



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



2019

INTERIM REPORT

中期報告

* For identification purpose only
僅供識別



MILESTONES OF GUODIAN TECH IN THE FIRST HALF OF 2019

國電科環2019年上半年大事記

1. On 8 January 2019, the project “Research and Development and Large-scale Engineering Application of the Key Technologies of High-efficiency and Low-wind-speed Wind Turbines”, with Guodian United Power Technology Company Limited (“**United Power**”) as the first completing unit and the first completing person, won the second prize of the National Scientific and Technological Progress Award.
1. 2019年1月8日，國電聯合動力技術有限公司(「**聯合動力**」)作為第一完成單位及第一完成人的項目《高效低風速風電機組關鍵技術研發和大規模工程應用》榮獲國家科技進步二等獎。
2. On 30 January 2019, the “Technology of Zero Discharge and Reclamation of Wastewater with the High-efficiency Scale Prevention Full Film Method and its Engineering Application in Thermal Plants” developed by Beijing Lucency Environment and Technology Co., Ltd. (“**Lucency**”) passed the technical appraisal of Chinese Society of Electrical Engineering.
2. 2019年1月30日，北京朗新明環保科技有限公司(「**朗新明**」)研發的「火電廠高效防垢全膜法廢水零排放和資源化利用技術及工程應用」順利通過中國電機工程學會組織的成果鑒定。
3. On 24 May 2019, Beijing Huadian Tianren Power Controlling Technology Co., Ltd. (“**Huadian Tianren**”) passed the Grade-4 formal evaluation of the Capability Maturity Model Integration (“**CMMI**”), becoming one of the few units of China Energy Investment Group Corporation Limited (“**China Energy**”) obtaining such qualification certification and further improving the overall competitiveness of its products. CMMI is a software capability maturity assessment standard promoted and implemented globally by the Software Engineering Institute, Carnegie-Mellon University, USA.
3. 2019年5月24日，北京華電天仁電力控制技術有限公司(「**華電天仁**」)通過能力成熟度模型集成(Capability Maturity Model Integration，即「**CMMI**」)4級正式評估，成為國家能源投資集團有限責任公司(「**國家能源集團**」)內少數獲得該資質認證的單位之一，進一步提升了其產品的整體競爭力。CMMI是由美國卡耐基梅隆大學軟件工程研究所在全世界推廣實施的一種軟件能力成熟度評估標準。
4. On 28 May 2019, the “Ultra-low Emission Intelligent Management Platform for Coal Fired Power Plants Based on Big Data” completed by Beijing Guodian Longyuan Environmental Engineering Co., Ltd. (“**Longyuan Environmental**”) passed the technical appraisal of Chinese Society for Environmental Sciences, leading in the world as a whole.
4. 2019年5月28日，北京國電龍源環保工程有限公司(「**龍源環保**」)完成的「基於大數據的燃煤電廠煙氣超低排放智慧管理平台」通過中國環境科學學會技術鑒定，整體達到國際領先水平。
5. On 31 May 2019, the project “Research and Application of Key Technologies for Network Security of the Control System in the Power Generation Industry” of Guodian Zhishen Control Technology Co., Ltd. (“**Guodian Zhishen**”) passed the technical appraisal of the Chinese Society of Electrical Engineering, leading in the world as a whole.
5. 2019年5月31日，北京國電智深控制技術有限公司(「**國電智深**」)發電行業控制系統網絡安全關鍵技術研究及應用項目通過中國電機工程學會技術鑒定，總體技術居國際先進水平。
6. On 6 June 2019, the project “Research and Application of Key Technologies of Double-fed Variable-speed Constant-Frequency Wind Turbine Current Transformers” of Guodian Longyuan Electrical Co., Ltd. (“**Longyuan Electrical**”) passed the technical appraisal of the Chinese Society of Electrical Engineering, leading in the world in terms of technical level and main performance indicators.
6. 2019年6月6日，國電龍源電氣有限公司(「**龍源電氣**」)雙饋型變速恒頻風電機組變流器關鍵技術研究及應用項目通過中國電機工程學會技術鑒定，技術水平和主要性能指標達到國際先進水平。

CONTENTS 目錄

Corporate Information 公司資料	2
Introduction of Company 公司介紹	5
Interim Results Highlights 中期業績摘要	7
Management's Discussion and Analysis 管理層討論與分析	8
Corporate Governance 企業管治	36
Other Information 其他資料	42
Environmental, Social and Governance Report 環境、社會及管治報告	46
Independent Review Report 審閱報告	61
Interim Condensed Consolidated Statement of Profit or Loss 簡要中期合併損益表	63
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	65
Interim Condensed Consolidated Statement of Financial Position 簡要中期合併財務狀況表	66
Interim Condensed Consolidated Statement of Changes in Equity 簡要中期合併權益變動表	68
Interim Condensed Consolidated Statement of Cash Flows 簡要中期合併現金流量表	69
Notes to the Interim Condensed Consolidated Financial Information 簡要中期合併財務資料附註	70



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.

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. YANG Xiangbin
Ms. HE Lili
Mr. LI Wei

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

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
楊向斌先生
何麗麗女士
李 偉先生

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
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

Nomination Committee

Mr. XIE Qiuye (*Chairman*)
Mr. QU Jiu-hui
Mr. TANG Chao-xiong

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
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

提名委員會

謝秋野先生 (*主席*)
曲久輝先生
唐超雄先生



CORPORATE INFORMATION (CONTINUED)

公司資料(續)

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.
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)

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
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)

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.

As China Energy consolidated China Guodian Corporation Limited (“**Guodian Group**”) by absorption, since the completion of the consolidation, shareholding or interest of the subsidiaries and branches of Guodian Group as well as the subordinate enterprises held by Guodian Group would be vested in China Energy. On 30 July 2019, the Company received a Confirmation on Share Transfer from China Securities Depository & Clearing Co., Ltd, according to which, an aggregate of 2,377,500,000 domestic shares in the Company directly held by Guodian Group were transferred to China Energy on 30 July 2019. 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.

The principal businesses of the Company 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. The core businesses of the Group is desulphurisation, denitrification, water treatment, plasma-assisted ignition and combustion stabilization, energy performance contracting. 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.

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。

由於國家能源集團吸收合併中國國電集團有限公司(「**國電集團**」)，自合併的交割起，國電集團的下屬分支機構及國電集團持有的下屬企業股權或權益亦歸屬於國家能源集團。本公司於2019年7月30日收到中國證券登記結算有限責任公司出具的《過戶登記確認書》，國電集團直接持有的本公司2,377,500,000股內資股，已於2019年7月30日過戶登記至國家能源集團名下。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。

本公司之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。本集團核心業務為脫硫、脫硝、水處理、等離子體點火穩燃及合同能源管理，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。



INTRODUCTION OF COMPANY (CONTINUED)

公司介紹(續)

The Group, focusing on technological innovation and industrial applications, has a number of technologies leading domestically and internationally, among which the plasma ignition technology is ranked first in the world. In the domestic market, the Group takes a leading position in many technologies, including wet flue gas desulfurization, seawater desulfurization, boiler low-nitrogen combustion and flue gas denitrification. Longyuan Environmental, Yantai Longyuan Power Technology Co., Ltd. (“**Longyuan Technology**”, SZ.300105), United Power, Huadian Tianren and Guodian Zhishen have become well-known brands in China. As at 30 June 2019, the Group owns three national scientific research platforms including “National Key Laboratory for Wind Power Equipment and System Technology”, 12 province-level scientific research platforms, one academician workstation and one post-doctoral scientific research workstation. The Group has accumulatively undertaken 22 national scientific and technological projects, and has won five second prizes of the National Science & Technology Progress Award, one second prize of the National Award for Technological Inventions and two gold prizes of the National Patent Award.

Guodian Tech upgrades the Company’s existing business and keeps abreast of future development trend on the basis of intellectualization, which has gradually formed wisdom achievements such as “Smart Enterprise”, “Smart Thermal Power”, “Smart Wind Power” and “Smart Products”. Through the emerging intellectual industries, Guodian Tech has built up its new core competitiveness to effectively serve and secure the safe, efficient, green, low-carbon and sustainable development of China Energy’s main businesses such as coal, thermal power, new energy, hydropower 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 expects to leverage on its business in the PRC to expand internationally, with the objective of becoming a top-tier supplier of integrated clean energy technology solutions and services.

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、煙臺龍源電力技術股份有限公司(「**龍源技術**」，SZ.300105)、聯合動力、華電天仁、國電智深已成為享譽中國的知名品牌。截至2019年6月30日，本集團擁有「風電設備及系統技術國家重點實驗室」等3個國家級科研平台、12個省級科研平台、1個院士工作站和1個博士後科研工作站。本集團累計承擔國家級科技項目22項，累計獲得國家科技進步二等獎5項，國家技術發明二等獎1項，國家專利金獎2項。

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

INTERIM RESULTS HIGHLIGHTS

中期業績摘要

- For the six months ended 30 June 2019, the revenue from continuing operations of the Group was approximately RMB4,090.3 million, representing a decrease of approximately 11.6% compared to that for the corresponding period last year; no revenue from discontinued operation of the Group was recorded, which remained the same as that for the corresponding period last year.
- For the six months ended 30 June 2019, the gross profit from continuing operations of the Group was approximately RMB944.3 million, representing a decrease of approximately 5.1% compared to that for the corresponding period last year; no gross loss was recorded from discontinued operation of the Group, representing a decrease of 100.0% compared to that for the corresponding period last year.
- For the six months ended 30 June 2019, the operating profit from continuing operations of the Group was approximately RMB111.4 million, representing a decrease of approximately 16.2% compared to that for the corresponding period last year; no operating profit was recorded from discontinued operation of the Group, representing a decrease of 100.0% compared to that for the corresponding period last year.
- For the six months ended 30 June 2019, loss attributable to equity shareholders of the Company was approximately RMB198.9 million, representing an increase of 255.2% compared to that for the corresponding period last year.
- For the six months ended 30 June 2019, loss per share of the Group (excluding non-controlling interests) was approximately RMB3.28 cents.
- The Board recommends not to distribute any interim dividend for the six months ended 30 June 2019.
- 截至2019年6月30日止6個月，本集團的持續經營業務收入約為人民幣4,090.3百萬元，比去年同期減少約11.6%；本集團沒有錄得已終止經營業務收入，與去年同期一致。
- 截至2019年6月30日止6個月，本集團的持續經營業務毛利約為人民幣944.3百萬元，比去年同期減少約5.1%；本集團沒有錄得已終止經營業務毛虧，比去年同期減少100.0%。
- 截至2019年6月30日止6個月，本集團的持續經營業務經營利潤約為人民幣111.4百萬元，比去年同期減少約16.2%；本集團沒有錄得已終止經營業務經營利潤，比去年同期減少100.0%。
- 截至2019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198.9百萬元，比去年同期增加255.2%。
- 截至2019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3.28分。
- 董事會建議不派發截至2019年6月30日止6個月的任何中期股息。



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 2019, facing the challenges and risks under the new normal of economic development, Chinese Government has issued new regulations, policies and measures suitable for China's electric power and electricity-related industries one after another.

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

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

1. On 29 January 2019, China Electricity Council ("CEC") issued the "National Power Supply and Demand Analysis Forecast Report 2018-2019" (the "Report").

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。

2019年，面臨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及政策措施。

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. 2019年1月29日，中國電力企業聯合會（「中電聯」）發佈《2018-2019年度全國電力供需形勢分析預測報告》（「報告」）。

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

The Report points out that China's power production continued the trend of green and low-carbon development, initially showing the effect of high-quality development. As at the end of 2018, the installed capacity of the full-caliber power generation in China had been 1.9 billion kW, of which, the installed capacity of non-fossil energy was 770 million kW, accounting for 40.8% of the total.

The Report points out that China's green transformation of power generation installations continued to advance. China's newly added installed capacity of power generation was 120 million kW, of which, the newly added installed capacity of non-fossil energy accounted for 73.0% of the total newly added installed capacity, and that of the newly added wind turbines in the east and central regions of China accounted for 64.2% of the total newly added installed capacity.

The Report points out that the problem of abandoning wind power and PV power continued to be improved. The governments at all levels, power enterprises and the other parties involved worked together to promote clean energy consumption. In 2018, throughout China, the abandoned wind power was 27.7 billion kwh and the average abandoned wind power rate was 7%, with a YOY decrease of 5 percentage points; the abandoned PV power was 5.49 billion kwh and the average abandoned PV power was 3%, with a YOY decrease of 2.8 percentage points. The utilization time of wind power generating equipment in North China, Northwest China and Northeast China increased YOY by 102 hours, 215 hours and 236 hours respectively, and the utilization time of solar power generating equipment in Northwest China and Northeast China increased YOY by 66 hours and 65 hours respectively.

The promulgation of the Report is conducive to the development of the clean energy industry and will bring a good operating environment to the wind turbine manufacturing industry of the Group.

2. On 29 January 2019, the National Development and Reform Commission (“**NDRC**”) and National Energy Administration (“**NEA**”) promulgated the “Notice on Standardizing the Management of the Plan of Priority Power Generation and Priority Purchase” (“**Notice I**”).

Notice I requires that the consumption of the planned wind and solar power generation shall be arranged in full according to the corresponding resource conditions in unrestricted areas, and the priority power generation price shall be formed by the combination of “quantity and price guaranteed” and “quantity guaranteed and price limited”.

《報告》指出，電力生產延續綠色低碳發展趨勢，高質量發展成效初步顯現。截至2018年底，全國全口徑發電裝機容量19.0億千瓦，其中非化石能源發電裝機容量7.7億千瓦，佔總裝機容量的比重為40.8%。

《報告》指出，發電裝機綠色轉型持續推進。全國新增發電裝機容量1.2億千瓦，其中新增非化石能源發電裝機佔新增總裝機的73.0%，東、中部地區新增風電裝機佔比為64.2%。

《報告》指出，棄風棄光問題繼續得到改善。各級政府和電力企業等多方共同努力，多措並舉推進清潔能源消納。2018年，全國棄風電量277億千瓦時，平均棄風率7%，同比下降5個百分點；全國棄光電量54.9億千瓦時，平均棄光率3%，同比下降2.8個百分點。華北、西北、東北地區風電設備利用小時分別比上年提高102小時、215小時和236小時，西北、東北地區太陽能發電設備利用小時分別提高66小時和65小時。

《報告》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帶來良好的經營環境。

2. 2019年1月29日，國家發展和改革委員會（「**國家發改委**」）、國家能源局（「**國家能源局**」）印發《關於規範優先發電優先購電計劃管理的通知》（「**通知一**」）。

《通知一》要求，規劃內風能、太陽能發電在消納不受限地區按照資源條件對應的發電量全額安排計劃，優先發電價格以「保量保價」和「保量限價」相結合的方式形成。



MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Notice I requires that the priority power generation plan shall focus on the utilization of resources, etc.. In respect of clean energy utilization guarantee, the planned wind and solar power generation shall be included into the full generated power arrangement plan according to the resource conditions in unrestricted areas; and in restricted areas, according to the full guarantee acquisition requirements and in consideration of the local actual arrangement plan, reasonable solutions shall be studied and established to ensure that the hours of the priority power generation plan can increase to a reasonable level year by year.

Notice I emphasizes that the price of priority power generation shall be established by combining "quantity and price guaranteed" and "quantity guaranteed and price limited". The power under the priority power generation plan of "quantity and price guaranteed" shall be acquired by power grid enterprises at the governmental fixed price, while that under the priority power generation plan of "quantity guaranteed and price limited" shall be priced through the market. The proportion of the priority power generation plan with governmental fixed price shall be decreased year by year. When most of units with the same type establish the price in the market-oriented way, the governmental fixed price shall be cancelled. The priority power generator units whose feed-in price is determined by competitive bidding shall carry out the price established by bidding. The priority power generation at the price established in the market-oriented manner shall actively determine the transaction price by participating in the local power market, and the average power purchase price of the same type of units in the region established in the market-oriented manner shall be carried out for the power whose trading is not completed.

The issuance of Notice I is conducive to the continuous development of wind power equipment manufacturing industry of the Group.

3. On 27 February 2019, the Ministry of Ecology and Environment promulgated the "Key Points of National Air Pollution Prevention and Control 2019" (the "Key Points").

According to the atmospheric environment target proposed in the Key Points, the average annual concentration of fine particulate matter (PM_{2.5}) in substandard cities shall be decreased by 2% YOY in 2019; the average ratio of good days of the cities at and above the prefecture level shall reach 79.4%; and the total emissions of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) in China shall be decreased by 3% YOY.

《通知一》要求，編製優先發電計劃要重點做好資源利用保障等方面工作。清潔能源資源利用保障方面，納入規劃的風能、太陽能發電，在消納不受限地區按照資源條件對應的發電量全額安排計劃；在消納受限地區，按照全額保障性收購要求，結合當地實際安排計劃，研究制定合理的解決措施，確保優先發電計劃小時數逐年增加到合理水平。

《通知一》強調，優先發電價格按照「保量保價」和「保量限價」相結合的方式形成，實行「保量保價」的優先發電計劃電量由電網企業按照政府定價收購，實行「保量限價」的優先發電計劃電量通過市場化方式形成價格。政府定價部分的優先發電計劃比例應逐年遞減，當同類型機組大部分實現市場化方式形成價格後，取消政府定價。通過競價招標方式確定上網電價的優先發電機組，按照招標形成的價格執行。市場化形成價格的優先發電，應積極通過參與本地電力市場確定交易價格；未能成交的部分，執行本地同類型機組市場化形成的平均購電價格。

《通知一》的發佈有利於本集團風機製造產業的持續發展。

3. 2019年2月27日，生態環境部印發《2019年全國大氣污染防治工作要點》(《工作要點》)。

根據《工作要點》提出的大氣環境目標，2019年，全國未達標城市細顆粒物(PM_{2.5})年均濃度同比下降2%，地級及以上城市平均優良天數比率達到79.4%；全國二氧化硫(SO₂)、氮氧化物(NO_x)排放總量同比削減3%。

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

The Key Points proposed to push forward the adjustment of China's industry structure stably. Enhance the elimination of backward capacity and reduce excess capacity. Each relevant enterprise shall actively cooperate with the competent authority to steadily promote the resolution of excess capacity of iron and steel and coal, and actively and steadily resolve the excess capacity of coal-fired power; key regions shall complete the comprehensive renovation of "scattered, disorderly and dirty" enterprises and clusters. Enhance the upgrading and reconstruct of industrial enterprises. Promote the transformation into ultra-low emission for the coal-fired generating units of 300,000 kW and above in West China, and promote the transformation into ultra-low emission for iron and steel enterprises. Formulate and implement special action plans for industrial furnace and kiln governance, guide all localities to establish a management list and implement classified management.

The Key Points emphasize to speed up the optimization of energy structure. Continue to implement total coal consumption control in key regions. Actively cooperate with NDRC to develop management measures for coal consumption reduction and replacement and clean and efficient utilization in key regions. Guide all localities to speed up the task of reducing total coal consumption, and focus on reducing the use of non-electric coal under the principle of centralized use and clean utilization of coal. Steadily promote clean heating in North China. Under the principle of determining reform by gas, determining demand with supply, first establishment and then breakthrough, strengthening the treatment of scattered coal in Beijing, Tianjin, Hebei and the areas around and the Fenwei Plain, coordinating Warm Winter and Clean Heating, and cooperate with the relevant Authorities to strengthen the guarantee of gas and power supply in key regions. Carry out comprehensive improvement of boilers. Step up the elimination of small coal-fired boilers, speed up the elimination of coal-fired boilers less than 35 t/h in key regions, carry out ultra-low emission transformation of coal-fired boilers of 65 t/h and above, and promote the transformation of low nitrogen combustion of gas-fired boilers.

The promulgation of the Key Points will create opportunities for the sustainable and healthy development of the Group's environmental protection and energy saving solutions.

《工作要點》指出，穩步推進產業結構調整。加大落後產能淘汰和過剩產能壓減力度。積極配合有關部門，穩步推進化解鋼鐵、煤炭過剩產能，積極穩妥化解煤電過剩產能；重點區域完成「散亂污」企業及集群綜合整治。深入開展工業企業提標改造。推進西部地區30萬千瓦及以上燃煤發電機組實施超低排放改造；推進鋼鐵企業實施超低排放改造。制定實施工業爐窖治理專項行動方案，指導各地建立管理清單，實施分類治理。

《工作要點》強調，加快優化能源結構。重點地區繼續實施煤炭消費總量控制。積極配合國家發改委研究制定重點地區煤炭消費減量替代和清潔高效利用管理辦法。指導各地加快煤炭消費總量削減任務分解落實，按照煤炭集中使用、清潔利用的原則，重點削減非電力用煤。穩步推進北方地區清潔取暖。按照以氣定改、以供定需、先立後破的原則，加大京津冀及週邊地區和汾渭平原散煤治理力度，統籌兼顧溫暖過冬與清潔取暖，配合有關部門加強重點區域氣源電源供應保障。開展鍋爐綜合整治。加大燃煤小鍋爐淘汰力度，重點區域加快淘汰35蒸噸/小時以下燃煤鍋爐，推進65蒸噸/小時及以上燃煤鍋爐實施超低排放改造，推進燃氣鍋爐實施低氮燃燒改造。

《工作要點》的頒佈將為本集團環保及節能解決方案業務的持續健康發展帶來機遇。



MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

4. On 22 April 2019, the Ministry of Ecology and Environment, NDRC, the Ministry of Industry and Information Technology, the Ministry of Finance and the Ministry of Transport issued the “Opinion on Promoting the Implementation of Ultra-low Emission from the Iron and Steel Industry”(the “**Opinion**”).

The Opinion requires that new (including relocated) iron and steel projects across the country shall, in principle, reach the ultra-low emission level. By the end of 2020, significant progress should be achieved in the transformation into ultra-low emission from iron and steel enterprises and strive to complete the transformation of about 60% of the production capacity in key regions, and promote the transformation into ultra-low emission from the iron and steel enterprises in other regions in an orderly manner. By the end of 2025, basically complete the transformation into ultra-low emission from the iron and steel enterprises in key regions, and strive to complete the transformation of more than 80% of the production capacity all over the country.

The Opinion points out that the ultra-low emission of iron and steel enterprises refers to the upgrading and transformation of all production links (including raw material yard, sintering, pelletizing, coking, iron making, steel making, steel rolling, self-owned power plant, as well as the transportation of bulk materials and products) and means that the organized emission, unorganized emission and transportation process of air pollutants shall meet the applicable regulations and requirements. It is a legal responsibility for iron and steel enterprises to meet the emission standards, and ultra-low emission shall be incentive-oriented. The iron and steel enterprises that complete the transformation into ultra-low emission shall be entitled to policy support.

The promulgation of the Opinion has brought new opportunities for the sustainable development of the environmental protection and energy conservation industries of the Group.

5. On 15 May 2019, NDRC and NEA jointly issued the “Notice on the Establishment and Improvement of the Renewable Energy Power Consumption Guarantee Mechanism”(“**Notice II**”).

Based on “the Renewable Energy Law”, Notice II proposes the establishment and improvement of the renewable energy power consumption guarantee mechanism. The core of the mechanism is to determine the proportion of renewable energy power in power consumption in each provincial region, that is, the weight of renewable energy power absorption responsibility. The purpose of the mechanism is to promote the provincial regions to give priority to the consumption of renewable energy, to speed up the solution of the problem of abandoning water power, wind power and PV power, at the same time, to promote all market players to assume fair responsibility for the consumption of renewable energy, and to form a long-term development mechanism led by renewable energy power consumption.

4. 2019年4月22日，生態環境部、國家發改委、工業和信息化部、財政部、交通運輸部印發《關於推進實施鋼鐵行業超低排放的意見》(《**意見**》)。

《意見》要求，全國新建(含搬遷)鋼鐵項目原則上要達到超低排放水平。到2020年底，重點區域鋼鐵企業超低排放改造要取得明顯進展，力爭60%左右產能完成改造，有序推進其他地區鋼鐵企業超低排放改造工作；到2025年底，重點區域鋼鐵企業超低排放改造基本完成，全國力爭80%以上產能完成改造。

《意見》指出，鋼鐵企業超低排放是指對所有生產環節(含原料場、燒結、球團、煉焦、煉鐵、煉鋼、軋鋼、自備電廠等，以及大宗物料產品運輸)實施升級改造，大氣污染物有組織排放、無組織排放以及運輸過程滿足相關規定和要求。鋼鐵企業達標排放是法定責任，超低排放是鼓勵導向，對於完成超低排放改造的鋼鐵企業應加大政策支持力度。

《意見》的頒佈，為本集團環保及節能產業持續發展帶來新的契機。

5. 2019年5月15日，國家發改委、國家能源局聯合印發《關於建立健全可再生能源電力消納保障機制的通知》(《**通知二**》)。

《通知二》以《可再生能源法》為依據，提出建立健全可再生能源電力消納保障機制。核心是確定各省級區域的可再生能源電量在電力消費中的佔比目標，即可再生能源電力消納責任權重。目的是促使各省級區域優先消納可再生能源，加快解決棄水棄風棄光問題，同時促使各類市場主體公平承擔消納責任，形成可再生能源電力消費引領的長效發展機制。

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

Notice II proposes that the competent energy authority under the State Council shall determine the weight of responsibility by the provincial administrative area, including the weight of total consumption responsibility and the weight of non-hydro power consumption responsibility. For the above two weights, the weight of the minimum consumption responsibility and the weight of incentive consumption responsibility shall be set on a yearly basis. The calculation and determination of the weight of consumption responsibility, comprehensive consideration of factors such as renewable energy resources, total social power consumption, national energy planning and implementation, construction of national major renewable energy bases and resource allocation capacity of cross-provincial transmission channels.

