



# 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

# 2018

## INTERIM REPORT 中期報告



\* For identification purpose only  
僅供識別



# MILESTONES OF GUODIAN TECH IN THE FIRST HALF OF 2018

## 國電科環2018年上半年大事記



1. On 4 January, Beijing Guodian Longyuan Environmental Engineering Co., Ltd. ("**Longyuan Environmental**") successfully broke through the key technology of small pore catalysts after independently developing the 60-pore denitration catalyst. The product comes with high yield, excellent performance and low fabricating cost, filling the blankness of the domestic small-pore catalyst preparation technique and breaking up the monopoly of foreign technology. It will make active contributions to the work of coal-to-gas switch and control of nitrogen oxides in gas-fired power plants in China.

1. 1月4日，北京國電龍源環保工程有限公司（「**龍源環保**」）成功突破小孔催化劑核心技術，自主研製出60孔脫硝催化劑。該產品成品率高，性能優良，製造成本低，填補國內小孔催化劑製備技術空白，打破了國外技術壟斷局面，將為我國煤改氣、燃氣電廠氮氧化物控制工作做出積極貢獻。
2. On 6 March, Longyuan Environmental was officially offered with the patent license, becoming the only high-tech enterprise that has been permitted to make use of, manufacture and promote biomass gasification – coupled power generation technology within China Energy Investment Group Corporation Limited ("**China Energy**"), which is a practical action in response to the strategic deployment of a market-oriented green technology innovation system brought up on the Party's 19th National Congress.

2. 3月6日，龍源環保正式獲得專利使用許可權，成為國家能源投資集團有限責任公司（「**國家能源集團**」）內唯一獲得實施生物質氣化—耦合發電技術使用權、生產製造權和推廣權的高科技企業，以實際行動響應黨的十九大關於構建市場導向的綠色技術創新體系的戰略部署。
3. On 13 March, Yantai Longyuan Power Technology Co., Ltd. (the "**Longyuan Technology**", SZ.300105) was awarded the title of "National Intellectual Property Demonstration Enterprise", the most distinguished honor in the field of national enterprise intellectual property management, by the State Intellectual Property Office (SIPO).

3. 3月13日，煙台龍源電力技術股份有限公司（「**龍源技術**」，SZ.300105）獲得國家知識產權局頒發的「國家知識產權示範企業」稱號，「國家知識產權示範企業」是國家企業知識產權管理領域的最高榮譽。
4. On 31 March, the 300kW Marine Tidal Current Turbine Generator System independently developed by Guodian United Power Technology Company Limited ("**United Power**") applying the 270° electric pitch control technology and underwater video technology was successfully deployed into the sea and combined to the grid for power generation. This sea-going generating unit uses the world's first 270° pitch control technology, which makes the tidal current energy generating unit functional with high-efficiency two-way ocean current energy capture.

4. 3月31日，國電聯合動力技術有限公司（「**聯合動力**」）自主研發的應用270°電動變槳技術和水下視頻技術的300kW海洋潮流能發電機組成功下海，並順利併網發電運行。本次下海發電機組是世界首台應用270°變槳技術，實現了雙向海流能量高效捕獲的潮流能發電機組。
5. On 11 June, United Power received the Verification Report on Grid-connection Model and Test Conformity issued by ESKOM, South Africa's electricity public utility, and passed the first inspection of South Africa's power grid acceptance. ESKOM's new energy grid-connection standards are derived from the European standards, and its latest grid-connection guidelines released in July 2016 are one of the world's most stringent grid-connection guidelines, substantially higher than domestic standards.

5. 6月11日，聯合動力獲得南非國家電網公司（ESKOM）簽發的併網模型及測試一致性驗證報告，一次性通過南非電網驗收。南非國家電網公司新能源併網標準源自歐洲併網標準，其於2016年7月發佈的最新併網導則更是世界最嚴苛的併網導則之一，遠高於國內標準。
6. On 19 June, Beijing Guodian Zhishen Control Technology Co., Ltd. ("**Guodian Zhishen**") successfully won the bid for the Experimental Lead-based Reactor Nuclear Power Control System project issued by the Institute of Nuclear Energy Safety Technology of the Chinese Academy of Sciences, marking the formal application of EDPF-NT, the series of distributed control system platform of Guodian Zhishen, in nuclear power projects.

6. 6月19日，北京國電智深控制技術有限公司（「**國電智深**」）成功中標中國科學院核能安全技術研究所實驗鉛基堆核電控制系統項目，標志著國電智深的系列分佈式控制系統平台（EDPF-NT）正式應用於核電項目。



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# CORPORATE INFORMATION

## 公司資料



### Directors

#### Executive Directors

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

#### Non-executive Directors

Mr. WANG Zhongqu  
Mr. ZHANG Wenjian  
Mr. GU Yuchun  
Mr. YAN Andrew Y.

#### 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

King & Wood Mallesons (as to Hong Kong law)  
13/F, Gloucester Tower  
The Landmark  
15 Queen's Road Central, Central  
Hong Kong

#### PRC

Beijing King & Capital Law Firm (as to PRC law)  
23rd Floor, Tower C, Office Park,  
No. 5 Jinghua South Street, Chaoyang District  
Beijing, PRC, 100020

### 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

金杜律師事務所(有關香港法律)  
香港  
中環皇后大道中15號  
置地廣場  
告羅士打大廈13樓

#### 中國

北京市京都律師事務所(有關中國法律)  
中國北京市  
朝陽區景華南街5號  
遠洋•光華國際C座23層(100020)

## Auditors

### International

KPMG  
Certified Public Accountants  
8th Floor, Prince's Building  
10 Chater Road, Central  
Hong Kong

### PRC

Mazars Certified Public Accountants  
(Special General Partnership)  
15/F, Building 7  
Yard 16, W.4th Ring Road  
Haidian District, Beijing, PRC

## Joint Company Secretaries

Mr. CAI Zhaowen  
Ms. MOK Ming Wai<sup>1</sup>  
Mr. LEE Kwok Fai Kenneth<sup>2</sup>

## Authorized Representatives

Mr. CHEN Dongqing  
Ms. MOK Ming Wai<sup>1</sup>  
Mr. LEE Kwok Fai Kenneth<sup>2</sup>

## Legal Address

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

## Head Office in PRC

Building 1  
Yard 16, W.4th Ring 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

畢馬威會計師事務所  
執業會計師  
香港  
中環遮打道10號  
太子大廈8樓

### 中國

中審眾環會計師事務所  
(特殊普通合伙)  
中國北京市海澱區  
西四環中路16號院  
7號樓15層

## 聯席公司秘書

蔡兆文先生  
莫明慧女士<sup>1</sup>  
李國輝先生<sup>2</sup>

## 授權代表

陳冬青先生  
莫明慧女士<sup>1</sup>  
李國輝先生<sup>2</sup>

## 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



### 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)

#### Notes:

- (1) Ms. Mok Ming Wai resigned as the joint company secretary of the Company (the “**Joint Company Secretary**”) and ceased to act as an authorized representative (the “**Authorized Representative**”) under Rule 3.05 of the Listing Rules on the Stock Exchange and the agent for the services of process in Hong Kong of the Company with effect from 23 August 2018.
- (2) Mr. Lee Kwok Fai Kenneth has been appointed as the Joint Company Secretary, Authorized Representative and agent for services of process in Hong Kong of the Company with effect from 23 August 2018.

### 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)

#### 附註:

- (1) 莫明慧女士辭任本公司之聯席公司秘書(「**聯席公司秘書**」)，根據聯交所上市規則第3.05條項下之本公司授權代表(「**授權代表**」)，及於香港接收法律程序代表之職務，自2018年8月23日生效。
- (2) 李國輝先生獲委任為聯席公司秘書、授權代表及於香港接收法律程序代表，自2018年8月23日生效。



# 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.

On 5 February 2018, China Energy, (formerly known as Shenhua Group Corporation Ltd) and China Guodian Corporation Limited (“**Guodian Group**”), the controlling shareholder of the Company, has signed the Consolidation Agreement Between China Energy Investment Corporation Limited and China Guodian Corporation Limited (the “**Consolidation Agreement**”). On 27 August 2018, the Company was informed by China Energy and Guodian Group that on 27 August 2018, China Energy and Guodian Group received the Decision of Non-Prohibition on Anti-Monopoly Review on Concentration of Operators (Fan Long Duan Shen Cha Han [2018] No. 26) issued by the Anti-Monopoly Bureau of the State Administration of Market Regulation. The Bureau decided not to prohibit the Consolidation after review, and allowed Consolidation to be implemented henceforth. Conditions for completion of the Consolidation as agreed under the Consolidation Agreement have been fully satisfied. After the Consolidation, the controlling shareholder of the Company was changed to China Energy.

