減少。



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 RMB411.9 million or 25.5%, from approximately RMB1,617.7 million as at 31 December 2019 to approximately RMB2,029.6 million as at 30 June 2020. It was primarily attributable to the increase of prepayments of United Power and its subordinate bases for obtaining key raw materials such as gearboxes.

Trade and bills payable

Trade and bills payable of the Group decreased by approximately RMB1,247.5 million, or 12.5%, from approximately RMB9,941.0 million as at 31 December 2019 to approximately RMB8,693.5 million as at 30 June 2020. It was primarily due to the decrease in trade and bills payable in relation to environmental protection sub-contracting engineering payment and equipment payment of the Group.

Indebtedness

The Group's total indebtedness increased by approximately RMB1,527.9 million, or 12.9%, from approximately RMB11,848.2 million as at 31 December 2019 to approximately RMB13,376.1 million as at 30 June 2020.

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

In the first half of 2020, the effective interest rate of the Group (determined by dividing total interest expenses by the average value of the outstanding borrowings as at 1 January 2020 and 30 June 2020) was approximately 4.7%, while the effective interest rate of the Group for the corresponding period in 2019 was approximately 4.8%.

Pledged assets

As at 30 June 2020, the long-term interest-bearing borrowings of the Group were pledged by concession assets, trade receivables and long-term service concession receivable with an aggregate carrying amount of approximately RMB827.4 million.

Contingent liabilities

The Group's contingent liabilities increased by approximately RMB822.5 million, or 78.2%, from approximately RMB1,051.8 million as at 31 December 2019 to approximately RMB1,874.3 million as at 30 June 2020. The Group's contingent liabilities at the end of the period primarily consisted of performance guarantees.

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2019年12月31日的約人民幣1,617.7百萬元增加至2020年6月30日的約人民幣2,029.6百萬元，增加約人民幣411.9百萬元或25.5%，主要是由於本期聯合動力及下屬基地為了獲得關鍵的原材料如齒輪箱等，預付款項增加。

應付賬款及票據

本集團於2020年6月30日的應付賬款及票據約為人民幣約8,693.5百萬元，較2019年12月31日的約人民幣9,941.0百萬元減少約人民幣1,247.5百萬元或12.5%，主要是由於本集團環保分包工程款及設備款有關的應付賬款及票據減少所致。

債項

本集團於2020年6月30日的總債項約為人民幣13,376.1百萬元，較2019年12月31日的約人民幣11,848.2百萬元增加約人民幣1,527.9百萬元或12.9%。

本集團所有借款都以人民幣計價。

本集團2020年上半年的實際利率(以總利息開支除以2020年1月1日與2020年6月30日的未償還借款的平均值釐定)約為4.7%，而本集團2019年同期的實際利率約為4.8%。

已抵押資產

於2020年6月30日，本集團長期帶息借款以賬面值合共約人民幣827.4百萬元的特許經營權資產、應收賬款及服務特許權長期應收款為抵押。

或有負債

本集團的或有負債從2019年12月31日的約人民幣1,051.8百萬元至2020年6月30日的約人民幣1,874.3百萬元，增加約人民幣822.5百萬元，或78.2%。本集團期末的或有負債主要包括履約保函。



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

Major investment

In the first half of 2020, the Group completed a total investment amount of RMB237.64 million, of which, the investment in infrastructure was RMB119.23 million, which was used for Dazhou sludge disposal project of Sichuan Province and Kangbao Zhongyi wind power project Phase I of Hebei Province (United Power); the investment in technical innovation amounted to RMB118.41 million, which was mainly used for the renovation and expansion of wind turbine blade plant, etc.

Material acquisition or disposal

On 10 January 2020, the Company entered into the equity transfer agreement with Beijing Huadian Tiande Assets Operation Co., Ltd. (“**Huadian Tiande**”), pursuant to which, the Company agreed to acquire, and Huadian Tiande agreed to sell, the latter's 10% equity interest in Tianren Company at a consideration of RMB27,111,294. Upon completion of the acquisition, Tianren Company became a wholly-owned subsidiary of the Company.

Save as disclosed above, the Group did not have any material acquisition and disposal during the six months ended 30 June 2020.

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.

重大投資

2020年上半年，本集團完成投資金額共計人民幣237.64百萬元，其中，基建投資金額為人民幣119.23百萬元，用於四川達州污泥處置項目及聯合動力河北康保忠義一期風電項目；技改投資金額為人民幣118.41百萬元，主要用於風機葉片廠房改擴建等。

重大收購或出售

本公司於2020年1月10日與北京華電天德資產經營有限公司(「**華電天德**」)訂立產權交易合同，據此，本公司同意收購，而華電天德同意出售其持有的天仁公司10%股權，代價為人民幣27,111,294元。於本次收購完成後，天仁公司成為本公司的全資附屬公司。

除上述披露外，於截至2020年6月30日止6個月內，本集團無任何重大收購或出售。

風險因素

本集團面臨着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。



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

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 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 arise.

Liquidity risk

The Group's operating cash flows are subject to significant irregularity, given the nature of the businesses in which it is engaged. The Group's business includes the water treatment business carried out under the build-operate-transfer business model. While the Group believes that such business model generate steady cash flows and revenues for the Group over extended periods, such business models require more up-front capital investment and a longer period to fully recoup such investments as compared to the traditional business model of EPC. Accordingly, while the Group aims to ensure that it has sufficient working capital to meet its operational requirements or has access to sufficient bank credit facilities to continue its operations without disruption, the position of the cash flow of the Group may vary with its continuous growth and expansion.

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 2020, the Group's exchange gain was approximately RMB0.5 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.

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。

流動資金風險

鑒於其所經營的業務性質，本集團的經營現金流量具有顯著的不規則性。本集團業務包含建設—經營—轉讓運營模式下的水處理業務。本集團認為，該種運營模式將在較長時期為本集團帶來穩定的現金流量以及收入。然而，這樣的運營模式相比傳統的EPC業務模式需要的前期資本投資更多，資金完全回籠的時限也更久。因此，本集團旨在確保其有足夠營運資金以達到其經營需求，或者能夠獲得充足的銀行信貸以不中斷地持續運營。本集團的現金流量狀況或會隨其持續發展和擴張而轉變。

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2020年6月30日止6個月發生匯率收益約人民幣0.5百萬元。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准入。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。



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

Subsequent events

Since 30 June 2020 and up to the date of this report, there was no event that had a significant impact on the Group's operational, financial or business prospects.

BUSINESS PROSPECT FOR THE SECOND HALF OF 2020

Highlight innovation leadership and constantly strengthen the driving force of innovation

The Group insists on scientific and technological innovation, focusing on core business, while aiming at the advanced technology, and making business perfect and professional. Improve the construction of the science and technology system, gradually form a new scientific and technological research and development ("R&D") system that features "cross-industry, cross-sector and cross-business"; strengthen R&D process management, carry out the whole-process fine management of science and technology projects, and strengthen the process management of science and technology projects.

Deepen market-oriented reform, comprehensively optimise systems and mechanisms

The Group continues to deepen market-oriented reform to adjust and optimise the equity structure, improve the modern enterprise system with Chinese characteristics, optimise the organisational structure and control modes, improve the market-oriented operation mechanism, and seek the support of capital market, and comprehensively and systematically plan market-oriented reform.

Insist on marketing innovation, strengthen the ability to expand the market

The Group continues to improve the construction of marketing system, insisting on the marketing strategy, optimising marketing system, improving service ability, and setting up brand concept; strive to open up external markets, strengthen the construction of international business capacity, and giving full play to the integrated advantages of the whole industrial chain.

期後事項

自2020年6月30日至本報告日，未發生對本集團營運、財務或經營前景產生重大影響的事件。

2020年下半年業務展望

突出創新引領，不斷增強創新驅動力

本集團堅持以科技創新為抓手，聚焦主業、瞄準先進、做精做專。完善科技體系建設，逐步形成「跨行業、跨板塊、跨業務」的新型科技研發體系；加強研發過程管理，開展全過程科技項目精細化管理，加強科技項目的過程管理。

深化市場化改革，推動體制機制全面優化

本集團持續深化市場化改革，以調整優化股權結構、健全中國特色現代企業制度、優化組織機構和管控模式、完善市場化經營機制、謀求資本市場支持為整體思路，全面系統謀劃市場化改革。

堅持營銷創新，增強市場開拓能力

本集團繼續完善營銷體系建設，堅持營銷戰略，優化營銷體系，提高服務能力，樹立品牌觀念；努力開拓外部市場，加強國際業務能力建設，充分發揮全產業鏈集成性優勢。



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 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 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 2020, 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 2020. 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、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建立有規範、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2020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2020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。

(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 were 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 2020 and the unaudited interim financial statements for the six months ended 30 June 2020 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2020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2020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。



CORPORATE GOVERNANCE (CONTINUED) 企業管治(續)

(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 at its own expenses 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，本公司已定期自費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 of Directors 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 of Directors 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 of Directors 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: The first half of 2020, from the aspects of optimizing the total risk management system, enhancing the working mechanism, strengthening monitoring and early warning, etc., the Group strengthened the mechanism construction continuously, organized annual risk assessment, quarterly risk analysis, monthly risk monitoring, intensified major risk management and special risk prevention, so as to conscientiously consolidate the results of risk management culture, keep driving the organic integration of risk management and business management, gradually improve the risk management capabilities, and add to the company's consistent enhancement of operation and management level.

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

According to the latest work requirements of China Energy on enhancing internal control and risk management, the Company carried out the work related to the integration of internal control and risk management in 2020, sorting out the current system, identifying the point where the internal control meets the risk management, incorporating internal control nodes in the daily risk monitoring index database to implement risk management in systems and processes and risk responsibilities in thoughts and posts. The board of directors believes that the current monitoring system of the Company is effective and adequate, and considers that the resources, qualifications and experiences of the staff of the Company's accounting and financial reporting functions, its training programs and budgets thereof are adequate. The board of directors will continue to monitor the risk management and internal control systems of the Group..

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 XIVA of the SFO.

工作實施：2020年上半年，本集團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，認真鞏固風險管理文化成果、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，助力公司經營管理水平持續提升。

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。

本公司按照國家能源集團關於加強內部控制和風險管理的最新工作要求，於2020年開展內部控制和風險管理融合的相關工作，對現有體系進行梳理，整理出內部控制和風險管理的結合點，在日常風險監控指標庫中融入內部控制節點，將風險管理落實到制度中、流程中，風險責任落實到思想中、崗位中。董事會認為本公司目前的內部監控體系是有效及足夠的，並認為本公司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。

內幕信息管理

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。



CORPORATE GOVERNANCE (CONTINUED) 企業管治(續)

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 AOA. 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 of Directors. 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.

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 2020 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 2020, 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 2020.

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 2020.

Material Litigation

Lucency submitted an arbitration application against Datong Huajian Water Treatment Co., Ltd. (the "**Huajian Water Treatment**") to the Shanghai Arbitration Commission (the "**Arbitration Commission**") to request for ruling confirming certain articles were terminated on 12 December 2019; request for the ruling that Huajian Water Treatment to repay the relevant loan and pay the corresponding interest. Up to the date of this report, the arbitration has been accepted and is still in the process. Please refer to the announcements of the Company dated 26 February 2020 and 25 March 2020 for details.

Saved as disclosed above, for the six months ended 30 June 2020, the Company has not involved in any material litigations or arbitrations.

Interim Dividends

The Board recommends not to distribute any interim dividend for the six months ended 30 June 2020.