Notice II clearly stipulates the responsibilities of the governmental authorities, power grid enterprises and market players. The competent energy authority at the provincial level shall take the lead in taking responsibility for implementation, organize and formulate the implementation plan for the consumption of renewable energy power in its respective region, and submit the plan to the people's government at the provincial level for approval before implementation. Power selling enterprises and power users shall jointly bear the responsibility of consumption. Power grid enterprises are responsible for organizing the implementation of the weight of consumption responsibility in their respective operating areas. Through the actual consumption of renewable energy, the purchase of excess energy from other market players, the voluntary subscription of green power certificate and so on, each market player may accomplish the power consumption task.

Notice II puts forward the monitoring, evaluation and assessment of the accomplishment of the weight of consumption responsibility at two levels, and requires the competent energy authority at the provincial level to carry out self-verification against the weight of consumption responsibility in 2018, simulate the operation in 2019 and conduct a trial assessment of market players. From 1 January 2020, comprehensive monitoring and evaluation and formal assessment will be carried out.

The promulgation of Notice II will be conducive to the wind turbine manufacturing of the Group.

《通知二》提出，國務院能源主管部門按省級行政區域確定消納責任權重，包括總量消納責任權重和非水電消納責任權重。對以上兩類權重，分別按年度設定最低消納責任權重和激勵性消納責任權重。消納責任權重的測算確定，綜合考慮各區域可再生能源資源、全社會用電量、國家能源規劃及實施情況、全國重大可再生能源基地建設情況和跨省跨區輸電通道資源配置能力等因素。

《通知二》明確規定了政府部門、電網企業、各類市場主體的責任。各省級能源主管部門牽頭承擔落實責任，組織制定本省級區域的可再生能源電力消納實施方案，並將方案報省級人民政府批准後實施。售電企業和電力用戶協同承擔消納責任。電網企業負責組織實施經營區內的消納責任權重落實工作。各市場主體通過實際消納可再生能源電量、購買其他市場主體超額消納量、自願認購綠色電力證書等方式，完成消納量。

《通知二》提出分兩個層次對消納責任權重完成情況進行監測評價和考核，要求各省級能源主管部門對照2018年消納責任權重開展自我核查，2019年模擬運行並對市場主體進行試考核。自2020年1月1日起，全面進行監測評價和正式考核。

《通知二》的發佈預計將對本集團風機製造產業形成利好。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Key Business Developments

主要業務發展

Environmental Protection Business

環保業務

As at 30 June 2019, the Group's desulfurization and denitrification projects under construction were as follows:

截至2019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)
Desulfurization projects under construction	在建脫硫項目	16	10,319
Including: Desulfurization reconstruction projects	其中：脫硫改造項目	10	4,989
Desulfurization reconstruction EPC projects	脫硫改造EPC項目	10	4,989
Newly built desulfurization projects	脫硫新建項目	6	5,330
Newly built desulfurization EPC projects	脫硫新建EPC項目	6	5,330
Denitrification projects under construction	在建脫硝項目	11	12,085
Including: Denitrification reconstruction projects	其中：脫硝改造項目	10	10,085
Denitrification reconstruction EPC projects	脫硝改造EPC項目	10	10,085
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

Currently, the models of concession operations of the Group's environmental protection business are categorized into three types: general concession model, the operation and maintenance model of general contracting for tariff (generating income from tariff for desulfurization, and assuming the responsibility for the supply of materials and the disposal of desulfurization by-products in addition to general operation and maintenance) and the operation and maintenance model (generating income from general operations and maintenance). As at 30 June 2019, the desulfurization concession operation of the Group had an aggregate installed capacity of 17,210 MW, the operating units of denitrification concession operation had an aggregate installed capacity of 12,540 MW; the desulfurization generating units under the operation and maintenance model of general contracting for tariff had an installed capacity of 3,340 MW; the desulfurization generating units under the operation and maintenance model had an installed capacity of 14,510 MW.

目前，本集團環保業務特許經營模式分為三種：一般特許經營模式、電價總包運維模式(獲得脫硫電價收益，除負責一般性運維外還負責物耗供應及脫硫副產物的處置)、運維模式(獲得一般性運維收益)。截至2019年6月30日，本集團脫硫特許經營在運機組裝機總容量為17,210兆瓦，脫硝特許經營在運機組裝機總容量為12,540兆瓦；電價總包運維模式脫硫機組為3,340兆瓦；運維模式脫硫機組為14,510兆瓦。

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

As of 30 June 2019, the annual production capacity of denitrification catalysts, the key material for denitrification service of the Group was 19,000 m³.

With respect to the Group's environmental protection business, under the "Low-cost Ultra-low Emission Control Technology and Scaled Equipment for Coal-fired Power Stations", a national key R&D program project undertaken by the Group, ultra-low emission of high-alkali coal has been achieved with the support of Guodian Hami Coal-fired Power Development Co., Ltd.; Flue Gas Eco-Island for a demonstration project of ultra-low emission of high-sulphur coal has been constructed and put into operation at Guodian Duyun Power Generation Co., Ltd.; construction of Flue Gas Eco-Island for a demonstration project of super ultra-low emission has been completed at Guodian Suqian Thermal Power Co., Ltd., and the field test at Suqian Power Plant is currently in progress.

The Group's big data-based smart flue gas environmental protection platform for coal-fired power plants has passed the certification of the Chinese Society for Environmental Sciences and was recognized achieving international leading level as a whole. The Group actively explored the fields of coal and coal chemical industry, and won the bid for "the Integrated Industrial Park for Green Intelligent Circular Economy" of National Energy Group Coal Coking Co., Ltd..

As of 30 June 2019, the Group processed approximately 110,430,000 tons of sewage (including reclaimed water and water supply) and reduced the COD (cumulative chemical oxygen demand) emissions by approximately 32,200 tons.

In terms of water treatment, the Group fully promoted whole-power plant water conservation renovation and waste water "zero emission". The Group won the bid for the EPC Project for Water Treatment Technology Renovation of Zaoquan Coal Mine of Shenhua Ningxia Coal Industry Group Co., Ltd., the Project for Desulfurization and Zero Discharge of Waste Water of Shanxi Luguang Power Generation Co., Ltd., and the Sea Water Desalting Equipment Project for a certain Coal-fired Power Plant in Pakistan.

截至2019年6月30日，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。

本集團環保業務方面，承擔的國家重點研發計劃項目「燃煤電站低成本超低排放控制技術及規模裝備」依託國電哈密煤電開發有限公司完成了高碱煤超低排放、在國電都勻發電有限公司完成了高硫煤超低排放示範工程煙氣環保島的建設並投產；在國電宿遷熱電有限公司完成超超低排放示範工程煙氣環保島的建設，目前正在開展現場測試。

本集團基於大數據的燃煤電廠煙氣智慧環保平台通過了中國環境科學學會鑒定，獲評整體達到國際領先水平。本集團積極拓展煤炭、煤化工領域，中標國家能源集團煤焦化有限責任公司「綠色智能循環經濟一體化工業園區」環保階段一體化綜合治理項目。

截至2019年6月30日，本集團的污水處理(含中水、供水)量約為11,043萬噸，COD(化學需氧量)累計減排量約為3.22萬噸。

本集團水處理方面，全面推進全廠節水改造和廢水「零排放」。中標神華寧夏煤業集團有限責任公司棗泉煤礦水處理技改EPC工程總承包項目，山西潞光發電有限公司脫硫廢水零排放項目，及巴基斯坦某燃煤電站海水淡化設備項目。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Energy Conservation Solutions Business

For the energy conservation solutions business, under the “Ultra-low NOx Pulverized Coal Combustion Technology”, a national key R&D program project undertaken by the Group, the R&D on in-boiler predictive control system based on pulverized coal monitoring and secondary air system optimisation has been conducted, and experimental verification thereof has been completed on the 300MW boiler.

In respect of power plant EPC business, in the first half of the year, regional strip-type coal yard closing for Project for Shed Renovation of Power Plant Coal Yard in Suzhou, Anhui Province has been completed at high efficiency and in high quality, which was highly recognized by the owner.

Wind Power Products and Services Business

The Group's wind turbine generator (“WTG”) sales volumes by product type during the periods ended 30 June 2019 and 2018 are set forth below:

		Completed Sales Orders (Unit)		Orders (Units)	
		完成銷售(套)		訂單(套)	
		2019	2018	As at 30 June 2019 2019年6月30日止	
				Confirmed orders 已確認訂單	Successful tenders 成功競標
1.5 MW	1.5兆瓦	—	—	599	—
1.65 MW	1.65兆瓦	—	—	30	—
2.0 MW	2.0兆瓦	222	230	922	50
3.0 MW	3.0兆瓦	—	—	23	72
Total	總數	222	230	1,574	122

Being customer satisfaction oriented, the Group kept improving quality services. The Group strengthened special rectification of equipment defect identified upon delivery and enhanced supervision of suppliers and after-sales quality. Average failure rate in January to June was 0.009 times/unit per day, representing a year-on-year decrease of 40%.

The Group has developed WindEYE, a smart wind farm service system, to provide wind farms with digital and smart comprehensive solutions, creating an “unattended or less-attended” new operating model, which has been conducted small batch deployment and test application in wind farms in several regions.

節能解決方案業務

在節能業務方面，本集團承擔的國家重點研發計劃課題「超低NOx煤粉燃燒技術」研發了基於風粉監測和二次配風系統優化的爐內預測控制系統，並在300MW等級鍋爐上完成系統的實驗驗證。

電站總承包業務方面，上半年安徽省宿州電廠煤場棚化改造項目高效保質完成區域條形煤場封閉，受到業主高度肯定。

風電產品及服務業務

本集團於2019年及2018年6月30日止期間按產品類型劃分的風機銷量如下：

本集團以客戶滿意為導向，持續提升質量服務。加強對設備出廠缺陷專項整改，強化供應商及售後質量監督，1-6月份平均故障率0.009次/台天，同比下降40%。

本集團開發的智慧風電場服務系統WindEYE，提供風電場站數字化、智能化全面解決方案，打造「無人值班，少人值守」的運營新模式，該系統已在多地風電場站開展小批量部署測試。

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

Strive to Stabilise Domestic Market

In the first half of 2019, facing challenges and difficulties, the Group took proactive measures and spared no efforts to stabilize the domestic market with the amount of new purchase orders of RMB3.924 billion with a YOY growth rate of 24.28%. Where:

- In the first half of 2019, the amount of new signed orders of Guodian Longyuan Power Technology and Engineering Co., Ltd. was about RMB923 million. It obtained new achievements in the project of cool yard closing renovation, meanwhile, it made a new breakthrough in the new energy EPC projects of wind power.
- In the first half of 2019, the amount of new purchase orders of United Power was about RMB847 million, with a remarkable YOY growth. United Power cooperated again with Shenzhen Energy Corporation, with its new model UP3400-141, and the bid amount is about RMB751 million. The project is the first implementation of the new model in a large scale in domestic projects.
- Lucency made great efforts to explore the non-electric market, and successively won the bid of large-scale water treatment projects in the field of coal and coal chemical industry.
- In the first half of 2019, the pitch control business of Huadian Tianren made breakthrough achievements in the external market of China Energy, which is Zhejiang Windey Co., Ltd., Mingyang Smart Energy Group Co., Ltd, Sany Heavy Energy Machinery Co., Ltd, etc..

Actively Expand Overseas Markets

In the first half of 2019, the Company fully strengthened international cooperation and exchanges with other countries, participated in the International Cooperation Conference of Electric Power Industry and the Annual Meeting of China Power International Cooperation Union (CPICU), attended the International High-end Forum of Clean Energy of China Energy Group, and was selected into the List of Enterprises of Israel Global Innovation Conference and reached an intention of cooperation with Israeli high-tech enterprises. The Company insisted on promoting the internationalization strategy, carried out the "going-out" strategy and the "bringing-in" strategy synchronously, and took solid steps in overseas businesses. Continuing to explore the markets in Southeast Asia, South Asia, Central and Eastern Europe and Africa, Longyuan Environmental actively participated in the bid for the environmental protection transformation projects in India, Greece and other countries; Longyuan Technology deeply explored the energy conservation transformation markets in India, Turkey and Zimbabwe, and explored opportunities in the market of South Africa; United Power continued to carry out the follow-up operation and maintenance services of Longyuan De Aar Project of China Longyuan Power Group Corporation Limited in South Africa, which has made outstanding contributions to the local people's access to electricity; and Guodian Zhishen implemented Shenhua Guohua Pembangkitan Java-Bali DCS Project, steadily exploring the Indonesian power automation control system market.

全力穩固國內市場

2019年上半年，本集團積極面對挑戰，迎難而上，國內市場穩中有進，新簽訂單金額約人民幣39.24億元，同比增長24.28%。其中：

- 國電龍源電力技術工程有限責任公司2019年上半年新簽訂單金額約人民幣9.23億元。不僅在煤場封閉改造項目方面取得新業績，還在風電新能源EPC項目獲得了新突破。
- 聯合動力2019年上半年新簽訂單金額約人民幣8.47億元，較去年同期有大幅增長。聯合動力與深圳能源集團股份有限公司再次合作，以新機型UP3400-141成功中標，中標金額約人民幣7.51億元，該項目是該新機型在國內項目的首次大批量使用。
- 朗新明大力開拓非電市場，先後中標煤炭和煤化工領域的大型水處理項目。
- 2019年上半年，華電天仁變漿業務在浙江運達風電股份有限公司、明陽智慧能源集團股份公司、三一重能有限公司等國家能源集團外市場上取得突破性業績。

積極拓展海外市場

2019年上半年，本公司全方位加強國際合作與對外交流工作，參加電力行業國際合作會議暨中國電力國際產能合作企業聯盟年度會議，參與國家能源集團清潔能源國際高端論壇，入選以色列全球創新大會企業名單，並與以色列高新技術企業達成合作意向。堅持推動國際化戰略，「走出去」與「引進來」同步進行，海外業務邁出堅實步伐。深耕東南亞、南亞、中東歐、非洲地區市場，龍源環保積極參與印度、希臘等國環保改造項目投標；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，為當地人民用電做出傑出貢獻；國電智深執行神華國華(印尼)爪哇發電有限公司某DCS項目，穩步拓展印度尼西亞電力自動化控制系統市場。



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

In the first half of 2019, the Company signed overseas orders of about RMB88.0 million accumulatively. The key projects include the supply contract of seawater desalination equipment for a certain Pakistan Coal-fired Power Plant signed by Lucency, and the sand and stone rebar trade contract of Bangladesh signed by a subsidiary in Hong Kong.

Analysis of Financial Results for the First Half of 2019

Please read this section in conjunction with the condensed consolidated financial statements of the Group for the six months ended 30 June 2019.

Analysis of Consolidated Results

Revenue

Consolidated revenue of the Group during the first half of 2019 was approximately RMB4,090.3 million, representing a decrease of approximately RMB536.6 million, or 11.6% from approximately RMB4,626.9 million in the first half of 2018. As compared to the first half of 2018, revenues from environmental protection solutions, energy conservation solutions and wind power products and services business decreased by RMB185.4 million, RMB97.3 million and RMB201.8 million respectively, representing decreases of 9.5%, 14.2% and 11.2% respectively.

2019年上半年公司累計簽訂海外訂單約人民幣88.0百萬元，重點項目有朗新明簽署的巴基斯坦某燃煤電站海水淡化設備供貨合同，香港子公司簽署的孟加拉國某砂石鋼筋貿易合同。

2019年上半年財務業績分析

閱讀本節時請一併閱讀截至2019年6月30日止6個月期間本集團的簡要合併財務報表。

合併業績分析

收入

2019年上半年，本集團合併收入約為人民幣4,090.3百萬元，與2018年上半年的約人民幣4,626.9百萬元相比，約減少536.6百萬元或11.6%。與2018年上半年相比，環保解決方案、節能解決方案及風電產品及服務業務的收入分別減少人民幣185.4百萬元、人民幣97.3百萬元及人民幣201.8百萬元，減少率分別為9.5%、14.2%及11.2%。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

The following table sets out the Group's revenues by segments and as a percentage of total consolidated revenue of the Group for the six months ended 30 June 2019 and 2018 respectively:

下表分別載列截至2019年及2018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			
		2019		2018	
		(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	1,774.3	43.4	1,959.7	42.3
Energy conservation solutions	節能解決方案	586.9	14.3	684.2	14.8
Sub-total	合計	2,361.2	57.7	2,643.9	57.1
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	1,597.7	39.1	1,799.5	38.9
Solar power products and services (discontinued operation)	太陽能產品及服務 (已終止經營)	-	-	-	-
Sub-total	合計	1,597.7	39.1	1,799.5	38.9
All others	所有其他	131.4	3.2	183.5	4.0
Total	總計	4,090.3	100.0	4,626.9	100.0

Cost of sales

For the six months ended 30 June 2019, consolidated cost of sales for the Group decreased by approximately RMB495.4 million, or 13.6%, from approximately RMB3,641.4 million for the corresponding period in 2018 to approximately RMB3,146.0 million. This decrease was primarily due to the decrease in cost of sales of environmental protection, energy conservation solutions and wind power products and services business of the Group which was consistent with the variation trend of revenues from those businesses.

銷售成本

截至2019年6月30日止6個月，本集團合併銷售成本約為人民幣3,146.0百萬元，較2018年同期的約人民幣3,641.4百萬元減少約為人民幣495.4百萬元或13.6%。下降的主要原因是本集團環保、節能解決方案及風電產品及服務業務的銷售成本有所減少，與該等業務收入變化趨勢相一致。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

The following table sets out the Group's cost of sales by segments and as a percentage of total consolidated cost of sales of the Group for the six months ended 30 June 2019 and 2018 respectively:

下表分別載列截至2019年及2018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		2018	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
Environmental	環保及節能解決方案：				
Protection and Energy Conservation Solutions:					
Environmental protection	環保	1,361.5	43.3	1,630.1	44.8
Energy conservation solutions	節能解決方案	520.8	16.5	590.7	16.2
Sub-total	合計	1,882.3	59.8	2,220.8	61.0
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	1,195.1	38.0	1,302.9	35.8
Solar power products and services (discontinued operation)	太陽能產品及服務 (已終止經營)	—	—	10.0	0.2
Sub-total	合計	1,195.1	38.0	1,312.9	36.0
All others	所有其他	68.6	2.2	107.7	3.0
Total	總計	3,146.0	100.0	3,641.4	100.0

Gross profit and gross profit margin

For the foregoing reasons, consolidated gross profit of the Group decreased by approximately RMB41.2 million, or 4.2%, from approximately RMB985.5 million for the six months ended 30 June 2018 to approximately RMB944.3 million for the six months ended 30 June 2019; such decrease in gross profit was mainly attributable to the decrease in gross profit of wind power products and services business, and energy conservation solutions. The average gross profit margin of the Group across all segments of the Group increased from 21.3% in the first half of 2018 to 23.1% in the first half of 2019. The increase in gross profit margin was primarily attributable to the increase in gross profit margin for the environmental protection business.

毛利及毛利率

鑒於上述原因，本集團截至2019年6月30日止6個月的合併毛利約為人民幣944.3百萬元，與截至2018年6月30日止6個月的約人民幣985.5百萬元相比減少約人民幣41.2百萬元或4.2%，毛利下降主要是由於風電產品及服務業務、節能解決方案的毛利減少所致。本集團所有分部平均毛利率從2018年上半年的21.3%增加至2019年上半年的23.1%，毛利率增加主要是因為環保業務的毛利率增加所致。

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 2019 and 2018 respectively:

下表分別載列截至2019年及2018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			
		2019		2018	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
Environmental	環保及節能解決方案：				
Protection and Energy Conservation Solutions:					
Environmental protection	環保	412.8	23.3	329.6	16.8
Energy conservation solutions	節能解決方案	66.1	11.3	93.5	13.7
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	402.6	25.2	496.6	27.6
Solar power products and services(discontinued operation)	太陽能產品及服務 (已終止經營)	-	-	(10.0)	N/A
All others	所有其他	62.8	47.8	75.8	41.3
Total	總計	944.3	23.1	985.5	21.3

Other revenue

Other revenue of the Group decreased by approximately RMB15.7 million, or 13.4%, from approximately RMB117.6 million for the six months ended 30 June 2018 to approximately RMB101.9 million for the six months ended 30 June 2019, which was primarily due to the decrease in government grants and interest income.

其他收入

截至2019年6月30日止6個月，本集團其他收入約為人民幣101.9百萬元，較截至2018年6月30日止6個月的約人民幣117.6百萬元減少約人民幣15.7百萬元或13.4%，主要原因是政府補助與利息收入減少。



MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Other net income

The other net income of the Group was approximately RMB4.8 million for the six months ended 30 June 2019, representing a decrease of approximately RMB6.4 million, or 57.1%, from approximately RMB11.2 million for the corresponding period in 2018, which was mainly attributable to the decrease in the net gain on sales of raw materials and net gain on disposal of subsidiaries in the period.

Selling and distribution expenses

The selling and distribution expenses of the Group increased by approximately RMB78.6 million, or 24.8%, from approximately RMB316.8 million for corresponding period in 2018 to approximately RMB395.4 million for the six months ended 30 June 2019, which was primarily attributable to the increase in sales service expense.

Administrative expenses

The administrative expenses of the Group decreased by approximately RMB130.3 million, or 19.3%, from approximately RMB674.5 million for the corresponding period in 2018 to approximately RMB544.2 million for the six months ended 30 June 2019, which was primarily due to the reversal of credit impairment losses.

Operating profit and operating profit margin

As a result of the foregoing reasons, the operating profit of the Group decreased by approximately RMB21.6 million, or 16.2%, from approximately RMB133.0 million for the first half of 2018 to approximately RMB111.4 million for the corresponding period in 2019.

Finance costs

The finance costs of the Group increased by approximately RMB19.4 million, or 7.4%, from approximately RMB261.7 million for the corresponding period in 2018 to approximately RMB281.1 million for the six months ended 30 June 2019, which was primarily due to the increase in interests on bank and other borrowings.

其他收益淨額

截至2019年6月30日止6個月，本集團其他收益淨額約人民幣4.8百萬元，較2018年同期的約人民幣11.2百萬元減少約人民幣6.4百萬元或57.1%，主要原因是本期原材料銷售收益淨額與出售附屬公司收益淨額減少。

銷售及分銷開支

截至2019年6月30日止6個月，本集團銷售及分銷開支約人民幣395.4百萬元，較2018年同期的約人民幣316.8百萬元增加約人民幣78.6百萬元或24.8%，主要是由於銷售服務費增加。

行政開支

截至2019年6月30日止6個月，本集團行政開支約人民幣544.2百萬元，較2018年同期的約人民幣674.5百萬元減少約人民幣130.3百萬元或19.3%，主要是信用減值損失的轉回。

經營利潤及經營利潤率

鑒於上述原因，本集團經營利潤由2018年上半年的約人民幣133.0百萬元減少至2019年同期的約人民幣111.4百萬元，減少約人民幣21.6百萬元或16.2%。

財務成本

截至2019年6月30日止6個月，本集團財務成本約人民幣281.1百萬元，較2018年同期的約人民幣261.7百萬元增加約人民幣19.4百萬元或7.4%，增加的原因主要是由於銀行及其他借款利息的增加。

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

Loss before taxation

As a result of the foregoing reasons, loss before taxation of the Group's continuing operations increased by approximately RMB56.5 million, or 58.5%, from approximately RMB96.5 million for the first half of 2018 to approximately RMB153.0 million for the corresponding period in 2019.

Income tax

The income tax of the Group's continuing operations increased by approximately RMB182.7 million, or 716.5%, from approximately RMB-25.5 million for the six months ended 30 June 2018 to approximately RMB157.2 million for the corresponding period in 2019, which was primarily due to the increase in deductible tax loss not being recognized as deferred income tax assets and reversal of deferred income tax assets by the Group for the period.

Loss for the period

As a result of the foregoing reasons, the Group recorded a loss of approximately RMB310.3 million for the six months ended 30 June 2019, whereas a loss of approximately RMB71.8 million was recorded for the corresponding period in 2018.