The principal businesses of the Company are carried out under two segments, 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. Leveraging on its comprehensive environmental protection and energy conservation technologies and solutions for all aspects of coal-fired power plants (with desulphurisation, denitrification, water treatment, plasma-assisted ignition and combustion stabilization, energy performance contracting as the core businesses), the Group is capable of providing “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日正式改制成為股份有限公司，並於2011年12月30日在香港聯合交易所有限公司(「**聯交所**」)主板上市。

於2018年2月5日，國家能源集團，其前身為神華集團有限責任公司)與本公司控股股東中國國電集團有限公司(「**國電集團**」)簽署《國家能源投資集團有限責任公司與中國國電集團有限公司之合併協議》(「**合併協議**」)。於2018年8月27日，本公司接到國家能源集團及國電集團通知，國家能源集團與國電集團於2018年8月27日收到國家市場監督管理總局反壟斷局出具的《經營者集中反壟斷審查不予禁止決定書》(反壟斷審查函[2018]第26號)，該局經審查後決定對本次合併不予禁止，從即日起可以實施集中。《合併協議》約定的本次合併交割條件已全部滿足。本次合併後，本公司控股股東變更為國家能源集團。

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。憑藉其為燃煤電廠提供的全方面綜合環保節能技術及解決方案(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)，本集團能為其客戶提供「一站式」的解決方案，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)



Focusing on technology innovation and industrial applications, the Group has achieved significant technology and product innovation results through original innovation, resources integration innovation and technology introduction and innovation. Among its various forms of technologies at the forefront in the PRC or global market, the Group's plasma ignition technology ranks the first in the world. In the domestic market, the Group possesses a leading position in technology, including wet flue gas desulphurisation, seawater desulphurisation, furnace combustion nitrogen reduction and flue gas denitrification. Longyuan Environmental, Longyuan Technology, United Power, Beijing Huadian Tianren Electricity Control Technology Co., Ltd ("**Huadian Tianren**") and Guodian Zhishen have gained significant brand recognition throughout China.

As at 30 June 2018, the Group had established four national scientific research platforms including a national key lab for wind power equipment and system technology, 12 provincial scientific research platforms, an academician workstation and a post-doctoral scientific research workstation. The Group had undertaken 22 national science and technology projects and won five national science and technology rewards on an accumulative basis.

China Energy has become the world's largest coal group, the world's largest thermal power generation group, the world's largest renewable energy generation group and the world's largest coal-to-liquids chemical industry group. Meanwhile, 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，通過原始創新、資源集成創新與技術引進並再創新，取得了一大批科技創新成果，有多項技術達到國際、國內領先水平，其中本集團的等離子體點火技術水準居世界第一位，本集團的煙氣濕法脫硫、海水脫硫、鍋爐燃燒降氮、煙氣脫硝技術始終保持國內領先地位，龍源環保、龍源技術、聯合動力、北京華電天仁電力控制技術有限公司(「**華電天仁**」)、國電智深已成為享譽中國的知名品牌。

截至2018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4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5項國家級科研獎勵。

國家能源集團已成為全球第一大的煤炭集團、全球第一大的火力發電集團、全球第一大的可再生能源發電集團以及全球第一大的煤制油化工集團。同時，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 2018, the revenue from continuing operations of the Group was approximately RMB4,626.9 million, representing a decrease of approximately 7.3% compared to that for the corresponding period last year; no revenue from discontinued operation of the Group was recorded, representing a decrease of approximately 100.0% compared to that for the corresponding period last year.
- For the six months ended 30 June 2018, the gross profit from continuing operations of the Group was approximately RMB995.5 million, representing a decrease of approximately 15.1% compared to that for the corresponding period last year; the gross loss from discontinued operation of the Group was approximately RMB10.0 million, representing an increase of approximately 92.3% compared to that for the corresponding period last year.
- For the six months ended 30 June 2018, the operating profit from continuing operations of the Group was approximately RMB133.0 million, representing a decrease of approximately 78.3% compared to that for the corresponding period last year; the operating profit from discontinued operation of the Group was approximately RMB1.6 million, while the operating loss from discontinued operation was approximately RMB76.9 million for the corresponding period last year.
- For the six months ended 30 June 2018, loss attributable to equity shareholders of the Company was approximately RMB56.0 million, while the profit attributable to equity shareholders of the Company was approximately RMB134.0 million for the corresponding period last year.
- For the six months ended 30 June 2018, loss per share of the Group (excluding non-controlling interests) was approximately RMB0.92 cents.
- The Board recommends not to distribute any interim dividend for the six months ended 30 June 2018.
- 截至2018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4,626.9百萬元，比去年同期減少約7.3%；本集團沒有錄得已終止經營業務收入，比去年同期減少約100.0%。
- 截至2018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995.5百萬元，比去年同期減少約15.1%；本集團已終止經營業務毛虧為人民幣10.0百萬元，比去年同期增加約92.3%。
- 截至2018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133.0百萬元，比去年同期減少約78.3%；本集團已終止經營業務經營利潤約為人民幣1.6百萬元，而去年同期已終止經營業務的經營虧損約為人民幣76.9百萬元。
- 截至2018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56.0百萬元，而去年同期權益股東應佔利潤約為人民幣134.0百萬元。
- 截至2018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0.92分。
- 董事會建議不派發截至2018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.*

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。

## Industry and Business Overview in the First Half of 2018

### Key Industry Developments

In the first half of 2018, the PRC government continued to introduce new regulations and policy initiatives applicable to the PRC power and power related industries amid significant challenges to sustainable economic growth.

For the purpose of this interim report, the "PRC" refers to the People's Republic of China, excluding Taiwan, the Macau Special Administration Region of the PRC and the Hong Kong Special Administration Region of the PRC.

Set forth below are the key regulations and policy initiatives issued by the PRC government and other relevant regulatory authorities that are expected to have a material effect on the Group's businesses, operations and financial condition:

1. On 26 February 2018, the National Energy Administration (the "NEA") issued the 2018 Practice Guide on Energy Work (the "Guidance I").

According to Guidance I, the total national energy consumption in 2018 is to be controlled at about 4.55 billion tons of standard coal. The share of non-fossil energy consumption is to be increased to approximately 14.3%, and that of the natural gas to approximately 7.5%, in comparison to the proportion of coal consumption which will fall to approximately 59%. The installed capacity of non-fossil energy power generation will reach approximately 740 million kilowatts or so, generating about 2 trillion kilowatt hours of electricity. The average power coal consumption of coal-fired power plants will decrease by about 1 gram year-on-year.

As proposed in Guidance I, wind power and solar power should be promoted on a gradual basis. The investment monitoring and early warning mechanism for wind power and PV should be enhanced, the scale of new construction in areas with idle capacity in wind and solar power should be cut down, so as to ensure the "double drop" of curtailed wind power, PV in terms of both volume and proportion. The key wind power base projects should be built in an orderly manner with emphasis on promoting the construction of distributed wind power, low wind speed wind power and offshore wind power projects. The construction of wind power grid parity demonstration projects should be actively promoted, and road maps for wind power grid parity should be worked with and formulated.

The release of Guidance I is conducive to the sustainable development of the Group's renewable energy equipment manufacturing sector and is predicted to prepare a healthy operating environment for the wind turbine manufacturing industry.

## 2018年上半年行業和業務回顧

### 主要行業發展

2018年上半年，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。

就本中期報告而言，中國是指中華人民共和國，並不包括台灣、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佈的主要法規及政策措施，預期該等法規及政策措施將對本集團的業務、經營和財務狀況產生實質性影響：

1. 2018年2月26日，國家能源局(「國家能源局」)印發2018年能源工作指導意見(「《意見一》」)。

《意見一》指出，2018年全國能源消費總量控制在45.5億噸標準煤左右。非化石能源消費比重提高到14.3%左右，天然氣消費比重提高到7.5%左右，煤炭消費比重下降到59%左右。非化石能源發電裝機達到7.4億千瓦左右、發電量達到2萬億千瓦時左右。燃煤電廠平均供電煤耗同比減少1克左右。

《意見一》提出，穩步發展風電和太陽能發電。強化風電、光伏發電投資監測預警機制，控制棄風、棄光嚴重地區新建規模，確保風電、光伏發電棄電量和棄電率實現「雙降」。有序建設重點風電基地項目，推動分散式風電、低風速風電、海上風電項目建設。積極推進風電平價上網示範項目建設，研究制定風電平價上網路線圖。

《意見一》的發佈有利於本集團可再生能源設備製造產業的持續發展，預計將對風機製造產業帶來良好的經營環境。



2. On 5 March 2018, the NEA released the investment monitoring and early warning results of wind power development in 2018.