Changes of Information of Directors, Supervisors and Chief Executive

As at the date of this interim report, there is no change of information about 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2020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2020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2020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2020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

朗新明對大同華建水務有限公司(「**華建水務**」)向上海仲裁委員會(「**仲裁委員會**」)提出仲裁申請，請求裁決確認《關於股權轉讓的補充合同》部分條款已於2019年12月12日解除；請求裁決華建水務向朗新明返還相關借款並支付相應利息。截止本報告日，該仲裁已被受理，尚在仲裁過程中。有關詳情，請參見本公司日期為2020年2月26日及2020年3月25日的公告。

除以上披露，截至2020年6月20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2020年6月30日止6個月的任何中期股息。

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

As at 30 June 2020, Mr. YAN Andrew Y., a non-executive Director of the Company, had interests of 288,200,000 H Shares (Long position) of the Company, which were interests of controlled corporation. The percentage in H Shares was 22.0%, and the percentage in the total share capital was 4.75%. The term of office of Mr. YAN Andrew Y. expired upon 7 August 2020. Due to adjustment to personal work arrangement, Mr. YAN Andrew Y. did not participate in the re-election of the fourth session of the Board. Save as disclosed above, 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 2020, to the best knowledge of the Directors, the following persons (other than the Directors, Supervisors and senior management of the Company, but including the Director Mr. YAN Andrew Y.) 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):

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 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

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

於2020年6月30日，本公司非執行董事閻焱先生持有本公司的288,200,000股H股(好倉)，為受控公司之權益，佔H股的比例為22.0%，佔股本總數的比例為4.75%。閻焱先生的任期已於2020年8月7日屆滿。因個人工作安排調整，閻焱先生並未參與第四屆董事會的重選。除上文所披露者之外，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2020年6月30日，就董事所知，下列人士(本公司董事、監事及高級管理人員除外，唯包括本公司董事閻焱先生。)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)：

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⁾ %
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
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
Datang Renewables (HK) Co., Ltd. 大唐新能源(香港)有限公司	H shares H股	Interests of beneficial owner 實益擁有人之權益	108,050,000 (Long position) (好倉)	8.25	1.78
National Council for Social Security Fund of the PRC 全國社會保障基金理事會	H shares H股	Interests of beneficial owner 實益擁有人之權益	77,310,000 (Long position) (好倉)	5.90	1.27
State Grid International Development Limited	H shares H股	Interests of beneficial owner 實益擁有人之權益	76,284,000 (Long position) (好倉)	5.82	1.26

Notes:

- (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 2020. As at 30 June 2020, 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.
- (2) As of June 30, 2020, China Energy has 46.00% of the interests in the total shares of GD Power and GD 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.

附註：

- (1) 該百分比是以本公司於2020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2020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。
- (2) 於2020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。



OTHER INFORMATION (CONTINUED) 其他資料(續)

(3) SAIF Partners IV L.P., a Cayman limited partnership, holds 288,200,000 in the H shares. Mr. YAN Andrew Y. holds a 100% shareholding in a Cayman corporation SAIF IV GP Capital Ltd., which acts as the general partner of SAIF IV GP, L.P., which in turn acts as the general partner of SAIF Partners IV L.P.. Mr. YAN Andrew Y. thus indirectly controls SAIF Partners IV L.P.. Mr. YAN Andrew Y. disclaims beneficial ownership of the shares held by SAIF Partners IV L.P., except to the extent of his pecuniary interests therein.

(3) SAIF Partners IV L.P.為一家開曼群島有限合夥企業，持有本公司288,200,000股H股。閻焱先生持有開曼公司SAIF IV GP Capital Ltd.的100%股權，該公司是SAIF IV GP, L.P.的普通合夥人，後者又是SAIF Partners IV L.P.的普通合夥人。因此閻焱先生間接控制SAIF Partners IV L.P.。閻焱先生聲明不持有SAIF Partners IV L.P.所持證券的實益擁有權，惟彼於其中的經濟利益除外。

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

As at 30 June 2020, the Group had a total of 6,091 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.

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

於2020年6月30日，本集團共有6,091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。



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.

1. Energy Conservation, Environmental Protection and Green Development

1.1 Exploit the Advantages and Promote the Environmental Industry

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.

1.1.1 Segment of Environmental Protection and Energy Conservation Solutions

Environmental Protection Business

Desulfurization and denitrification: In the first half of 2020, Longyuan Environmental conducted the technical transformation for 7 desulfurization projects with a total capacity of 3,065 MW, and 13 denitrification projects with a total capacity of 15,450 MW, respectively. The accumulatively installed capacity of the desulfurization units input by Longyuan Environmental in thermal power plants was 271 million kW, and the installed capacity of flue gas denitrification units was 178 million kW.

As of June 30, 2020, a total installed capacity of 15,740 MW has been built by Longyuan Environmental's desulfurization concession project, a total installed capacity of 31,530 MW for the company's desulfurization concession and O&M projects, and a total installed capacity of 11,840 MW for the company's denitration franchise projects. In the first half of 2020, the total utilization hours of the thermal power concession projects were 2,182 hours, the emission reduction of SO₂ in the desulfurization concession project reached 167,400 tons; the emission reduction of SO₂ of the desulfurization concession and O&M projects reached 652,900 tons; and the emission reduction of NO_x in the denitrification concession project totaled 20,900 tons.

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. 節能環保綠色發展

1.1 發揮優勢推進環保行業發展

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 環保與節能解決方案分部

環保業務

脫硫脫硝：2020年上半年，龍源環保對7個項目容量共3,065兆瓦的脫硫裝置進行了技術改造；對13個項目容量共15,450兆瓦的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2.71億千瓦，煙氣脫硝裝置裝機容量1.78億千瓦。

截至2020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，所屬脫硫特許經營加運維項目共31,530兆瓦，所屬脫硝特許經營項目的總裝機容量為11,840兆瓦。2020年上半年，火電特許項目累計完成利用小時2,182小時，特許脫硫項目減排二氧化硫量達到了16.74萬噸，特許加運維項目減排二氧化硫量達到了65.29萬噸，特許脫硝項目減排氮氧化物2.09萬噸。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)



Low NO_x combustion: In the first half of 2020, 3 boiler combustion nitrogen reduction devices were newly built by Longyuan Technology, and total 586 devices were put into operation, with an installed capacity of 170 million kW. Calculated by the national average running hour of thermal power which was about 4,307 hours in 2019, the NO_x emission reduced in the first half of 2020 was about 344,500 tons.

Sewage treatment: There were 21 sewage treatment plants (stations) operated by Lucency, and with the treatment capacity of 1,290,000 t/d. As of 30 June 2020, the sewage treatment plant treated accumulatively 87,644,200 tons sewage (including reclaimed water) and reduced accumulatively 26,100 tons COD (chemical oxygen demand) emission.

Business of Energy Conservation Solutions

Energy conservation: In the first half of 2020, Longyuan Energy Conservation newly entered into 4 contracts, saving more than 120,000 tons standard coal.

The oil-saving ignition products of Longyuan Technology kept leading in the industry and the Company was the only enterprise in China with offshore plasma ignition business. Longyuan Technology continued to optimize the design of the small-scale plasma ignition system, and constantly reduced system cost and enhanced product competitiveness. Its plasma ignition technology was successfully applied to 867 units, with an installed capacity of 380 million kW, and the global market share is around 90%, saving fuel by more than 10 million tons in total.

低氮燃燒：2020年上半年，龍源技術新建鍋爐燃燒降氮裝置3台爐，累計投運586台爐，裝機容量1.7億千瓦。按照2019年全國火電平均運行小時數約4,307小時計算，2020年上半年減排氮氧化物約34.45萬噸。

污水處理：朗新明運營有21座污水處理廠(站)，日處理能力為129萬噸。截至2020年6月30日，處理污水(含中水)量約為8,764.42萬噸，COD(化學需氧量)半年減排量2.61萬噸。

節能解決方案業務

能源節約：2020年上半年，龍源節能新簽合同4項，新增節約標煤12萬噸以上。

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867台設備，裝機容量達3.8億千瓦，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

Carbon dioxide emission reduction: In the first half of 2020, United Power produced 294 wind turbines (including 279 units of 2.XMW wind turbines, 15 units of 3.XMW wind turbines, with a total capacity of 604.6MW). United Power has accumulatively produced and sold 12,100 units of wind turbines, which was equal to 20,586.8 MW. According to 2,083 hours of the average operating hours of wind power in China in 2019, about 6,569,600 tons standard coal was saved, CO₂ emission was reduced by about 17,961,700 tons, SO₂ emission was reduced by 8,600 tons, NO_x emission was reduced by 8,100 tons, and soot emission was reduced by 1,700 tons. In the first half of 2020, an accumulative total of 22,715,600 kWh of wind and photovoltaic power was generated by the Dayuying Wind & Photovoltaic Power Station and the Zhaganhua Wind Power Farm of the Group, which was equivalent to reduction of 222,100 tons of CO₂ emission.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 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：2020年上半年，聯合動力生產風機294台（其中2.X兆瓦風機279台，3.X兆瓦風機15台，合計604.6兆瓦）。聯合動力累計產銷風機1.21萬台，合計20,586.8兆瓦，按照2019年全國風電平均運行小時數2,083小時考慮，上半年節約標煤約656.96萬噸，減排二氧化碳約1,796.17萬噸，減排二氧化硫約0.86萬噸，減排氮氧化物約0.81萬噸，減排煙塵約0.17萬噸。本集團赤峰大於營風光電場和查幹花風電場上半年累計風力和光伏發電22,271.56萬千瓦時，相當於減排二氧化碳22.21萬噸。¹

1.1.3 國際化發展

同時，本集團憑藉著知名的品牌效應、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 Publicly accessible latest authoritative data: Annual Development Report 2020 of China Electric Power Industry issued by China Electricity Council. The national standard coal consumption for power supply of 6,000kW or above thermal power plants in 2019 was 306.4 g/kWh, the emissions of CO₂, soot, SO₂ and NO_x per unit of thermal power generation were 838 g/kWh, 0.038 g/kWh, 0.187 g/kWh and 0.195 g/kWh respectively.

¹ 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2020》，2019年全國6,000千瓦及以上火電廠供電標準煤耗306.4克/千瓦時，單位火電發電量二氧化碳、煙塵、二氧化硫和氮氧化物排放量分別為838、0.038、0.187和0.195克/千瓦時。



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, and reduced the whole power consumption by 5% through adjusting the furnace production control as compared with the corresponding period of last year.

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，通過調整窯爐生產控制，同比整體耗電量下降5%。

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率，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、管道閘門及沖水閘等供水器具。



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. Guided by the "13th Five-Year Plan" for Ecological Environment Protection and the "13th Five-Year Plan" for Energy Conservation and Emission Reduction, 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 2020, 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，以國家《「十三五」生態環境保護規劃》及《「十三五」節能減排綜合工作方案》為指導，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，2020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 Guodian 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》，國電智深制訂的《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。



1.3.3 Exhaust Gas Management

The Group produces a small amount of exhaust gas during its operation, including SO₂², NO_x³ and particulate matters⁴.

When producing wind turbine blades in winter, United Power needs to burn natural gas in the paint spray room to dry the paint on the surface of the blade. In this process, natural gas combustion exhaust gas is produced. The main components of exhaust gas include particulate matter, SO₂ and NO_x. In the process of producing and manufacturing wind turbine blades, the semi-finished blade after solidification and forming should be cut and polished, thus producing particulate matters. After being collected and treated properly, exhaust gas is emitted into atmosphere if the Emission Standard of Air Pollutants for Industrial Kiln and Furnace (DB13/1640-2012) is met.

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²、氮氧化物³和顆粒物⁴。

聯合動力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型修，會產生顆粒物。廢氣經收集處理後，可滿足《工業爐窯大氣污染物排放標準》(DB13/1640-2012)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

In accordance with the applicable laws and regulations and the applicable regulations of China Energy, the Group has established a clear and transparent HR system, including over 40 HR systems such as organization establishment, personnel management, salary management, labor and employment, education and training and cadre management systems. In the first half of 2020, Head Office organized the Personnel Department (HR Department) to formulate and revise 6 systems such as: Interim Methods for the Management of Annual Salary System of Enterprise Leaders, Measures for Vigorously Discovering, Training and Selection of Outstanding Young Cadres.