Loss attributable to non-controlling interests

Loss attributable to non-controlling interests of the Group for the six months ended 30 June 2019 amounted to approximately RMB111.4 million, while the loss attributable to non-controlling interests of the Group was approximately RMB15.8 million for the corresponding period in 2018.

Loss attributable to equity shareholders of the Company

As a result of the foregoing reasons, loss attributable to equity shareholders of the Company for the six months ended 30 June 2019 amounted to approximately RMB198.9 million, whereas loss attributable to equity shareholders of the Company for the corresponding period in 2018 amounted to approximately RMB56.0 million.

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2018年上半年的約人民幣96.5百萬元增加至2019年同期的約人民幣153.0百萬元，增加約人民幣56.5百萬元或58.5%。

所得稅

本集團持續經營業務的所得稅由2018年6月30日止6個月的約人民幣-25.5百萬元增加至2019年同期的約人民幣157.2百萬元，增加約人民幣182.7百萬元或716.5%。主要是由於本集團本期未確認為遞延所得稅資產的可抵扣虧損額增加和轉回遞延所得稅資產。

本期虧損

鑒於上述原因，截至2019年6月30日止6個月，本集團錄得虧損約人民幣310.3百萬元，而2018年同期錄得虧損約人民幣71.8百萬元。

歸屬於非控股權益虧損

本集團截至2019年6月30日止6個月的歸屬於非控股權益虧損約人民幣111.4百萬元，而2018年同期錄得歸屬於非控股權益虧損約人民幣15.8百萬元。

歸屬於本公司權益股東虧損

鑒於上述原因，本公司截至2019年6月30日止6個月的歸屬於本公司權益股東虧損約人民幣198.9百萬元，而2018年同期錄得歸屬於本公司權益股東虧損約人民幣56.0百萬元。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Analysis of Segment Results

分部業績分析

The following table sets out the Group's segment revenues, gross profit and operating profit for the six months ended 30 June 2019 and 2018 respectively, and each as a percentage of total revenues, gross profit, and operating profit of the Group for such periods:

下表分別載列截至2019年及2018年6月30日止6個月本集團的分部收入、毛利和經營利潤以及各自佔相關期間本集團收入、毛利和經營利潤總額的百分比：

		For the six months ended 30 June 截至6月30日止6個月			
		2019		2018	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
Environmental	環保及節能解決方案				
Protection and Energy Conservation Solutions					
Environmental protection:	環保：				
Revenue	收入	1,774.3	43.4	1,959.7	42.3
Gross profit	毛利	412.8	43.7	329.6	33.4
Operating profit	經營利潤	300.9	270.1	143.6	106.7
Energy conservation solutions:	節能解決方案：				
Revenue	收入	586.9	14.3	684.2	14.8
Gross profit	毛利	66.1	7.0	93.5	9.5
Operating (loss)/profit	經營(虧損)/利潤	(19.2)	(17.2)	15.8	11.7
Renewable Energy Equipment Manufacturing and Services	可再生能源設備製造及服務				
Wind power products and services:	風電產品及服務：				
Revenue	收入	1,597.7	39.1	1,799.5	38.9
Gross profit	毛利	402.6	42.6	496.6	50.4
Operating loss	經營虧損	(157.6)	(141.5)	(18.9)	(14.0)
Solar energy products and services(discontinued operation):	太陽能產品及服務(已終止經營)：				
Revenue	收入	—	—	—	—
Gross loss	毛虧	—	—	(10.0)	N/A
Operating profit	經營利潤	—	—	1.6	1.2

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 RMB1,774.3 million for the six months ended 30 June 2019, representing a decrease of approximately RMB185.4 million, or 9.5%, as compared to approximately RMB1,959.7 million for the corresponding period in 2018. The decrease was mainly attributable to the decrease in the revenue generated from desulfurization and denitrification business.

環保業務於截至2019年6月30日止6個月收入約人民幣1,774.3百萬元，與2018年同期的約人民幣1,959.7百萬元相比減少約人民幣185.4百萬元或9.5%，主要是由於脫硫及脫硝業務收入減少所致。

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 2018.

下表分別載列截至2019年及2018年6月30日止6個月本集團環保業務中各業務線的收入，以及各自佔該業務收入的百分比。

		For the six months ended 30 June 截至6月30日止6個月			
		2019		2018	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
Desulfurization	脫硫	843.8	47.6	1,032.0	52.7
Denitrification	脫硝	277.0	15.6	365.6	18.6
Low NO _x combustion equipment	低氮燃燒設備	8.8	0.5	54.6	2.8
Water treatment	水處理	407.1	22.9	347.5	17.7
Ash removal	除塵	170.2	9.6	160.0	8.2
Coal yard renovation and smoke plume control	煤場改造及煙羽治理	67.4	3.8	-	N/A
Total	總計	1,774.3	100.0	1,959.7	100.0

Cost of sales

銷售成本

Cost of sales for the environmental protection business was approximately RMB1,361.5 million for the six months ended 30 June 2019, representing a decrease of approximately RMB268.6 million, or 16.5%, as compared to approximately RMB1,630.1 million for the corresponding period of 2018. The decrease was consistent with the decrease in revenue generated from the business.

環保業務於截至2019年6月30日止6個月銷售成本約人民幣1,361.5百萬元，與2018年同期的約人民幣1,630.1百萬元相比減少約人民幣268.6百萬元或16.5%，這與該業務的收入減少一致。

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 increased by approximately RMB83.2 million, or 25.2%, from approximately RMB329.6 million for the six months ended 30 June 2018 to approximately RMB412.8 million for the corresponding period in 2019. The gross profit margin of this business increased from approximately 16.8% for the first half of 2018 to approximately 23.3% for the first half of 2019, mainly due to the significant increase in gross profit margin of desulfurization business, which accounted for a greater proportion.

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 2019 as compared with the six months ended 30 June 2018:

		For the six months ended 30 June 截至6月30日止6個月	
		2019 (%)	2018 (%)
Desulfurization	脫硫	25.9	15.5
Denitrification	脫硝	23.0	17.6
Low NO _x combustion equipment	低氮燃燒設備	13.6	15.2
Water treatment	水處理	26.6	26.7
Ash removal	除塵	8.6	12.2
Coal yard renovation and smoke plume control	煤場改造及煙羽治理	24.5	—

Energy conservation solutions

Revenue

Revenue from the energy conservation solutions business was approximately RMB586.9 million for the six months ended 30 June 2019, representing a decrease of approximately RMB97.3 million, or 14.2%, as compared to approximately RMB684.2 million for the corresponding period in 2018. The decrease in revenue was mainly due to the decrease in revenue generated from plasma-assisted coal ignition and combustion stabilization, energy conservation service and general contracting business of power station construction of the Group.

毛利及毛利率

鑒於上述原因，環保業務產生的毛利從截至2018年6月30日止6個月的約人民幣329.6百萬元增加至2019年同期的約人民幣412.8百萬元，增加約人民幣83.2百萬元或25.2%。此業務的毛利率從2018年上半年的約16.8%增加至2019年上半年的約23.3%，主要是由於佔比較大的脫硫業務毛利率大幅上升所致。

下表載列截至2019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2018年6月30日止6個月相比的變化：

節能解決方案

收入

節能解決方案業務於截至2019年6月30日止6個月收入約人民幣586.9百萬元，與2018年同期的約人民幣684.2百萬元相比減少約人民幣97.3百萬元或14.2%，主要是由於等離子體點火及穩燃、節能服務及電站建設總承包業務線收入均有所減少所致。

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 comprising the Group's energy conservation solutions business and each as a percentage of the revenue from this business for the six months ended 30 June 2019 and 2018.

下表分別載列截至2019年及2018年6月30日止6個月本集團節能解決方案各業務線的收入，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		2018	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
Plasma-assisted coal ignition and combustion stabilization	等離子體點火及穩燃	60.6	10.3	87.4	12.8
Energy conservation services	節能服務	80.1	13.7	120.4	17.6
General contracting for power stations	電站建設總承包	433.0	73.8	464.3	67.8
Others ⁽¹⁾	其他 ⁽¹⁾	13.2	2.2	12.1	1.8
Total	總計	586.9	100.0	684.2	100.0

(1) Others include steam turbine related equipment maintenance, waste heat recovery construction and boiler comprehensive utilization and retrofitting.

(1) 其他包括汽輪機維修及改造、餘熱回收建造、鍋爐綜合利用改造。

Cost of sales

Cost of sales for the energy conservation solutions business was approximately RMB520.8 million for the six months ended 30 June 2019, representing a decrease of approximately RMB69.9 million, or 11.8%, as compared to approximately RMB590.7 million for the corresponding period in 2018. Such decrease was consistent with the decrease trend in revenue from this business.

銷售成本

節能解決方案業務於截至2019年6月30日止6個月銷售成本約人民幣520.8百萬元，與2018年同期的約人民幣590.7百萬元相比減少約人民幣69.9百萬元或11.8%，這與該業務的收入減少一致。

Gross profit and gross profit margins

As a result of the foregoing reasons, gross profit attributable to the energy conservation solutions business decreased by approximately RMB27.4 million, or 29.3%, from approximately RMB93.5 million for the six months ended 30 June 2018 to approximately RMB66.1 million for the corresponding period in 2019. Gross profit margin for this business decreased from approximately 13.7% for the first half of 2018 to approximately 11.3% for the first half of 2019. This decrease was primarily due to the significant decrease in gross profit margin of plasma-assisted coal ignition and combustion stabilization business.

毛利及毛利率

鑒於上述原因，節能解決方案業務產生的毛利從截至2018年6月30日止6個月的約人民幣93.5百萬元減少至2019年同期的約人民幣66.1百萬元，減少約人民幣27.4百萬元或29.3%。此業務的毛利率從2018年上半年的約13.7%減少至2019年上半年的約11.3%，減少的主要原因是由於等離子體點火及穩燃業務毛利率大幅下降所致。

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 solutions business for the six months ended 30 June 2019 as compared with the six months ended 30 June 2018:

下表載列截至2019年6月30日止6個月構成本集團節能解決方案業務的業務線毛利率與截至2018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	
		2019 (%)	2018 (%)
Plasma-assisted coal ignition and combustion stabilization	等離子體點火及穩燃	15.7	39.9
Energy conservation services	節能服務	26.5	15.9
General contracting for power stations	電站建設總承包	7.9	8.0
Others ⁽¹⁾	其他 ⁽¹⁾	31.8	32.8

(1) Others include steam turbine maintenance and retrofit, waste heat recovery construction and boiler comprehensive utilization and retrofitting.

(1) 其他包括汽輪機維修及改造、餘熱回收建造、鍋爐綜合利用改造。

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

Revenues

收入

Revenue attributable to the wind power products and services business was approximately RMB1,597.7 million for the six months ended 30 June 2019, representing a decrease of approximately RMB201.8 million, or 11.2%, as compared to approximately RMB1,799.5 million for the corresponding period in 2018. The decrease was mainly attributable to the decrease in single-unit selling price of wind turbines in the first half of 2019.

風電產品及服務業務於截至2019年6月30日止6個月收入約人民幣1,597.7百萬元，與2018年同期的約人民幣1,799.5百萬元相比減少約人民幣201.8百萬元或11.2%。下降的主要原因是由於2019年上半年風機銷售單價的下降。

Cost of sales

銷售成本

Cost of sales attributable to the wind power products and services business was approximately RMB1,195.1 million for the six months ended 30 June 2019, representing a decrease of approximately RMB107.8 million, or 8.3%, as compared to approximately RMB1,302.9 million for the corresponding period in 2018. Such decrease was consistent with the decrease trend of revenue from the business.

風電產品及服務業務於截至2019年6月30日止6個月銷售成本約人民幣1,195.1百萬元，與2018年同期的約人民幣1,302.9百萬元相比減少約人民幣107.8百萬元或8.3%，這與該業務的收入減少一致。

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 decreased by approximately RMB94.0 million, or 18.9%, from approximately RMB496.6 million for the six months ended 30 June 2018 to approximately RMB402.6 million for the corresponding period in 2019. Gross profit margin for this business for the first half of 2019 was approximately 25.2%, decreasing from approximately 27.6% for the first half of 2018.

鑒於上述原因，風電產品及服務業務產生的毛利從截至2018年6月30日止6個月的約人民幣496.6百萬元減少至2019年同期的約人民幣402.6百萬元，減少約人民幣94.0百萬元或18.9%。該業務的毛利率從2018年上半年的約27.6%減少至2019年上半年的約25.2%。

MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Solar power products and services (discontinued operation)

On 30 June 2018, the Company completed the disposal of 90% equity interest in Guodian Solar Co., Ltd. to Tianjin Zhonghuan Semiconductor Co., Ltd.. The segment of solar power products and services of the Group discontinued operation, it did not record any revenue or cost in the first half of 2019.

Liquidity and Source of Capital

The following table sets out the net cash flows of the Group for the six months ended 30 June 2019 and 2018 respectively:

太陽能產品及服務(已終止經營)

於2018年6月30日，本公司完成將所持國電光伏有限公司的90%股權出售於天津中環半導體股份有限公司。本集團太陽能產品及服務分部已終止經營，2019年上半年該分部未發生任何收入、成本。

流動資金和資本來源

下表分別載列截至2019年和2018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	
		2019 (RMB million) (人民幣百萬元)	2018 (RMB million) (人民幣百萬元)
Net cash used in operating activities	經營活動使用的現金淨額	(198.6)	(318.5)
Net cash used in investing activities	投資活動使用的現金淨額	(897.8)	(305.2)
Net cash used in financing activities	籌資活動使用的現金淨額	(475.4)	(453.2)
Cash and cash equivalents as at 30 June	於6月30日的現金及 現金等價物	1,864.7	2,917.9

Net cash used in operating activities

In the first half of 2019, net cash used in operating activities of the Group was approximately RMB198.6 million, while that of the corresponding period in 2018 was approximately RMB318.5 million. The decrease in the net cash flow used in operating activities was mainly due to the increase in collection of trade receivables 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2019年上半年經營活動使用的現金淨額約為人民幣198.6百萬元，而2018年同期則約為人民幣318.5百萬元。經營活動使用的現金流量淨額減少主要是由於本集團本期應收賬款回收金額較去年同期有所增加導致。

Net cash used in investing activities

Net cash used in the Group's investing activities for the first half of 2019 was approximately RMB897.8 million, while net cash used in investing activities for the corresponding period in 2018 was approximately RMB305.2 million. The increase in the net cash used in investing activities was mainly due to the purchase of structural deposits by the Group by utilizing idle funds during the period.

投資活動使用的現金淨額

本集團2019年上半年投資活動使用的現金淨額約為人民幣897.8百萬元，而2018年同期投資活動使用的現金淨額則約為人民幣305.2百萬元。投資活動使用的現金淨額增加，主要是由於本集團本期利用閒置資金購買結構性存款導致。

Net cash used in financing activities

Net cash used in financing activities of the Group for the first half of 2019 was approximately RMB475.4 million, while net cash used in financing activities for the same period in 2018 was approximately RMB453.2 million, mainly due to the increase of restricted deposits during the period as compared to the prior period.

籌資活動使用的現金淨額

本集團2019年上半年籌資活動使用的現金淨額約為人民幣475.4百萬元，而2018年同期籌資活動使用的現金淨額則約為人民幣453.2百萬元。主要是由於本集團本期受限制存款較上期增加所致。



MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Working capital

As at 30 June 2019, the Group's cash and cash equivalents were approximately RMB1,864.7 million, representing a decrease of approximately RMB1,571.8 million, or 45.7%, as compared to approximately RMB3,436.5 million as at 31 December 2018. The decrease was mainly attributable to the net cash outflow from operating, investing and financing activities.

The Group's gearing ratio, which is calculated by dividing total debt by the total assets, decreased to 77.1% as at 30 June 2019 as compared to that of 77.3% as at 31 December 2018.

Net current assets

As at 30 June 2019, the Group's net current assets were approximately RMB1,235.6 million, representing a decrease of approximately RMB231.3 million, as compared to net current assets of approximately RMB1,466.9 million as at 31 December 2018.

As at 30 June 2019, the unutilised banking facilities of approximately RMB9,977.2 million, of which RMB7,429.1 million would be renewed within 12 months, could fulfil its future capital commitments for payment and other financial requirements. The Directors are of the 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 RMB3,832.8 million as at 30 June 2019, which increased by approximately RMB815.4 million, or 27.0%, from approximately RMB3,017.4 million as at 31 December 2018, which was mainly attributable to the increase in raw materials, work-in-progress, finished goods and spare parts due to stocking needs.

Trade and bills receivables

Trade and bills receivables of the Group decreased by approximately RMB1,117.0 million, or 9.4%, from approximately RMB11,915.4 million as at 31 December 2018 to approximately RMB10,798.4 million as at 30 June 2019. The decrease was mainly attributable to the decrease in trade and bills receivables as a result of the decrease in sales revenue and continuous collection.

運營資金

於2019年6月30日，本集團的現金及現金等價物約為人民幣1,864.7百萬元，較2018年12月31日的約人民幣3,436.5百萬元減少約人民幣1,571.8百萬元或45.7%。主要是由於經營、投資及籌資活動均呈現現金淨流出狀態所致。

本集團的資產負債率，由總債務除以總資產計算得出，與2018年12月31日的77.3%相比，下降至2019年6月30日的77.1%。

流動資產淨額

於2019年6月30日，本集團流動資產淨額約為人民幣1,235.6百萬元，較2018年12月31日流動資產淨額約人民幣1,466.9百萬元減少約人民幣231.3百萬元。

於2019年6月30日，本集團未動用銀行授信約為人民幣9,977.2百萬元，其中人民幣7,429.1百萬元需於未來的12個月內續期，可滿足其未來資本承付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2019年6月30日存貨約為人民幣3,832.8百萬元，較2018年12月31日的存貨約人民幣3,017.4百萬元增加約人民幣815.4百萬元或27.0%。主要是由於因備貨需要，原材料、在產品、產成品及備件增加。

應收賬款及票據

本集團於2019年6月30日的應收賬款及票據約為人民幣10,798.4百萬元，較2018年12月31日的約人民幣11,915.4百萬元減少約人民幣1,117.0百萬元或9.4%，主要是由於本期本集團銷售收入下降及持續催收導致的應收賬款及票據減少。

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 RMB135.6 million or 8.0%, from approximately RMB1,700.8 million as at 31 December 2018 to approximately RMB1,836.4 million as at 30 June 2019. The increase was primarily attributable to the increase in financial assets measured at amortised cost and reclassified amount of the short-term portion of deductible VAT on purchases for the period.

Trade and bills payables

Trade and bills payables of the Group decreased by approximately RMB547.4 million, or 5.6%, from approximately RMB9,770.7 million as at 31 December 2018 to approximately RMB9,223.3 million as at 30 June 2019. The decrease was primarily due to the decrease in trade and bills payables in relation to environmental protection sub-contracting engineering payment and equipment payment of the Group.

Indebtedness

The Group's total indebtedness decreased by approximately RMB106.8 million, or 0.9%, from approximately RMB11,728.7 million as at 31 December 2018 to approximately RMB11,621.9 million as at 30 June 2019. This is mainly because the Group reduces financing scale for the period. The proportion of long-term indebtedness to the total indebtedness increased from approximately 31.5% as at 31 December 2018 to approximately 35.0% as at 30 June 2019. The increase was primarily attributable to the decrease in the Group's short-term indebtedness for the period.

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

In the first half of 2019, 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 2019 and 30 June 2019) was approximately 4.8%, while the effective interest rate of the Group for the corresponding period in 2018 was approximately 4.4%.

Pledged assets

As at 30 June 2019, the long-term interest-bearing borrowings of the Group were pledged by concession assets, trade receivables and long-term service concession receivables with an aggregate carrying amount of approximately RMB998.5 million. As at 30 June 2019, the short-term interest-bearing borrowings of the Group were pledged by trade receivables with the carrying amount of approximately RMB286.6 million.

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2018年12月31日的約人民幣1,700.8百萬元增加至2019年6月30日的約人民幣1,836.4百萬元，增加約人民幣135.6百萬元或8.0%，主要是由於本期以攤餘成本計量的金融資產及待抵扣進項稅短期部分重分類款項增加所致。

應付賬款及票據

本集團於2019年6月30日的應付賬款及票據約為人民幣約9,223.3百萬元，較2018年12月31日的約人民幣9,770.7百萬元減少約人民幣547.4百萬元或5.6%，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2019年6月30日的總債項約為人民幣11,621.9百萬元，較2018年12月31日的約人民幣11,728.7百萬元減少約人民幣106.8百萬元或0.9%，主要是由於本期本集團壓降融資規模所致。其中長期債項佔總債項的比例從2018年12月31日的約31.5%增加至2019年6月30日的約35.0%，主要是由於本期本集團短期債項減少。

本集團所有借款都以人民幣計價。

本集團2019年上半年的實際利率(以總利息開支除以2019年1月1日與2019年6月30日的未償還借款的平均值釐定)約為4.8%，而本集團2018年同期的實際利率約為4.4%。

已抵押資產

於2019年6月30日，本集團長期帶息借款以賬面值合共約人民幣998.5百萬元之特許經營權資產、應收賬款及服務特許權長期應收款為抵押。於2019年6月30日，本集團短期帶息借款以賬面值約人民幣286.6百萬元之應收賬款為抵押。



MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

管理層討論與分析(續)

Contingent liabilities

The Group's contingent liabilities decreased by approximately RMB765.6 million, or 30.8%, from approximately RMB2,489.0 million as at 31 December 2018 to approximately RMB1,723.4 million as at 30 June 2019. The Group's contingent liabilities at the end of the period primarily consisted of bids and performance guarantees.

Major investment

In the first half of 2019, the Group fulfilled a total investment amount of RMB250.7 million, of which the capital investment amount was RMB58.6 million, which was used to construct the Jiangsu Suqian Phase II Desulfurization and Denitrification Concession Project (already put into production) and the Inner Mongolia Chifeng Chaganhua Experimental Wind Power Project (already put into operation); the amount of technological upgrading investment was RMB192.1 million, which was mainly used for sewage disposal, etc.

Material Acquisition and Disposal

The Group did not have any material acquisition and disposal during the six months ended 30 June 2019.

Market risk

The Group is exposed to various risks associated with its business operations, including credit and counterparty risk, 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 risk

The Group's credit risk is primarily attributable to its bank deposits, trade and bills receivables, 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 climate. The Group generally requires its customers to settle progress billings and other debts in accordance with agreed contractual terms.

或有負債

本集團的或有負債從2018年12月31日的約人民幣2,489.0百萬元減少至2019年6月30日的約人民幣1,723.4百萬元，減少約人民幣765.6百萬元，或30.8%。本集團期末的或有負債主要包括投標保函及履約保函。

重大投資

2019年上半年，本集團完成投資金額共計人民幣250.7百萬元，其中，基建投資金額為人民幣58.6百萬元，用於建設江蘇宿遷二期脫硫、脫硝特許經營項目(已投產)及內蒙古赤峰查乾花實驗風力發電項目(已投產)；技改投資金額為人民幣192.1百萬元，主要用於污水處理等。

重大收購或出售

於截至2019年6月30日止6個月期間，本集團無任何重大收購或出售。

市場風險

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. Substantially 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 (BOT) 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 cash flow position of the Group may vary with its continuous growth and expansion.

Exchange risk

The continued development and expansion of the Group's international operations is 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, Euros or Hong Kong dollar. During the six months ended 30 June 2019, the Group's exchange loss was approximately RMB0.1 million. The Directors consider the exchange rate risk to be insignificant. The Group does not currently hedge its exchange rate risk.

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

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。本公司借款基本上以人民幣計價，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BOT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2019年6月30日止6個月發生匯率損失約人民幣0.1百萬元。董事認為匯率風險不重大。本集團目前未對沖其匯率風險。

人民幣並不是自由兌換的貨幣，未來中國政府可能會酌情決定限制經常賬戶交易的外匯匯入。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

On 30 July 2019, the Company received a Confirmation on Share Transfer from China Securities Depository & Clearing Co., Ltd, according to which, an aggregate of 2,377,500,000 domestic shares in the Company directly held by Guodian Group were transferred to China Energy on 30 July 2019. So far, China Energy is directly holding 2,377,500,000 domestic shares in the Company (representing approximately 39.21% of the Company's total issued share capital), and 2,376,500,000 domestic shares in the Company through its subsidiary, Guodian Power Development Co., Ltd. (representing approximately 39.19% of the Company's total issued share capital). China Energy is holding an aggregate of 4,754,000,000 domestic shares in the Company (representing approximately 78.40% of the Company's total issued share capital) and is the controlling shareholder of the Company. The State-owned Assets Supervision and Administration Commission of the State Council remains as the de facto controller of the Company.