Gansu, Xinjiang (including the Corps), and Jilin are classified into Red-alert Areas. Inner Mongolia and Heilongjiang are Orange-alert Areas, and Xinzhou City, Shuozhou City and Datong City in Northern Shanxi, Yulin City in northwestern Shaanxi, and Zhangjiakou City and Chengde City in Hebei Province are subject to the Orange-alert management. Other provinces (autonomous regions, municipalities) and regions are Green-alert Areas.

The wind power development and construction in Red-alert Areas are ground to a halt, and taking effective measures to solve the problem of wind power stock depletion will be the top priority. The ongoing construction of approved wind power projects is suspended, and the unapproved wind power projects that have been included in the country's plan and joined to each year's implementation plan are suspended. The grid-connection applications of projects whose construction and approval have been postponed are ceased by power grid enterprises. No annual construction scale should be newly added into those Orange-alert Areas in addition to the wind power projects that are in line with the plan and included in the annual implementation plan, and the demonstration projects and market-based bidding projects organized by the NEA, while the projects that have been included in the annual implementation plan can continue their construction after approval.

3. On 2 July 2018, the National Development and Reform Commission issued the Guide on Innovating and Improving the Green Development Price Mechanism (the "Guidance II").

Guidance II underlines the need to comprehensively implement the Guidance lines of the 19th National Party Congress and the second and third plenary sessions of the 19th CPC Central Committee, and take Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era as the guide to accelerate the establishment and improvement of a resource environmental price mechanism that fully reflects market supply-demand and resource scarcity, and reveals the ecological value and environmental damage cost, to perfect the price policy that is conducive to green development, to incorporate the ecological environment cost into the economic operation cost, to incentivize more social capital to enter the ecological environment protection field, to facilitate resource conservation and ecological environment protection and pollution prevention, to promote the formation of a green development space pattern, industrial structure, production mode and lifestyle, so as to constantly meet the people's growing needs of beautiful ecological environment.

2. 2018年3月5日，國家能源局發佈2018年度風電開發投資監測預警結果。

甘肅、新疆(含兵團)、吉林為紅色預警區域。內蒙古、黑龍江為橙色預警區域，山西北部忻州市、朔州市、大同市，陝西北部榆林市以及河北省張家口市和承德市按照橙色預警管理。其他省(區、市)和地區為綠色預警區域。

紅色預警的區域暫停風電開發建設，集中精力採取有效措施解決存量風電消納問題。已核准的風電項目暫緩建設，已納入規劃且列入各年度實施方案未核准的風電項目暫停核准，電網企業停止受理緩建和暫停核准項目的並網申請。橙色預警地區除符合規劃且列入年度實施方案的風電項目和國家能源局組織的示範項目及市場化招標項目外，不再新增年度建設規模，之前已納入年度實施方案的項目可以繼續核准建設。

3. 2018年7月2日，國家發展改革委出台《關於創新和完善促進綠色發展價格機制的意見》(「《意見二》」)。

《意見二》強調，要全面貫徹落實黨的十九大和十九屆二中、三中全會精神，以習近平新時代中國特色社會主義思想為指導，加快建立健全能夠充分反映市場供求和資源稀缺程度、體現生態價值和環境損害成本的資源環境價格機制，完善有利於綠色發展的價格政策，將生態環境成本納入經濟運行成本，撬動更多社會資本進入生態環境保護領域，促進資源節約、生態環境保護和污染防治，推動形成綠色發展空間格局、產業結構、生產方式和生活方式，不斷滿足人民群眾日益增長的優美生態環境需要。

Guidance II puts forward that by 2020, the price mechanism and price policy system favorable to green development will have largely been formed, which can significantly intensify resource conservation and internalization of ecological environment costs; by 2025, price mechanism aligned with the requirements of green development will have been more complete and implemented into all aspects of the whole society.

Guidance II also deals with sewage treatment, energy conservation and environmental protection. On one hand, it proposes to improve the sewage treatment fee-collection policy, establish a dynamic adjustment mechanism for urban sewage treatment fees, a differential fee-charging mechanism for corporate sewage discharge, and a fee-charging mechanism coordinated with sewage treatment standards, to build up a healthy market-based mechanism for the collection of sewage treatment service fees in cities and towns, gradually incorporate the service fees into the sewage treatment fees in cities and towns, and explore the establishment of a peasant household payment system for sewage treatment. On the other hand, it proposes to establish a better electricity price mechanism that can help energy conservation and environmental protection, materialize the differentiated electricity price policy, the peak-valley electricity price formation mechanism and the electricity-support policy for some environmental protection industries, so as to give full play to the leverage of electricity prices, and promote energy-saving and emission reduction in energy-intensive industries, guide the optimal allocation of power resources, promote the optimization and upgrade of industrial structure and energy structure, as well as the development of related environmental protection industries.

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

4. On 3 July 2018, the State Council issued the Three-Year Action Plan to Win the Blue Sky Battle (the "Action Plan").

The Action Plan elaborated the overall thinking, basic goals, primary missions and backup measures of air pollution prevention and control work, and provided the timeline and road map for winning the blue sky battle.

The Action Plan proposes that by 2020, the total emissions of sulfur dioxide and nitrogen oxides will have declined by more than 15% from 2015, respectively.

《意見二》提出，到2020年，基本形成有利於綠色發展的價格機制、價格政策體系，促進資源節約和生態環境成本內部化的作用明顯增強；到2025年，適應綠色發展要求的價格機制更加完善，並落實到全社會各方面各環節。

《意見二》亦涉及污水處理、節能環保方面，一是完善污水處理收費政策，建立城鎮污水處理費動態調整機制、企業污水排放差別化收費機制、與污水處理標準相協調的收費機制，健全城鎮污水處理服務費市場化形成機制，逐步實現城鎮污水處理費基本覆蓋服務費用，探索建立污水處理農戶付費制度。二是健全促進節能環保的電價機制，完善差別化電價政策、峰谷電價形成機制以及部分環保行業用電支持政策，充分發揮電力價格的槓桿作用，推動高耗能行業節能減排、淘汰落後，引導電力資源優化配置，促進產業結構、能源結構優化升級和相關環保業發展。

《意見二》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。

4. 2018年7月3日，國務院印發《打贏藍天保衛戰三年行動計劃》(「《行動計劃》」)。

《行動計劃》明確了大氣污染防治工作的總體思路、基本目標、主要任務和保障措施，提出了打贏藍天保衛戰的時間表和路線圖。

《行動計劃》提出，到2020年，二氧化硫、氮氧化物排放總量分別比2015年下降15%以上。

Accelerate the adjustment of energy structure and build a clean, low-carbon and efficient energy system. Effectively carry forward clean heating in the northern regions, continue to implement total coal consumption control in key areas, conduct comprehensive rectification of coal-fired boilers, improve energy efficiency, and accelerate the development of clean energy and new energy. Carry out investigations on unorganized emissions of key industries such as steel, building materials, nonferrous metals, thermal power, coking, foundry, etc., and coal-fired boilers, establish management standing book, and implement in-depth governance on unorganized emissions from links of transportation, loading, unloading, storage, transfer, and technological process of materials (including waste residue). By the end of 2018, Beijing-Tianjin-Hebei and surrounding areas should have basically fulfilled their governance tasks, in comparison to the Yangtze River Delta and the Fen-wei Plains by the end of 2019, and the whole country by the end of 2020.

Vigorously cultivate green environmental protection industry. Scale up the green industry, develop energy-saving and environmental protection industries, clean production industries and clean energy industries, and foster new development momentums. Actively support and cultivate a host of large-scale energy-saving and environmental protection leading enterprises with international competitiveness, support the construction of technological innovation capabilities of enterprises, speed up the mastery of major key core technologies, and facilitate the industrialization development and application of key technologies and equipment for atmospheric controlling. Actively promote integrated solutions on energy-saving and environmental protection, accelerate the development of new forms of industries such as energy management contract (EMC), third party governance and social monitoring in the handling of environmental pollution, and cultivate an array of high level, specialize energy-saving environmental protection service companies.

Work out a special plan to heavily eliminate shutdown unqualified coal-fired units less than 300,000 kilowatts that can not meet standards of environmental protection, energy consumption and safety. The cut-off installed capacity, coal consumption and pollutant discharge indicators of the shutdown units, are allowed to be transacted or replaced, and the construction of ultra-low emission coal-fired units with equal capacity can be arranged on an overall basis. The newly installed capacity of coal-fired units in key areas should be strictly controlled, and the newly-added electricity consumption in the region should be satisfied mainly by non-fossil energy generation and external power transmission.