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、勞動用工、教育培訓、幹部管理等人力資源制度40餘項。2020年上半年，本部組織人事部(人力資源部)制定及修訂了《企業領導人員年薪制管理暫行辦法》《關於大力發現培養選拔優秀年輕幹部工作的實施辦法》等6項制度。

² SO₂ mainly came from the exhaust emission of the Company's vehicles.

³ NO_x was mainly emitted from the production of United Power, excluding vehicle exhaust emission.

⁴ Particulate matters were mainly emitted from the catalyst production of United Power and Longyuan Environmental, excluding vehicle exhaust emission.

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。



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環境、社會及管治報告(續)

As of 30 June, 2020, the Group had in total 6,091 employees, including 2,270 workers, 1,501 technicians and 2,320 other employees; or including 4,345 male employees, accounting for 71.3% of the total, and 1,746 female employees, accounting for 28.7% of the total. At the management level, female officers accounted for 24.5%, which was similar to proportion of female employees. There were 3,136 employees aged 35 and below, accounting for 51.5% of total employees; 1,857 employees aged 36–45, accounting for 30.5%; 924 employees aged 46–55, accounting for 15.2%; 174 employees aged 56 and above, accounting for 2.8%. The age structure of employees was reasonable. Except one employee working in Hong Kong, 6,090 employees were working 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 2020, there were no labor disputes caused by violation of laws and regulations.

截至2020年6月30日，本集團共有員工6,091人，工人2,270人，技術人員1,501人，其他僱員2,320人；男性員工4,345人，佔員工總數的71.3%，女性員工1,746人，佔28.7%；管理層中，女性約佔24.5%，與員工比例相近；35歲及以下員工3,136人，佔員工總數的51.5%，36–45歲員工1,857人，佔30.5%，46–55歲員工924人，佔15.2%，56歲以上員工174人，佔2.8%，年齡構成比較合理；除1位員工在香港辦公外，其餘6,090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员工提供平等的就業機會和勞動保障。2020年上半年未發生因違法違規引起的勞動糾紛。

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 2020, 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。2020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。定期由協力



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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 2020, no occupational disease incident occurred in the Group, and the coverage rate of occupational health examination was 100%.

Safety Guarantee

Until now, the Group has worked out 34 rules and regulations in respect of work safety, mainly including the Regulations for the Assessment of the Safety Management of Engineering Projects, Work Safety Responsibility System, and Safety Education and Training System, and has set up a safety committee to ensure the implementation of the safety rules and regulations.

In the first half of 2020, the Company carried out three major safety inspections, i.e. spring safety inspection, summer safety inspection and Safety Month, involving one production project, 13 infrastructure projects and 445 manufacturing projects. Moreover, the Company totally checked 574 hidden safety hazards and eliminated such safety hazards in time. In the first half of 2020, the Company convened two meetings of the Safety Committee.

In the first half of 2020, 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。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《工程項目安全管理考核制度》、《安全生產責任制度》及《安全教育培訓制度》等，並成立了安全委員會以保障安全制度的貫徹實施。

2020年上半年，本公司開展了春季、夏季及安全月共3次安全大檢查工作，共計對1個生產項目、13個基建項目、445個製造業項目進行檢查。累計排查安全隱患574項，及時排除安全隱患。上半年共召開2次安全委員會會議。

2020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。

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The Group pays attention to improving its democratic management system, deepened the “people-benefit projects”, guided the subsidiaries to establish special funds to help difficult employees. In the first half of 2020, more than RMB300,000 relief funds were allocated in total.

During the outbreak of COVID-19, the Group’s trade union purchased the epidemic prevention materials for employees for the first time, including professional masks, disposable medical masks, alcohol wipes and alcohol sanitizer, and mailed the epidemic prevention kits to 2 employees in Hunan. The Group’s trade union consoled the families of front-line employees and the employees who have made special contributions to the fight against the epidemic, and released the condolence money of RMB40,000. At the same time, a caring health consultation platform of overseas projects was launched in May, and professional physicians were invited to organize the health psychology seminars, online consultation, etc.

The Group, based on serving the needs of the staff, pays much attention to the physical and mental health of the staff and strengthens the linkage between the upper and lower levels. The Group jointly organized badminton competition and table tennis competition with its subsidiaries, which were popular with employees. The “Romantic China Energy” dating platform undertaken by the Group and the single youth exclusive applications constructed by the Group act as the exchange platforms for more than 2,200 young people, which have attracted the extensive attention of China Energy, the Working Committee of the Communist Youth League of Central Enterprises and people from all walks of life.

本集團注重健全完善企業民主管理體系，深化「惠民工程」，並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，上半年共撥付救助資金人民幣30餘萬元。

疫情期間，本集團工會第一時間為員工採購了各類防疫物資，包括專業口罩、一次性醫用口罩、酒精棉球及酒精免洗手液等，並為滯留湖南的2名員工郵寄了防疫物資包。慰問抗擊疫情一線職工家庭及為抗擊疫情做出特殊貢獻職工，發放慰問金達人民幣4萬元。同時5月啟動了境外工程項目的愛心健康諮詢平台，邀請專業醫師組織健康心理輔導講座及線上諮詢等。

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，與各附屬公司工會聯合舉辦了羽毛球、乒乓球比賽，深受職工歡迎。本集團承辦的「浪漫國家能源」交友平台，建設單身青年專屬應用程序，為2,200餘名青年搭建交流平台，受到國家能源集團、中央企業共青團工作委員會及社會各界廣泛關注。

3. Innovative Operation and High-quality Service

3.1 Fight Corruption and Promote Clean Governance according to Law

In the first half of 2020, the Group firmly built up the “Spirit of Contract” and the concept of operation according to law, constantly improved the clean governance and operation system with scientific decision-making, perfect mechanism and strong supervision and seriously carried out anti-corruption activities, forming a good atmosphere of honest practice.

3 創新經營、高質服務

3.1 依法依規反腐倡廉

2020年上半年，本集團牢固樹立「契約精神」和依法經營理念，不斷健全決策科學、機制完善及監督有力的廉政運行體系，認真開展反貪反腐活動，形成廉潔從業的良好氛圍。



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In order to standardize the professional behavior of employees and prevent the occurrence of corruption, the Group formulated and issued the key points of annual work, clarifying 26 annual tasks in 5 aspects, and further strengthening the implementation of responsibilities. Establish a supervision and reporting module in the Company's intranet, unblock the channels of reporting, and widely mobilize the masses for supervision. Focus on important nodes and key links, actively carry out supervision and inspection to prevent the "four undesirable work styles" problem from rebounding.

The Group strictly implemented the before-post inspection system, i.e. clean governance inspection, reply to letters of clean governance, clean governance examination and conversation of clean governance, and insisted on putting an end to the cadres' "promotion with problem", "taking up post with problem" and "praise with problem". The Group continued to promote its educational brands of "9-Clean-Governance", making the staff "know" clean governance through major festivals, "publicizing" clean governance via new media, "recording" clean governance matters of the staff in their archives, "enhancing" clean governance as early as possible, "promising" to keep key posts in clean governance, "waking up" the staff in clean governance by watching feature films, "alerting" the staff via case analysis, asking the staff to "think" clean governance by writing down experience, and "discussing" clean governance between the top level and the bottom level. As a result, this further strengthened the awareness of staff in disciplines and rules, created a good political ecology of clean and right style, honest and clean governance, hard working and legal compliance. In the first half of 2020, the Group had no corruption cases filed and concluded against any 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，預防腐敗發生，制定印發年度工作要點，明確5個方面26項年度任務，進一步強化責任落實。在公司內網增設監督舉報模塊，暢通信訪舉報管道，廣泛動員群眾監督。緊盯重要節點和關鍵環節，積極開展監督檢查，堅決防止「四風」問題反彈回潮。

本集團嚴格執行廉政考察、廉政回函、廉政考試、廉政談話的任前廉政體檢制度，堅持杜絕幹部「帶病提拔」「帶病上崗」「帶病表揚」。持續打造抓「九廉」教育品牌，通過重要節日「明廉、新媒體「送」廉、填報檔案「建」廉、抓早抓先「促」廉、關鍵崗位「諾」廉、觀看專題片「醒」廉、案例剖析「警」廉、撰寫體會「思」廉、上下互動「談」廉，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。2020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 NDA 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.

As of June 30, 2020, some 143 patents have been awarded, including 26 national invention patents. The Group has acquired 2,424 patents, including 21 international invention patents and 555 national invention patents.

Achievement transformation: As of June 30, 2020, the Group has created a total of over 90 mature technologies around the core business. In the recent three years, the industrialization of over 60 new technologies has realized operating revenues of RMB9 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。

截至2020年6月30日，本年度上半年累計獲得專利143項，其中國家發明專利26項。本集團歷史累計獲得專利2,424項，其中國際發明專利21項、國家發明專利555項

成果轉化：截至2020年6月30日，本集團圍繞核心業務共形成了90餘項成熟技術。近三年來形成的60餘項新技術產業化實現營業收入達人民幣90億元，科技創新為本集團的持續發展提供了源泉和動力。

4. Cooperation for Common Win and Dedicating 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 2020, a procurement supervision and management measure was compiled according to the procurement system requirements of China Energy. 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.

4.2 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,

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。2020年上半年按照國家能源集團採購制度要求新編製1項採購監督管理辦法。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。

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。



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

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 People's Republic of China 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 2020, 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 2020, the Group carried out the activity of "Loving Consumption for Poverty Alleviation", donating RMB612,000 to poor areas of China through purchasing products for poverty alleviation.

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 2020, "Green Ribbon" volunteers donated over RMB12,000 of study and daily necessities for over 1,160 students from 21 primary and secondary schools in Nyirong County, Tibet, and actively participated in community volunteer activities during the COVID-19 epidemic. In the first half of 2020, the "Green Ribbon" Volunteers Association carried out more than 15 hours of activities nationwide.

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.

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。2020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。

2020年，本集團舉辦「愛心消費助力扶貧」活動，通過購買扶貧產品方式，為中國貧困地區捐款人民幣61.2萬元。

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。2020年上半年，「綠絲帶」志願者為西藏聶榮縣21所中小學的1,160餘名學生捐贈人民幣1.2萬餘元的學習和生活用品，並在新冠肺炎疫情期間積極參與社區志願服務活動。2020年上半年，「綠絲帶」志願者協會在全國範圍開展活動總計15個小時以上。

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 59 to 113, which comprises the 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 2020 and the related 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59頁至第113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2020年6月30日的簡要合併財務狀況表與截至該日止6個月期間的簡要合併損益表、簡要合併損益及其他綜合收益表、簡要合併權益變動表及簡要合併現金流量表以及附註解釋。《香港聯合交易所有限公司證券上市規則》要求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主要向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
28 August 2020

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號的規定編製。

安永會計師事務所

執業會計師

香港
2020年8月28日

INTERIM CONDENSED CONSOLIDATED STATEMENT OF PROFIT OR LOSS

簡要中期合併損益表

For the six months ended 30 June 2020 截至2020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		
		2020	2019	
		RMB'000	RMB'000	
		(Unaudited)	(Unaudited)	
		(未經審計)	(未經審計)	
	Notes 附註			
Revenue	收入	5	4,447,784	4,090,305
Cost of sales	銷售成本		(3,532,785)	(3,146,019)
Gross profit	毛利		914,999	944,286
Other revenue	其他收入	6	153,041	101,903
Other income	其他收益	6	4,094	4,933
Other expense	其他費用	6	(43,187)	(123)
Selling and distribution expenses	銷售及分銷開支		(586,601)	(395,416)
Administrative expenses	行政開支		(576,449)	(544,182)
(Loss)/profit from operations	經營(虧損)/利潤		(134,103)	111,401
Finance costs	財務成本	7	(290,769)	(281,100)
Share of profits less losses of associates	應佔聯營公司利潤減虧損		14,365	16,671
Loss before taxation	稅前虧損	8	(410,507)	(153,028)
Income tax	所得稅	9	(115,124)	(157,230)
Loss for the period	本期虧損		(525,631)	(310,258)
Attributable to:	歸屬於：			
Equity shareholders of the Company	本公司權益股東	10	(402,914)	(198,862)
Non-controlling interests	非控股權益		(122,717)	(111,396)
Loss for the period	本期虧損		(525,631)	(310,258)
Basic and diluted loss per share (expressed in RMB cent)	每股基本及攤薄虧損 (以人民幣分列示)	10	(6.64)	(3.28)

The notes on pages 67 to 113 form part of this interim financial report.