On 7 August 2019, the board of directors of the Company announced that Lucency intends to dispose of its 70% equity interest in Guodian Galaxy Water Co., Ltd. (“**Guodian Galaxy Water**”) through a public tender process (the “**Public Tender**”) to be conducted on the China Beijing Equity Exchange. Qingdao Galaxy Investment Co., Ltd., the other shareholder of Guodian Galaxy Water, intends to dispose of its 30% equity interest in Guodian Galaxy Water together with the Company. The base price for transfer of the 70% equity interest in Guodian Galaxy Water through the Public Tender will be determined based on the asset appraisal on Guodian Galaxy Water to be conducted by a qualified appraisal institution and subject to the approvals from relevant regulatory authorities of state-owned assets in the PRC.

Business Prospect for the Second Half of 2019

Boost Safety Production Prevention & Control and Consolidate Reform and Development Basis

The Group will deeply boost the construction of safety production standardization, lay special emphasis on standardization by taking basic management and site management as breakthrough points, and promote the comprehensive enhancement of construction project standardization fully and orderly in a way of covering all from key points; develop risk assessment and hazard identification at a regular interval and build the dual working mechanism of risk pre-control and hidden danger elimination.

期後事項

本公司於2019年7月30日收到中國證券登記結算有限責任公司出具的《過戶登記確認書》，國電集團直接持有的本公司2,377,500,000股內資股，已於2019年7月30日過戶登記至國家能源集團名下。至此，國家能源集團直接持有本公司2,377,500,000股內資股，約佔本公司已發行總股本的39.21%，並通過其附屬公司國電電力發展股份有限公司持有本公司2,376,500,000股內資股，約佔本公司已發行總股本的39.19%。國家能源集團合計持有本公司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，國務院國有資產監督管理委員會仍為本公司實際控制人。

於2019年8月7日，本公司董事會宣佈朗新明擬透過於北京產權交易所進行之公開掛牌方式（「**公開掛牌**」）出售其於國電銀河水務股份有限公司（「**國電銀河水務**」）之70%股本權益。國電銀河水務的另一股東青島銀河投資有限公司擬一併出售其持有的國電銀河水務30%股本權益。透過公開掛牌轉讓國電銀河水務70%股本權益之底價將由具有資質的評估機構進行資產評估後釐定，並須經中國國有資產監管機構之相關部門批准後，方告作實。

2019年下半年業務展望

推進安全生產防控，穩固改革發展基礎

本集團要深入推進安全生產標準化建設，以基礎管理和現場管理為突破點，抓實抓牢標準化工作，以點帶面，有序推進，全面推動工程項目標準化水平的提高；定期開展風險評估和危害辨識，構建風險預控和隱患排查雙重工作機制。

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

Cultivate Quality Technical Services and Enhance Core Competitiveness

While providing technologies and services to the coal and power generation industries, the Group is also cultivating core technologies of pollution control such as air, water and solid wastes, researching and deploying a number of strategic projects. Applying and promoting technologies include key technologies for co-processing of pollutants from Circulating Fluidized Bed boiler, coupling of co-processing and disposal technology for solid waste, ultra-low NOx pulverized coal combustion technology, key technologies for large offshore wind power, vertical application technology for industrial Internet wind power, operation control optimization technology for ultra-supercritical units, key technology for intelligent Distributed Control System, etc.; explores forward-looking technologies including supercritical carbon dioxide power generation technology, and advanced seawater desalination technology, etc., which resolves major bottleneck problems or technical difficulties in the industry.

Build New Marketing System and Enhance Market Exploration Capacity

The Group will explore and build the safety marketing system of large and medium-sized equipment and technology of central enterprises; integrate the core technology and service of relevant units according to the owner's demand to provide owners with one-stop solution. Strengthen the construction of marketing team and the basic management of marketing system and improve the execution capacity of marketing personnel. Strengthen the exploration of overseas market and the export ratio of products and technologies and improve the competitiveness of products and technologies both at home and in abroad.

Boost Quality Service Construction and Enhance Enterprise Brand Reputation

The Group will further improve the after-sales service system, build profitable customer relationship, improve regular follow-up system, grasp after-sales service in time and enhance customer perception; strengthen the appraisal weight of customer satisfaction survey, improve the service level in a down-to-earth manner, make publicity and brand planning in new era with efforts, analyze the potential market characteristics earnestly, make publicity externally and create a high-tech industrial brand.

Improve Compliance Capacity Construction and Consolidate Risk Prevention Bottom Line

The Group will boost risk management in a comprehensive manner, improve the risk management process, design the pre-warning index system scientifically and build the risk management-oriented concept for corporate governance and operation; improve the legal system and consolidate legal and compliance foundation; build a modern enterprise system featured by clear property, definite rights and responsibilities, separation of management and transaction and powerful control in a higher speed.

培育優質技術服務，增強核心競爭能力

本集團在為煤炭和發電行業提供優質技術和服務的同時，也在培育大氣、水、固體廢棄物等污染治理核心技術，研究佈局一批戰略性項目。應用推廣類技術包括循環流化床鍋爐污染物協同治理關鍵技術、固廢耦合協同處理處置技術、超低氮氧化物煤粉燃燒技術、大型海上風電機組關鍵技術、工業互聯網風電垂直應用技術、超超臨界機組運行控制優化技術、智能分佈式控制系統關鍵技術等；探索前瞻性技術包括超臨界二氧化碳發電技術、先進海水淡化技術等，破解產業領域內重大瓶頸問題或技術難點。

構建新型營銷體系，增強市場開拓能力

本集團要探索構建中央企業大中型設備和技術的安全營銷體系；根據業主需求，融合相關單位核心技術和服務，為業主提供一站式解決方案；加強營銷團隊建設，加強營銷體系基礎管理，提高營銷人員執行能力；加強境外市場的開拓，加大產品和技術的外銷比例，提升產品和技術在國內外的競爭力。

推進質量服務建設，提升企業品牌美譽度

本集團將進一步完善售後服務體系，構建贏利性客戶關係；完善定期回訪制度，及時掌握售後服務情況，提升客戶感知；加大客戶滿意度調查的考核權重，切實提高服務水平；搞好新時期宣傳及品牌策劃工作，認真分析潛在市場特徵，做好對外宣傳，打造高科技產業品牌。

完善合規性能力建設，夯實風險防範底線

本集團要全面推進風險管理，完善風險管理流程，科學設計預警指標體系，樹立以風險管理為導向的公司治理和經營理念；健全法律制度體系，夯實依法合規基礎；加快構建產權清晰、權責明確、管辦分離、管控有力的現代企業制度體系。



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 2019, the Group had complied with the 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 terms of the code currently adopted by the Company comply with the requirements of the Model Code. 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 2019. 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2019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。本公司現時採納的守則所載條款符合標準守則的規定。本公司對所有董事及監事作出明確查詢後，截至2019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 accounts, annual reports and interim reports 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 2019 and the unaudited interim financial statements for the six months ended 30 June 2019 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2019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2019年6月30日止6個月的未經審核中期財務報表。

(4) 互聯網信息發佈的管理工作

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

(5) 海外監管市場公告

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

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

(6) Risk Management and Internal Control

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

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

Internal Control

The Company has set up a set of internal control regulations, including "the Rules and Procedures of the General Meeting", "the Rules and Procedures of the Meetings of the Board of Directors", "the Rules and Procedures of the Meetings of the Board of Supervisors", "the Terms of References for the Strategic Committee of the Board of Directors", "the Terms of References for the Audit Committee of the Board", "the Terms of References for the Nomination Committee of the Board of Directors", "the Terms of References for the Remuneration and Appraisal Committee of the Board of Directors", "the Provisions on Information Disclosure", "the Measures for the Management of Related Transactions", "the Measures for the Management of Comprehensive Risks", "the Internal Control Principle Policy", etc., and amends the same from time to time.

The Company has also established the Finance and Property Department, the Enterprise Management Department, the Audit Department and the Disciplinary Inspection Supervision Department, 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規則，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》及《內部控制基本制度》等，並對相關規則辦法進行不時修訂。

本公司已設立了財務產權部、企業管理部、審計部和紀檢監察部，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 overall risk management system pilot construction has completed the establishment of "two systems, two handbooks, three databases and one report" (that is, the overall risk management measure and the internal information control basic system; the risk operation handbook and the internal control handbook; the risk information database, the risk case database and the risk index database; the internal control evaluation report), and has kept optimizing the applicable systems and handbooks, initially realizing the standardization and systematization of risk management and internal control.

Organizational construction: At the beginning of 2019, the overall risk management of the Group was formally transferred from the Financial Property Department of the Company to its Enterprise Management Department. The Group's overall risk management organization system reached every department horizontally and every affiliate vertically. The Board of Directors is the highest decision-making organization in respect of overall risk management. The Group has set up a steering group for the construction of the risk management system led by the general manager as the group leader and the heads of departments as members. The director of each department is responsible for organizing and carrying out daily work in respect of overall risk management. In addition, an overall risk management steering group led by the general manager as the group leader is established at every affiliate, clearly defining the management responsibilities at all levels.

本公司每個部門都能把有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「兩制、兩冊、三庫、一報告」(即全面風險管理辦法和內部控制基本製度、風險管理操作手冊和內部控制手冊、風險信息庫、風險案例庫和風險指標庫、內部控制評價報告)的編製，並對相關制度、手冊進行不斷優化，初步實現了風險管理和內部控制的標準化與體系化。

組織建設：2019年初，本集團的全面風險管理工作由本公司財務產權部正式轉至企業管理部。本集團的全面風險管理組織體系橫向到部門，縱向到附屬公司。董事會是全面風險管理的最高決策機構，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，各部門主任負責組織開展本部門全面風險管理日常工作；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 2019, 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 promote the enthusiasm of all staff to participate in risk management, the Group also fosters risk management culture by enhancing risk management training, and multi-channel and multi-media publicity.

In April 2019, the Company passed the acceptance by the Risk Management Acceptance Group of China Energy Group on the overall risk management system of the Group. In June 2019, the Group took three affiliates as pilots, carried out the evaluation of internal control by the way of independent implementation. The evaluation covered financial management, operation monitoring, compliance monitoring, risk management and other major aspects. The Board 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 will continue to monitor the risk management and internal control systems.

Management of Inside Information

In order to promote fairness, transparency, accountability and responsibility, which are the core principles of good corporate governance, the Company notifies the Stock Exchange and discloses to Shareholders and other holders of its listed securities of the Group's inside information in a timely manner pursuant to the Listing Rules and Part XIVA of the Securities and Futures Ordinance (Cap 571) (the "SFO").

工作實施：2019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。

為提升全員參與風險管理的積極性，本集團亦通過加大風險管理培訓和多渠道、多媒體宣貫，培育全員參與的風險管理文化。

本公司於2019年4月以優秀評分通過國家能源集團風險管理驗收小組對本集團全面風險管理體系的驗收。本公司於2019年6月通過自主實施的方式，對三家附屬公司開展內部控制評價工作，評價範圍涵蓋財務監控、運作監控、合規監控和風險管理等各項重大方面。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。

內幕消息管理

為推行良好公司管治的核心原則，即公正、透明、問責及負責，本公司會適時根據上市規則及《證券及期貨條例》(香港法例第571章)(「《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消息。

CORPORATE GOVERNANCE (CONTINUED)

企業管治(續)

In order to monitor and regulate potential insider trading activities, and to ensure the confidentiality of inside information, the Company has established a set of “Management Rules on Inside Information” in accordance with the Company Law of the PRC, the SFO, the Listing Rules and other relevant laws and regulations and the requirements of the articles of association of the Company. 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) 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 department of securities financing and legal affairs. 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” and has designated the department of securities financing and legal affairs to be responsible for the management of connected transactions. In order to ensure that the Company's connected transactions are carried out in accordance with applicable rules and system and that the aggregate transaction amounts do not exceed the annual caps, the Group has notified all subsidiaries and divisions regarding the applicable continuing connected transaction caps, allocated monitoring obligations to specific subsidiaries and divisions and required such subsidiaries or divisions to report to the senior management regarding the connected transactions. The Company provides regular training to the Company's internal staff in relation to connected transactions from time to time, and has designated specialized personnel to make every effort to ensure full compliance with the relevant Listing Rules.

為監管和規範潛在內幕交易行為，確保內幕消息保密工作，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本公司《公司章程》的規定，制定《內幕信息管理辦法》。內幕消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)負責內幕消息的判斷及披露工作，完善內幕消息知情人的登記管理，由各部門及附屬公司向證券融資與法律事務部報送可能涉及內幕消息的事項。一旦內幕消息觸及披露要求、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

本公司制定了《關連交易管理辦法》，以加強本公司的關連交易管理，並指定證券融資與法律事務部負責關連交易的管理工作。本集團已將適用的持續性關連交易上限通知所有附屬公司和部門，將監管職責分配到特定的附屬公司和部門，並要求各附屬公司和部門就關連交易向高級管理層進行報告，以確保本公司的關連交易按適用的規則和制度進行，以此保證交易總額不超過年度上限。本公司為內部員工不時提供關於關連交易的常規性培訓，並且已指定專門人員負責盡力保證全面遵守相關的上市規則。



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 2019 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 2019, 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 2019.

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 2019.

Material Legal Proceedings

For the six months ended 30 June 2019, 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 2019.

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2019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2019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2019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2019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。

重大法律程序

截至2019年6月30日6個月止，本公司並無涉及任何重大訴訟或仲裁。

中期股息

董事會建議不派發截至2019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 2019, 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 beneficial owner and controlled corporation. The percentage in H Shares was 22.0%, and the percentage in the total share capital was 4.75%. 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 HKSE 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.

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2019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)，為實益接有人及受控公司之權益，佔H股的比例為22.0%，佔股本總數的比例為4.75%。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。

Substantial Shareholders' Interests in the Shares

As at 30 June 2019, to the best knowledge of the Directors, the following persons (other than the Directors, Supervisors and senior management of the Company) 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):

主要股東於股份之權益

於2019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)於本公司股份或相關股份中擁有根據《證券及期貨條例》第XV部第2及3分部須向本公司披露之權益或淡倉(該表已根據中央結算系統持股記錄及本公司掌握最新情況更新)：

Name of Shareholders	Class of Share	Capacity	Number of Shares/ Underlying Shares Held 持有股份/ 相關股份數目 (Share) (股)	Percentage in the Relevant Class of Share Capital ⁽¹⁾ 佔有關股本類別 之百分比 ⁽¹⁾ %	Percentage in the Total Share Capital ⁽¹⁾ 佔股本總數 之百分比 ⁽¹⁾ %
China Energy ⁽²⁾ 國家能源集團 ⁽²⁾	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

OTHER INFORMATION (CONTINUED)

其他資料(續)

Name of Shareholders	Class of Share	Capacity	Number of Shares/ Underlying Shares Held	Percentage in the Relevant Class of Share Capital ⁽¹⁾	Percentage in the Total Share Capital ⁽¹⁾
股東姓名／名稱	股份類別	身份	持有股份／ 相關股份數目 (Share) (股)	佔有關股本類別 之百分比 ⁽¹⁾ %	佔股本總數 之百分比 ⁽¹⁾ %
SAIF IV GP Capital Ltd.	H shares H股	Interests of beneficial owner and controlled corporation 實益擁有人及受控公司之權益	288,200,000 ⁽³⁾ (Long position) (好倉)	22.00	4.75
SAIF IV GP LP	H shares H股	Interests of beneficial owner and controlled corporation 實益擁有人及受控公司之權益	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
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 國家電網國際發展有限公司	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 2019. As at 30 June 2019, 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 China Energy consolidated Guodian Group by absorption, since the completion of the consolidation, shareholding or interest of the subsidiaries and branches of Guodian Group as well as the subordinate enterprises held by Guodian Group would be vested in China Energy. On 30 July 2019, the Company received a Confirmation on Share Transfer from China Securities Depository & Clearing Co., Ltd, according to which, an aggregate of 2,377,500,000 domestic shares in the Company directly held by Guodian Group were transferred to China Energy on 30 July 2019. 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2019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2019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) 由於國家能源集團吸收合併國電集團，自合併的交割起，國電集團的下屬分支機構及國電集團持有的下屬企業股權或權益亦歸屬於國家能源集團。本公司於2019年7月30日收到中國證券登記結算有限責任公司出具的《過戶登記確認書》，國電集團直接持有的本公司2,377,500,000股內資股，已於2019年7月30日過戶登記至國家能源集團名下。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) Mr. YAN Andrew Y. holds 22.00% of the H shares indirectly via SAIF Partners IV L. P. through SAIF IV GP Capital Ltd. and SAIF IV GP LP. Mr. YAN Andrew Y. is the controlling shareholder of SAIF IV GP Capital Ltd., SAIF IV GP LP, and SAIF Partners IV L.P.. SAIF IV GP Capital Ltd. is the controlling shareholder of SAIF IV GP LP. SAIF IV GP LP is the controlling shareholder of SAIF Partners IV L.P.. SAIF Partners IV L.P. has 22.00% of the H shares. Therefore, Mr. YAN Andrew Y., SAIF IV GP Capital Ltd., and SAIF IV GP LP are deemed to be interested in the H shares held by SAIF Partners IV L.P.

(3) 閻焱先生透過SAIF IV GP Capital Ltd.及SAIF IV GP LP經SAIF Partners IV L.P.間接持有22.00%的H股。閻焱先生是SAIF IV GP Capital Ltd.、SAIF IV GP LP以及SAIF Partners IV L.P.的控股股東。SAIF IV GP Capital Ltd.是SAIF IV GP LP的控股股東。SAIF IV GP LP是SAIF Partners IV L.P.的控股股東。SAIF Partners IV L.P.擁有22.00%的H股。因此，閻焱先生、SAIF IV GP Capital Ltd.以及SAIF IV GP LP被視為擁有SAIF Partners IV L.P.所持有H股的權益。

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, regards legal reviews as the core, establishes a legal review mechanism in respect of major decisions, 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 Party Committee Central Group of the Company, 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 2019, the Group had a total of 6,137 employees. The remunerations of employees of the Group 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，建立對重大決策、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黨委中心組學習內容，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2019年6月30日，本集團共聘用6,137名僱員。本集團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, Worldwide Sharing" 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

Focusing on the power generation industry and adhering to the industrial development direction of energy efficiency and clean use, the Group has formed two major core business categories, i. e., environmental protection and energy conservation solutions, renewable energy equipment manufacturing and services. Its business system has made outstanding contributions to the development of green energy, with a positive impact on the environment.

At present, the Group is China's largest conventional coal-fired power plant energy conservation and environmental protection service provider and leading manufacturer of renewable energy system and equipment, with the aim to promote the development of the industry with leading technology. During its process of rapid development, the Group has cultivated a series of well-known brands such as Longyuan Environmental, Longyuan Technology, United Power, etc..

1.1.1 Environmental Protection and Energy Conservation Solutions

Environmental Protection Business

Desulfurization and Denitrification: In the first half of 2019, 15 desulphurization units of Longyuan Environmental were put into production, including 10 units with a total capacity of 3,765MW were newly built, 5 units with a total capacity of 1,225MW were reconstructed; and 11 denitrification units were put into production, including 5 units with a total capacity of 2,060MW were newly built, and 6 units with a total capacity of 1,555MW were reconstructed. The accumulatively installed capacity of the desulfurization units input by Longyuan Environmental in thermal power plants was 258 million KW, and the installed capacity of flue gas denitrification units was 164 million KW.

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

本集團圍繞發電主業，堅持能源高效、清潔利用的產業發展方向，形成了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，業務體系對環境產生積極影響，為發展綠色能源做出了傑出貢獻。

目前，本集團是中國最大的常規燃煤電廠節能環保服務商和領先的可再生能源系統服務及設備製造商，以領先技術推動行業發展。本集團在快速發展中培育了龍源環保、龍源技術、聯合動力等一批知名品牌。

1.1.1 環保與節能解決方案

環保業務

脫硫脫硝：2019年上半年，龍源環保脫硫裝置共投產15台，其中新建機組10台，容量共3,765MW，技術改造機組5台，容量共1,225MW；脫硝裝置共投產11台，其中新建機組5台，容量共2,060MW，技術改造機組6台，容量共1,555MW。龍源環保歷史累計投運火電廠脫硫裝置裝機容量2.58億千瓦，煙氣脫硝裝置裝機容量1.64億千瓦。

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

As at 30 June, 2019, the total installed capacity of the desulfurization concession projects of Longyuan Environmental was 17,210 MW; the total installed capacity of the desulfurization concession and operational maintenance projects was 35,060 MW and the total installed capacity of Denitrification concession projects was 12,540 MW. Calculated by the 2,254 hours operation of the thermal power concession projects of the subsidiaries in the first half of 2019, the emission reduction of SO₂ by the concession desulphurization projects reached 189,600t in half a year; 559,200t SO₂ by the concession and operational maintenance projects; and 22,800t NO_x by the concession Denitrification projects.

Low NO_x combustion: In the first half of 2019, 7 boiler combustion nitrogen reduction devices were newly built by Longyuan Technology, with its total accumulative installed capacity of the devices put into operation up to 100 million KW. Calculated by the national average running time of thermal power which is about 4,400 hours, the NO_x emission reduced in the first half of 2019 was about 355,000t.

Sewage treatment: As at 30 June, 2019, there were 23 sewage treatment plants (stations) operated by Lucency, involving the operation of sewage treatment, reclaimed water and water supply, and with the treatment capacity of 1,450,000t per day. In the first half of 2019, the sewage treatment plants treated accumulatively 110,430,000t sewage (including reclaimed water and water supply) and reduced accumulatively 32,200t COD (chemical oxygen demand) emission.

Business of Energy Conservation Solutions

In the first half of 2019, Longyuan Energy Conservation newly entered into 4 contracts, saving more than 30,000t standard coal. The oil-saving ignition products of Longyuan Technology kept leading in the industry and it was the only enterprise from China with offshore plasma ignition business. Longyuan Technology continued to carry out small-scale plasma ignition system design optimization, and constantly reduced system cost and enhanced product competitiveness. Its plasma ignition technology was successfully applied to 851 units, with an installed capacity of 370 million KW, and the global market share is around 90%, saving fuel by more than 10 million tons in total.

截至2019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17,210MW，所屬脫硫特許經營加運營維護項目共35,060MW，所屬脫硝特許經營項目的總裝機容量為12,540MW。按附屬公司火電特許項目2019年上半年運行2,254小時計算，特許脫硫項目半年減排二氧化硫量達18.96萬噸，特許經營與運維項目半年減排二氧化硫量達55.92萬噸，特許脫硝項目半年減排氮氧化物2.28萬噸。

低氮燃燒：2019年上半年，龍源技術新建鍋爐燃燒降氮裝置7台爐，歷史累計投運裝機容量上億千瓦。按照全國火電平均運行小時數約4,400小時計算，2019年上半年減排氮氧化物約35.50萬噸。

污水處理：截至2019年6月30日，朗新明運營的污水處理廠(站)有23座，涉及污水、中水、供水運營業務，處理能力145萬噸/天。污水處理廠2019年上半年處理污水(含中水、供水)11,043萬噸，COD(化學需氧量)半年減排量3.22萬噸。

節能解決方案業務

2019年上半年，龍源節能新簽合同4項，新增節約標煤約3萬噸。龍源技術節油點火產品繼續保持行業領先地位，是行業內唯一擁有海外等離子體點火業績的企業。該公司持續進行小型化等離子體點火系統設計優化，不斷降低系統成本，提升產品競爭力。等離子點火技術成功應用於851台設備，裝機容量達3.7億千瓦，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 Services

WTG Products and Services

In the first half of 2019, United Power produced 167 wind turbines (including 162x 2MW wind turbines, 5x 3MW wind turbines, with a total capacity of 339MW). In total, United Power produced and sold 11,400 wind turbines with a total capacity of 19,000 MW. Calculated by the annual utilization time of 2,100 hours, for the first half of 2019, United Power saved approximately 6,164,500t standard coal and 16,837,800t CO₂, and reduced the emission of approximately 5,200t SO₂, 5,000t NO_x and 1,200t soot. In the first half of 2019, Chifeng Wind Power, a branch of the Group, accumulatively generated 162,746,500 kwh wind power and PV power, equivalent to reduction of the emission of 136,900t CO₂¹.

1.1.3 Internationalized Development

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 and Turkey, etc.. The wind turbine equipment of the company has entered the markets of the United States and South Africa. Its seawater desulphurization devices have entered the markets of Sri Lanka, Philippines, Bangladesh, Cambodia and Indonesia, and its environmental protection devices have entered the markets of Vietnam and Indonesia. Its automatic control systems and engineering services have entered the markets of India, Indonesia and Africa. Its engineering services and water treatment have entered the market in Bangladesh.