The promulgation of the Action Plan is conducive to the optimized development of the Group's environmental protection and energy saving solutions.

加快調整能源結構，構建清潔低碳高效能源體系。有效推進北方地區清潔取暖，重點區域繼續實施煤炭消費總量控制，開展燃煤鍋爐綜合整治，提高能源利用效率，加快發展清潔能源和新能源。開展鋼鐵、建材、有色、火電、焦化、鑄造等重點行業及燃煤鍋爐無組織排放排查，建立管理台賬，對物料（含廢渣）運輸、裝卸、儲存、轉移和工藝過程等無組織排放實施深度治理，2018年底前京津冀及週邊地區基本完成治理任務，長三角地區和汾渭平原2019年底前完成，全國2020年底前基本完成。

大力培育綠色環保產業。壯大綠色產業規模，發展節能環保產業、清潔生產產業、清潔能源產業，培育發展新動能。積極支持培育一批具有國際競爭力的大型節能環保龍頭企業，支持企業技術創新能力建設，加快掌握重大關鍵核心技術，促進大氣治理重點技術裝備等產業化發展和推廣應用。積極推行節能環保整體解決方案，加快發展合同能源管理、環境污染第三方治理和社會化監測等新業態，培育一批高水平、專業化節能環保服務公司。

制定專項方案，大力淘汰關停環保、能耗、安全等不達標的30萬千瓦以下燃煤機組。對於關停機組的裝機容量、煤炭消費量和污染物排放量指標，允許進行交易或置換，可統籌安排建設等容量超低排放燃煤機組。重點區域嚴格控制燃煤機組新增裝機規模，新增用電量主要依靠區域內非化石能源發電和外送電滿足。

《行動計劃》的頒佈有利於本集團環保及節能解決方案業務的優化發展。

## Key Business Developments

### Environmental Protection Business

As at 30 June 2018, the Group's desulfurization and denitrification projects under construction were as follows:

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	28	21,240
Including: Desulfurization reconstruction projects	其中：脫硫改造項目	18	10,590
The Engineering Procurement Construction (EPC) projects of desulfurization reconstruction	脫硫改造設計、採購及施工(「EPC」)項目	17	8,590
Desulfurization concession reconstruction projects	脫硫改造特許項目	1	2,000
Newly built desulfurization projects	脫硫新建項目	10	10,650
Newly built desulfurization EPC projects	脫硫新建EPC項目	9	9,330
Newly built desulfurization concession project	脫硫新建特許項目	1	1,320
Denitrification projects under construction	在建脫硝項目	18	11,860
Including: Denitrification reconstruction projects	其中：脫硝改造項目	13	6,960
Denitrification reconstruction EPC projects	脫硝改造EPC項目	13	6,960
Newly built denitrification projects	脫硝新建項目	5	4,900
Newly built denitrification EPC projects	脫硝新建EPC項目	4	3,580
Newly built denitrification concession project	脫硝新建特許項目	1	1,320

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 2018, the desulfurization concession operation of the Group had an aggregate installed capacity of 15,890 MW, the operating units of denitrification concession operation had an aggregate installed capacity of 11,100 MW; the desulfurization generating units under the operation and maintenance model of general contracting for tariff had an installed capacity of 2,020 MW; the desulfurization generating units under the operation and maintenance model had an installed capacity of 17,430 MW.

## 主要業務發展

### 環保業務

截至2018年6月30日，本集團在建脫硫脫硝項目情況如下表所示：

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2018年6月30日，本集團脫硫特許經營在運機組裝機總容量為15,890兆瓦，脫硝特許經營在運機組裝機總容量為11,100兆瓦；電價總包運維模式脫硫機組為2,020兆瓦；運維模式脫硫機組為17,430兆瓦。



As at 30 June 2018, the annual production capacity of denitrification catalysts, the key material for denitrification service of the Group was 19,000 m<sup>3</sup>.

As at 30 June 2018, the Group processed approximately 105,700,000 tons of sewage (including reclaimed water) and reduced the cumulative chemical oxygen demand ("COD") emissions by approximately 30,500 tons.

### Energy Conservation Solutions Business

For the energy conservation solutions business, the market expansion of the Group's plasma ignition business has been greatly affected by the decline of the new infrastructure coal market, and the market for low-nitrogen combustion retrofitting tends to saturation. In the first half of 2018, revenues from the Shizuishan, Changzhou flow path and other energy-saving reconstruction projects increased significantly as compared to the corresponding period in the previous year: four generating units of Shizuishan Integrated Energy-saving Retrofitting Project are completed and connected to the grid successfully one off; economic efficiency, safety and reliability of steam turbine after flow path retrofit increased remarkably, and its design and guaranteed heat consumption remained at the international advanced standard of 300MW steam turbine.

In terms of general contracting business of power stations, Lanzhou project implemented quality control and refined construction; energizing of auxiliary power system was completed successfully one off in May 2018 and the project moved to the trial operation phase; overall progress of Bengbu coal yard project was more than 1 month ahead of the original schedule; Zhongyang photovoltaic project was connected to the grid partially, and Hengfeng, Bengbu and Quanzhou projects moved to the closeout phase as scheduled. In the first half of 2018, each EPC project was constructed at a high standard.

於2018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。

於2018年6月30日，本集團的污水處理(含中水)量約為10,570萬噸，化學需氧量(「COD」)累計減排量約為3.05萬噸。

### 節能解決方案業務

在節能業務方面，本集團等離子點火業務市場開拓受新增基建煤電市場下滑影響較大，低氮燃燒改造業務市場趨於飽和。2018年上半年石嘴山、常州通流及節能改造項目收入同比大幅增加，石嘴山綜合節能改造項目已完工的四台機組均一次併網成功。汽輪機通流改造後的經濟性和安全可靠性顯著提升，其設計和保證熱耗處於300MW級汽輪機的國際先進水平。

電站總承包業務方面，蘭州項目開展質量管理和精細化施工，已於2018年5月廠用電受電一次成功，工程已進入試運階段；蚌埠煤場項目整體進度比原計劃提前一個多月；中陽光伏項目已部分併網，衡豐、蚌埠、泉州項目已按計劃進入工程收尾階段；2018年上半年各EPC項目均實現高標準開工。



### Wind Power Products and Services Business

### 風電產品及服務業務

The Group's wind turbine generator ("WTG") sales volumes by product type during the first half of 2018 and the corresponding period in 2017 are set forth below:

本集團於2018年上半年及2017年同期按產品類型劃分的風機銷量如下：

		Completed Sales Orders (Unit) 完成銷售(套)		Orders (Units) 訂單(套)	
		For the six months ended 30 June 截至6月30日 止6個月	2017	For the six months ended 30 June 2018 截至2018年6月30日 止6個月	Confirmed orders 已確認訂單
1.5MW	1.5兆瓦	—	102	598	—
2.0MW	2.0兆瓦	230	206	830	54
3.0MW	3.0兆瓦	—	2	16	—
Total	總數	230	310	1,444	54

The Group is now actively developing the wind power operation and maintenance market, with professionalism and by technical means, to provide value-added services for business so as to explore new business models.

本集團目前積極開拓風電運維市場。通過依靠專業化水平和技術手段，為業務提供增值服務，探索新的商業模式。

### Strive to Secure a Stable Domestic Market

### 全力穩固國內市場

In the first half of 2018, faced with challenges and difficulties, the Group has taken proactive measures and spared no efforts to stabilize the domestic market with the amount of new purchase orders of RMB3,147 billion. Where:

2018年上半年，本集團積極面對挑戰，迎難而上，全力穩固國內市場，新簽訂單金額約人民幣31.47億元。其中：

- In the first half of 2018, Guodian Longyuan Power Technology & Engineering Co., Ltd. ("**Longyuan Engineering**") signed a new order with an amount of approximately RMB748 million, a sharply increase over the same period last year. At the same time, Longyuan Engineering actively explored the PV power plant construction market, and undertook the first PV power plant EPC project which was successfully connected to the grid, proving the capacity of EPC general contracting in fields of large thermal power plants, wind power plants and PV power plants.
- In the first half of 2018, United Power won the bid for Guodian's Guanyang Zhengjiangling Wind Power Project with an amount of RMB210 million. The project's adoption of the 2MW-130 wind turbine of United Power achieves the first mass promotion of this model, which is a major breakthrough of the new model.
- 國電龍源電力技術工程有限責任公司(「**龍源工程**」)於2018年上半年新簽訂單金額約人民幣7.48億元，較去年同期有大幅提升。同時，龍源工程積極開拓光伏電站建設市場，承擔了首個光伏電站EPC項目並成功並網，目前已具備大型火電廠、風電站及光伏電站的EPC總承包能力。
- 聯合動力2018年上半年中標國電瀘陽正江嶺風電項目，金額為人民幣2.1億元。該項目使用了聯合動力2MW-130風機，實現了該機型的首次批量化推廣，是該新機型在市場上的重大突破。