第67頁至第113頁的附註為本中期財務報告的組成部分。

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

簡要中期合併損益及其他綜合收益表

For the six months ended 30 June 2020 截至2020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	
		2020 RMB'000 人民幣千元 (Unaudited) (未經審計)	2019 RMB'000 人民幣千元 (Unaudited) (未經審計)
Loss for the period	本期虧損	(525,631)	(310,258)
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	741,449	305,138
– income tax effect	– 所得稅影響	(185,362)	(68,792)
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：	556,087	236,346
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	(666)	34
Other comprehensive income for the period, net of tax	稅後本期其他綜合收益	555,421	236,380
Total comprehensive income for the period	本期綜合收益總額	29,790	(73,878)
Attributable to:	歸屬於：		
Equity shareholders of the Company	本公司權益股東	152,507	37,518
Non-controlling interests	非控股權益	(122,717)	(111,396)
Total comprehensive income for the period	本期綜合收益總額	29,790	(73,878)

The notes on pages 67 to 113 form part of this interim financial report.

第67頁至第113頁的附註為本中期財務報告的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION

簡要中期合併財務狀況表

30 June 2020 2020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 2020	At 31 December 2019
			於2020年 6月30日	於2019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	11	物業、廠房及設備	4,448,072	4,586,390
Investment properties		投資性物業	213,532	218,205
Intangible assets		無形資產	841,177	864,193
Goodwill		商譽	57,591	57,591
Interests in associates		對聯營公司的投資	458,608	444,539
Other equity investments	12	其他權益工具	1,971,249	1,229,800
Restricted deposits		受限制存款	22,268	14,578
Other non-current assets	13	其他非流動資產	3,794,161	3,828,725
Deferred tax assets		遞延所得稅資產	710,654	686,097
Total non-current assets		非流動資產總額	12,517,312	11,930,118
Current assets		流動資產		
Inventories		存貨	4,333,639	4,147,852
Contract assets		合同資產	2,467,290	2,284,957
Trade and bills receivables	14	應收賬款及票據	9,291,170	9,809,267
Deposits, prepayments and other receivables		按金、預付款項及其他應收款項	2,029,583	1,617,680
Tax recoverable		可收回稅項	174,038	220,952
Restricted deposits		受限制存款	291,725	615,564
Cash at bank and in hand	15	銀行存款及庫存現金	4,858,112	4,186,922
Total current assets		流動資產總額	23,445,557	22,883,194
Current liabilities		流動負債		
Borrowings	16	借款	7,430,050	6,318,173
Trade and bills payables	17	應付賬款及票據	8,693,477	9,941,038
Other payables		其他應付款項	1,367,908	1,469,945
Contract liabilities		合同負債	3,007,077	2,174,643
Income tax payable		應付所得稅	22,016	52,636
Provision for warranty		質保金撥備	317,339	320,736
Total current liabilities		流動負債總額	20,837,867	20,277,171
Net current assets		流動資產淨額	2,607,690	2,606,023
Total assets less current liabilities		總資產減流動負債	15,125,002	14,536,141

The notes on pages 67 to 113 form part of this interim financial report.

第67頁至第113頁的附註為本中期財務報告的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF FINANCIAL POSITION (CONTINUED)

簡要中期合併財務狀況表(續)

30 June 2020 2020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 2020	At 31 December 2019
			於2020年 6月30日	於2019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 liabilities	非流動負債			
Borrowings	借款	16	5,821,846	5,401,057
Deferred income	遞延收益		284,988	293,602
Deferred tax liabilities	遞延所得稅負債		437,340	215,742
Lease liabilities	租賃負債		93,654	98,003
Provision for warranty	質保金撥備		304,632	271,863
Other non-current liabilities	其他非流動負債		679,418	694,156
Total non-current liabilities	非流動負債總額		7,621,878	6,974,423
NET ASSETS	資產淨額		7,503,124	7,561,718
CAPITAL AND RESERVES	資本及儲備			
Share capital	股本		6,063,770	6,063,770
Reserves	儲備		(1,140,946)	(1,297,656)
Total equity attributable to equity shareholders of the Company	歸屬於本公司權益股東的權益總額		4,922,824	4,766,114
Non-controlling interests	非控股權益		2,580,300	2,795,604
TOTAL EQUITY	權益總額		7,503,124	7,561,718

Approved and authorised for issue by the Board of Directors on 28 August 2020.

董事會於2020年8月28日批准及授權刊發。

Mr. CHEN Dongqing
陳冬青
Executive Director
授權董事

Mr. TANG Chaoxiong
唐超雄
Executive Director
授權董事

The notes on pages 67 to 113 form part of this interim financial report.

第67頁至第113頁的附註為本中期財務報告的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

簡要中期合併權益變動表

For the six months ended 30 June 2020 截至2020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	(非轉回)	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:	截至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 minor 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

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

* 國電科技環保集團股份有限公司(「本公司」)和北京華電天德資產經營有限公司(「華電天德」)分別持有北京華電天仁電力控制技術有限公司(「天仁公司」)90%和10%的股權。2020年1月10日，根據股權轉讓協定，公司以人民幣27,111,294元從華電天德收購天仁公司的10%股權。收購於2020年4月21日完成，至此天仁公司成為本公司的全資子公司。

The notes on pages 67 to 113 form part of this interim financial report.

第67頁至第113頁的附註為本中期財務報告的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (CONTINUED)

簡要中期合併權益變動表(續)

For the six months ended 30 June 2020 截至2020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							Non-controlling interests	Total equity
		Share capital	Capital reserve	PRC statutory reserve	Exchange reserve	Fair value reserve (non-recycling)	Accumulated losses	Sub-total		
		股本	資本儲備	中國法定公積	匯兌儲備	(非轉回)	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 2019	2019年1月1日結餘	6,063,770	1,053,550	129,332	2,121	(32,932)	(2,446,357)	4,769,484	2,973,688	7,743,172
Changes in equity for the six months ended 30 June 2019:	截止2019年6月30日止6個月權益變動:									
Loss for the period	本期虧損	-	-	-	-	-	(198,862)	(198,862)	(111,396)	(310,258)
Other comprehensive income	其他綜合收益	-	-	-	34	236,346	-	236,380	-	236,380
Total comprehensive income	本期綜合收益總額	-	-	-	34	236,346	(198,862)	37,518	(111,396)	(73,878)
Capital injection from a non-controlling interest	非控股股東注資	-	-	-	-	-	-	-	3,300	3,300
Disposal of a subsidiary	處置附屬公司	-	-	-	-	-	-	-	106	106
Balance at 30 June 2019	2019年6月30日結餘	6,063,770	1,053,550	129,332	2,155	203,414	(2,645,219)	4,807,002	2,865,698	7,672,700

The notes on pages 67 to 113 form part of this interim financial report.

第67頁至第113頁的附註為本中期財務報告的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS

簡要中期合併現金流量表

For the six months ended 30 June 2020 截至2020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	
		2020	2019
		RMB'000	RMB'000
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Operating activities	經營活動		
Cash used in operations	經營中使用的現金	(513,197)	(80,718)
Income tax paid	已付所得稅	(87,150)	(117,909)
Net cash used in operating activities	經營活動使用的淨現金	(600,347)	(198,627)
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	(159,015)	(166,303)
Payment for purchase of deposits with banks	支付從銀行購買的存款	(1,055,000)	(1,013,500)
Redemption of deposits with banks	贖回銀行存款	1,141,500	400,000
Purchase of a short-term investment	購買短期投資	(215,000)	(902,000)
Proceeds from a short-term investment	短期投資收入	150,000	762,000
Other cash flows arising from investing activities	來自投資活動的其他現金流	32,982	22,029
Net cash used in investing activities	投資活動使用的淨現金	(104,533)	(897,774)

The notes on pages 67 to 113 form part of this interim financial report.

第67頁至第113頁的附註為本中期財務報告的組成部分。

INTERIM CONDENSED CONSOLIDATED STATEMENT OF CASH FLOWS (CONTINUED)

簡要中期合併現金流量表(續)

For the six months ended 30 June 2020 截至2020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	
		2020 RMB'000 人民幣千元 (Unaudited) (未經審計)	2019 RMB'000 人民幣千元 (Unaudited) (未經審計)
	Note 附註		
Financing activities	籌資活動		
Proceeds from borrowings	借款所得款項	7,639,000	7,777,020
Repayment of borrowings	償還借款	(6,227,130)	(7,913,891)
Decrease in restricted deposits	受限制存款的減少	481,831	357,151
Increase in restricted deposits	受限制存款的增加	(165,682)	(435,491)
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	(81,836)	-
Interest paid	已付利息	(148,896)	(254,389)
Principal portion of lease payments	支付租賃本金部分	(7,429)	(9,135)
Other cash flows arising from financing activities	來自籌資活動的其他現金流	-	3,300
Net cash generated from/(used in) financing activities	籌資活動使用的淨現金	1,462,747	(475,435)
Net increase/(decrease) in cash and cash equivalents	現金及現金等價物的淨增加/ (減少) 額	757,867	(1,571,836)
Cash and cash equivalents at 1 January	於1月1日的現金及現金等價物	3,145,422	3,436,459
Effect of foreign exchanges rate changes	外匯匯率變動的影響	(177)	32
Cash and cash equivalents at 30 June	於6月30日的現金及現金等價物	3,903,112	1,864,655

The notes on pages 67 to 113 form part of this interim financial report.

第67頁至第113頁的附註為本中期財務報告的組成部分。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION

簡要中期合併財務資料附註

30 June 2020 2020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.

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。



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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

This interim condensed consolidated financial information for the six months ended 30 June 2020 (“**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 2019 annual consolidated financial statements, except for the accounting policy changes that are expected to be reflected in the 2020 annual consolidated financial statements. Details of any changes in accounting policies are set out in note 3 to the interim financial information.

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.

2 編製基礎

本截至2020年6月30日止6個月期間的簡要中期合併財務資料(「**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2020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2019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。

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。



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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)

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 2019 annual consolidated financial statements. The condensed consolidated interim 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 2019.

This interim financial information has been prepared assuming the Group will continue as a going concern notwithstanding the net loss of RMB525,631,000 and the net cash used in operating activities of RMB600,347,000 for the six months ended 30 June 2020. The Group has unutilised banking facilities of RMB8,084,921,000 as at 30 June 2020 to fulfil its future capital commitments and other financial requirements, of which RMB5,802,787,000 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)

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2019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。簡要合併中期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2019年年度合併財務報表一併閱讀。

儘管本集團截至2020年6月30日止6個月期間淨虧損為人民幣525,631,000元，以及在經營活動中使用的淨現金為人民幣600,347,000元，本中期財務資料是以假設本集團持續經營的基礎編製。於2020年6月30日，本集團擁有金額為人民幣8,084,921,000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5,802,787,000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)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 information are consistent with those applied in the preparation of the Group's annual consolidated financial statements for the year ended 31 December 2019, except for the adoption of the following revised IFRSs for the first time for the current period's financial information.