1.1.2 可再生能源製造及服務

風機產品及服務業務

2019年上半年，聯合動力生產風機167台(其中2MW風機162台，3MW風機5台，合計339MW)。聯合動力累計產銷風機1.14萬台，合計19,000MW，按年利用2,100小時考慮，上半年節約標煤約616.45萬噸，減排二氧化碳約1,683.78萬噸，減排二氧化硫0.52萬噸，減排氮氧化物0.50萬噸，減排煙塵0.12萬噸。本集團分公司赤峰風電上半年累計風力和光伏發電16,274.65萬千瓦時，相當於減排溫室氣體二氧化碳13.69萬噸¹。

1.1.3 國際化發展

本集團憑藉著名的品牌效應、科學的項目管理及良好的品質信譽穩步邁向國際市場。等離子體點火裝置進入韓國、俄羅斯、印尼及土耳其等市場。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，環保設備進入越南及印尼市場。自動化控制系統及工程服務進入印度、印尼及非洲市場。工程服務和水處理進入孟加拉市場。

¹ Publicly available and up-to-date authoritative data: According to "the Annual Development Report of the Chinese Electric Power Industry (2019)" by CEC, in 2018, the power supply standard coal consumption of the thermal power plants of 6,000kW and above around China was 307.6 g/kWh; and the emissions of carbon dioxide, soot, SO₂ and NO_x of unit thermal power generation were 841 g/kWh, 0.04 g/kWh, 0.20 g/kWh and 0.19 g/kWh respectively.

¹ 可公開獲取的最新權威資料：中電聯《中國電力行業年度發展報告2019》，2018年全國6,000千瓦及以上火電廠供電標準煤耗307.6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841、0.04、0.20和0.19克/千瓦時。

1.2 Saving Energy and Reducing Consumption 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 PRC”, “the Energy Conservation Law of the PRC” and other applicable laws and regulations, and requires each of 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 basis of their own business characteristics. Under the call of the Group, United Power formulated “the Management System of Energy Conservation and Consumption Reduction”, Chifeng Wind Power formulated “the Management System of the Saving Use of Resources and Energy”, covering power saving, fuel saving, water saving and other management measures. According to the Integrated Health, Safety and Environment Management System (the “**HSE Management System**”), the Group required each subsidiary of implement energy conservation and consumption reduction management. 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 to require each subsidiary of implement energy conservation and consumption reduction management.

1.2.1 Energy Management

The Group’s energy consumption in the production and operation processes mainly includes: electricity, gasoline, diesel and natural gas, etc. Power consumption mainly comes from the production processes of wind turbines, blades, desulfurization catalysts and other products; debugging 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. The gasoline consumption mainly comes from the use and maintenance of commercial vehicles and equipment inspection and repair vehicles. Diesel consumption mainly comes from the product transport vehicles for wind turbines, blades, desulfurization catalysts and so on, and from the running of power station diesel generators. Natural gas consumption mainly comes from the blade production workshop heating and paint baking, as well as the making of daily food by the canteen of the company.

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。在本集團的號召下，聯合動力制定了《節能降耗管理制度》，赤峰風電制訂了《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要求實施節能降耗管理。

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**”) required each energy using department to take records of the consumption of electricity and steam, and submit the statistics after summarizing in the form of Daily Production Briefing. For departments with abnormal energy consumption, the production safety department would analyze the problem and report the analysis result. Meanwhile, according to the production situation of every project, Longyuan Catalyst would take records of energy consumption of each project and then the financial department would carry on cost accounting and analysis of energy consumption.

1.2.2 Water Resource Management

The water consumed by the Group and every subsidiary thereto 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, etc. The Group has not identified significant risks of water shortages in term of seeking suitable sources of water.

According to the requirements of the Group’s water resource management system, the office of each subsidiary is responsible for the water resource management. In respect of water conservation, the Group mainly takes the following measures: to train and publicize to raise employees’ awareness of water conservation; 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**」)要求各能源使用部門每天統計電和蒸汽的消耗量，通過「生產每日簡報」匯總後上報，對能耗出現異常的部門，由安全生產部分析、予以解決並上報。同時，龍源催化劑根據項目生產情況統計每個項目的生產能耗，由財務部對項目能耗進行成本核算與分析。

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。在尋求適用水源方面，本集團尚未發現水資源短缺的重大風險。

根據本集團水資源管理制度的要求，各附屬公司辦公室負責其水資源管理工作。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、管道閥門及沖水閥等供水器具。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

1.2.3 Use of Packaging Materials

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

The subsidiaries of the Group have established relevant management rules and regulations in the management of packaging materials. For example, United Power has developed "the Regulations of Packaging Materials", Longyuan Electrical has developed "the Regulations of the Use of Packages", etc., including procurement management, goods warehousing acceptance, storage and keeping, material requisition and replacement of old production consumables with the new ones.

1.3 Being Clean and Environment-friendly, Reducing Pollutant Emission

The Group strictly complies with "the Environmental Protection Law of the PRC", "the Law on the Prevention and Control of Environmental Pollution by Solid Wastes of the PRC", "the Air Pollution Prevention and Control Law of the PRC". 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 2019, there were no environmental violations that had a significant impact on the Group.

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..

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》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。

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，2019年上半年，未發生對本集團有重大影響的環境違規事件。

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。



ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

In terms of the above hazardous waste, each subsidiary of the Group established relevant management rules and regulations, for example, “the Measures of the Management and Control of Waste” established by Longyuan Catalyst, “the Measures of Solid Waste” established by Guodian Zhishen, “the Regulations for the Environment-friendly Management of Waste Mineral Oil” established by Chifeng Wind Power, etc.. The relevant departments of each subsidiary are responsible for waste management.

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 specially-assigned 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%.

1.3.3 Exhaust Gas Management

The Group produces a small amount of exhaust gas during its operation, including SO₂, NO_x and particulate matters. Among them, SO₂ mainly comes from the exhaust emission of the Company's vehicles; nitrogen oxide mainly comes from the production emission of United Power, excluding vehicle exhaust emission; particles mainly come from the production emission of United Power and Longyuan Catalyst, excluding vehicle exhaust emission.

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《廢棄物管理控制辦法》，國電智深制訂的《固體廢棄物管理辦法》，赤峰風電編製的《廢礦物油環保管理制度》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 廢氣管理

本集團在運營過程中會產生少量的廢氣，包括：二氧化硫、氮氧化物和顆粒物。其中，二氧化硫主要來自於公司車輛使用的尾氣排放；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；顆粒物主要來自於聯合動力和龍源催化劑生產排放，不包含車輛尾氣排放。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

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 nitrogen oxide. 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 matter. After being collected and treated properly, exhaust gas is emitted into atmosphere when meets "the Emission Standard of Air Pollutants for Industrial Kiln and Furnace" (DB13/1640-2012).

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 33 HR rules and regulations such as "the Measures Governing the Use of HR (Tentative)", etc. In the first half of 2019, the HR department of the Company revised 7 rules and regulations including "the Interim Measures Governing Total Payroll" and "the Measures Governing Education and Training", etc.

As at the end of 30 June, 2019, the Group had in total 6,137 employees, including 2,382 workers, 1,454 technicians and 2,309 other employees; or including 4,382 male employees, accounting for 71.40% of the total, and 1,755 female employees, accounting for 28.60% of the total. 24.2% of the management were female officers, with the proportion similar to that of female employees to the total. There were 3,345 employees aged 35 and below, accounting for 54.51% of the total; 1,744 employees aged 36-45, accounting for 28.42%; 957 employees aged 46-55, accounting for 15.59%; 91 employees aged 56 and above, accounting for 1.48%. The age structure of employees was reasonable. Except one employee working in Hong Kong, the other 6,136 were working in Mainland China.

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《用人用工管理辦法(試行)》等人力資源制度33項。2019年上半年，本公司人力資源部修訂了《工資總額管理暫行辦法》及《教育培訓管理辦法》等7項制度。

截至2019年6月30日，本集團共有員工6,137人，其中，工人2,382人，技術人員1,454人，其他僱員2,309人；男性員工4,382人，佔員工總數的71.40%，女性員工1,755人，佔28.60%；管理層中，女性約佔24.2%，與員工比例相近；35歲及以下員工3,345人，佔員工總數的54.51%，36-45歲員工1,744人，佔28.42%，46-55歲員工957人，佔15.59%，56歲以上員工91人，佔1.48%，年齡構成比較合理；除1位員工在香港辦公室外，其餘6,136名員工均在中國大陸。



ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

Employment according to Law

The Group insists on the principle of employment according to law. In accordance with “the Labor Law of the PRC”, “the Labor Contract Law of the PRC” and other applicable laws and regulations, the Group has strictly managed employment and established “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 workers and forced workers, 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 Forbidding the Use of Child Workers”, effectively avoiding child workers; “the 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 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 workers. 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 2019, there were no labor disputes caused by violation of laws and regulations.

Remuneration Management

In order to adapt to the requirements of the transformation and development, the Group has established and improved the gross pay 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 “the Interim Measures Governing Total Payroll” and “the Interim Measures Governing the Annual Payroll for the Officers of the Enterprise”. The Group has established the remuneration system of wage income and performance evaluation, and titled its advantageous resources to core talents, fully reflecting the value of talents and exploring such market incentives as professional managers, post dividends and the transformation of scientific and technological achievements.

依法僱傭

本集團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，本集團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信息，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，本集團倡導平等用工政策，為不同國籍、種族、性別、宗教信仰和文化背景的員工提供平等的就業機會和勞動保障。2019年上半年未發生因違法違規引起的勞動糾紛。

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》。建立工資收入與績效考核相聯動的薪酬體系，集中企業優勢資源向核心人才傾斜，充分體現人才價值，探索了職業經理人、崗位分紅、科技成果轉化等市場化激勵手段。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

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. The Group schedules the working hours and leaves of the staff in accordance with the applicable national regulations, and implements the system of paid annual leave. In the first half of 2019, no social security violations and defaults of payment occurred.

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 the relevant subsidiaries set up occupational disease prevention and control leading groups to supervise the implementation of occupational disease prevention and control measures, prepare effective personal protection equipment (PPE) and supervise their use of PPE by workers in work. The Group has established the before-work and after-work occupational disease notification system, and made full use of occupational disease notification card 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.

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。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。2019年上半年未發生任何社會保險違規及欠繳現象。

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、噪聲、電焊煙塵及有毒有害化學物質等，各相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。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。



ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

Safety Guarantee

Until now, the Group has worked out 34 rules and regulations in respect of work safety, including “the Regulations for the Assessment of the Safety Management of Engineering Projects”, “the Work Safety Responsibility System” and “the 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 2019, the Company carried out three major safety inspections, i. e. spring safety inspection, summer safety inspection and Safety Month, involving seven production projects, eight infrastructure projects and six manufacturing projects. Moreover, the Group totally checked 574 hidden safety hazards and eliminated such safety hazards in time. In the first half of 2019, the Company held twice meetings of the Safety Committee in total.

In the first half of 2019, 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 change 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.

The Group pays attention to improving its democratic management system. In June 2019, the Group completed the reelection of the members of the trade union to form the third term of trade union committee. The Group furthers the “People-benefit Project”. In the first half of 2019, it issued consolation products for more than 920 person-times such as annual park admission card, movie ticket, the consolation for May Day, Tomb-sweeping Day, and Dragon Boat Festival, etc.. In addition, the Group guided its subsidiaries to establish special funds to help difficult workers and staff. Throughout the first half of 2019, more than RMB300,000 relief funds were allocated in total.

安全保障

本集團編製有34項安全生產相關制度，包括《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。

2019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7個生產項目、8個基建項目、6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。本公司上半年共召開2次安全委員會會議。

2019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。

本集團注重健全完善企業民主管理體系，2019年6月完成了工會換屆，產生第三屆工會委員會。深化「惠民工程」，2019年上半年，為本公司職工發放公園年卡、電影卡、五一勞動節、清明節、端午節等節日慰問品共計920餘人次。同時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。

ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

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. In the first half of 2019, the Group jointly organized the second “Kehuan Cup” badminton competition and table tennis competition with its subsidiaries, which were in the deep favor of the staff. 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 2,000 young people, which have attracted the attention of China Energy, the Youth League Committee of Central Enterprises and all social circles.

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。上半年本集團與各附屬公司工會聯合舉辦了第二屆「科環杯」羽毛球、乒乓球比賽，深受職工歡迎。本集團承辦的「浪漫國能」交友平台，建設單身青年專屬應用程序，為2,000餘名青年搭建交流平台，受到國家能源集團、中央企業團工委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 2019, 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.

In order to standardize the professional behavior of employees and prevent the occurrence of corruption, the Group formulated and issued the Work Task Book Entitled “the Construction and Promotion of the Three-Non-corruption Mechanism for 2019”, defining 59 annual tasks in seven aspects and further strengthening the implementation of responsibilities. The Group carried out solid self-rectification and self-correction of the “Four Styles” phenomenon and the “Office Disease” problem, implemented the spirit of the Eight Rules of the Central Committee of CPC and the special inspections such as the “Strict Inspection on Six Items”, etc., and firmly avoided the reoccurrence of such problems. The Group organized special control over leading cadres’ using special resources for personal benefit, and resolutely put an end to the use of valuable and special resources for power rent seeking, transmission of interest, and use of power for personal benefit.

3 創新經營、高質服務

3.1 依法依規反腐倡廉

2019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。

為規範員工的職業行為，預防腐敗發生，制定印發《2019年「三不腐機制建設提升年」工作任務書》，明確7個方面59項年度任務，進一步強化責任落實。紮實開展整治「四風」現象和「機關病」問題自查自糾、落實中央八項規定精神暨「六項嚴查」等專項檢查，堅決防止反彈回潮。組織開展領導幹部利用特殊資源謀取私利專項治理，堅決杜絕利用名貴特產類特殊資源搞權力尋租、利益輸送、以權謀私。



ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

The Group strictly implemented the “four-in-one” 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 seeing feature films, “alerting” the staff via case analysis, asking the staff to “think” clean governance by writing down experience, “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 2019, 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.

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, arousing the enthusiasm of the staff in invention and creation while protecting the technology. In the first half of 2019, the Group obtained a total of 113 patents, including 22 national invention patents. **Achievement transformation:** As at 30 June, 2019, revolving around the core business, the Group has created a total of 86 mature technologies. In the recent three years, the industrialization of its over 50 new technologies has realized operating revenues of more than RMB10 billion, and scientific and technological innovation has provided the source and motive force for the sustainable development of the Group.

本集團嚴格執行廉政考察、廉政回函、廉政考試、廉政談話的「四位一體」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。2019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。

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議，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。2019年上半年本集團共獲得專利113項，其中國家發明專利22項。成果轉化：截至2019年6月30日，本集團圍繞核心業務共形成了86項成熟技術。近三年來形成的50餘項新技術產業化實現營業收入超過人民幣百億元，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

In the first half of 2019, the Group strictly implemented the applicable national laws and regulations such as “the Law of the PRC on Tenders and Bids”, etc. and the applicable regulations of China Energy. The Group actively implemented the requirements of the new procurement management and control system of China Energy to ensure the smooth implementation of procurement in accordance with the new system and new process. At the same time, according to its actual conditions, the Group compiled and revised its original systems, formulated 2, revised 4, renewed 4 of China Energy, abolished 1, further strengthening the procurement plan management and supplier development. The Group utilizes the unified procurement platform of China Energy and adheres to the “four unified” requirements for Group procurement: unified planning, unified standard, unified process and unified platform. The Group has a professional agency company responsible for the organization of bid evaluation committee and the evaluation group, and implements the relevant confidentiality discipline and application challenge regulations of China Energy; in addition, China Energy or the Group dispatches relevant personnel to supervise procurement. Each subsidiary plans the procurement ahead of time and completes the annual procurement plan to improve the planning of procurement. 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, as well as local governments with municipal water operation requirements. The Group packs and marks products strictly according to the applicable national standards; and it strictly observes “the Advertising Law of the PRC” in publicity in order to ensure authentic contents and protect the legal rights and interests of customers. If necessary, both parties shall abide by the confidentiality provisions as stipulated in the contract. For long time, the Group has maintained a good relationship with customers, and its customer satisfaction has kept improving. In the first half of 2019, there was no violations that had a significant impact on the Group.

4. 攜手共贏及奉獻社會

4.1 供應商合作與管理

2019年上半年，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公司相關規定。積極落實國家能源集團新採購管控體系要求，確保採購工作按照新制度新流程順利執行。同時結合本集團自身實際情況對原有制度進行了修編，編製2項，修訂4項，延用國家能源集團4項，廢止1項，進一步強化採購計劃管理和供應商開發。利用國家能源集團的統一採購平台，堅持集團採購工作的「四個統一」要求：統一計劃、統一標準、統一流程、統一平台。由專業代理公司負責評標委員會、評審小組成員組建，執行國家能源集團相關保密紀律和申請迴避規定，並按規定由國家能源集團或本集團派出採購監督。附屬公司對採購工作提前謀劃，完成年度採購方案提高採購工作計劃性。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。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。2019年上半年，未發生對本集團有重大影響的違規事件。



ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT (CONTINUED)

環境、社會及管治報告(續)

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.

At present, the “Green Ribbon” Young Volunteers Association established by the Group has created three major voluntary service brands, that is, “Energy Knowledge into Campus”, “Reunite Love, Seed Love” and “Green Ribbon Superobject Everywhere”. In the first half of 2019, the “Green Ribbon” Young Volunteers Association and Youth League Committee of Longyuan Environmental jointly went to the poor mountain areas, bringing study and daily necessities to 100 poor children in local kindergartens, and donated goods valued at RMB30,000. In the first half year, the “Green Ribbon” Volunteers Association carried out more than 40 hours of activities nationwide.

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。

本集團成立的「綠絲帶」青年志願者協會，目前已形成「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。2019年上半年，「綠絲帶」志願者協會與龍源環保團委聯合深入貧困山區，為當地幼兒園100名貧困兒童帶去了學習及生活用品，捐贈物資價值人民幣3萬元。上半年，「綠絲帶」志願者協會在全國範圍開展活動總計40個小時以上。

INDEPENDENT REVIEW REPORT

審閱報告



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

安永會計師事務所
香港中環添美道1號
中信大廈22樓

Tel電話：+852 2846 9888
Fax傳真：+852 2868 4432
ey.com

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

(Incorporated 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 63 to 117, 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 2019 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 other 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63頁至第117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2019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》要求符合其相關規定和國際會計準則理事會頒佈的《國際會計準則》第34號「中期財務報告」的規定編製中期財務報告。董事須負責根據《國際會計準則》第34號編製及列報中期財務資料。我們的責任是根據我們的審閱對中期財務資料作出結論，並按照我們雙方所協議的業務條款，僅向全體董事會報告我們的結論。除此以外，我們的報告書不可用作其他用途。我們概不就本報告書的內容，對任何其他人士負責或承擔法律責任。

審閱範圍

我們已根據香港會計師公會頒佈的《香港審閱工作準則》第2410號「獨立核數師對中期財務資料的審閱」進行審閱。中期財務資料審閱工作包括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》進行審核的範圍為小，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。因此我們不會發表任何審核意見。



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 2019

結論

根據我們的審閱工作，我們並沒有注意到任何事項使我們相信於2019年6月30日的中期財務資料在所有重大方面沒有按照《國際會計準則》第34號「中期財務報告」的規定編製。

安永會計師事務所

執業會計師

香港
2019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 2019 截至2019年6月30日止6個月期間
(Amounts expressed in Renminbi ("RMB")) (以人民幣列示)

		Six months ended 30 June 截至6月30日止6個月	
		2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 RMB'000 人民幣千元 (Unaudited) (未經審計)
	<i>Notes</i> 附註		
Continuing operations	持續經營業務		
Revenue	收入	4,090,305	4,626,865
Cost of sales	銷售成本	(3,146,019)	(3,631,377)
Gross profit	毛利	944,286	995,488
Other revenue	其他收入	5,101,903	117,567
Other net income	其他收益淨額	5,4,810	11,229
Selling and distribution expenses	銷售及分銷開支	(395,416)	(316,786)
Administrative expenses	行政開支	(544,182)	(674,452)
Profit from operations	經營利潤	111,401	133,046
Finance costs	財務成本	6,(281,100)	(261,659)
Share of profits less losses of associates	應佔聯營公司利潤減虧損	16,671	32,129
Loss before taxation from continuing operations	來自持續經營業務之稅前虧損	7, (153,028)	(96,484)
Income tax	所得稅	8, (157,230)	25,489
Loss for the period from continuing operations	本期來自持續經營業務之虧損	(310,258)	(70,995)
Discontinued operation	已終止經營業務		
Loss for the period from a discontinued operation	本期來自已終止經營業務之虧損	9,-	(849)
Loss for the period	本期虧損	(310,258)	(71,844)

The notes on pages 70 to 117 form part of this interim financial report.

第70頁至第117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 (CONTINUED)

簡要中期合併損益表(續)

For the six months ended 30 June 2019 截至2019年6月30日止6個月期間
(Amounts expressed in RMB) (以人民幣列示)

		Six months ended 30 June 截至6月30日止6個月	
		2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 <i>RMB'000</i> 人民幣千元 (Unaudited) (未經審計)
		<i>Notes</i> 附註	
Attributable to:	歸屬於：		
Equity shareholders of the Company	本公司權益股東	(198,862)	(56,015)
Non-controlling interests	非控股權益	(111,396)	(15,829)
Loss for the period	本期虧損	(310,258)	(71,844)
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	
- continuing and discontinued operations	- 持續經營業務和 已終止經營業務	(3.28)	(0.92)
- continuing operations	- 持續經營業務	(3.28)	(0.91)
- discontinued operation	- 已終止經營業務	-	(0.01)

The notes on pages 70 to 117 form part of this interim financial report.

第70頁至第117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 2019 截至2019年6月30日止6個月期間
(Amounts expressed in RMB) (以人民幣列示)

		Six months ended 30 June	
		截至6月30日止6個月	
		2019	2018
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Loss for the period	本期虧損	(310,258)	(71,844)
Other comprehensive income for the period (after tax and reclassification adjustments):	本期其他綜合收益(稅後及重新分類調整後)		
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:	– 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	305,138	(8,893)
– income tax effect	– 所得稅影響	(68,792)	–
Items that may be reclassified subsequently to profit or loss:	其後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	34	59
Other comprehensive income for the period	本期其他綜合收益	236,380	(8,834)
Total comprehensive income for the period	本期綜合收益總額	(73,878)	(80,678)
Attributable to:	歸屬於：		
Equity shareholders of the Company	本公司權益股東	37,518	(64,849)
Non-controlling interests	非控股權益	(111,396)	(15,829)
Total comprehensive income for the period	本期綜合收益總額	(73,878)	(80,678)

The notes on pages 70 to 117 form part of this interim financial report.

第70頁至第117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 2019 2019年6月30日

(Amounts expressed in RMB) (以人民幣列示)

			At 30	At 31
			June 2019	December 2018
			於2019年	於2018年
			6月30日	12月31日
			RMB'000	RMB'000
		<i>Notes</i>	人民幣千元	人民幣千元
		<i>附註</i>	(Unaudited)	(Note)
			(未經審計)	(附註)
Non-current assets	非流動資產			
Property, plant and equipment	物業、廠房及設備	11	4,545,134	4,250,821
Investment properties	投資性物業		222,501	226,281
Lease prepayments	預付土地租賃款		-	302,033
Intangible assets	無形資產		1,172,349	1,177,482
Goodwill	商譽		57,591	57,591
Interests in associates	對聯營公司的投資		413,353	396,682
Other equity investments	其他權益工具		1,163,553	858,415
Other non-current assets	其他非流動資產	12	3,483,759	3,353,611
Deferred tax assets	遞延所得稅資產		774,990	911,188
Total non-current assets	非流動資產總額		11,833,230	11,534,104
Current assets	流動資產			
Inventories	存貨		3,832,833	3,017,407
Contract assets	合同資產		2,148,275	2,090,735
Trade and bills receivables	應收賬款及票據	13	10,798,393	11,915,446
Deposits, prepayments and other receivables	按金、預付款項及其他應收款項		1,836,406	1,700,827
Tax recoverable	可收回稅項		235,890	176,299
Financial assets at fair value through profit or loss	以公允價值計量且其變動計入當期損益的金融資產		141,452	-
Restricted deposits	受限制存款		353,170	274,830
Cash at bank and in hand	銀行存款及庫存現金	14	2,378,155	3,436,459
Assets held for sale	持有待售資產		-	11,307
Total current assets	流動資產總額		21,724,574	22,623,310
Current liabilities	流動負債			
Borrowings	借款	15	7,554,415	8,035,414
Trade and bills payables	應付賬款及票據	16	9,223,271	9,770,747
Other payables	其他應付款項		1,409,928	1,600,928
Contract liabilities	合同負債		1,916,417	1,608,155
Income tax payable	應付所得稅		19,747	48,565
Provision for warranty	質保金撥備		365,216	92,597
Total current liabilities	流動負債總額		20,488,994	21,156,406

Note: Certain comparative numbers have been reclassified to conform with current period's presentation.