- Guodian Zhishen extensively expanded the nuclear power market. In the first half of 2018, it won the bid for the Instrument Control specific Devices and Tools Project of Tianwan Nuclear Power and a certain Nuclear Power Control System Project of Chinese Academy of Sciences, marking the further expansion of the scope of application of Guodian Zhishen's products in the nuclear power market.
- In the first half of 2018, the newly signed order amount outside the system of the Group was approximately RMB723 million, rising over 50% compared to that for the corresponding period last year. Among them, Longyuan Environmental received an order amount of RMB229 million outside the system, indicating remarkable success in the development of the market outside the system. The company won the bid for the ultra-low emission transformation project of Asia Pulp and Paper (APP), which marks that Longyuan Environmental has entered into the paper manufacturing industry for the first time.
- 國電智深大力開拓核電市場，2018年上半年先後中標田灣核電站某機組儀控專用工器具項目與中科院某核電控制系統項目，標誌着國電智深產品在核電市場的應用範圍進一步擴展。
- 2018年上半年本集團系統外新簽訂單金額約人民幣7.23億元，同比提高50%以上。其中，龍源環保獲得系統外訂單金額約人民幣2.29億元，系統外市場開拓成效顯著，中標金光集團APP(中國)廣西某超低排放改造項目，標誌着龍源環保首次進入造紙行業。

#### Actively Expand Overseas Markets

In the first half of 2018, the Company strengthened international cooperation and external publicity on every side, participated in the Wind Expo 2018 in Japan and the "International Ocean Energy Conference" in France, and made use of multi-language promotional videos, English brochures and English websites to comprehensively improve the Company's international publicizing platform. Further penetrating the key country markets, Longyuan Environmental actively went out for bidding from India, Vietnam and other countries, and tapped the markets of Taiwan and Greece; Yantai Longyuan actively explored markets in Taiwan, Zimbabwe and South Africa; United Power proceeded to the follow-up operation and maintenance services of Longyuan De Aar South Africa project, which has made outstanding contributions to the local people's access to electricity, and is of great significance to accelerating the pace of internationalization strategy of China's energy companies as well as strengthening the cooperation and exchange of renewable energy technologies between China and South Africa.

#### 積極拓展海外市場

2018年上半年，本公司全方位加強國際合作與對外宣傳工作，參加了日本國際風力發電展覽會與法國「國際海洋能大會」，並通過多語種宣傳片、英文宣傳冊和英文網站等多種方式全面完善公司國際化宣傳平台。進一步深挖重點國別市場，龍源環保積極參與印度、越南等國家投標，開拓台灣和希臘市場；煙台龍源積極開拓台灣、津巴布韋和南非市場；聯合動力繼續執行龍源南非德阿項目後續運維服務，為解決當地人民用電做出傑出貢獻，對加快我國能源企業國際化戰略步伐，以及加強中南兩國可再生能源技術合作和交流等方面具有重要意義。

## Analysis of Financial Results for The First Half of 2018

Please read this section in conjunction with the unaudited interim results of the Group as at, and for the six months ended 30 June 2018.

### Analysis of Consolidated Results

#### Revenue

Consolidated revenue of the Group during the first half of 2018 was approximately RMB4,626.9 million, representing a decrease of approximately 7.3% from approximately RMB4,991.1 million in the first half of 2017. As compared to the first half of 2017, revenues from environmental protection solutions, wind power products and services business, and solar energy products and services business (discontinued operation) decreased by RMB259.9 million, RMB393.0 million and RMB1.4 million respectively, representing decreases of approximately 11.7%, 17.9% and 100% respectively. Revenue from energy conservation solutions increased by RMB260.3 million, or approximately 61.4%. The decrease in revenue generated from environmental protection business was mainly due to a drop in revenue from the desulfurization business. The decrease in revenue from the wind power products and services business was primarily attributable to a decline in the number of wind turbines of the Group sold in the first half of 2018. The decrease in revenue from the solar power products and services business (discontinued operation) was primarily attributable to the discontinuation of such business. Increase in revenue from energy conservation solutions was primarily attributable to significant increase of revenue generated from general contracting business of construction of power stations.

## 2018年上半年財務業績分析

閱讀本節時請一併閱讀於2018年6月30日及截至該日止6個月期間本集團未經審核的中期業績。

### 合併業績分析

#### 收入

2018年上半年，本集團合併收入約為人民幣4,626.9百萬元，與2017年上半年的約人民幣4,991.1百萬元相比，約減少7.3%。與2017年上半年相比，環保解決方案、風電產品及服務業務和太陽能產品及服務業務(已終止經營)收入分別減少人民幣259.9百萬元、人民幣393.0百萬元及人民幣1.4百萬元，減少率分別約為11.7%、17.9%及100%。節能解決方案收入增加人民幣260.3百萬元，增加率約為61.4%。環保業務產生的收入下降主要是由於脫硫業務的收入減少，風電產品及服務業務產生的收入下降主要是由於2018年上半年本集團風機銷售數量有所下降，太陽能產品及服務業務(已終止經營)產生的收入減少主要是由於終止經營所致；節能解決方案收入增加主要是由於電站建設總承包業務的收入大幅增加所致。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

The following table sets out the Group's revenues by segments and as a percentage of total consolidated revenue of the Group for the six months ended 30 June 2018 and 2017 respectively:

下表分別載列截至2018年及2017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			
		2018		2017	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
<b>Environmental Protection and Energy Conservation Solutions:</b>	<b>環保及節能解決方案：</b>				
Environmental protection	環保	<b>1,959.7</b>	<b>42.3</b>	2,219.6	44.5
Energy conservation solutions	節能解決方案	<b>684.2</b>	<b>14.8</b>	423.9	8.5
<b>Sub-total</b>	<b>合計</b>	<b>2,643.9</b>	<b>57.1</b>	2,643.5	53.0
<b>Renewable Energy Equipment Manufacturing and Services:</b>	<b>可再生能源設備製造及服務：</b>				
Wind power products and services	風電產品及服務	<b>1,799.5</b>	<b>38.9</b>	2,192.5	43.9
Solar power products and services (discontinued operation)	太陽能產品及服務(已終止經營)	—	—	1.4	0.0
<b>Sub-total</b>	<b>合計</b>	<b>1,799.5</b>	<b>38.9</b>	2,193.9	43.9
All others	所有其他	<b>183.5</b>	<b>4.0</b>	153.7	3.1
<b>Total</b>	<b>總計</b>	<b>4,626.9</b>	<b>100.0</b>	4,991.1	100.0

#### Cost of sales

For the six months ended 30 June 2018, consolidated cost of sales for the Group decreased by approximately RMB182.1 million, or 4.8%, from approximately RMB3,823.5 million for the corresponding period in 2017 to approximately RMB3,641.4 million. This decrease was primarily due to the decrease in cost of sales of environmental protection solutions and wind power products and services business and increase in cost of sales of energy conservation solutions, which was consistent with the variation trend of revenues from those businesses.

#### 銷售成本

截至2018年6月30日止6個月，本集團合併銷售成本約為人民幣3,641.4百萬元，較2017年同期的約人民幣3,823.5百萬元減少約為人民幣182.1百萬元或4.8%。下降的主要原因是本集團環保解決方案和風電產品及服務業務的銷售成本有所減少，節能解決方案銷售成本增加，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 2018 and 2017 respectively:

下表分別載列截至2018年及2017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			
		2018		2017	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
<b>Environmental Protection and Energy Conservation Solutions:</b>	<b>環保及節能解決方案：</b>				
Environmental protection	環保	<b>1,630.1</b>	<b>44.8</b>	1,776.2	46.5
Energy conservation solutions	節能解決方案	<b>590.7</b>	<b>16.2</b>	314.4	8.2
<b>Sub-total</b>	<b>合計</b>	<b>2,220.8</b>	<b>61.0</b>	2,090.6	54.7
<b>Renewable Energy Equipment Manufacturing and Services:</b>	<b>可再生能源設備製造及服務：</b>				
Wind power products and services	風電產品及服務	<b>1,302.9</b>	<b>35.8</b>	1,642.6	43.0
Solar power products and services (discontinued operation)	太陽能產品及服務(已終止經營)	<b>10.0</b>	<b>0.2</b>	6.6	0.1
<b>Sub-total</b>	<b>合計</b>	<b>1,312.9</b>	<b>36.0</b>	1,649.2	43.1
All others	所有其他	<b>107.7</b>	<b>3.0</b>	83.7	2.2
<b>Total</b>	<b>總計</b>	<b>3,641.4</b>	<b>100.0</b>	3,823.5	100.0

#### Gross profit and gross profit margin

For the foregoing reasons, consolidated gross profit of the Group decreased by approximately RMB182.1 million, or 15.6%, from approximately RMB1,167.6 million for the six months ended 30 June 2017 to approximately RMB985.5 million for the six months ended 30 June 2018. The average gross profit margin of the Group across all segments of the Group decreased from 23.4% in the first half of 2017 to 21.3% for the corresponding period in 2018. The decrease in gross profit margin was primarily attributable to the decrease in gross profit margin for the environmental protection and energy conservation solutions.