Amendments to IFRS 3	<i>Definition of a Business</i>
Amendments to IFRS 7, IFRS 9 and IAS 39	<i>Interest Rate Benchmark Reform</i>
Amendment to IFRS 16	<i>Covid-19-Related Rent Concessions</i>
Amendments to IAS 1 and IAS 8	<i>Definition of Material</i>

Conceptual Framework for Financial Reporting issued on 29 March 2018

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

- (a) Amendments to IFRS 3 clarify and provide additional guidance on the definition of a business. The amendments clarify that for an integrated set of activities and assets to be considered a business, it must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create output. A business can exist without including all of the inputs and processes needed to create outputs. The amendments remove the assessment of whether market participants are capable of acquiring the business and continuing to produce outputs. Instead, the focus is on whether acquired inputs and acquired substantive processes together significantly contribute to the ability to create outputs. The amendments have also narrowed the definition of outputs to focus on goods or services provided to customers, investment income or other income from ordinary activities. Furthermore, the amendments provide guidance to assess whether an acquired process is substantive and introduce an optional fair value concentration test to permit a simplified assessment of whether an acquired set of activities and assets is not a business. The Group has applied the amendments prospectively to transactions or other events that occurred on or after 1 January 2020. The amendments did not have any significant impact on the financial position and performance of the Group.

3 會計政策與披露變更

除以下修訂後的國際財務報告準則本期財務信息首次採用以外，編製中期簡明合併財務信息時採用的會計政策與編製截至2019年12月31日止的本集團年度合併財務報表時採用的會計政策一致。

國際財務報告準則第3號之修訂	業務的定義
國際財務報告準則第7號、第9號以及國際會計準則第39號之修訂	利率基準改革
國際財務報告準則第16號之修訂	新冠肺炎疫情相關租金減讓
國際會計準則第1號及第8號之修訂	重大的定義

2018年3月29日發佈的財務報告概念框架

經修訂國際財務報告準則的性質及影響如下：

- (a) 對國際財務報告準則第3號之修訂澄清並提供了關於業務定義的額外指導。修正案明確指出，要使一套完整的活動和資產被視為一項業務，它至少必須包括一項投入和一項實質性過程，這些投入和實質性進度共同對創造產出的能力作出重大貢獻。業務可以不包含創建輸出所需的所有輸入和過程而存在。修正案取消了對市場參與者是否有能力收購業務並繼續產出的評估。相反，重點在於獲得的投入和獲得的實質性過程是否共同對創造產出的能力作出重大貢獻。修正案還縮小了產出的定義，將重點放在向客戶提供的商品或服務、投資收入或其他來自日常活動的收入。此外，修正案為評估收購過程是否具有實質性提供了指導，並引入了可選的公允價值集中度測試，以簡化對收購的一系列活動和資產是否為業務的評估。本集團前瞻性地將修正案應用於2020年1月1日或之後發生的交易或其他事件。修正案對集團的財務狀況和業績沒有任何重大影響。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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) Amendments to IFRS 7, IFRS 9 and IAS 39 address the effects of interbank offered rate reform on financial reporting. The amendments provide temporary reliefs which enable hedge accounting to continue during the period of uncertainty before the replacement of an existing interest rate benchmark. In addition, the amendments require companies to provide additional information to investors about their hedging relationships which are directly affected by these uncertainties. The amendments did not have any significant impact on the financial position and performance of the Group.
- (c) Amendment to IFRS 16 provides a 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. The practical expedient applies only to rent concessions occurring as a direct consequence of the covid-19 pandemic and only if (i) the change in lease payments results in revised consideration for the lease that is substantially the same as, or less than, the consideration for the lease immediately preceding the change; (ii) any reduction in lease payments affects only payments originally due on or before 30 June 2021; and (iii) there is no substantive change to other terms and conditions of the lease. The amendment is effective retrospectively for annual periods beginning on or after 1 June 2020 with earlier application permitted. During the period ended 30 June 2020, the Group had no rent concessions granted by the lessors. The amendment did not have any significant impact on the financial position and performance of the Group.
- (d) Amendments to IAS 1 and IAS 8 provide a new definition of material. The new definition states that information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements. The amendments clarify that materiality will depend on the nature or magnitude of information. The amendments did not have any significant impact on the Group's interim condensed consolidated financial information.

3 會計政策與披露變更(續)

- (b) 國際財務報告準則第7號、第9號以及國際會計準則第39號之修訂涉及銀行同業拆借利率改革對財務報告的影響。修正案提供了臨時性的減免措施，使對沖會計在替代現有利率基準之前的不確定性期間繼續有效。此外，修正案要求公司向投資者提供直接受這些不確定性影響的對沖關係的額外信息。修正案對本集團的財務狀況和業績沒有任何重大影響。
- (c) 國際財務報告準則第16號之修訂，為承租人選擇不適用因新冠疫情而產生的租金減讓，提供了一種可行權宜方法。可行權宜方法僅適用於因新冠疫情而產生的租金優惠，且僅當(i)租賃付款的變化導致租賃的修正對價實質上與變更之前的租賃對價相同或更低；(ii)租賃付款的任何減少僅影響在2021年6月30日或之前到期的付款；以及(iii)租賃的其他條款和條件沒有實質性變化。修正案對2020年6月1日或之後開始的年度有效，允許提前適用。截至2020年6月30日，本集團沒有獲得出租人批准的租金優惠。修正案對集團的財務狀況和業績沒有任何重大影響。
- (d) 對國際會計準則第1號和第8號之修訂提供了新的重大的定義。新的定義指出，如果信息被省略、誤述或模糊，可以合理地預期這些信息會影響通用財務報表的主要使用者根據這些財務報表作出的決定，那麼這些信息就是重要的。修正案澄清了重要性將取決於信息的性質或數量。修訂對本集團中期簡明合併財務資料並無任何重大影響。



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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)

- (e) The Conceptual Framework is not a standard, and none of the concepts contained therein override the concepts or requirements in any standard. The purpose of the Conceptual Framework is to assist the IASB in developing standards, to help preparers develop consistent accounting policies where there is no applicable standard in place and to assist all parties to understand and interpret the standards. The revised Conceptual Framework includes some new concepts, provides updated definitions and recognition criteria for assets and liabilities and clarifies some important concepts. The amendments had no impact on the consolidated financial statements of the Group.

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.
- 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.

3 會計政策與披露變更(續)

- (e) 概念框架不是一個準則，並且任何概念都不能凌駕於任何一項準則中的概念或要求。概念框架的目的是協助國際會計準則理事會制定準則，在沒有適用準則的情況下，說明編製者制定一致的會計政策，並協助各方理解和解釋準則。修訂後的概念框架包括一些新概念，提供了資產和負債的最新定義和確認標準，並澄清了一些重要概念。這些修訂對集團的合併財務報表沒有影響。

4 經營分部信息

本集團以附屬公司管理其業務，該等附屬公司以經營項目(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、脫硫脫硝設備運營、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。
- 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。



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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)

(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, inventory write-down and additions to segment non-current assets.

4 經營分部信息(續)

(i) 分部業績、資產及負債

為評估分部業績、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、資產減值和存貨撇減和添置分部非流動資產的分部信息。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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)

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 2020 and 2019 is set out below:

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2020年和2019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 2020 於2020年6月30日/截至2020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	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	1,503,639	604,024	2,188,529	151,592	4,447,784
Inter-segment revenue	分部間收入	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)

簡要中期合併財務資料附註(續)

30 June 2020 2020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)

		For the six months ended 30 June 2019 截至2019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	128,379	60,642	1,587,361	128,593	1,904,975
Over time	在一段時間確認	1,645,881	526,267	10,383	2,799	2,185,330
Revenue from external customers	外部客戶收入	1,774,260	586,909	1,597,744	131,392	4,090,305
Inter-segment revenue	分部間收入	9	35,115	340	12,288	47,752
Reportable segment revenue	可呈報分部收入	1,774,269	622,024	1,598,084	143,680	4,138,057
Reportable segment profit (gross profit)	可呈報分部利潤(毛利)	401,961	73,937	361,707	65,489	903,094
Depreciation and amortisation (Reversal of impairment)/ impairment of contract assets	折舊及攤銷 合同資產減值(轉 回)/計提	116,399 (22,110)	8,714 -	62,077 336	52,708 -	239,898 (21,774)
Reversal of impairment of inventory (Reversal of impairment)/ impairment of trade and other receivables	存貨撇減 應收賬款及其他應 收款項減值(轉 回)/計提	(1,551) (29,231)	(814) (3,277)	- 6,107	- (30,646)	(2,365) (57,047)
Impairment of other non-current assets	其他非流動資產減 值	8,030	-	4,671	-	12,701
Interest income	利息收入	10,531	15,048	8,045	315	33,939
Finance costs	財務成本	40,508	1,953	74,439	2,127	119,027

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 31 December 2019 於2019年12月31日				
		Environmental protection 環保	Energy conservation solutions 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
		(Audited) (經審計)	(Audited) (經審計)	(Audited) (經審計)	(Audited) (經審計)	(Audited) (經審計)
Reportable segment assets	可呈報分部資產	12,232,405	3,731,758	13,126,819	2,524,128	31,615,110
Additions to reportable segment non-current assets during the year*	年內添置可呈報分部非流動資產*	325,365	25,789	176,040	56,261	583,455
Reportable segment liabilities	可呈報分部負債	7,964,451	2,186,049	11,362,183	498,025	22,010,708

* 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)

簡要中期合併財務資料附註(續)

30 June 2020 2020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	
		2020	2019
		<i>RMB'000</i>	<i>RMB'000</i>
		人民幣千元	人民幣千元
		(Unaudited)	<i>(Unaudited)</i>
		(未經審計)	(未經審計)
Revenue	收入		
Reportable segment revenue	可呈報分部收入	4,754,586	4,138,057
Elimination of inter-segment revenue	分部間收入抵銷	(306,802)	(47,752)
Revenue	收入	4,447,784	4,090,305
Profit	利潤		
Reportable segment profit	可呈報分部利潤	920,938	903,094
Elimination of inter-segment (profit)/ loss	分部間(利潤)/虧損抵銷	(5,939)	41,192
Gross profit	毛利	914,999	944,286
Other revenue	其他收入	153,041	101,903
Other income	其他收益	4,094	4,933
Other expense	其他費用	(43,187)	(123)
Selling and distribution expenses	銷售及分銷開支	(586,601)	(395,416)
Administrative expenses	行政開支	(576,449)	(544,182)
Finance costs	財務成本	(290,769)	(281,100)
Share of profits less losses of associates	應佔聯營公司利潤減虧損	14,365	16,671
Loss before taxation	稅前虧損	(410,507)	(153,028)

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 2020	At 31 December 2019
		於2020年 6月30日	於2019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	32,287,844	31,615,110
Inter-segment elimination	分部間抵銷	(671,620)	(365,217)
		31,616,224	31,249,893
Interests in associates	對聯營公司的投資	458,608	444,539
Other equity investments	其他權益投資	1,971,249	1,229,800
Tax recoverable	可收回稅項	174,038	220,952
Deferred tax assets	遞延稅項資產	710,654	686,097
Unallocated head office and corporate assets	未分配總部及行政資產	1,032,096	982,031
Total assets	資產總額	35,962,869	34,813,312
Liabilities	負債		
Total reportable segment liabilities	可呈報分部負債	23,087,339	22,010,708
Inter-segment elimination	分部間抵銷	(665,911)	(379,237)
		22,421,428	21,631,471
Income tax payable	應付所得稅	22,016	52,636
Deferred tax liabilities	遞延稅項負債	437,340	215,742
Unallocated head office and corporate liabilities	未分配總部及行政負債	5,578,961	5,351,745
Total liabilities	負債總額	28,459,745	27,251,594

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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

An analysis of revenue is as follows:

5 收入

收入分析如下：

		Six months ended 30 June 截至6月30日止6個月	
		2020 RMB'000 人民幣千元 (Unaudited) (未經審計)	2019 RMB'000 人民幣千元 (Unaudited) (未經審計)
Revenue from contracts with customers	客戶合約收入	4,185,316	3,589,341
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)	262,468	500,964
		4,447,784	4,090,305

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.