附註：為與本期列報一致，對部分比較數據進行重分類。

The notes on pages 70 to 117 form part of this interim financial report.

第70頁至第117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 2019 2019年6月30日
(Amounts expressed in RMB) (以人民幣列示)

			At 30 June 2019 於2019年 6月30日 RMB'000 人民幣千元 (Unaudited) (未經審計)	At 31 December 2018 於2018年 12月31日 RMB'000 人民幣千元 (Note) (附註)
Net current assets	流動資產淨額		1,235,580	1,466,904
Total assets less current liabilities	總資產減流動負債		13,068,810	13,001,008
Non-current liabilities	非流動負債			
Borrowings	借款	15	4,067,497	3,693,318
Deferred income	遞延收益		318,252	318,933
Deferred tax liabilities	遞延所得稅負債		214,274	153,949
Lease liabilities	租賃負債		41,836	-
Provision for warranty	質保金撥備		244,500	574,744
Other non-current liabilities	其他非流動負債		509,751	516,892
Total non-current liabilities	非流動負債總額		5,396,110	5,257,836
NET ASSETS	資產淨額		7,672,700	7,743,172
CAPITAL AND RESERVES	資本及儲備			
Share capital	股本		6,063,770	6,063,770
Reserves	儲備		(1,256,768)	(1,294,286)
Total equity attributable to equity shareholders of the Company	歸屬於本公司權益股東的權益總額		4,807,002	4,769,484
Non-controlling interests	非控股權益		2,865,698	2,973,688
TOTAL EQUITY	權益總額		7,672,700	7,743,172

Note: Certain comparative numbers have been reclassified to conform with current period's presentation.

附註：為與本期列報一致，對部分比較數據進行重分類。

Approved and authorised for issue by the Board of Directors on 28 August 2019.

董事會於2019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 70 to 117 form part of this interim financial report.

第70頁至第117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 2019 截至2019年6月30日止6個月期間
(Amounts expressed in RMB) (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	(不重新計入)	累計虧損	小計	非控股權益	權益總額
		RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000
		人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)
Balance at 31 December 2018 and 1 January 2019	2018年12月31日和 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 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

		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	(不重新計入)	累計虧損	小計	非控股權益	權益總額
		RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000
		人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)
Balance at 1 January 2018	2018年1月1日結餘	6,063,770	1,053,550	129,332	995	11,482	(2,511,059)	4,748,070	3,040,445	7,788,515
Changes in equity for the six months ended 30 June 2018:	截止2018年6月30日止6個月 權益變動：									
Loss for the period	本期虧損	-	-	-	-	-	(56,015)	(56,015)	(15,829)	(71,844)
Other comprehensive income	其他綜合收益	-	-	-	59	(8,893)	-	(8,834)	-	(8,834)
Total comprehensive income	本期綜合收益總額	-	-	-	59	(8,893)	(56,015)	(64,849)	(15,829)	(80,678)
Disposal of subsidiaries	處置附屬公司	-	-	-	-	-	-	-	(22,478)	(22,478)
Dividends paid by subsidiaries to non-controlling equity owners	附屬公司向非控股權益所有者支付股息	-	-	-	-	-	-	-	(41,241)	(41,241)
Acquisition of minority interest in a subsidiary	收購子公司的少數股權	-	-	-	-	-	(126)	(126)	126	-
Balance at 30 June 2018	2018年6月30日結餘	6,063,770	1,053,550	129,332	1,054	2,589	(2,567,200)	4,683,095	2,961,023	7,644,118

The notes on pages 70 to 117 form part of this interim financial report.

第70頁至第117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 2019 截至2019年6月30日止6個月期間
(Amounts expressed in RMB) (以人民幣列示)

		Note 附註	Six months ended 30 June 截至6月30日止6個月	
			2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 RMB'000 人民幣千元 (Unaudited) (未經審計)
Operating activities	經營活動			
Cash used in operations	經營中使用的現金		(80,718)	(158,459)
Income tax paid	已付所得稅		(117,909)	(159,994)
Net cash used in operating activities	經營活動使用的淨現金		(198,627)	(318,453)
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		(166,303)	(126,237)
Payment for purchase of structural deposits	支付購買結構性存款		(753,500)	-
Other cash flows arising from/(used in) investing activities	來自投資活動的其他現金流		22,029	(178,957)
Net cash used in investing activities	投資活動使用的淨現金		(897,774)	(305,194)
Financing activities	籌資活動			
Proceeds from borrowings	借款所得款項		7,777,020	5,465,000
Repayment of borrowings	償還借款		(7,913,891)	(5,700,051)
Decrease in restricted deposits	受限制存款的減少		357,151	139,287
Increase in restricted deposits	受限制存款的增加		(435,491)	(120,102)
Interest paid	已付利息		(254,389)	(223,507)
Principal portion of lease payments	支付租賃本金部分		(9,135)	-
Other cash flows arising from/(used in) financing activities	來自籌資活動的其他現金流		3,300	(13,815)
Net cash used in financing activities	籌資活動使用的淨現金		(475,435)	(453,188)
Net decrease in cash and cash equivalents	現金及現金等價物的淨減少額		(1,571,836)	(1,076,835)
Cash and cash equivalents at 1 January	於1月1日的現金及現金等價物	14	3,436,459	3,994,074
Effect of foreign exchanges rate changes	外匯匯率變動的影響		32	680
Cash and cash equivalents at 30 June	於6月30日的現金及現金等價物	14	1,864,655	2,917,919

The notes on pages 70 to 117 form part of this interim financial report.

第70頁至第117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

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

1 Corporate information

Guodian Technology & Environment Group Corporation Limited (the “Company”) was formerly known as Guodian Technology & Environment Group Limited Liability Company and was established on 6 April 2001 as a state-owned enterprise with limited liability. The Company was converted into 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
- energy conservation solutions
- wind power products and services
- all others, including wind and solar power generation and sale of other 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 公司資訊

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。本公司的子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其他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)

(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 2019 (“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 (“IAS”) 34, “Interim Financial Reporting”, issued by the International Accounting Standards Board (“IASB”). This interim financial information was approved for issuance on 28 August 2019.

The interim financial information has been prepared in accordance with the same accounting policies adopted in the 2018 annual consolidated financial statements, except for the accounting policy changes that are expected to be reflected in the 2019 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.

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 2018 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 2018.

This interim financial information has been prepared assuming the Group will continue as a going concern notwithstanding the net loss of RMB310,258,000 and the net cash used in operating activities of RMB198,627,000 for the six months ended 30 June 2019. The Group has unutilised banking facilities of RMB9,977,169,000 as at 30 June 2019 to fulfil its future capital commitments and other financial requirements, of which RMB7,429,141,000 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

本截至2019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」。本中期財務資料於2019年8月28日被批准報出。

除預計將在2019年年度合併財務報表中體現的會計政策變化外，本中期財務報告的編製依據為2018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。

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2018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2018年年度合併財務報表一併閱讀。

儘管本集團截至2019年6月30日止6個月期間淨虧損為人民幣310,258,000元，以及在經營活動中使用的淨現金為人民幣198,627,000元，本中期財務資料是以假設本集團持續經營的基礎編制。於2019年6月30日，本集團擁有金額為人民幣9,977,169,000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7,429,141,000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制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)

(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

(a) Overview

The accounting policies adopted in the preparation of the interim financial information are consistent with those followed in the preparation of the Group's annual consolidated financial statements for the year ended 31 December 2018, except for the adoption of new standards effective as of 1 January 2019. The Group has not early adopted any other standards, interpretations or amendments that have been issued but are not yet effective.

The Group adopted IFRS 16 "Leases" ("IFRS 16") using the modified retrospective method of adoption with the date of initial application of 1 January 2019. Details of the changes in accounting policies are discussed in note 3(b) below.

Several other amendments and interpretations apply for the first time in 2019, but do not have material impact on the interim financial information of the Group:

IFRIC interpretation 23 *Uncertainty over Income Tax Treatments*

Amendments to IFRS 9 *Prepayment Features with Negative Compensation*

Amendments to IAS 19 *Plan Amendment, Curtailment or Settlement*

Annual Improvements to IFRSs 2015–2017 Cycle:

IFRS 3 *Business Combinations Previously held interest in a joint operation*

IFRS 11 *Joint Arrangements Previously held interest in a joint operation*

IAS 12 *Income Taxes Income tax consequences of payments on financial instruments classified as equity*

IAS 23 *Borrowing Costs Borrowing costs eligible for capitalisation*

3 會計政策與披露變更

(a) 概況

除於2019年1月1日開始生效的新準則的應用，編製本中期財務資料時採用的會計政策與編製截至2018年12月31日止年度的本集團年度財務報表時所採用會計政策一致。本集團未提前採納任何其他已發佈但未生效的準則、解釋或修訂。

本集團於2019年1月1日按修正追溯調整法採用《國際財務報告準則》第16號「租賃」，本集團採用此新準則的詳情載於下文附註3(b)。

下述幾項其他對現有準則的修訂與解釋公告已於2019年度生效，但未對本集團的中期財務資料構成重大影響：

《國際財務報告解釋公告》第23號，「所得稅處理的不確定性」

對《國際財務報告準則》第9號，包含「反向賠償的提前還款特徵」的修訂

對《國際會計準則》第19號，「計劃修改、削減和結算」的修訂

《國際財務報告準則》2015–2017周期年度改進：

《國際財務報告準則》第3號，業務合併—「在共同經營中的權益」

《國際財務報告準則》第11號，合營安排—「在共同經營中的權益」

《國際會計準則》第12號，所得稅—「支付權益類金融工具的所得稅處理」

《國際會計準則》第23號，借款費用—「符合資本化條件的借款費用」

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

(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) IFRS 16 Leases

IFRS 16 supersedes IAS 17 *Leases*, IFRIC 4 *Determining whether an Arrangement contains a Lease*, SIC-15 *Operating Leases-Incentives* and SIC-27 *Evaluating the Substance of Transactions Involving the Legal Form of a Lease*. The standard sets out the principles for the recognition, measurement, presentation and disclosure of leases and requires lessees to account for all leases under a single on-balance sheet model.

Lessor accounting under IFRS 16 is substantially unchanged from IAS 17. Lessors will continue to classify leases as either operating or finance leases using similar principles as in IAS 17. Therefore, IFRS 16 did not have an impact for leases where the Group is the lessor.

The Group adopted IFRS 16 using the modified retrospective method of adoption with the date of initial application of 1 January 2019. Under this method, the standard is applied retrospectively with the cumulative effect of initial adoption as an adjustment to the opening balance of retained earnings at 1 January 2019, and the comparative information for 2018 was not restated and continues to be reported under IAS 17.

New definition of a lease

Under IFRS 16, a contract is, or contains a lease if the contract conveys a right to control the use of an identified asset for a period of time in exchange for consideration. Control is conveyed where the customer has both the right to obtain substantially all of the economic benefits from use of the identified asset and the right to direct the use of the identified asset. The Group elected to use the transition practical expedient allowing the standard to be applied only to contracts that were previously identified as leases applying IAS 17 and IFRIC 4. Therefore, the definition of a lease under IFRS 16 has been applied only to contracts entered into or changed on or after 1 January 2019.

At inception or on reassessment of a contract that contains a lease component, the Group allocates the consideration in the contract to each lease and non-lease component on the basis of their stand-alone prices.

3 會計政策與披露變更(續)

(b) 《國際財務報告準則》第16號，租賃

《國際財務報告準則》第16號「租賃」取代了《國際會計準則》第17號「租賃」，國際財務報告解釋委員會第4號「判斷一項安排中是否包含租賃」，國際會計準則解釋委員會第15號「經營租賃－激勵」，及第27號「評價採用租賃法律形式的交易實質」。該準則規定了與租賃有關的確認，計量，列報和披露的原則，並要求承租人對其所有租賃採用單一資產負債表模型。

出租人將繼續使用與《國際會計準則》第17號相似的原則，將租賃分類為經營租賃或融資租賃。因此，《國際財務報告準則》第16號對本集團為出租人的租賃無重大影響。

本集團於2019年1月1日按修正追溯調整法首次採用《國際財務報告準則》第16號，基於此方法，將首次採用本準則的累積影響確認為對首次採用日（即2019年1月1日），留存收益餘額的調整。2018年度比較財務資料沒有進行重述並繼續基於《國際會計準則》第17號進行列報。

租賃的新定義

基於《國際財務報告準則》第16號，租賃為在一定期間內讓渡控制及使用一項資產的權利以獲取對價的合同或合同的一部分。控制權為客戶擁有獲取與使用該項資產相關的幾乎所有的經濟利益的權利以及使用該項已識別資產的權利。在首次採用日，本集團選擇採用過渡期的實務變通，新租賃準則僅適用於在《國際會計準則》第17號及國際財務報告解釋委員會第4號下確定為租賃的合約。因此，《國際財務報告準則》第16號的租賃定義僅適用於2019年1月1日或之後簽訂或更改的合約。

在開始或重新評估包含租賃組成部分的合同時，本集團以各租賃組成部分和非租賃組成部分的單獨價格為基礎將對價分攤至這些組成部分。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

(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) IFRS 16 Leases (continued)

As a lessee – Leases previously classified as operating leases

Nature of the effect of adoption of IFRS 16

The Group has lease contracts for various items of property, land, vehicles and other equipment. As a lessee, the Group previously classified leases as either finance leases or operating leases based on the assessment of whether the lease transferred substantially all rewards and risks of ownership of assets to the Group. Under IFRS 16, the Group applies a single approach to recognise and measure right-of-use assets and lease liabilities for all leases, except for two elective exemptions for leases of low value assets (elected on a lease by lease basis) and short-term leases (elected by class of underlying asset). The Group has elected not to recognise right-of-use assets and lease liabilities for (i) leases of low value assets; and (ii) leases, that at the commencement date, have a lease term of 12 months or less. Instead, the Group recognises the lease payments associated with those leases as an expense on a straight-line basis over the lease term.

Impacts on transition

Lease liabilities at 1 January 2019 were recognised based on the present value of the remaining lease payments discounted using the incremental borrowing rate at 1 January 2019.

The right-of-use assets were measured at the amount of the lease liability, adjusted by the amount of any prepaid or accrued lease payments relating to the lease recognised in the statement of financial position immediately before 1 January 2019. All these assets were assessed for any impairment based on IAS 36 on that date. The Group elected to present the right-of-use assets in property, plant and equipment.

3 會計政策與披露變更(續)

(b) 《國際財務報告準則》第16號，租賃(續)

作為承租人 – 之前劃分為經營租賃的租賃

採用《國際財務報告準則》16號的影響

本集團擁有各類廠房、土地、車輛及其他設備的租賃合約。在新準則適用前，本集團作為承租人根據租賃是否將租賃資產所有權相關的幾乎所有風險與報酬轉移給本集團，將租賃分類為融資租賃和經營租賃。根據《國際財務報告準則》第16號，本集團對所有租賃採用單一方法確認和計量使用權資產與租賃負債，低價值資產租賃(基於每一項租賃)與短期租賃(基於每一類資產)除外。本集團選擇不對(i)低價值資產租賃；(ii)短期租賃，於租賃期開始日，租賃期為12個月或更短期間的租賃，確認使用權資產及租賃負債。本集團將與該等租賃相關的租金付款在租賃期內以直線法進行攤銷計入相關費用。

過渡期的影響

本集團根據相關租賃的剩餘租賃付款額按首次採用日的增量借款利率折現的現值確認2019年1月1日的租賃負債。

使用權資產按照與租賃負債相等的金額來計量，並根據於2019年1月1日前計入財務報表的與該租賃相關的預付和預提租賃付款額進行調整。本集團在首次採用日對全部使用權資產根據《國際會計準則》第36號「資產減值」進行減值測試。本集團選擇將使用權資產列示於物業、廠房及設備中。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

(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) IFRS 16 *Leases* (continued)

As a lessee – Leases previously classified as operating leases (continued)

Impacts on transition (continued)

The Group has used the following elective practical expedients when applying IFRS 16 at 1 January 2019:

- Used a single discount rate to a portfolio of leases with reasonably similar characteristics
- Applied the short-term leases exemptions to leases with lease term that ends within 12 months at the date of initial application
- Excluded the initial direct costs from the measurement of the right-of-use asset at the date of initial application
- Used hindsight in determining the lease term where the contract contains options to extend or terminate the lease

3 會計政策與披露變更(續)

(b) 《國際財務報告準則》第16號，租賃 (續)

作為承租人 – 之前劃分為經營租賃的 租賃(續)

採用《國際財務報告準則》16號的影響 (續)

本集團於2019年1月1日採用《國際財務報告準則》第16號時，採用下述可選擇的實務變通：

- 對具有合理相似特徵的租賃組合採用單一折現率
- 對於租賃期將在首次採用日後12個月內結束的租賃採用短期租賃豁免
- 於首次採用日計量使用權資產時，扣除初始直接費用
- 對合同中含續租或終止租賃選擇權的租賃，採用後見之明確定租賃期

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

(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) IFRS 16 Leases (continued)

As a lessee – Leases previously classified as operating leases (continued)

Impacts on transition (continued)

The effect of adoption of IFRS 16 as at 1 January 2019 is as follows:

3 會計政策與披露變更(續)

(b) 《國際財務報告準則》第16號，租賃(續)

作為承租人－之前劃分為經營租賃的租賃(續)

採用《國際財務報告準則》16號的影響(續)

執行《國際財務報告準則》第16號－租賃對2019年1月1日合併財務狀況表項目的影響如下：

		Increase/(Decrease) 增加/(減少) RMB'000 人民幣千元 (Unaudited) (未經審計)
Assets		
資產		
Increase in property, plant and equipment	物業、廠房及設備增加	330,194
Decrease in lease prepayments	預付土地租賃款減少	(302,033)
Decrease in other non-current assets	其他非流動資產減少	(890)
Decrease in deposit, prepayments and other receivables	按金、預付款項及其他應收款項減少	(341)
Increase in total assets	資產總額增加	26,930
Liabilities		
負債		
Increase in lease liabilities	租賃負債增加	19,988
Increase in other payables	其他應付款項增加	6,942
Increase in total liabilities	負債總額增加	26,930
Decrease in retained earnings	留存收益減少	-

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

(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) IFRS 16 Leases (continued)

As a lessee – Leases previously classified as operating leases (continued)

Impacts on transition (continued)

The lease liabilities as at 1 January 2019 reconciled to the operating lease commitments as at 31 December 2018 are as follows:

3 會計政策與披露變更(續)

(b) 《國際財務報告準則》第16號，租賃(續)

作為承租人－之前劃分為經營租賃的租賃(續)

採用《國際財務報告準則》16號的影響(續)

將2018年12月31日經營租賃承諾調整至2019年1月1日租賃負債過程如下：

		RMB'000 人民幣千元 (Unaudited) (未經審計)
Operating lease commitments as at 31 December 2018	2018年12月31日經營租賃承諾	25,900
Weighted average incremental borrowing rate as at 1 January 2019	2019年1月1日加權平均增量借款利率	4.75%
Discounted operating lease commitments as at 1 January 2019	2019年1月1日經折現經營租賃承諾	22,992
Less:	減：	
Commitments relating to short-term leases and those leases with a remaining lease term ending on or before 31 December 2019	與短期租賃和剩餘租賃期在2019年12月31日或之前結束的租賃相關的最低租賃付款額	19,201
Add:	加：	
Payments for optional extension period not recognised as at 31 December 2018	2018年12月31日未確認的可選續租期的付款	23,139
Lease liabilities as at 1 January 2019	2019年1月1日租賃負債	26,930

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

(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) IFRS 16 Leases (continued)

Summary of new accounting policy

Set out below are the new accounting policies of the Group upon adoption of IFRS 16, which have been applied from the date of initial application:

- *Right-of-use assets*

The Group recognises right-of-use assets at the commencement date of the lease (i.e., the date the underlying asset is available for use). Right-of-use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any remeasurement of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities recognised, initial direct costs incurred and lease payments made at or before the commencement date less any lease incentives received. Unless the Group is reasonably certain to obtain ownership of the leased asset at the end of the lease term, the recognised right-of-use assets are depreciated on a straight-line basis over the shorter of its estimated useful life and the lease term. Right-of-use assets are subject to impairment.

- *Lease liabilities*

At the commencement date of the lease, the Group recognises lease liabilities measured at the present value of lease payments to be made over the lease term. The lease payments include fixed payments (including in-substance fixed payments) less any lease incentives receivable, variable lease payments that depend on an index or a rate, and amounts expected to be paid under residual value guarantees. The lease payments also include the exercise price of a purchase option reasonably certain to be exercised by the Group and payments of penalties for terminating a lease, if the lease term reflects the Group exercising the option to terminate. The variable lease payments that do not depend on an index or a rate are recognised as expense in the period in which the event or condition that triggers the payment occurs.

3 會計政策與披露變更(續)

(b) 《國際財務報告準則》第16號，租賃(續)

新會計政策匯總

下列示了本集團自2019年1月1日採用《國際財務報告準則》第16號後的新會計政策：

- *使用權資產*

本集團於租賃開始日(如標的資產可供使用之日)確認使用權資產。使用權資產按成本減去累計折舊及累計減值損失進行計量，同時在對租賃負債重新計量時進行相應調整。使用權資產的成本包括已確認的租賃負債金額，已發生的初始直接費用以及在租賃開始日或之前支付的租賃付款額減去收到的租賃激勵。除非能夠合理確定租賃期屆滿時將會取得該租賃資產的所有權，本集團在租賃期開始日至使用權資產的使用壽命結束與租賃期孰短的期間對使用權資產按直線法攤銷。使用權資產存在減值跡象的，應當進行減值測試。

- *租賃負債*

於租賃開始日，本集團以租賃期內的租賃付款額現值來確認租賃負債。租賃付款額包括固定付款額(包括實質固定付款額)，扣除任何應收的租賃激勵，取決於指數或比率的可變租賃付款額，以及根據餘值擔保預計的應付金額。租賃付款額亦包括本集團可合理確定將行使購買選擇權的行權價和終止租賃的罰款金額，如果租賃條款反映出承租人將行使終止租賃的選擇權。不取決於指數或利率的可變租賃付款額在觸發付款的事件或條件發生時計入損益。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

(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) IFRS 16 Leases (continued)

Summary of new accounting policy (continued)

- Lease liabilities (continued)

In calculating the present value of lease payments, the Group uses the incremental borrowing rate at the lease commencement date if the interest rate implicit in the lease is not readily determinable. After the commencement date, the amount of lease liabilities is increased to reflect the accretion of interest and reduced for the lease payments made. In addition, the carrying amount of lease liabilities is remeasured if there is a modification, a change in future lease payments arising from change in an index or rate, a change in the lease term, a change in the in-substance fixed lease payments or a change in the assessment to purchase the underlying asset.

- Short-term leases and leases of low-value assets

The Group applies the short-term lease recognition exemption to its short-term leases of certain offices and apartments for employees (i.e., those leases that have a lease term of 12 months or less from the commencement date and do not contain a purchase option). The Group also applies the lease of low-value assets recognition exemption to leases of office equipment that are considered of low value (i.e., below RMB30,000). Lease payments on short-term leases and leases of low-value assets are recognised as expense on a straight-line basis over the lease term.

3 會計政策與披露變更(續)

(b) 《國際財務報告準則》第16號，租賃 (續)

新會計政策匯總(續)

- 租賃負債(續)

在計算租賃付款的現值時，如果無法直接確定租賃內含利率，本集團使用租賃開始日時的增量借款利率。在租賃開始日後，承租人將增加租賃負債賬面金額以反映增加的利息，減少賬面金額以反映支付的租賃付款額。此外如果發生租賃修改，因指數或利率的變更，租賃期的變更，實質上固定的付款額的變更或對標的資產行使購買選擇權評估的變更，則需要重新計量租賃負債的賬面金額。

- 短期租賃和低價值資產租賃

本集團對短期租賃的辦公室和員工公寓予以豁免確認使用權資產(如不包含購買選擇權且在租賃開始時租賃期為12個月或更短時間的租賃)。本集團對於低價值辦公設備租賃予以豁免確認使用權資產(如低於人民幣30,000元)。短期租賃和低價值資產的租賃在租賃期內採用直線法在租賃期內攤銷計入相關費用。



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

(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) IFRS 16 Leases (continued)

Summary of new accounting policy (continued)

- Significant judgement in determining the lease term of contracts with renewal options

The Group determines the lease term as the non-cancellable term of the lease, together with any periods covered by an option to extend the lease if it is reasonably certain to be exercised, or any periods covered by an option to terminate the lease, if it is reasonably certain not to be exercised.

The Group has the option, under some of its leases, to lease properties for additional terms of one year to five years. The Group applies judgement in evaluating whether it is reasonably certain to exercise the option to renew. It considers all relevant factors that create an economic incentive for it to exercise the renewal. After the lease commencement date, the Group reassesses the lease term if there is a significant event or change in circumstances that is within the control of the Group and affects its ability to exercise the option to renew.