#### 毛利及毛利率

鑒於上述原因，本集團截至2018年6月30日止6個月的合併毛利約為人民幣985.5百萬元，與截至2017年6月30日止6個月的約人民幣1,167.6百萬元相比減少約人民幣182.1百萬元或15.6%。本集團所有分部平均毛利率從2017年上半年的23.4%減少至2018年同期的21.3%。毛利率減少主要是因為環保及節能解決方案的毛利率下降所致。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)



The following table sets out the Group's gross profit and gross profit margins by segments for the six months ended 30 June 2018 and 2017 respectively:

下表分別載列截至2018年及2017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			
		2018		2017	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
<b>Environmental Protection and Energy Conservation Solutions:</b>	<b>環保及節能解決方案：</b>				
Environmental protection	環保	<b>329.6</b>	<b>16.8</b>	443.4	20.0
Energy conservation solutions	節能解決方案	<b>93.5</b>	<b>13.7</b>	109.5	25.8
<b>Sub-total</b>	<b>合計</b>	<b>423.1</b>	<b>16.0</b>	552.9	20.9
<b>Renewable Energy Equipment Manufacturing and Services:</b>	<b>可再生能源設備製造及服務：</b>				
Wind power products and services	風電產品及服務	<b>496.6</b>	<b>27.6</b>	549.9	25.1
Solar power products and services (discontinued operation)	太陽能產品及服務 (已終止經營)	<b>(10.0)</b>	<b>N/A</b>	(5.2)	(371.4)
<b>Sub-total</b>	<b>合計</b>	<b>486.6</b>	<b>27.0</b>	544.7	24.8
All others	所有其他	<b>75.8</b>	<b>41.3</b>	70.0	45.5
<b>Total</b>	<b>總計</b>	<b>985.5</b>	<b>21.3</b>	1,167.6	23.4

### **Other revenue**

Other revenue from continuing operations of the Group decreased by approximately RMB23.3 million, or 16.5%, from approximately RMB140.9 million for the six months ended 30 June 2017 to approximately RMB117.6 million for the six months ended 30 June 2018, which was primarily due to the decrease in government grants; other revenue of the Group's discontinued operation increased by approximately RMB17.9 million, or 639.3%, from approximately RMB2.8 million for the six months ended 30 June 2017, to approximately RMB20.7 million, which was primarily due to the increase in rental income.

### **Other net income**

The other net income from continuing operations of the Group was approximately RMB11.2 million for the six months ended 30 June 2018, representing a decrease of approximately RMB536.4 million, or 98.0%, from approximately RMB547.6 million for the corresponding period in 2017. No other net income from the Group's discontinued operation was recorded, representing a decrease of approximately RMB98.8 million, or 100.0%, from approximately RMB98.8 million for the corresponding period in 2017. Both decreases were attributable to the fact that the Group did not have significant disposal of subsidiaries in the current period while the Group recorded a net gain on disposal of subsidiaries of approximately RMB584.1 million for the corresponding period in 2017.

### **Selling and distribution expenses**

The selling and distribution expenses of the Group's continuing operations decreased by approximately RMB116.4 million, or 26.9%, from approximately RMB433.2 million for corresponding period in 2017 to approximately RMB316.8 million for the six months ended 30 June 2018, which was primarily attributable to the decrease in related payment as a result of the decrease in bidding service fee, transportation expense, after-sale service expense and warranty.

### **Administrative expenses**

The administrative expenses of the Group's continuing operations decreased by approximately RMB140.3 million, or 17.2%, from approximately RMB814.8 million for the corresponding period in 2017 to approximately RMB674.5 million for the six months ended 30 June 2018, which was primarily due to the decrease in assets impairment losses.

### **Operating profit/(loss) and operating profit margin**

As a result of the foregoing reasons, the operating profit of the Group's continuing operations decreased by approximately RMB480.2 million, or 78.3%, from approximately RMB613.2 million for the first half of 2017 to approximately RMB133.0 million for the corresponding period in 2018; the operating profit of the Group's discontinued operation increased by approximately RMB78.5 million, or 102.1%, from an operating loss of approximately RMB76.9 million for the first half of 2017 to an operating profit of approximately RMB1.6 million for the corresponding period in 2018.

### **其他收入**

截至2018年6月30日止6個月，本集團持續經營業務的其他收入約為人民幣117.6百萬元，較截至2017年6月30日止6個月的約人民幣140.9百萬元減少約人民幣23.3百萬元或16.5%，主要原因是政府補助減少；本集團已終止經營業務的其他收入約為人民幣20.7百萬元，較2017年6月30日止6個月的約人民幣2.8百萬元增加約人民幣17.9百萬元或639.3%，主要原因是租賃收入增加。

### **其他收益淨額**

截至2018年6月30日止6個月，本集團持續經營業務其他收益淨額約人民幣11.2百萬元，較2017年同期的約人民幣547.6百萬元減少約人民幣536.4百萬元或98.0%；本集團沒有錄得已終止經營業務的其他收益，較2017年同期其他收益淨額約人民幣98.8百萬元減少約人民幣98.8百萬元或100.0%。此減少均因為本集團於本期未獲得重大的處置附屬公司的淨收益，而2017年同期獲得處置附屬公司的淨收益約人民幣584.1百萬元。

### **銷售及分銷開支**

截至2018年6月30日止6個月，本集團持續經營業務銷售及分銷開支約人民幣316.8百萬元，較2017年同期的約人民幣433.2百萬元減少約人民幣116.4百萬元或26.9%，主要是由於中標服務費、運輸費、售後服務費及質保金減少導致相關費用的下降。

### **行政開支**

截至2018年6月30日止6個月，本集團持續經營業務行政開支約人民幣674.5百萬元，較2017年同期的約人民幣814.8百萬元減少約人民幣140.3百萬元或17.2%，主要是資產減值損失的減少。

### **經營利潤/(虧損)及經營利潤率**

鑒於上述原因，本集團持續經營業務的經營利潤由2017年上半年的約人民幣613.2百萬元減少至2018年同期的約人民幣133.0百萬元，減少約人民幣480.2百萬元或78.3%；本集團已終止經營業務的經營利潤增加，由2017年上半年的經營虧損約人民幣76.9百萬元增加至2018年同期的利潤約人民幣1.6百萬元，增加約人民幣78.5百萬元或102.1%。

### **Finance costs**

The finance costs of the Group's continuing operations decreased by approximately RMB24.5 million, or 8.6%, from approximately RMB286.2 million for the the corresponding period in 2017 to approximately RMB261.7 million for the six months ended 30 June 2018, which was primarily due to the decrease in the average borrowing size and interest expense on bonds; the finance costs of the Group's discontinued operation decreased by approximately RMB2.8 million, or 54.9%, from approximately RMB5.1 million for the the corresponding period in 2017 to approximately RMB2.3 million for the six months ended 30 June 2018, which was primarily due to the significant decrease in the average borrowing size.

### **(Loss)/profit before taxation**

As a result of the foregoing reasons, the profit before taxation of the Group's continuing operations decreased by approximately RMB461.1 million, or 126.5%, from profit before taxation of approximately RMB364.6 million for the six months ended 30 June 2017 to loss before taxation of approximately RMB96.5 million for the corresponding period in 2018; the loss before taxation of the Group's discontinued operation decreased by approximately RMB81.3 million, or 99.1%, from approximately RMB82.0 million for the six months ended 30 June 2017 to approximately RMB0.7 million for the corresponding period in 2018.

### **Income tax**

The income tax for the Group's continuing operations decreased by approximately RMB165.9 million, or 118.2%, from approximately RMB140.4 million for the six months ended 30 June 2017 to approximately RMB-25.5 million for the corresponding period in 2018. The effective tax rate for the Group's continuing operations decreased from 38.5% for the six months ended 30 June 2017 to 26.4% for the corresponding period in 2018, which was primarily due to the increase in deductible tax loss not being recognized as deferred income tax assets by the Group for the period and the decrease in the provision of under-provision of income tax in respect of previous years.