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。

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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

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

5 收入(續)

分拆收入信息

截至2020年6月30日止6個月期間的客戶合約收入

		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
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

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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 2019

截至2019年6月30日止6個月期間的客戶合約收入

		For the six months ended 30 June 2019 截至2019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	128,380	60,642	1,587,361	128,593	1,904,976
Revenue from construction contracts	建造合同收入	861,109	526,267	-	-	1,387,376
Rendering of services	提供服務	122,535	-	10,383	2,799	135,717
Service concession arrangement revenue	服務特許權協定收入	161,272	-	-	-	161,272
Total	總計	1,273,296	586,909	1,597,744	131,392	3,589,341
Geographical markets	地域市場					
Mainland China	中國大陸	1,273,296	586,909	1,597,744	131,392	3,589,341
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	128,380	60,642	1,587,361	128,593	1,904,976
Services transferred over time	隨時間轉讓的服務	1,144,916	526,267	10,383	2,799	1,684,365
Total	總計	1,273,296	586,909	1,597,744	131,392	3,589,341

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30 June 2020 2020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 (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 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

		For the six months ended 30 June 2019 截至2019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	1,273,296	586,909	1,597,744	131,392	3,589,341
Gross rental income from operating leases	來自經營租賃的租賃收入	500,964	-	-	-	500,964
Total	總計	1,774,260	586,909	1,597,744	131,392	4,090,305

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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	
		2020	2019
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Other revenue	其他收入		
Government grants	政府補助	80,368	35,717
Interest income	利息收入	42,856	34,447
Others	其他	29,817	31,739
		153,041	101,903
Other income	其他收益		
Net gains on sales of raw materials	原材料銷售收益淨額	1,945	3,141
Net gains on disposals of subsidiaries	出售附屬公司收益淨額	-	248
Net gains on disposals of property, plant and equipment	出售物業、廠房及設備收益淨額	140	300
Net foreign exchange gains	匯兌收益淨額	497	-
Others	其他	1,512	1,244
		4,094	4,933
Other expense (Note)	其他費用(附註)	43,187	123

Note:

Other expense for the six months ended 30 June 2020 represented the provision for an arbitration with a third party.

附註：

截至2020年6月30日止6個月其他費用為為仲裁計提的應付第三方款項。

7 Finance costs 7 財務成本

		Six months ended 30 June	
		截至6月30日止6個月	
		2020	2019
		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	287,957	279,788
Interest on lease liabilities	租賃負債利息	2,812	1,312
		290,769	281,100

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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

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

(a) Personnel costs

		Six months ended 30 June	
		截至6月30日止6個月	
		2020	2019
		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	549,216	548,160
Contributions to defined contribution retirement plan	界定供款退休計畫的供款	40,658	78,058
		589,874	626,218

(b) Other items

		Six months ended 30 June	
		截至6月30日止6個月	
		2020	2019
		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	39,810	38,876
Depreciation	折舊		
– investment properties	– 投資性物業	4,673	4,169
– property, plant and equipment	– 物業、廠房及設備	179,115	196,853
Impairment/ (reversal of impairment) of	減值虧損/(減值轉回)		
– inventories	– 存貨	512	(2,365)
– trade and bills receivables and other receivables	– 應收賬款及其他應收款項	(5,438)	(57,047)
– other non-current assets	– 其他非流動資產	–	12,701
– contract assets	– 合同資產	–	(21,774)
Research and development costs	研發成本	66,008	48,630
Cost of inventories	存貨成本	1,964,963	1,429,332

8 稅前虧損

稅前虧損已扣除/(計入)：

(a) 員工成本

		Six months ended 30 June	
		截至6月30日止6個月	
		2020	2019
		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	549,216	548,160
Contributions to defined contribution retirement plan	界定供款退休計畫的供款	40,658	78,058
		589,874	626,218

(b) 其他項目

		Six months ended 30 June	
		截至6月30日止6個月	
		2020	2019
		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	39,810	38,876
Depreciation	折舊		
– investment properties	– 投資性物業	4,673	4,169
– property, plant and equipment	– 物業、廠房及設備	179,115	196,853
Impairment/ (reversal of impairment) of	減值虧損/(減值轉回)		
– inventories	– 存貨	512	(2,365)
– trade and bills receivables and other receivables	– 應收賬款及其他應收款項	(5,438)	(57,047)
– other non-current assets	– 其他非流動資產	–	12,701
– contract assets	– 合同資產	–	(21,774)
Research and development costs	研發成本	66,008	48,630
Cost of inventories	存貨成本	1,964,963	1,429,332

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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	
		2020	2019
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Current tax	本期稅額		
Provision for the period	本期撥備	89,757	51,804
Under provision/(over provision) in respect of prior years	過往年度撥備不足/(過度撥備)	13,688	(22,304)
		103,445	29,500
Deferred tax	遞延稅項		
Origination and reversal of temporary differences	暫時性差異的產生及轉回	11,679	127,730
		115,124	157,230

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 2019: 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. Project income derived from its units 1 to 5 is levied at a preferential rate of 15% (six months ended 30 June 2019: 15%). Meanwhile, income derived from its unit 6 is tax-exempted for the first 3 years followed by a 50% exemption from the fourth to the sixth years starting from the first year in which the project generates operating income, due to the qualified environmental protection projects, thus the applicable income tax rate for the six months ended 30 June 2020 was 12.5% (six months ended 30 June 2019: 12.5%).

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2019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定為「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。1-5號機組產生項目收入減按15%(截至2019年6月30日止6個月: 15%)的稅率徵收企業所得稅。同時因從事合資格環保項目，6號機組享受從該等項目產生項目收入的第一年起首三個年度豁免繳納稅項，其後第4至6年豁免50%稅項，由此該機組2020年6月30日止6個月應繳稅稅率為12.5%(截至2019年6月30日止6個月: 12.5%)。

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9 Income tax (continued)

Besides, a subsidiary of the Group which is a small-scale enterprise subject to enterprise income tax at 20% (six months ended 30 June 2019: 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.

10 Loss per share

The calculation of basic loss per share is based on the loss attributable to equity shareholders of the Company of RMB402,914,000 (six months ended 30 June 2019: RMB198,862,000) and the weighted average of 6,063,770,000 ordinary shares (six months ended 30 June 2019: 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 2020 and 2019.

11 Property, plant and equipment

9 所得稅(續)

除此之外，本集團一家附屬公司屬於小型企業並按20%(截至2019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。

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402,914,000元(截至2019年6月30日止6個月：虧損人民幣198,862,000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2019年6月30日止6個月：6,063,770,000股普通股)。

截至2020年及2019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

	Buildings and structures	Machinery and equipment	Motor vehicles	Furniture, fixtures and others	Buildings	Structures	General equipment	Special power equipment	Technology and environmental protection equipment	Other industrial equipment	Construction in progress	Right-of-use assets	Total
	樓宇及建築物	機器及設備	汽車	傢俱裝置及其他	樓宇	構築物	通用設備	電力專用設備	科技環保專用設備	其他行業專用設備	在建工程	使用權資產	總計
	RMB'000	RMB'000	RMB'000	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	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)	(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)	(未經審計)	(未經審計)	(未經審計)
Cost:	成本：												
At 31 December 2019	於2019年12月31日	2,688,113	3,956,990	162,393	468,954	-	-	-	-	-	238,155	752,803	8,266,408
Reclassification	重分類	(2,688,113)	(3,956,990)	(162,393)	(468,954)	2,460,611	282,042	902,371	1,283,326	1,330,429	-	-	-
At 1 January 2020	於2020年01月01日	-	-	-	-	2,460,611	282,042	902,371	1,283,326	1,330,429	238,155	752,803	8,266,408

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簡要中期合併財務資料附註(續)

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

11 Property, plant and equipment (continued)

11 物業、廠房及設備(續)

		Buildings and structures	Machinery and equipment	Motor vehicles	Furniture, fixtures and others	Buildings	Structures	General equipment	Special power equipment	Technology and environmental protection equipment	Other industrial equipment	Construction in progress	Right-of-use assets	Total
		樓宇及建築物	機器及設備	汽車	傢俱裝置及其他	樓宇	構築物	通用設備	電力專用設備	科技環保專用設備	其他行業專用設備	在建工程	使用權資產	總計
		RMB'000	RMB'000	RMB'000	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	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)	(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)	(未經審計)	(未經審計)	(未經審計)
Additions	增加	-	-	-	-	4,309	-	16,963	1,069	30,832	775	78,154	10,964	143,066
Transfer from construction in progress	在建工程轉入	-	-	-	-	1,413	3,534	1,374	-	-	-	(6,321)	-	-
Disposals	出售	-	-	-	-	-	-	(5,035)	-	-	-	-	-	(5,035)
Other adjustments	其他變動	-	-	-	-	-	-	-	-	(18,737)	-	(82,377)	-	(101,114)
At 30 June 2020	於2020年06月30日	-	-	-	-	2,466,333	285,576	915,673	1,284,395	1,342,524	1,017,446	227,611	763,767	8,303,325
Accumulated depreciation and impairment:	累計折舊及減值：													
At 31 December 2019	於2019年12月31日	1,028,244	2,044,868	140,653	335,515	-	-	-	-	-	-	37,862	92,876	3,680,018
Reclassification	重分類	(1,028,244)	(2,044,868)	(140,653)	(335,515)	843,319	153,677	714,230	298,911	757,343	781,800	-	-	-
At 1 January 2020	於2020年01月01日	-	-	-	-	843,319	153,677	714,230	298,911	757,343	781,800	37,862	92,876	3,680,018
Depreciation charge for the period	本期折舊費	-	-	-	-	49,763	3,395	19,018	23,912	35,885	25,251	-	21,891	179,115
Written back on disposals	因出售而撥回	-	-	-	-	-	-	(3,880)	-	-	-	-	-	(3,880)
At 30 June 2020	於2020年06月30日	-	-	-	-	893,082	157,072	729,368	322,823	793,228	807,051	37,862	114,767	3,855,253
Net book value:	賬面淨值：													
At 31 December 2019	於2019年12月31日	1,659,869	1,911,122	21,740	133,439	-	-	-	-	-	-	200,293	659,927	4,586,390
At 1 January 2020	於2020年01月01日	-	-	-	-	1,617,292	128,365	188,141	984,415	573,086	234,871	200,293	659,927	4,586,390
At 30 June 2020	於2020年06月30日	-	-	-	-	1,573,251	128,504	186,305	961,572	549,296	210,395	189,749	649,000	4,448,072

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020年6月30日

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

11 Property, plant and equipment (continued)

11 物業、廠房及設備(續)

		Buildings and structures 樓宇及建築物 RMB'000 人民幣千元 (未經審計) (Unaudited)	Machinery and equipment 機器及設備 RMB'000 人民幣千元 (未經審計) (Unaudited)	Motor vehicles 汽車 RMB'000 人民幣千元 (未經審計) (Unaudited)	Furniture, fixtures and others 傢俱裝置及其他 RMB'000 人民幣千元 (未經審計) (Unaudited)	Construction in progress 在建工程 RMB'000 人民幣千元 (未經審計) (Unaudited)	Right-of-use assets 使用權資產 RMB'000 人民幣千元 (未經審計) (Unaudited)	Total 總計 RMB'000 人民幣千元 (未經審計) (Unaudited)
Cost:	成本：							
At 1 January 2019	於2019年01月01日	2,604,054	3,646,173	165,226	457,361	418,689	628,422	7,919,925
Additions	增加	577	43,495	1,268	4,760	74,769	35,061	159,930
Transfer from construction in progress	在建工程轉入	-	67,774	-	-	(67,774)	-	-
Transfer to investment properties	轉出至投資性物業	(720)	-	-	-	-	-	(720)
Disposals	出售	(131)	(1,100)	(2,959)	(787)	-	(474)	(5,451)
At 30 June 2019	於2019年06月30日	2,603,780	3,756,342	163,535	461,334	425,684	663,009	8,073,684
Additions	增加	32,184	22,320	2,079	11,442	161,759	89,794	319,578
Transfer from construction in progress	在建工程轉入	68,069	281,219	-	-	(349,288)	-	-
Transfer to investment properties	轉出至投資性物業	(944)	-	-	-	-	-	(944)
Disposals	出售	(14,976)	(103,891)	(3,221)	(3,822)	-	-	(125,910)
At 31 December 2019	於2019年12月31日	2,688,113	3,955,990	162,393	468,954	238,155	752,803	8,266,408