- (c) IFRIC 23 addresses the accounting for income taxes (current and deferred) when tax treatments involve uncertainty that affects the application of IAS 12 (often referred to as “uncertain tax positions”). The interpretation does not apply to taxes or levies outside the scope of IAS 12, nor does it specifically include requirements relating to interest and penalties associated with uncertain tax treatments. The interpretation specifically addresses (i) whether an entity considers uncertain tax treatments separately; (ii) the assumptions an entity makes about the examination of tax treatments by taxation authorities; (iii) how an entity determines taxable profits or tax losses, tax bases, unused tax losses, unused tax credits and tax rates; and (iv) how an entity considers changes in facts and circumstances. Upon adoption of the interpretation, the Group considered whether it has any uncertain tax positions arising from the transfer pricing on its intergroup sales. Based on the Group’s tax compliance and transfer pricing study, the Group determined that it is probable that its transfer pricing policy will be accepted by the tax authorities. Accordingly, the interpretation did not have any significant impact on the Group’s interim financial information.

3 會計政策與披露變更(續)

(b) 《國際財務報告準則》第16號，租賃(續)

新會計政策匯總(續)

- 有關附有續約選擇權合約租賃期的重大判斷

本集團將租賃期間確定為不可撤銷的租賃期間，包括續租選擇權所涵蓋的期間(如果承租人可合理確定將行使該選擇權)以及終止租賃選擇權所涵蓋的期間(如果承租人可合理確定不會行使該選擇權)。

在部分租賃合同約定下，本集團擁有延長租賃資產租賃期限一年至五年的選擇權。本集團在評估是否行使該續租選擇權時涉及判斷。本集團考慮通過行使選擇權能夠創造的經濟激勵相關的所有因素。在租賃開始日後，本集團評估租賃期是否發生其可控制範圍內的重大的事項或情況變化，以影響其行使可續期選擇權。

- (c) 《國際財務報告解釋公告》第23號澄清了當期和遞延所得稅處理存在不確定性的情況下，如何應用《國際會計準則》第12號中確認和計量的規定(通常稱為「不確定的稅務狀況」)，該解釋公告不適用於《國際會計準則》第12號範圍以外的稅收或徵費，也未特別包括關於與稅務處理的不正確性相關的利息和罰款的規定。此解釋公告具體說明了：(i)實體是否單獨考慮稅收處理的不確定性；(ii)實體對稅務機關核查查稅務處理所做的假設；(iii)實體如何確定應稅利潤或可抵扣虧損，計稅基礎，未利用的可抵扣虧損，未利用的稅收抵免和稅率；以及(iv)實體如何考慮事實和情況的變化。該解釋公告使用後，本集團考慮了是否因集團間銷售的轉移定價而產生不確定的稅務狀況。根據本集團對稅收合規性和轉移定價的研究，本集團確定其轉移定價政策很有可能被稅務機關接受。因此，這項解釋對該集團的中期財務資料沒有重大影響。

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

(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)

(d) Annual IFRS Improvements:

IAS 12 clarifies that an entity recognises all income tax consequences of dividends in profit or loss, other comprehensive income or equity, depending on where the entity recognised the originating transaction or event that generated the distributable profits giving rise to the dividends. The amendments did not have any impact on the Group's interim financial information.

IAS 23 clarifies that an entity treats as part of general borrowing any specific borrowing originally made to develop a qualifying asset, and that is still outstanding, when substantially all of the activities necessary to prepare that assets for its intended use or sale are complete. The amendments did not have any impact on the Group's interim financial information.

4 Revenue and segment reporting

(a) Revenue

The Group is principally engaged in manufacturing and sale of wind turbines, plasma ignition equipment and other related electric equipment for power plants, construction engineering of desulphurisation, denitrification, water treatment and other environmental protection and energy conservation projects, rental of desulphurisation and denitrification facilities and provision of integrated services relating to environmental protection, energy conservation and renewable energy businesses.

Revenue represents the sales value of goods supplied to customers, revenues from construction contracts, rendering of services, service concession arrangement and rental income. Revenue is presented net of value added tax, if any.

3 會計政策與披露變更(續)

(d) 《國際財務報告準則》的年度改進

《國際會計準則》第12號澄清了實體將股利的所得稅影響確認在當期損益，其他綜合收益或者權益，取決於實體對產生股利的初始交易和事項的確認。該修訂對本集團的中期財務資料沒有影響。

《國際會計準則》第23號澄清了當為資產達到預期使用目的或者達到銷售目的發生的活動已基本完成，實體將與該資產相關的專項借款中未償還的部分作為一般借款處理。該修訂對本集團的中期財務資料沒有影響。

4 收入及分部報告

(a) 收入

本集團主要從事風力發電機、等離子點火裝置及發電廠其他相關電氣設備的製造和銷售、以及脫硫脫硝、水處理和其他環保和節能工程的建造施工、脫硫脫硝設備租賃及提供與環保、節能和可再生能源業務相關的綜合服務。

收入指向客戶出售的商品銷售價值、建造合同、提供服務及服務特許權協定取得的收入和租賃收入。收入以扣除增值稅後的淨額列示，如有。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

4 Revenue and segment reporting (continued)

(a) Revenue (continued)

The amount of each significant category of revenue from continuing operations recognised during the period is as follows:

4 收入及分部報告(續)

(a) 收入(續)

本年內確認的持續經營業務的各重大類別收入的金額列舉如下：

		Six months ended 30 June 截至6月30日止6個月	
		2019 <i>RMB'000</i> 人民幣千元 (Unaudited) (未經審計)	2018 <i>RMB'000</i> 人民幣千元 (Unaudited) (未經審計)
Revenue from contracts with customers	與客戶簽訂的合同收入		
Disaggregated by major products of service lines	按服務項目的主要產品分類		
- sales of goods	— 銷售商品	1,904,976	2,251,175
- revenue from construction contracts	— 建造合同收入	1,387,376	1,623,042
- rendering of services	— 提供服務	135,717	174,034
- service concession arrangement revenue	— 服務特許權協定收入	161,272	147,492
		3,589,341	4,195,743
Revenue from other sources	其他會計準則範圍內的收入		
- rental income from operating leases	— 經營租賃的租賃收入	500,964	431,122
		4,090,305	4,626,865
Disaggregated by geographical location of customers	按客商地理位置分類		
- Mainland China	— 中國大陸	4,090,305	4,626,865

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

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

4 Revenue and segment reporting (continued)

(b) Segment reporting

The Group manages its businesses by its subsidiaries, which are organised by business line (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 four reportable segments.

- Environmental protection segment: this segment provides environmental protection products and services which mainly consists of sulphur oxide control technologies, nitrogen oxide control technologies, rental of desulphurisation and denitrification facilities, ash removal with filter bags, 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 of 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 other electric power control system related products.

4 收入及分部報告(續)

(b) 分部報告

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)組織。本集團按照作分配資源、評估業績之用途而向本集團最高級行政管理人員進行內部匯報所一致的方式列報四個可呈報分部。

- 環保分部：本分部提供環保產品和服務，主要包括脫硫技術、脫硝技術、脫硫脫硝設施租賃服務、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、微油點火設備、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、太陽能發電及銷售其他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)

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

4 Revenue and segment reporting (continued)

(b) Segment reporting (continued)

(i) Segment results, assets and liabilities

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, write-down of inventories and additions to segment non-current assets.

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 2019 and 2018 is set out below:

4 收入及分部報告(續)

(b) 分部報告(續)

(i) 分部業績、資產及負債

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資訊外，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、存貨撇減以及添置分部非流動資產的分部資訊。

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2019年及2018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資訊如下：

		For the six months ended 30 June 2019 截至2019年6月30日止6個月				
		Continuing operations 持續經營業務				
		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
		(Unaudited) (未經審計)	(Unaudited) (未經審計)	(Unaudited) (未經審計)	(Unaudited) (未經審計)	(Unaudited) (未經審計)
Disaggregated by timing of revenue recognition	按收入確認時點分類					
Point in time	在單個時點確認	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

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

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

4 Revenue and segment reporting (continued)

4 收入及分部報告(續)

(b) Segment reporting (continued)

(b) 分部報告(續)

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

(i) 分部業績、資產及負債(續)

		As at/for the six months ended 30 June 2019 於2019年6月30日/截至2019年6月30日止6個月				
		Continuing operations 持續經營業務				
		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)
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	8,714	62,077	52,708	239,898
(Reversal of impairment)/impairment of trade and other receivables	應收賬款及其他應收款項 減值(轉回)/計提	(22,110)	-	336	-	(21,774)
Impairment of other non-current assets	其他非流動資產減值	(29,231)	(3,277)	6,107	(30,646)	(57,047)
Interest income	利息收入	8,030	-	4,671	-	12,701
Finance costs	財務成本	10,531	15,048	8,045	315	33,939
		40,508	1,953	74,439	2,127	119,027
Reportable segment assets	可呈報分部資產	12,169,868	3,264,476	12,878,093	1,818,555	30,130,992
Additions to reportable segment non-current assets during the period	本期可呈報分部非流動資 產的增加	124,361	15,848	56,642	7,320	204,171
Reportable segment liabilities	可呈報分部負債	7,732,261	2,033,445	10,701,989	1,006,039	21,473,734

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

4 Revenue and segment reporting (continued)

4 收入及分部報告(續)

(b) Segment reporting (continued)

(b) 分部報告(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 2018 截至2018年6月30日止6個月					
		Continuing operations 持續經營業務				Discontinued operation 已終止經營業務	
		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)	Solar power products and services 太陽能 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	203,081	114,774	1,768,426	176,376	-	2,262,657
Over time	在一段時間確認	1,756,644	569,386	31,112	7,066	-	2,364,208
Revenue from external customers	外部客戶收入	1,959,725	684,160	1,799,538	183,442	-	4,626,865
Inter-segment revenue	分部間收入	(1,855)	617	1,483	33,910	-	34,155
Reportable segment revenue	可呈報分部收入	1,957,870	684,777	1,801,021	217,352	-	4,661,020
Reportable segment profit (gross profit/(loss))	可呈報分部利潤(毛利)/(虧損)	305,369	95,276	495,544	98,242	(10,040)	984,391
Depreciation and amortisation	折舊及攤銷	119,466	13,037	63,859	53,223	421	250,006
Impairment of contract assets	合同資產減值	1,494	121	-	-	-	1,615
Impairment of property, plant and equipment	物業、廠房及設備減值	11,049	-	-	-	-	11,049
Impairment/(reversal of impairment) of trade and other receivables	應收賬款及其他應收款項減值/(轉回)	2,624	(6,679)	58,994	2,369	(34,498)	22,810
(Reversal of impairment)/impairment of other non-current assets	其他非流動資產(轉回)/減值	(4)	(156)	772	-	-	612
Interest income	利息收入	17,969	10,201	2,417	367	97	31,051
Finance costs	財務成本	39,943	3,744	68,230	107	2,256	114,280

As at 31 December 2018
於2018年12月31日

		Continuing operations 持續經營業務				Discontinued operation 已終止經營業務	
		Environmental protection 環保 RMB'000 人民幣千元	Energy conservation solutions 節能解決方案 RMB'000 人民幣千元	Wind power products and services 風電產品及服務 RMB'000 人民幣千元	All others 所有其他 RMB'000 人民幣千元	Solar power products and services 太陽能 RMB'000 人民幣千元	Total 總計 RMB'000 人民幣千元
Reportable segment assets	可呈報分部資產	12,237,742	3,635,364	12,569,856	2,291,276	589,180	31,323,418
Additions to reportable segment non-current assets during the period	本期可呈報分部非流動資產的增加	204,194	15,556	195,859	19,823	1,828	437,260
Reportable segment liabilities	可呈報分部負債	8,992,225	1,829,343	9,912,219	513,719	687,971	21,935,477

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

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

4 Revenue and segment reporting (continued)

4 收入及分部報告(續)

(b) Segment reporting (continued)

(b) 分部報告(續)

(ii) Reconciliations of reportable segment revenue, profit/(loss), assets and liabilities

(ii) 可呈報分部收入、利潤/(虧損)、資產和負債的調節

		Six months ended 30 June 截至6月30日止6個月					
		Continuing operations 持續經營業務		Discontinued operation 已終止經營業務		Total 總計	
		2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 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)	2018 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)	2018 RMB'000 人民幣千元 (Unaudited) (未經審計)
Revenue	收入						
Reportable segment revenue	可呈報分部收入	4,138,057	4,661,020	-	-	4,138,057	4,661,020
Elimination of inter-segment revenue	分部間收入抵銷	(47,752)	(34,155)	-	-	(47,752)	(34,155)
Consolidated revenue	合併收入	4,090,305	4,626,865	-	-	4,090,305	4,626,865
Profit/(loss)	利潤/(虧損)						
Reportable segment profit/(loss)	可呈報分部利潤/(虧損)	903,094	994,431	-	(10,040)	903,094	984,391
Elimination of inter-segment profit	分部間利潤抵銷	41,192	1,057	-	-	41,192	1,057
Reportable segment profit/(loss) derived from the Group's external customers	取得自集團外的可呈報分部利潤/(虧損)	944,286	995,488	-	(10,040)	944,286	985,448
Other revenue	其他收入	101,903	117,567	-	20,731	101,903	138,298
Other net income	其他收益淨額	4,810	11,229	-	-	4,810	11,229
Selling and distribution expenses	銷售及分銷開支	(395,416)	(316,786)	-	(1,046)	(395,416)	(317,832)
Administrative expenses	行政開支	(544,182)	(674,452)	-	(8,055)	(544,182)	(682,507)
Finance costs	財務成本	(281,100)	(261,659)	-	(2,256)	(281,100)	(263,915)
Share of profits less losses of associates	應佔聯營公司利潤減虧損	16,671	32,129	-	-	16,671	32,129
Consolidated loss before taxation	合併稅前虧損	(153,028)	(96,484)	-	(666)	(153,028)	(97,150)

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

4 Revenue and segment reporting (continued)

4 收入及分部報告(續)

(b) Segment reporting (continued)

(b) 分部報告(續)

(ii) Reconciliations of reportable segment revenue, profit/(loss), assets and liabilities (continued)

(ii) 可呈報分部收入、利潤/(虧損)、資產和負債的調節(續)

		At 30 June 2019 於2019年 6月30日 RMB'000 人民幣千元 (Unaudited) (未經審計)	At 31 December 2018 於2018年 12月31日 RMB'000 人民幣千元
Assets			
	資產		
Reportable segment assets	可呈報分部資產	30,130,992	31,323,418
Inter-segment elimination	分部間抵銷	(140,738)	(377,790)
		29,990,254	30,945,628
Interests in associates	對聯營公司的投資	413,353	396,682
Other equity investments	其他權益投資	1,163,553	858,415
Tax recoverable	可收回稅項	235,890	176,299
Deferred tax assets	遞延稅項資產	774,990	911,188
Unallocated head office and corporate assets	未分配總部及行政資產	979,764	869,202
Consolidated total assets	合併資產總額	33,557,804	34,157,414
Liabilities			
	負債		
Reportable segment liabilities	可呈報分部負債	21,473,734	21,935,477
Inter-segment elimination	分部間抵銷	(144,364)	(368,273)
		21,329,370	21,567,204
Income tax payable	應付所得稅	19,747	48,565
Deferred tax liabilities	遞延稅項負債	214,274	153,949
Unallocated head office and corporate liabilities	未分配總部及行政負債	4,321,713	4,644,524
Consolidated total liabilities	合併負債總額	25,885,104	26,414,242

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

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

5 Other revenue and other net income

5 其他收入及其他收益淨額

		Six months ended 30 June 截至6月30日止6個月					
		Continuing operations 持續經營業務		Discontinued operation 已終止經營業務		Total 總計	
		2019	2018	2019	2018	2019	2018
		<i>RMB'000</i>	<i>RMB'000</i>	<i>RMB'000</i>	<i>RMB'000</i>	<i>RMB'000</i>	<i>RMB'000</i>
		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)
		(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)	(未經審計)
Other revenue	其他收入						
Government grants	政府補助	35,717	42,040	-	28	35,717	42,068
Interest income	利息收入	34,447	47,103	-	97	34,447	47,200
Others	其他	31,739	28,424	-	20,606	31,739	49,030
		101,903	117,567	-	20,731	101,903	138,298
Other net income	其他收益淨額						
Net gain on sales of raw materials	原材料銷售收益淨額	3,141	7,004	-	-	3,141	7,004
Net gain on disposal of subsidiaries	出售附屬公司收益淨額	248	3,525	-	-	248	3,525
Net gain on disposal of property, plant and equipment and intangible assets	出售物業、廠房及設備收益淨額	300	117	-	-	300	117
Net foreign exchange gain/(loss)	匯兌收益/(虧損)淨額	(123)	1,207	-	-	(123)	1,207
Others	其他	1,244	(624)	-	-	1,244	(624)
		4,810	11,229	-	-	4,810	11,229

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

6 Finance costs

6 財務成本

		Six months ended 30 June 截至6月30日止6個月					
		Continuing operations 持續經營業務		Discontinued operation 已終止經營業務		Total 總計	
		2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 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)	2018 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)	2018 RMB'000 人民幣千元 (Unaudited) (未經審計)
Interest on bank and other borrowings	銀行及其他借款利息	279,788	263,173	-	2,256	279,788	265,429
Interest on lease liabilities	租賃負債利息	1,312	-	-	-	1,312	-
Less: interest expenses capitalised into property, plant and equipment	減：資本化在物業、廠房及設備中的利息開支	-	(1,514)	-	-	-	(1,514)
		281,100	261,659	-	2,256	281,100	263,915

7 Loss before taxation

7 稅前虧損

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

稅前虧損已扣除/(計入)：

		Six months ended 30 June 截至6月30日止6個月					
		Continuing operations 持續經營業務		Discontinued operation 已終止經營業務		Total 總計	
		2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 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)	2018 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)	2018 RMB'000 人民幣千元 (Unaudited) (未經審計)
Amortisation	攤銷						
- lease prepayments	- 預付土地租賃款	-	3,795	-	-	-	3,795
- intangible assets	- 無形資產	38,876	37,177	-	421	38,876	37,598
Depreciation	折舊						
- investment properties	- 投資性物業	4,169	4,779	-	-	4,169	4,779
- property, plant and equipment	- 物業、廠房及設備	196,853	203,834	-	-	196,853	203,834
Impairment/(reversal of impairment) on	減值虧損/(減值轉回)						
- property, plant and equipment	- 物業、廠房及設備	-	11,049	-	-	-	11,049
- inventories	- 存貨	(2,365)	-	-	-	(2,365)	-
- trade and other receivables	- 應收賬款及其他應收款項	(57,047)	57,308	-	(34,498)	(57,047)	22,810
- other non-current assets	- 其他非流動資產	12,701	612	-	-	12,701	612
- contract assets	- 合同資產	(21,774)	1,615	-	-	(21,774)	1,615
Research and development costs	研發成本	140,998	79,915	-	-	140,998	79,915

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

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

8 Income tax

8 所得稅

		Six months ended 30 June 截至6月30日止6個月					
		Continuing operations 持續經營業務		Discontinued operation 已終止經營業務		Total 總計	
		2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 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)	2018 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)	2018 RMB'000 人民幣千元 (Unaudited) (未經審計)
Current tax	本期稅額						
Provision for the period	本期撥備	51,804	39,454	-	36	51,804	39,490
(Over-provision)/under-provision in respect of prior years	過往年度(過度撥備)/撥備不足	(22,304)	16,255	-	147	(22,304)	16,402
		29,500	55,709	-	183	29,500	55,892
Deferred tax	遞延稅項						
Origination and reversal of temporary differences	暫時性差異的產生及轉回	127,730	(81,198)	-	-	127,730	(81,198)
		157,230	(25,489)	-	183	157,230	(25,306)

The charge for PRC enterprise income tax for the Group's subsidiaries established in the PRC is calculated at the statutory rate of 25% (six months ended 30 June 2018: 25%) on the estimated assessable profit of the period determined in accordance with relevant enterprise income tax rules and regulations, except for certain subsidiaries of the Group, which are taxed at preferential rates of 12.5% or 15% (six months ended 30 June 2018: tax exempted or 12.5% or 15%).

Taxation for subsidiaries incorporated in Hong Kong or overseas countries is charged at the appropriate rate of taxation ruling in the relevant jurisdictions.

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

本集團於中國成立的附屬公司的中國企業所得稅支出是按照相關企業所得稅規則和法規確定的以本期估計的應繳稅利潤按法定稅率25%(截至2018年6月30日止6個月: 25%)計算，但本集團的若干附屬公司享受12.5%或15%(截至2018年6月30日止6個月: 享受免稅政策或12.5%或15%)的優惠稅率除外。

本集團於香港或海外成立的附屬公司根據相關地域的適用稅率繳納稅款。

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

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

9 Discontinued operation

During the year ended 31 December 2015, management decided to abandon all of the Group's operations under the solar power products and services segment, which constituted a major line of business of the Group, due to the challenging market conditions in the solar industry. As such, the results of the Group's operations under the solar power products and services segment were presented as discontinued operation in the condensed consolidated financial information.

The Company entered into a sale and purchase agreement with certain counter-party during the year ended 31 December 2016, pursuant to which the Company proposed to dispose of the main assets/liabilities of solar power products and services segment. The disposal of such assets and liabilities has been completed as at 31 December 2018.

10 Loss per share

The calculation of basic loss per share is based on the loss attributable to equity shareholders of the Company of RMB198,862,000 (six months ended 30 June 2018: loss of RMB56,015,000) and the weighted average of 6,063,770,000 ordinary shares (six months ended 30 June 2018: 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 2019 and 2018.

Loss attributable to equity shareholders of the Company used in the basic and diluted loss per share calculations :

9 已終止經營業務

於截至2015年12月31日止年度，由於太陽能行業嚴峻的市場環境，管理層決定終止本集團主要經營業務之一的太陽能產品和服務分部的所有經營業務。因此，本集團在太陽能產品及服務分部的經營成果在簡要合併財務資料中列示為已終止經營業務。

截至2016年12月31日止本公司與交易方簽署了買賣協定，提議處置太陽能產品及服務分部的主要資產／負債。截至2018年12月31日止已完成該部分資產及負債的處置。

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198,862,000元(截至2018年6月30日止6個月：虧損人民幣56,015,000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2018年6月30日止6個月：6,063,770,000股普通股)。

截至2019年及2018年6月30日止6個月，本公司不存在稀釋性潛在普通股。

在計算基本及攤薄每股虧損時使用的歸屬於本公司股東的虧損為：

		Six months ended 30 June 截至6月30日止6個月	
		2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 RMB'000 人民幣千元 (Unaudited) (未經審計)
- From continuing operations	- 持續經營業務	(198,862)	(55,166)
- From discontinued operation	- 已終止經營業務	-	(849)
		(198,862)	(56,015)

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

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

11 Property, plant and equipment

(a) Acquisitions and disposals

During the six months ended 30 June 2019, the Group acquired items of property, plant and equipment with a cost of RMB170,426,000 (six months ended 30 June 2018: RMB100,646,000). Items of property, plant and equipment with a net book value of RMB864,000 were disposed of during the six months ended 30 June 2019 (six months ended 30 June 2018: RMB74,000), resulting in a gain on disposal of RMB300,000 (six months ended 30 June 2018: a gain of RMB117,000), which is included in "other net income" in the consolidated statement of profit or loss.

(b) Impairment losses

During the six months ended 30 June 2019, certain subsidiaries of the Group were loss making due to various market and economic factors, which included severe market competition and decreases in market demand. The Group assessed the recoverable amounts by using value in use model or fair value less cost of disposal model, and recognised impairment losses on property, plant and equipment with an aggregate amount of nil (six months ended 30 June 2018: RMB11,049,000).