### **(Loss)/profit for the period**

As a result of the foregoing reasons, the Group recorded a loss of approximately RMB71.8 million for the six months ended 30 June 2018, whereas a profit of approximately RMB140.8 million was recorded for the corresponding period in 2017.

### **(Loss)/profit attributable to non-controlling interests**

Loss attributable to non-controlling interests of the Group for the six months ended 30 June 2018 amounted to approximately RMB15.8 million, while the profit attributable to non-controlling interests of the Group was approximately RMB6.8 million for the corresponding period in 2017.

### **(Loss)/profit 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 2018 amounted to approximately RMB56.0 million, whereas profit attributable to equity shareholders of the Company for the corresponding period in 2017 amounted to approximately RMB134.0 million.

### **財務成本**

截至2018年6月30日止6個月，本集團持續經營業務的財務成本約人民幣261.7百萬元，較2017年同期的約人民幣286.2百萬元減少約人民幣24.5百萬元或8.6%，減少的原因主要是由於平均借款規模減少以及債券利息費用減少；本集團已終止經營業務的財務成本約人民幣2.3百萬元，較2017年同期的約人民幣5.1百萬元減少約人民幣2.8百萬元或54.9%，主要是由於平均借款規模大幅降低。

### **稅前(虧損)/利潤**

鑒於上述原因，本集團持續經營業務從截至2017年6月30日止6個月的稅前利潤約人民幣364.6百萬元減少至2018年同期的稅前虧損約人民幣96.5百萬元，減少約人民幣461.1百萬元或126.5%；本集團已終止經營業務的從截至2017年6月30日止6個月的稅前虧損約人民幣82.0百萬元減少至2018年同期的稅前虧損約人民幣0.7百萬元，減少約人民幣81.3百萬元或99.1%。

### **所得稅**

本集團持續經營業務的所得稅由2017年6月30日止6個月的約人民幣140.4百萬元減少至2018年同期的約人民幣-25.5百萬元，減少約人民幣165.9百萬元或118.2%。本集團持續經營業務的實際稅率從截至2017年6月30日止6個月的38.5%減少至2018年同期的26.4%，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以及補提以前年度少提所得稅減少。

### **本期(虧損)/利潤**

鑒於上述原因，截至2018年6月30日止6個月，本集團錄得虧損約人民幣71.8百萬元，而2017年同期錄得利潤約人民幣140.8百萬元。

### **歸屬於非控股權益(虧損)/利潤**

本集團截至2018年6月30日止6個月的歸屬於非控股權益虧損約人民幣15.8百萬元，而2017年同期錄得歸屬於非控股權益利潤約人民幣6.8百萬元。

### **歸屬於本公司權益股東(虧損)/利潤**

鑒於上述原因，本公司截至2018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56.0百萬元，而2017年同期錄得歸屬於本公司權益股東利潤約人民幣134.0百萬元。



# 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 2018 and 2017 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2018年及2017年6月30日止6個月本集團的分部收入、毛利和經營利潤及其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			
		2018		2017	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
<b>Environmental Protection and Energy Conservation Solutions:</b>	<b>環保及節能解決方案</b>				
Environmental protection	環保：				
Revenue	收入	<b>1,959.7</b>	<b>42.3</b>	2,219.6	44.5
Gross profit	毛利	<b>329.6</b>	<b>33.4</b>	443.4	38.0
Operating profit	經營利潤	<b>143.6</b>	<b>106.7</b>	498.2	92.9
Energy conservation solutions:	節能解決方案：				
Revenue	收入	<b>684.2</b>	<b>14.8</b>	423.9	8.5
Gross profit	毛利	<b>93.5</b>	<b>9.5</b>	109.5	9.4
Operating profit/(loss)	經營利潤/(虧損)	<b>15.8</b>	<b>11.7</b>	(26.1)	(4.9)
<b>Segment revenues</b>	<b>分部收入</b>	<b>2,643.9</b>	<b>57.1</b>	2,643.5	53.0
<b>Segment gross profit</b>	<b>分部毛利</b>	<b>423.1</b>	<b>42.9</b>	552.9	47.4
<b>Segment operating profit</b>	<b>分部經營利潤</b>	<b>159.4</b>	<b>118.4</b>	472.1	88.0
<b>Renewable Energy Equipment</b>	<b>可再生能源設備</b>				
Wind power products and services:	風電產品及服務：				
Revenue	收入	<b>1,799.5</b>	<b>38.9</b>	2,192.5	43.9
Gross profit	毛利	<b>496.6</b>	<b>50.4</b>	549.9	47.1
Operating (loss)/profit	經營(虧損)/利潤	<b>(18.9)</b>	<b>(14.0)</b>	148.4	27.7
Solar energy products and services (discontinued operation):	太陽能產品及服務(已終止經營)：				
Revenue	收入	—	—	1.4	0.1
Gross	毛利	<b>(10.0)</b>	<b>N/A</b>	(5.2)	(0.4)
operating profit/(loss)	經營利潤/(虧損)	<b>1.6</b>	<b>1.2</b>	(76.9)	(14.3)
<b>Segment revenues</b>	<b>分部收入</b>	<b>1,799.5</b>	<b>38.9</b>	2,193.9	43.9
<b>Segment gross profit</b>	<b>分部毛利</b>	<b>486.6</b>	<b>49.4</b>	544.7	46.7
<b>Segment operating (loss)/profit</b>	<b>分部經營(虧損)/利潤</b>	<b>(17.3)</b>	<b>(12.8)</b>	71.5	13.3



**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 decreased by RMB259.9 million, or 11.7%, from approximately RMB2,219.6 million for the corresponding period 2017 to approximately RMB1,959.7 million for the six months ended 30 June 2018. The decrease was mainly attributable to the decrease in the revenue generated from desulfurization business. As compared to the corresponding period in 2017, the Group's revenue generated from desulfurization business decreased by approximately RMB208.5 million, or approximately 16.8%. The decrease in the Group's desulfurization business was mainly due to excess power production capacity, the stringent national controls and reduction in scale of new thermal power, and the continuing shrinkage of traditional thermal power desulfurization market.

環保業務於截至2018年6月30日止6個月收入約人民幣1,959.7百萬元，與2017年同期的約人民幣2,219.6百萬元相比減少259.9百萬元或11.7%。主要是由於脫硫業務收入減少所致。與2017年同期相比，本集團脫硫業務收入減少約人民幣208.5百萬元，降幅約為16.8%。本集團脫硫業務的減少主要是因為電力產能過剩，國家嚴控和壓縮新建火電規模，傳統火電脫硫市場持續萎縮。

The following table sets out the revenues from the business lines included 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 2018 and 2017.

下表分別載列截至2018年及2017年6月30日止6個月包括在本集團環保業務中各業務線的收入，及其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			
		2018		2017	
		(RMB million) (人民幣百萬元)	%	(RMB million) (人民幣百萬元)	%
Desulfurization	脫硫	1,032.0	52.7	1,240.5	55.9
Denitrification	脫硝	365.6	18.6	288.4	13.0
Low NO <sub>x</sub> combustion equipment	低氮燃燒設備	54.6	2.8	32.2	1.4
Water treatment	水處理	347.5	17.7	445.4	20.1
Ash removal	除塵	160.0	8.2	213.1	9.6
<b>Total</b>	<b>總計</b>	<b>1,959.7</b>	<b>100.0</b>	<b>2,219.6</b>	<b>100.0</b>

*Cost of sales*

Cost of sales for the environmental protection business was approximately RMB1,630.1 million for the six months ended 30 June 2018, representing a decrease of RMB146.1 million, or 8.2%, as compared to that of approximately RMB1,776.2 million for the six months ended 30 June 2017. The decrease was consistent with the decrease in revenue generated from such business line and was mainly due to the decrease in the cost of sales for the desulfurization business.

*Gross profit and gross profit margin*

As a result of the foregoing reasons, gross profit attributable to the environmental protection business decreased by approximately RMB113.8 million, or 25.7%, from approximately RMB443.4 million for the six months ended 30 June 2017 to approximately RMB329.6 million for the corresponding period in 2018. The gross profit margin of this business decreased from approximately 20.0% for the first half of 2017 to approximately 16.8% for the first half of 2018, mainly due to the decrease in gross profit margin of desulfurization and denitrification business.