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020年6月30日

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

11 Property, plant and equipment (continued)

11 物業、廠房及設備(續)

		Buildings and structures 樓宇及建築物 RMB'000 人民幣千元 (未經審計) (Unaudited)	Machinery and equipment 機器及設備 RMB'000 人民幣千元 (未經審計) (Unaudited)	Motor vehicles 汽車 RMB'000 人民幣千元 (未經審計) (Unaudited)	Furniture, fixtures and others 傢俱裝置及其他 RMB'000 人民幣千元 (未經審計) (Unaudited)	Construction in progress 在建工程 RMB'000 人民幣千元 (未經審計) (Unaudited)	Right-of-use assets 使用權資產 RMB'000 人民幣千元 (未經審計) (Unaudited)	Total 總計 RMB'000 人民幣千元 (未經審計) (Unaudited)
Accumulated depreciation and impairment:	累計折舊及減值：							
At 1 January 2019	於2019年01月01日	918,724	1,865,546	144,679	319,466	37,862	52,633	3,338,910
Depreciation charge for the period	本期折舊費	61,399	112,139	2,598	8,327	-	12,390	196,853
Transfer to investment properties	轉出至投資性物業	(392)	-	-	-	-	-	(392)
Written back on disposals	因出售而撥回	(100)	(1,016)	(2,812)	(585)	-	(74)	(4,587)
At 30 June 2019	於2019年06月30日	979,631	1,976,669	144,465	327,208	37,862	64,949	3,530,784
Depreciation charge for the period	本期折舊費	49,899	143,510	(654)	11,963	-	27,927	232,645
Impairment loss	減值損失	-	21,248	-	66	-	-	21,314
Transfer to investment properties	轉出至投資性物業	(215)	-	-	-	-	-	(215)
Written back on disposals	因出售而撥回	(1,071)	(96,559)	(3,158)	(3,722)	-	-	(104,510)
At 31 December 2019	於2019年12月31日	1,028,244	2,044,868	140,653	335,515	37,862	92,876	3,680,018
Net book value:	賬面淨值：							
At 31 December 2019	於2019年12月31日	1,659,869	1,911,122	21,740	133,439	200,293	659,927	4,586,390

Items of property, plant and equipment with a net book value of RMB1,155,000 were disposed of during the six months ended 30 June 2020 (six month ended 30 June 2019: RMB864,000), resulting in a gain on disposal of RMB140,000 (six months ended 30 June 2019: a gain of RMB300,000), which is included in "other income" in the unaudited interim condensed consolidated statement of profit or loss.

本期處置的物業、廠房及設備的賬面淨值為人民幣1,155,000元(截至2019年6月30日止6個月：人民幣864,000元)，處置收益為人民幣140,000元(截至2019年6月30日止6個月：人民幣300,000元)並計入簡要中期合併損益表中的「其他收益」。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020年6月30日

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

11 Property, plant and equipment (continued)

According to the approval of the board of directors of the Company during the first meeting of the third session in 2020, the Group adjusted the expected useful life and the expected residual value rate of property, plant and equipment to ensure the adjusted expected useful life and expected residual value rate to meet the estimates on the period that the future economic benefits by considering actual useful life of these assets accordingly. Besides, the Group also reclassified its property, plant and equipment from four categories to six categories in order to better physical management. The new classification, expected useful life and the expected residual value rate came into effect from 1 January 2020. The management adopts prospective application for the changes in accounting estimates.

If there were no changes in aforementioned accounting estimates, the depreciation for the six months ended 30 June 2020 would have become approximately RMB179,604,000 and the loss before taxation would have increased by approximately RMB24,270,000 for the period ended 30 June 2020.

11 物業、廠房及設備(續)

經第三屆董事會2020年第一次會議決定，本集團對物業、廠房及設備的適用年限、殘值率進行變更，以確保調整後的預期使用年限及預期殘值率更符合相關固定資產預計為公司帶來經濟利益的期限。此外，本集團為了更好的對物業、廠房及設備進行管理，將物業、廠房及設備的分類從4類變更為6類。新折舊年限、新預計使用年限及預計殘值率變更於2020年1月1日生效。管理層對本次會計估計變更採用未來適用法。

如果上述會計估計不發生變化，截至2020年6月30日止6個月的固定資產折舊將約為人民幣179,604,000元，並且截至2020年6月30日止期間稅前虧損將增加約人民幣24,270,000元。

12 Other equity investments

12 其他權益工具

	At 30 June 2020	At 31 December 2019
	於2020年 06月30日	於2019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)		
– listed equity securities (Note)	1,678,773	882,738
– unlisted equity securities	292,476	347,062
	1,971,249	1,229,800

Note:

It represents the 3.02% equity investment (namely 83,983,137 shares) of Tianjin Zhonghuan Semiconductor Co., Ltd.

附註:

上市權益證券所指的是對天津中環半導體有限公司3.02%的股權投資(所持股數為83,983,137股)。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

13 Other non-current assets (continued)

13 其他非流動資產(續)

		At 30 June 2020	At 31 December 2019
		於2020年 06月30日	於2019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:	長期應收賬款		
–related parties under China Energy	–國家能源集團下屬關聯方	13,628	12,545
–third parties	–第三方	–	9,182
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	700,036	721,022
Less: Loss allowance	減：壞賬準備	(4,473)	(4,473)
		709,191	738,276
Advance to third parties	長期應收第三方款項	220,902	214,854
Less: Loss allowance	減：壞賬準備	(14,926)	(14,926)
		205,976	199,928
Contract assets (Note)	合同資產(附註)	2,624,724	2,721,910
Long-term prepayments	長期預付款	14,065	14,071
Deductible Value added tax	可抵扣增值稅	240,205	154,540
		3,794,161	3,828,725

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

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 2020	At 31 December 2019
		於2020年 06月30日	於2019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	1,083	–
Between 2 and 3 years	2至3年內	–	8,336
Over 3 years	3年以上	708,108	729,940
		709,191	738,276

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 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築服務對價，該對價在建築服務完成後將重分類至長期應收款。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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

14 應收賬款及票據

		At 30 June 2020	At 31 December 2019
		於2020年 6月30日	於2019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	2,512,898	2,726,196
– associates	– 聯營公司	147	–
– third parties	– 第三方	2,309,052	2,329,520
		4,822,097	5,055,716
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	82,274	92,038
– third parties	– 第三方	381	364
		82,655	92,402
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	890	1,567
– related parties under China Energy	– 國家能源集團下屬的關聯方	2,025,310	1,783,997
– associates	– 聯營公司	19,629	13,733
– third parties	– 第三方	3,017,609	3,172,330
		5,063,438	4,971,627
		9,968,190	10,119,745
Less: Loss allowance	減：壞賬撥備	(1,995,150)	(2,001,070)
		7,973,040	8,118,675

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

30 June 2020 2020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 2020	At 31 December 2019
		於2020年 6月30日	於2019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	316,320	674,813
– third parties	– 第三方	346,642	220,041
		662,962	894,854
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	210,297	211,033
– third parties	– 第三方	449,100	585,873
		659,397	796,906
		1,322,359	1,691,760
Less: Loss allowance	減：壞賬撥備	(4,229)	(1,168)
		1,318,130	1,690,592
Net value of trade and bills receivables	應收賬款及應收票據淨值	9,291,170	9,809,267

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

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。

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簡要中期合併財務資料附註(續)

30 June 2020 2020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)

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 2020	At 31 December 2019
		於2020年 6月30日	於2019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	4,769,785	4,556,233
Between 1 and 2 years	1至2年內	1,083,255	1,790,635
Between 2 and 3 years	2至3年內	638,339	590,500
Over 3 years	3年以上	1,481,661	1,181,307
		7,973,040	8,118,675

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

本期／本年有關應收賬款的壞賬撥備的變動如下：

		Six months ended 30 June 2020	Year ended 31 December 2019
		截至6月30日 止6個月2020	截至12月31日 止年度2019
		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	2,001,070	2,078,371
Reversal of impairment losses, net	本年確認的減值虧損淨值	(5,438)	(77,301)
Uncollectible amounts written off	本年核銷金額	(482)	-
At 30 June/31 December	於6月30日／12月31日結餘	1,995,150	2,001,070

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 2020	At 31 December 2019
		於2020年 6月30日	於2019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 in hand	庫存現金	–	4
Cash at bank	銀行存款	2,092,255	1,616,873
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)	2,765,857	2,570,045
		4,858,112	4,186,922
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	3,903,112	3,145,422
– 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	955,000	1,041,500
Cash at bank and in hand as stated in the statement of financial position	財務報表中銀行存款及庫存現金 餘額	4,858,112	4,186,922

Note:

Cash at a related party under China Energy represents the deposits in China Guodian Finance Corporation Limited (“**Guodian 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電財務有限公司(「**國電財務**」)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)

簡要中期合併財務資料附註(續)

30 June 2020 2020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

16 借款

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

(a) 長期帶息借款包括：

		At 30 June 2020	At 31 December 2019
		於2020年 6月30日	於2019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))	139,304	155,600
– unsecured	– 無抵押	230,000	–
Other loans	其他貸款		
– financial institutions (secured) (Note (i))	– 來自金融機構的其他貸款(抵押) (附註(i))	279,061	329,894
– China Energy (unsecured)	– 國家能源集團(無抵押)	600,000	600,000
Private placement notes (Note (ii))	私人配售債務融資工具(無抵押) (附註(ii))	2,061,289	2,011,311
Corporate bonds (Note (iii))	公司債券(附註(iii))	3,013,242	2,942,425
		6,322,896	6,039,230
Less: Current portion of long-term borrowings	減：長期借款的即期部分	(501,050)	(638,173)
		5,821,846	5,401,057



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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)

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

Notes:

- (i) Secured long-term interest-bearing borrowings as at 30 June 2020 were secured by concession assets with a carrying amount of RMB190,570,000 (2019: RMB195,378,000), trade and bills receivables with a carrying amount of RMB111,882,000 (2019: RMB76,649,000) and long-term service concession receivables with a carrying amount of RMB524,946,000 (2019: RMB584,598,000).

- (ii) 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%.

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, Beijing Guodian Longyuan Environmental Engineering Co., Ltd. ("Longyuan Environmental"), a wholly-owned subsidiary of the Company, provides a counter-guarantee of the same amount for Guodian Power in the form of a letter of counter-guarantee.

- (iii) 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.

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.