11 物業、廠房及設備

(a) 購置與處置

截至2019年6月30日止6個月，本集團購置物業、廠房及設備的成本為人民幣170,426,000元(截至2018年6月30日止6個月：人民幣100,646,000元)；同期處置的物業、廠房及設備的賬面淨值為人民幣864,000元(截至2018年6月30日止6個月：人民幣74,000元)，導致處置收益為人民幣300,000元(截至2018年6月30日止6個月：處置收益人民幣117,000元)並計入合併損益表中的「其他收益淨額」。

(b) 減值虧損

截至2019年6月30日止6個月期間，由於各種市場及經濟因素，包括激烈的市場競爭及市場需求的減少，本集團部分子公司虧損。本集團根據公允價值減去出售成本確定物業、廠房及設備的可收回金額，對其確認減值損失人民幣0元(截至2018年6月30日止6個月：人民幣11,049,000元)。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

12 Other non-current assets

12 其他非流動資產

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
Long-term trade receivables	長期應收賬款	336,039	387,617
Less: current portion of long-term trade receivables	減：長期應收款的即期部分	(207,227)	(181,666)
		128,812	205,951
Long-term service concession receivables	應收第三方服務特許權長期應收款項	787,179	802,294
Less: current portion of long-term service concession receivables	減：服務特許權長期應收款項的即期部分	(40,530)	(55,475)
		746,649	746,819
Long-term receivables from third parties	長期應收第三方款項	424,903	983,428
Less: current portion of long-term receivables from third parties	減：長期應收第三方款項即期部分	(31,884)	(245,714)
		393,019	737,714
Contract assets (Note(i))	合同資產(附註(i))	2,158,792	1,978,837
Long-term loan to a third party	提供給第三方的長期貸款	14,926	14,926
Long-term prepayments	長期預付款	2,404	3,062
Deductible VAT	可抵扣增值稅	166,654	139,820
		3,611,256	3,827,129
Less: loss allowance	減：壞賬準備	(127,497)	(473,518)
		3,483,759	3,353,611

Note:

- (i) The contract assets represent retentions of sales of wind turbines which will be received when the retention period elapses, and those in connection with construction services under concession arrangements.

附註：

- (i) 合同資產包含質保期滿之後將收回的風機銷售質保金，以及特許經營安排下的建造服務相關款項。

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

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

13 Trade and bills receivables

13 應收賬款及票據

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
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	2,626,775	2,962,972
– associates	– 聯營公司	–	5,667
– third parties	– 第三方	2,784,630	3,122,049
		5,411,405	6,090,688
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	291,340	821,660
– associates	– 聯營公司	–	8,822
– third parties	– 第三方	404,153	210,197
		695,493	1,040,679
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	172,357	68,136
– associates	– 聯營公司	–	3,263
– third parties	– 第三方	23,272	8,199
		195,629	79,598

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

13 Trade and bills receivables (continued)

13 應收賬款及票據(續)

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
Trade receivables for sale of goods and rendering of services due from:	銷售商品及提供服務應收賬款		
– China Energy	– 國家能源集團	–	1,900
– related parties under China Energy	– 國家能源集團下屬的關聯方	2,143,755	2,166,586
– associates	– 聯營公司	14,070	53,581
– third parties	– 第三方	3,640,316	3,408,397
		5,798,141	5,630,464
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	324,930	522,369
– associates	– 聯營公司	100	1,000
– third parties	– 第三方	384,527	629,019
		709,557	1,152,388
		12,810,225	13,993,817
Less: loss allowance	減：壞賬撥備	(2,011,832)	(2,078,371)
		10,798,393	11,915,446

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。

Trade receivables are required to be settled in accordance with contract terms and are generally due immediately without credit period.

應收賬款按照合同條款支付，一般不設信用限期並於出具發票當日立即到期。

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

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

13 Trade and bills receivables (continued)

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

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
Within 1 year	1年以內	6,892,684	7,492,657
Between 1 to 2 years	1至2年內	1,677,847	2,996,401
Between 2 to 3 years	2至3年內	857,388	922,804
Over 3 years	3年以上	1,370,474	503,584
		10,798,393	11,915,446

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

本期/年度壞賬撥備的變動如下表所示：

		Six months ended 30 June 2019	Year ended 31 December 2018
		截至6月30日 止6個月 2019	截至12月31日 止年度 2018
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
At 1 January	於1月1日	2,078,371	2,131,077
Reversal of impairment losses, net	減值虧損轉回淨額	(66,539)	(23,694)
Uncollectible amounts written off	無法收回金額撇減	-	(29,012)
At 30 June/31 December	於6月30日/12月31日	2,011,832	2,078,371

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

14 Cash at bank and on hand

14 銀行存款及庫存現金

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
Cash on hand	庫存現金	3,345	–
Cash at bank	銀行存款	1,330,738	292,285
Cash at a related party under China Energy (Note(i))	於國家能源集團下屬的關聯方存放 的現金(附註(i))	1,044,072	3,144,174
		2,378,155	3,436,459
Representing:	包括：		
– cash and cash equivalents	– 現金及現金等價物	1,864,655	3,436,459
– deposits with banks over three months of original maturity	– 初始到期日三個月以上的銀行 存款	513,500	–
		2,378,155	3,436,459

Note:

- (i) 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：

- (i) 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)

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

15 Borrowings

15 借款

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

(a) 長期帶息借款包括：

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
Bank loans	銀行貸款		
– secured (Note)	– 抵押(附註)	263,490	279,500
– unsecured	– 無抵押	35,900	59,200
Other loans	其他貸款		
– a related party under China Energy (secured) (Note)	– 國家能源集團下屬的關聯方(抵押)(附註)	164,000	171,526
– China Energy (unsecured)	– 國家能源集團(無抵押)	500,000	–
– related parties under China Energy (unsecured)	– 國家能源集團下屬的關聯方(無抵押)	260,000	260,000
– financial institutions (secured) (Note)	– 金融機構(抵押)(附註)	386,980	360,055
Private placement notes	私人配售債務融資工具	871,622	2,453,658
Corporate bonds	公司債券	2,247,880	2,035,793
		4,729,872	5,619,732
Less: current portion of long-term borrowings	減：長期借款的即期部分	(662,375)	(1,926,414)
		4,067,497	3,693,318

Note:

Secured long-term interest-bearing borrowings as at 30 June 2019 were guaranteed and/or secured by concession assets, trade receivables and long-term service concession receivables with total a carrying value of RMB998,468,000 (31 December 2018: RMB1,228,757,000) and income stream of certain subsidiaries.

附註：

於2019年6月30日，抵押的長期帶息借款為已擔保及／或以賬面價值總額為人民幣998,468,000元(2018年12月31日：人民幣1,228,757,000元)的特許經營權資產、應收賬款及服務特許權長期應收款作抵押。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

15 Borrowings (continued)

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

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
Bank loans	銀行貸款		
– secured (Note)	– 抵押(附註)	190,000	925,000
– unsecured	– 無抵押	6,402,040	4,534,000
Other loans	其他貸款		
– China Energy (unsecured)	– 國家能源集團(無抵押)	–	500,000
– related parties under China Energy (unsecured)	– 國家能源集團下屬的關聯方(無抵押)	300,000	150,000
Current portion of long-term borrowings	長期借款的即期部分	662,375	1,926,414
		7,554,415	8,035,414

Note:

Secured short-term interest-bearing borrowings as at 30 June 2019 were secured by trade receivables with carrying value of RMB286,575,000 (31 December 2018: RMB1,042,355,000).

附註：

在2019年6月30日，賬面價值為人民幣286,575,000元的應收賬款為有抵押的短期附息借款提供了擔保(2018年12月31日：人民幣1,042,355,000元)。

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

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

16 Trade and bills payables

16 應付賬款及票據

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
Bills payable to:	應付票據：		
– sub-contractors and equipment suppliers	– 分包商及設備供應商	262,598	182,649
– raw material suppliers	– 原材料供應商	1,937,117	1,126,460
		2,199,715	1,309,109
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	87,442	67,943
– associates	– 聯營公司	1,448	1,038
– third parties	– 第三方	3,402,449	4,934,164
		3,491,339	5,003,145
– raw material suppliers:	– 原材料供應商：		
– related parties under China Energy	– 國家能源集團下屬的關聯方	51,133	29,488
– associates	– 聯營公司	4,215	3,651
– third parties	– 第三方	3,476,869	3,425,354
		3,532,217	3,458,493
		9,223,271	9,770,747

All trade and bills payables are expected to be settled within one year.

預計所有應付賬款及票據將在一年內結清。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

16 Trade and bills payables (continued)

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

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
Within 1 year	1年以內	7,386,790	7,632,120
Between 1 to 2 years	1至2年內	814,295	970,255
Between 2 to 3 years	2至3年內	163,675	266,456
Over 3 years	3年以上	858,511	901,916
		9,223,271	9,770,747

16 應付賬款及票據(續)

於報告期末，基於發票日期的應付賬款及票據的賬齡分析如下：

17 Dividends

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

The board of directors of the Company does not recommend the payment of any interim dividend for the six months ended 30 June 2019 and 2018.

(b) Dividends payable to equity shareholders in respect of the previous financial period, 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 period during the six months ended 30 June 2019 and 2018.

17 股息

(a) 就中期應向權益股東支付的股息

截至2019年及2018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2019年及2018年6月30日止6個月，本公司董事會未批准或派發任何以前年度相關的股息。

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

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

18 Fair value measurement of financial instruments

(a) Fair values of financial assets and liabilities carried at other than fair value

The carrying amounts of the Group's financial instruments carried at cost or amortised cost are not materially different from their fair values as at 31 December 2018 and 30 June 2019 except for the following financial instruments, for which their carrying amounts and fair values are disclosed below:

		At 30 June 2019 於2019年6月30日		At 31 December 2018 於2018年12月31日	
		Carrying amount 賬面金額 RMB'000 人民幣千元 (Unaudited) (未經審計)	Fair value 公允價值 RMB'000 人民幣千元 (Unaudited) (未經審計)	Carrying amount 賬面金額 RMB'000 人民幣千元	Fair value 公允價值 RMB'000 人民幣千元
Long-term receivables	長期應收款項	1,982,377	1,844,796	1,819,031	1,723,048
Fixed rate long-term bank loans	固定利率長期銀行貸款	(1,610,370)	(1,600,755)	(1,039,943)	(1,102,297)
Private placement notes and corporate bonds	私人配售債務融資工具和公司債券	(3,119,502)	(3,116,766)	(4,489,451)	(4,484,484)
Other non-current liabilities	其他非流動負債	(509,751)	(478,612)	(516,892)	(492,557)

(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:

18 金融工具的公允價值計量

(a) 非按公允價值列賬的金融資產和金融負債的公允價值

於2018年12月31日和2019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：

(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：



NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

18 Fair value measurement of financial instruments (continued)

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

(i) Fair value hierarchy (continued)

- Level 1 valuations: 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 valuations: 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 valuations: 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 date, 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.

18 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)

- 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)

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

18 Fair value measurement of financial instruments (continued)

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

(i) Fair value hierarchy (continued)

The following table presents the financial instruments of the Group that are measured at fair value as at 30 June 2019:

18 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)

下表列示於2019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 2019 於2019年 6月30日的 公允價值	Fair value measurements as at 30 June 2019 categorised into 於2019年6月30日歸屬以下 層級公允價值計量數值		
		Level 1 第1層級	Level 2 第2層級	Level 3 第3層級
	RMB'000 人民幣千元 (Unaudited) (未經審計)	RMB'000 人民幣千元 (Unaudited) (未經審計)	RMB'000 人民幣千元 (Unaudited) (未經審計)	RMB'000 人民幣千元 (Unaudited) (未經審計)
Financial assets:	金融資產：			
Financial assets at fair value through profit or loss	以公允價值計量且其變動計入當期損益的金融資產	141,452	–	–
Bills receivable	應收票據	1,405,050	–	–
Equity investments in a listed company	對上市公司的權益投資	819,675	819,675	–
Equity investments in unlisted companies	對非上市公司的權益投資	343,878	–	343,878

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

18 Fair value measurement of financial instruments (continued)

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

(i) Fair value hierarchy (continued)

The following table presents the financial instruments of the Group that are measured at fair value as at 31 December 2018:

		Fair value at 31 December 2018	Fair value measurements as at 31 December 2018 categorised into		
		於2018年12月31日的公允價值	於2018年12月31日歸屬以下層級公允價值計量數值		
			Level 1	Level 2	Level 3
			第1層級	第2層級	第3層級
		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
Financial assets:	金融資產：				
Bills receivable	應收票據	2,193,067	–	2,193,067	–
Equity investments in a listed company	對上市公司的權益投資	607,198	607,198	–	–
Equity investments in unlisted companies	對非上市公司的權益投資	251,217	–	–	251,217

During the six months ended 30 June 2019 and 2018, there were no transfers between Level 1 and Level 2, or transfers into or out of Level 3.

18 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)

下表列示於2018年12月31日本集團按公允價值計量的金融工具：

於截至2018年及2019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。

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

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

18 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

The fair values of financial assets at fair value through profit or loss and bills receivables were measured using the discounted cashflows model. The significant observable inputs used when measuring the fair values of these financial assets are the contract yield and the benchmark interest rate for one-year loan.

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 calculates an appropriate price multiple, such as the price/earnings ("P/E") multiple, price/book value ("P/B") multiple, enterprise value to earnings before interest, tax depreciation and amortisation ("EV/EBITDA") multiple, or enterprise value to earnings before interest and tax ("EV/EBIT") multiple of comparable listed companies adjusted for lack of marketability discount. For the six months ended 30 June 2019, the range of P/E multiple and P/B multiple is 0.9 to 23.5 and 1.4 to 4.0 respectively. The EV/EBITDA multiple and EV/EBIT multiple is 10.3 and 18.5 respectively. The discount rate for lack of marketability is 25% to 30%. The fair value measurement is positively correlated to the above multiples and negatively correlated to the discount for lack of marketability.

18 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及第三 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貸款基準利率。

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」)，或企業價值與利息、稅費前利潤的比率(「企業價值與息稅前利潤率」)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2019年6月30日止6個月期間，市盈率及市淨率的範圍分別為0.9至23.5及1.4至4.0，企業價值與息稅攤折前利潤率及企業價值與息稅前利潤率分別為10.3及18.5。就缺乏市場流通性折讓的範圍為25%至30%。公允價值計量與上述比率存在正相關的關係，並就缺乏市場流通性的折讓存在負相關的關係。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

18 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 movement during the period in the balance of the Level 3 fair value measurements is as follows:

18 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及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：

	At 30 June 2019	At 31 December 2018
	於2019年 6月30日	於2018年 12月31日
	RMB'000	RMB'000
	人民幣千元	人民幣千元
	(Unaudited)	
	(未經審計)	
Unlisted equity securities		
At 1 January	251,217	-
Adjustment on initial application of IFRS 9	-	173,669
Additional securities recognised	-	71,572
Changes in fair value recognised in other comprehensive income	92,661	5,976
At 30 June/31 December	343,878	251,217

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

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

19 Commitments outstanding not provided for in the interim financial information

19 中期財務資料中未列出的承諾

(a) Capital commitments

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

(a) 資本承諾

於報告期末，本集團作出以下承諾：

	At 30 June 2019	At 31 December 2018
	於2019年 6月30日	於2018年 12月31日
	RMB'000	RMB'000
	人民幣千元	人民幣千元
	(Unaudited)	
	(未經審計)	
Contracted, but not provided for property, plant and equipment:	114,821	24,231
已訂約但未撥備予物業、廠房及設備		

(b) Lease commitments

The Group leases certain of its office properties and office equipment under operating lease arrangements. Leases for properties are negotiated for terms under two years, and those for office equipment are for terms ranging between one and three years.

As at 30 June 2019, the lease commitments represent the operating leases with lease term ending within 12 months from the commencement date.

(b) 經營租賃承諾

本集團根據經營租賃安排租賃若干辦公物業及辦公設備。物業租賃協議的期限為兩年以內，辦公設備的租期為一至三年。

於2019年6月30日，租賃承諾指租賃期自生效日期起12個月以內的經營租賃。

	At 30 June 2019	At 31 December 2018
	於2019年 6月30日	於2018年 12月31日
	RMB'000	RMB'000
	人民幣千元	人民幣千元
	(Unaudited)	
	(未經審計)	
Within 1 year	5,271	16,373
After 1 year but within 5 years	-	9,527
	5,271	25,900

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

20 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:

		At 30 June 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
Bid guarantees provided to:	向如下公司提供的投標擔保：		
– related parties under China Energy	– 國家能源集團下屬的關聯方	10,940	17,494
– third parties	– 第三方	400	26,342
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	1,312,815	1,741,656
– third parties	– 第三方	399,265	703,481
		1,723,420	2,488,973

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

(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 claims.

20 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 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
Bid guarantees provided to:	向如下公司提供的投標擔保：		
– related parties under China Energy	– 國家能源集團下屬的關聯方	10,940	17,494
– third parties	– 第三方	400	26,342
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	1,312,815	1,741,656
– third parties	– 第三方	399,265	703,481
		1,723,420	2,488,973

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。

(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式的原告。

雖然上述或有事項，訴訟或其他法律程式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。本集團未因此索賠確認預計負債。

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

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

21 Material 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.

The 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	
		2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 RMB'000 人民幣千元 (Unaudited) (未經審計)
<i>Sale of goods to</i>	<i>出售貨物予</i>		
China Energy	國家能源集團	9,781	3,476
Related parties under China Energy	國家能源集團下屬的關聯方	1,641,111	1,878,660
Associates	聯營公司	-	87
<i>Construction services provided to</i>	<i>提供建造服務予</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	802,668	1,301,992
Associates	聯營公司	-	173
<i>Services provided to</i>	<i>提供服務予</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	150,964	153,846
<i>Leases to</i>	<i>出租予</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	425,123	407,276
<i>Leases from</i>	<i>出租自</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	76	6,679
<i>Purchases of goods from</i>	<i>購買商品自</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	97,331	81,886
Associates	聯營公司	1,359	3,839
<i>Services provided by</i>	<i>服務提供自</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	8,659	10,313

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

21 Material 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	
		2019 RMB'000 人民幣千元 (Unaudited) (未經審計)	2018 RMB'000 人民幣千元 (Unaudited) (未經審計)
<i>Working capital provided to Associates</i>	提供週轉資金予 聯營公司	353	203,962
<i>Working capital received from Associates</i>	償還週轉資金自 聯營公司	-	4,893
<i>Working capital repaid to Related parties under China Energy Associates</i>	償還週轉資金予 國家能源集團下屬的關聯方 聯營公司	-	121 258
<i>Loans received from China Energy</i>	貸款借取自 國家能源集團	500,000	500,000
<i>Loans received from Related parties under China Energy</i>	貸款借取自 國家能源集團下屬的關聯方	150,000	270,000
<i>Loans repaid to China Energy</i>	償還貸款予 國家能源集團	500,000	500,000
<i>Loans repaid to Related parties under China Energy</i>	償還貸款予 國家能源集團下屬的關聯方	7,500	7,500
<i>Interest expenses paid to China Energy</i>	支付利息費用予 國家能源集團	10,717	11,722
<i>Interest expenses paid to Related parties under China Energy</i>	支付利息費用予 國家能源集團下屬的關聯方	9,693	7,174
<i>Interest income received from Related parties under China Energy</i>	收取利息收入自 國家能源集團下屬的關聯方	10,348	23,479
<i>Net deposits withdrawn from Related parties under China Energy</i>	支取存款淨額自 國家能源集團下屬的關聯方	2,100,102	1,657,944
<i>Dividend received from Related parties under China Energy</i>	收取股息自 國家能源集團下屬的關聯方	12,200	-

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

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

21 Material related party transactions (continued)

21 重大關聯方交易(續)

(b) Balances with related parties

Except as disclosed in notes 12, 13, 14 and 15 in the interim financial information, at the end of the reporting period, the Group's significant balances with related parties are as follows:

(b) 與關聯方的餘額

除本中期財務資料附註12、13、14和15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 2019	At 31 December 2018
		於2019年 6月30日	於2018年 12月31日
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	
		(未經審計)	
<i>Other non-current assets</i>	<i>其他非流動資產</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	1,650,156	922,846
<i>Contract assets</i>	<i>合同資產</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	1,165,850	1,368,874
<i>Deposits, prepayments and other receivables</i>	<i>按金、預付款項及其他應收款項</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	560,867	584,435
Associates	聯營公司	505,706	505,891
<i>Lease liabilities</i>	<i>租賃負債</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	372	-
<i>Other payables</i>	<i>其他應付款項</i>		
China Energy	國家能源集團	609,426	603,921
Related parties under China Energy	國家能源集團下屬的關聯方	75,581	82,574
Associates	聯營公司	-	58
<i>Contract liabilities</i>	<i>合同負債</i>		
Related parties under China Energy	國家能源集團下屬的關聯方	1,231,614	1,111,881
Associates	聯營公司	-	2,029

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

21 Material related party transactions (continued)

21 重大關聯方交易(續)

(c) Commitments with related parties

At the end of the reporting period, the Group's commitments with related parties that have been contracted for but not yet been recognised in this interim financial information were as follows:

(c) 與關聯方的承諾

於報告期末，本集團與關聯方之間已訂約但在本中期財務資料中尚未確認的承擔如下：

	At 30 June 2019	At 31 December 2018
	於2019年 6月30日	於2018年 12月31日
	RMB'000	RMB'000
	人民幣千元	人民幣千元
	(Unaudited)	
	(未經審計)	
<i>Sale of goods to</i>		
Related parties under China Energy	4,919,587	4,506,079
<i>Construction services to be provided to</i>		
Related parties under China Energy	1,582,329	4,436,662

(d) Contribution to defined contribution retirement plans

The Group participates in various defined contribution retirement plans organised by China Energy for its staff. As at 30 June 2019 and 31 December 2018, 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 2019 amounted to RMB17,394,000 (six months ended 30 June 2018: RMB10,842,000).

(d) 界定供款退休計劃的供款

本集團參加了國家能源集團內部組織的各種界定供款退休計劃。於2019年6月30日和2018年12月31日，在退休福利計劃項下，沒有重大未支付供款。截至2019年6月30日止6個月，本集團對界定供款退休計劃的供款金額為人民幣17,394,000元(截至2018年6月30日止6個月：人民幣10,842,000元)。

NOTES TO THE INTERIM CONDENSED CONSOLIDATED FINANCIAL INFORMATION (CONTINUED)

簡要中期合併財務資料附註(續)

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

21 Material related party transactions (continued)

(e) 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, purchase 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.

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 this interim financial information, the directors are of the opinion that further information about the following transactions that are collectively significant is required for disclosure:

– Sales 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. These transactions individually are not significant to the Group.

– 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 重大關聯方交易(續)

(e) 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式，並建立了關於借款方面的融資政策。此等審批程式及融資政策並不考慮交易對方是否是政府相關實體。

考慮到關聯方關係對交易的潛在影響、本集團的審批程式以及融資政策，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。此等交易個別而言對本集團並不重大。

– 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)

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

21 Material related party transactions (continued)

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

- Purchases of materials and receiving construction services

The Group purchases materials and receives construction services from a wide range of government-related manufacturing enterprises and construction contractors. These transactions individually are not significant to the Group.

- 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.

(f) Key management personnel remuneration

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

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

21 重大關聯方交易(續)

(e) 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。此等具體交易個別而言對本集團不重大。

- 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。

(f) 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。

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	
		2019	2018
		RMB'000	RMB'000
		人民幣千元	人民幣千元
		(Unaudited)	(Unaudited)
		(未經審計)	(未經審計)
Salaries and other emoluments	工資和其他酬金	3,346	2,729
Retirement scheme contributions	退休計劃供款	550	426
		3,896	3,155

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

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

22 Accounting judgements and estimates

In preparing the interim financial information, except for the significant accounting judgements and estimates in relative to new accounting policies application mentioned above, the Group believes that the critical accounting judgements and estimates as disclosed in the 2018 annual consolidated financial statements are material to an understanding of this interim financial information.

23 Events after the reporting period

On 7 August 2019, the board of directors of the Company announced that Beijing Lucency Environment and Technology Co., Ltd., a subsidiary of the Company, intends to dispose of its 70% equity interest in Guodian Galaxy Water Co., Ltd. (“**Guodian Galaxy Water**”) through a public tender process (the “**Public Tender**”) to be conducted on the China Beijing Equity Exchange. Qingdao Galaxy Investment Co., Ltd., the other shareholder of Guodian Galaxy Water, intends to dispose of its 30% equity interest in Guodian Galaxy Water together with the Company. The base price for transfer of the 70% equity interest in Guodian Galaxy Water through the Public Tender will be determined based on the asset appraisal on Guodian Galaxy Water to be conducted by a qualified appraisal institution and subject to the approvals from relevant regulatory authorities of state-owned assets in the PRC.

22 會計判斷及估計

於編製中期財務資料時，除前文所述有關新會計政策的重大會計判斷及估計外，本集團相信於2018年年度合併財務報表中所披露的關鍵會計判斷及估計對於理解本中期財務資料是重要的。

23 期後事項

於2019年8月7日，本公司董事會宣佈，本公司附屬公司北京朗新明環保科技有限公司擬透過於北京產權交易所進行之公開掛牌方式(「**公開掛牌**」)出售其於國電銀河水務股份有限公司(「**國電銀河水務**」)之70%股本權益。國電銀河水務的另一股東青島銀河投資有限公司擬一併出售其持有的國電銀河水務30%股本權益。透過公開掛牌轉讓國電銀河水務70%股本權益之底價將由具有資質的評估機構進行資產評估後釐定，並須經中國國有資產監管機構之相關部門批准後，方告作實。



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

北京市海澱區西四環中路 16 號院 1 號樓

Building 1, Yard 16, W.4th Ring Middle Road,

Haidian District, Beijing, PRC

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