16 借款(續)

(a) 長期帶息借款包括(續):

附註:

- (i) 於2020年6月30日，抵押的長期帶息借款為以特許經營權資產賬面價值人民幣190,570,000(2019年12月31日: 人民幣195,378,000)、應收賬款及票據賬面價值人民幣111,882,000(2019年12月31日: 人民幣76,649,000)、應收服務特許權長期應收款項賬面價值人民幣524,946,000(2019年12月31日: 人民幣584,598,000)為抵押。

- (ii) 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%。

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北京國電龍源環保工程有限公司(「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。

- (iii) 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。

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)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 2020	At 31 December 2019
		於2020年 6月30日	於2019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	– 抵押	–	190,000
– unsecured	– 無抵押	6,519,000	5,030,000
Other loans	其他貸款		
– related parties under China Energy (unsecured)	– 國家能源集團下屬的關聯方(無 抵押)	410,000	460,000
Current portion of long-term borrowings	長期借款的即期部分	501,050	638,173
		7,430,050	6,318,173

17 Trade and bills payables

17 應付賬款及票據

		At 30 June 2020	At 31 December 2019
		於2020年 6月30日	於2019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	385,531	269,482
– raw material suppliers	– 原材料供應商	1,249,746	1,640,878
		1,635,277	1,910,360
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	110,511	81,302
– associates	– 聯營公司	267	–
– third parties	– 第三方	3,480,507	3,961,817
		3,591,285	4,043,119

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

30 June 2020 2020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)

17 應付賬款及票據(續)

	At 30 June 2020	At 31 December 2019
	於2020年 6月30日	於2019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)
- raw material suppliers:		
- related parties under China Energy	15,635	19,151
- associates	4,215	4,215
- third parties	3,447,065	3,964,193
	3,466,915	3,987,559
	8,693,477	9,941,038

As at 30 June 2020 and 31 December 2019, 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2020年6月30日及2019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。

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:

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：

	At 30 June 2020	At 31 December 2019
	於2020年 6月30日	於2019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	6,301,219	7,520,724
1 to 2 years	1,492,991	1,587,956
2 to 3 years	292,698	197,360
Over 3 years	606,569	634,998
	8,693,477	9,941,038

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020年6月30日

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

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 2020 and 2019.

(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 2020.

18 股息

(a) 就中期應向權益股東支付的股息

截至2020年及2019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2020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。

19 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 and sale of wind turbines as follows:

19 或有負債

(a) 擔保款項

於報告期末，本集團關於建造合同，風機銷售而向客戶作出的投標及履約擔保，如下所述：

		At 30 June 2020	At 31 December 2019
		於2020年6月30日	於2019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	–	200
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	1,462,134	794,459
– third parties	– 第三方	412,170	257,173
		1,874,304	1,051,832

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.

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。



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 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.

20 Commitments

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

	At 30 June 2020	At 31 December 2019
	於2020年 6月30日	於2019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:	217,615	152,578
已訂約但未撥備予物業、廠房及設備		

19 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。

雖然上述或有事項，訴訟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。

20 承諾

於報告期末，本集團作出以下資本承諾：

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 Related party transactions

(a) Transactions with related parties

The Group is part of a larger 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:

21 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	
		2020	2019
		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		
– China Energy	– 國家能源集團	–	9,781
– related parties under China Energy	– 國家能源集團下屬的關聯方	1,579,816	1,641,111
– associates	– 聯營公司	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	884,161	802,668
– associates	– 聯營公司	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	336,601	150,964
Leases to	出租予		
– related parties under China Energy	– 國家能源集團下屬的關聯方	245,328	425,123
Leases from	授租自		
– related parties under China Energy	– 國家能源集團下屬的關聯方	5,452	76
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	82,734	97,331
– associates	– 聯營公司	2,185	1,359
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	7,703	8,659

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 Related party transactions (continued)

21 重大關聯方交易(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	
		2020	2019
		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 expenses	利息費用		
– China Energy	– 國家能源集團	10,806	10,717
– related parties under China Energy	– 國家能源集團下屬的關聯方	11,992	9,693
Interest income	利息收入		
– related parties under China Energy	– 國家能源集團下屬的關聯方	3,244	10,348
Working capital provided to	提供週轉資金予		
– associates	– 聯營公司	11,000	353
Working capital repaid from	償還週轉資金自		
– associates	– 聯營公司	11,000	–
Loans received from	貸款借取自		
– China Energy	– 國家能源集團	–	500,000
– related parties under China Energy	– 國家能源集團下屬的關聯方	1,470,000	150,000
Loans repaid to	償還貸款於		
– China Energy	– 國家能源集團	–	500,000
– related parties under China Energy	– 國家能源集團下屬的關聯方	1,520,000	7,500
Net deposits change in	存款變動淨額		
– Guodian Finance	– 國電財務	195,812	(2,100,102)
Dividends received from	收取股息自		
– related parties under China Energy	– 國家能源集團下屬的關聯方	–	12,200
– associates	– 聯營公司	14,150	–

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 Related party transactions (continued)

21 關聯方交易(續)

(b) Outstanding balances with related parties

(b) 與關聯方的餘額

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:

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：

		At 30 June 2020	At 31 December 2019
		於2020年 6月30日	於2019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	1,315,597	930,421
Contract assets	合同資產		
– Related parties under China Energy	– 國家能源集團下屬的關聯方	1,181,083	1,182,646
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	521,790	522,361
– Associates	– 聯營公司	19,886	33,673
Lease liabilities	租賃負債		
– Related parties under China Energy	– 國家能源集團下屬的關聯方	36,382	39,037
Other payables	其他應付款項		
– China Energy	– 國家能源集團	602,294	602,092
– Related parties under China Energy	– 國家能源集團下屬的關聯方	60,982	53,229
Contract liabilities	合同負債		
– Related parties under China Energy	– 國家能源集團下屬的關聯方	2,003,255	1,482,850

(c) Contributions to defined contribution retirement plans

(c) 界定供款退休計畫的供款

The Group participates in various defined contribution retirement plans organised by China Energy for its staff. As at 30 June 2020 and 31 December 2019, 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 2020 amounted to RMB19,873,000 (six months ended 30 June 2019: RMB17,394,000).

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畫。於2020年6月30日和2019年12月31日，在退休福利計畫項下，沒有重大未支付供款。截至2020年6月30日止6個月，本集團對界定供款退休計畫的供款金額為人民幣19,873,000元(2019年6月30日止6個月：人民幣17,394,000元)



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 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.

21 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)
簡要中期合併財務資料附註(續)

30 June 2020 2020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 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.

21 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。



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 Related party transactions (continued)

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

– **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.

(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.

21 關聯方交易(續)

(d) 與中國其他政府相關實體之間的交易(續)

– **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。

(e) 重要管理人員薪酬

重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。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020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 Related party transactions (continued)

21 關聯方交易(續)

(e) Key management personnel remuneration (Continued)

(e) 重要管理人員薪酬(續)

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

重要管理人員薪酬(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	
		2020	2019
		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	2,465	3,346
Retirement scheme contributions	退休計畫供款	293	550
		2,758	3,896

22 Fair value measurement of financial instruments

22 金融工具的公允價值計量

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

(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

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 31 December 2019 and 30 June 2020 except for the following financial instruments, for which their carrying amounts and fair values are disclosed below:

於2019年12月31日和2020年6月30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 2020		At 31 December 2019	
		於2020年6月30日		於2019年12月31日	
		Carrying amount	Fair value	Carrying amount	Fair value
		賬面金額	公允價值	賬面金額	公允價值
		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
		(Unaudited)	(Unaudited)	(Audited)	(Audited)
		(未經審計)	(未經審計)	(經審計)	(經審計)
Fixed rate long-term bank loans	固定利率長期銀行貸款	1,248,365	1,175,021	1,085,494	1,025,181
Private placement notes and corporate bonds	私人配售債務融資工具和公司債券	5,074,531	5,058,708	4,953,736	4,904,156



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020年6月30日

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

22 Fair value measurement of financial instruments (continued)

(b) Financial assets and liabilities measured at fair value

(i) Fair value hierarchy

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:

- 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

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.

22 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

(i) 公允價值層級

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：

- 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。

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。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020年6月30日

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

22 Fair value measurement of financial instruments (continued)

22 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 2020:


下表列示於2020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 2020 於2020年6月30日 的公允價值	Fair value measurements as at 30 June 2020 categorised into 於2020年6月30日歸屬以下級 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	1,318,130	-	1,318,130	-
Equity investments in a listed company	對上市公司的權益投資	1,678,773	1,678,773	-	-
Equity investments in unlisted companies	對非上市公司的權益投資	292,476	-	-	292,476

The following table presents the financial instruments of the Group that are measured at fair value as at 31 December 2019:

下表列示於2019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 2019 於2019年12月31日 的公允價值	Fair value measurements as at 31 December 2019 categorised into 於2019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	RMB'000 人民幣千元	RMB'000 人民幣千元	RMB'000 人民幣千元
Financial assets:	金融資產：				
Bills receivable	應收票據	1,690,592	-	1,690,592	-
Equity investments in a listed company	對上市公司的權益投資	882,738	882,738	-	-
Equity investments in unlisted companies	對非上市公司的權益投資	347,062	-	-	347,062



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020年6月30日

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

22 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 2020 and 2019, 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 of comparable listed companies adjusted for lack of marketability discount.

For the six months ended 30 June 2020, the range of P/B multiple was 0.7 to 3.5 (31 December 2019: 0.9 to 3.5). The range of EV/EBITDA multiple was 9.2 to 13.4 (31 December 2019: 9.9). The EV/Sales multiple was 2.7. The discount rate for lack of marketability was 25% to 30% (31 December 2019: 25% to 30%).

22 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2019年及2020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

以公允價值計量且其變動計入當期損益的金融資產及應收票據的公允價值採用折現現金流量模型進行計算。上述金融資產估值使用的重要可觀察輸入資料為合同收益率及一年內到期的基準利率。

基於無法取得可觀察的市場價格或比率的假設，以公允價值計量且其變動計入其他綜合收益的非上市權益工具的公允價值採用市場可比較企業法。該估值方法需要由董事基於行業、規模、槓桿及策略確定可比較上市企業，並計算一個合理的價格乘數，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(「企業價值與息稅攤折前利潤率」)進行確定，並根據就缺乏市場流通性的折讓進行調整。

於截至2020年6月30日止6個月期間，市盈率的範圍為0.7至3.5(2019年12月31日：0.9至3.5)，企業價值與息稅攤折前利潤率的範圍為9.2及13.4(2019年12月31日：9.9)。企業價值與收入率為2.7。就缺乏市場流通性折讓的範圍為25%至30%。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

30 June 2020 2020年6月30日

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

22 Fair value measurement of financial instruments (continued)

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

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

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

		At 30 June 2020	At 31 December 2019
		於2020年 6月30日	於2019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	347,062	251,217
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	(54,586)	95,845
At 30 June/31 December	於6月30日/12月31日	292,476	347,062

22 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)

本期第3層級公允價值計量下的結餘變動如下：

23 Impact of Covid-19

The novel coronavirus (Covid-19) outbreak has spread across the PRC since early January 2020, the prevention and control of Covid-19 has been ongoing nationwide.

According to the current situation, the main impacts of the Covid-19 on the Group are some EPC projects were in suspension, and the progress were delayed by 2 to 3 months which resulted in the revenue from construction services had a decrease of RMB552 million compared with the same period of last year.

The Group will monitor the developments of Covid-19 situation closely, assess and react actively to its impact on the financial position and operating results of the Group. As of the report date, this assessment is still under way.

24 Approval of the interim condensed consolidated financial statements

The interim condensed consolidated financial statements were approved and authorized for issue by the Board on 28 August 2020.

23 新型冠狀病毒的影響

自新型冠狀病毒的傳染疫情(「新冠疫情」)從2020年1月起在中國爆發以來，對新冠疫情的防控工作仍在全國範圍內持續進行。

截至目前，本次新冠疫情對本集團的主要影響是部分建設工程總承包項目受疫情的影響，工程進度延後2至3個月，導致建造服務收入較去年同期減少約人民幣552百萬元。

本集團仍在密切關注新冠疫情發展情況，積極應對其可能對公司財務狀況、經營成果等方面的影響。截至本財務報表批准報出日，該評估工作尚在進行中。

24 批准中期簡明合併財務報表

本中期簡明合併財務報表於2020年8月28日經董事會批准及授權發佈。



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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GREEN TECHNOLOGY FOR A BETTER WORLD



國電科環官微



財務報告



公司公告



社會責任

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