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 2018 as compared with the six months ended 30 June 2017:

銷售成本

環保業務截至2018年6月30日止6個月的銷售成本約人民幣1,630.1百萬元，與截至2017年6月30日止6個月的約人民幣1,776.2百萬元相比減少146.1百萬元或8.2%。這與該業務線的收入下降一致，主要原因是脫硫業務所產生的銷售成本減少所致。

毛利及毛利率

鑒於上述原因，環保業務產生的毛利從截至2017年6月30日止6個月的約人民幣443.4百萬元減少至2018年同期的約人民幣329.6百萬元，減少約人民幣113.8百萬元或25.7%。此業務的毛利率從2017年上半年的約20.0%減少至2018年上半年的約16.8%，主要因為脫硫及脫硝業務毛利率下降。

下表載列截至2018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2017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	
		2018 (%)	2017 (%)
Desulfurization	脫硫	15.5	21.2
Denitrification	脫硝	17.6	29.7
Low NO <sub>x</sub> combustion equipment	低氮燃燒設備	15.2	27.6
Water treatment	水處理	26.7	16.7
Ash removal	除塵	12.2	12.6

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)



#### Energy conservation solutions

##### Revenue

Revenue from the energy conservation solutions business increased by approximately RMB260.3 million, or 61.4%, from approximately RMB423.9 million for the first half of 2017 to approximately RMB684.2 million for the corresponding period in 2018. The increase in revenue was mainly due to the increase in revenue generated from the general contracting business of power station construction, resulted from substantial settlement of Lanzhou project undertaken by the general contracting business of power station construction of the Group.

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 2018 and 2017.

#### 能源解決方案

##### 收入

節能解決方案業務的收入從2017年上半年的約人民幣423.9百萬元增加至2018年同期的人民幣約684.2百萬元，增加約人民幣260.3百萬元或61.4%。收入增加主要是因為電站建設總承包業務線收入增長，這是本集團電站建設總承包業務承建的蘭州項目大量結算所致。

下表分別載列截至2018年及2017年6月30日止6個月包括在本集團節能解決方案各業務線的收入，及其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			
		2018		2017	
		(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	87.4	12.8	134.1	31.6
General contracting for power stations	電站建設總承包	464.3	67.8	195.7	46.2
Energy conservation services	節能服務	120.4	17.6	–	–
Others <sup>(1)</sup>	其他 <sup>(1)</sup>	12.1	1.8	94.1	22.2
<b>Total</b>	<b>總計</b>	<b>684.2</b>	<b>100.0</b>	423.9	100.0

##### Note:

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

##### 附註：

(1) 其他包括汽輪機維修及改造、餘熱回收建造、鍋爐綜合利用改造服務。

*Cost of sales*

Cost of sales for the energy conservation solutions business increased by approximately RMB276.3 million, or 87.9%, from approximately RMB314.4 million for the first half of 2017 to approximately RMB590.7 million for the corresponding period in 2018. Such increase was consistent with the increase trend in revenue from this business line.

*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 RMB16.0 million, or 14.6%, from approximately RMB109.5 million for the first half of 2017 to approximately RMB93.5 million for the corresponding period in 2018. Gross profit margin for this business decreased from approximately 25.8% for the first half of 2017 to approximately 13.7% for the corresponding period in 2018. This decrease was primarily due to the decrease in gross profit margin of general contracting for power stations business which had contributed to a relatively large percentage of revenue.

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 2018 as compared with the six months ended 30 June 2017:

銷售成本

節能解決方案業務的銷售成本從2017年上半年的約人民幣314.4百萬元增加至2018年同期的約人民幣590.7百萬元，增長約人民幣276.3百萬元或87.9%，這與該業務線的收入增長趨勢一致。

毛利及毛利率

鑒於上述原因，節能解決方案業務的毛利從2017年上半年的約人民幣109.5百萬元下降至2018年同期的約人民幣93.5百萬元，減少約人民幣16.0百萬元或14.6%。此業務的毛利率從2017年上半年的約25.8%下降至2018年同期的約13.7%。減少的主要原因是因為收入所佔比例較大的電站建設總承包業務毛利率下降。

下表載列截至2018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2017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	
		2018 (%)	2017 (%)
Plasma-assisted coal ignition and combustion stabilization	等離子體點火及穩燃	39.9	31.5
General contracting for power stations	電站建設總承包	8.0	24.1
Energy conservation services	節能服務	15.9	-
Others	其他	32.8	22.1



## 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

#### Revenues

#### 收入

Revenue attributable to the wind power products and services business decreased by approximately RMB393.0 million, or 17.9%, from approximately RMB2,192.5 million for the first half of 2017 to approximately RMB1,799.5 million for the corresponding period in 2018. The decrease was mainly attributable to the slight decrease in number of wind turbines of the Group sold in the period.

風電產品及服務業務的收入從2017年上半年的約人民幣2,192.5百萬元下降至2018年同期的約人民幣1,799.5百萬元，減少約人民幣393.0百萬元或17.9%。下降的主要原因是本集團風機銷售數量有所下降。

#### Cost of sales

#### 銷售成本

Cost of sales attributable to the wind power products and services business decreased by approximately RMB339.7, or 20.7%, from approximately RMB1,642.6 million for the first half of 2017 to approximately RMB1,302.9 million for the corresponding period in 2018. Such decrease was consistent with the downward trend of revenue from these businesses.

風電產品及服務業務的銷售成本從2017年上半年的約人民幣1,642.6百萬元下降至2018年同期的約人民幣1,302.9百萬元，減少約人民幣339.7百萬元或20.7%，這與該等業務的收入下降趨勢一致。

#### 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 RMB53.3 million, or 9.7%, from approximately RMB549.9 million for the first half of 2017 to approximately RMB496.6 million for the corresponding period in 2018. Gross profit margin for this business for the first half of 2018 was 27.6%, increasing slightly from the 25.1% for the first half of 2017.

鑒於上述原因，風電產品及服務業務的毛利從2017年上半年的約人民幣549.9百萬元下降至2018年同期的約人民幣496.6百萬元，減少約人民幣53.3百萬元或9.7%。此業務2018年上半年的毛利率為27.6%，與2017年上半年的25.1%略有上升。

### Liquidity and capital resources

The following table sets out the net cash flows of the Group for the six months ended 30 June 2018 and 2017 respectively:

### 流動資金和資本來源

下表分別載列截至2018年和2017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	
		2018 (RMB million) (人民幣百萬元)	2017 (RMB million) (人民幣百萬元) (restated) (重述)
Net cash used in operating activities	經營活動使用的現金淨額	(318.5)	(303.4)
Net cash (used in)/generated from investing activities	投資活動(使用)/產生的現金淨額	(305.2)	157.4
Net cash used in financing activities	融資活動使用的現金淨額	(453.2)	(2,469.5)
Cash and cash equivalents as at 30 June	於6月30日的現金及現金等價物	2,917.9	1,823.1

#### Net cash used in operating activities

In the first half of 2018, net cash used in operating activities of the Group was approximately RMB318.5 million, while that of the corresponding period in 2017 was approximately RMB303.4 million. The increase in the net cash flow used in operating activities was mainly due to the increase in the settlement of accounts payable of the Group for the period as compared with the corresponding period in the previous year.

#### 經營活動使用的現金淨額

本集團2018年上半年經營活動使用的現金淨額約為人民幣318.5百萬元，而2017年同期則約為人民幣303.4百萬元。經營活動使用的現金流量淨額增加主要是由於本集團本期應付賬款支付金額較去年同期有所增加導致。

#### Net cash (used in)/generated from investing activities

Net cash used in the Group's investing activities for the first half of 2018 was approximately RMB305.2 million, while net cash generated from investing activities for the corresponding period in 2017 was approximately RMB157.4 million. The decrease in the net cash generated from investing activities was mainly due to the collection of part of considerations from the disposal of subsidiaries in the first half of 2017.

#### 投資活動(使用)/產生的現金淨額

本集團2018年上半年投資活動使用的現金淨額約為人民幣305.2百萬元，而2017年同期投資活動產生的現金淨額則約為人民幣157.4百萬元。投資活動產生的現金淨額減少，主要是由於本集團2017年上半年處置附屬公司而收回部份對價款所致。

#### Net cash used in financing activities

Net cash used in financing activities of the Group for the first half of 2018 was approximately RMB453.2 million, while net cash used in financing activities for the same period in 2017 was approximately RMB2,469.5 million, mainly due to the repayments of borrowings of the Group in the first half of 2017.

#### 融資活動使用的現金淨額

本集團2018年上半年融資活動使用的現金淨額約為人民幣453.2百萬元，而2017年同期融資活動使用的現金淨額則約為人民幣2,469.5百萬元。主要是由於本集團2017年上半年償還借款所致。



### Working capital

As at 30 June 2018, the Group's cash and cash equivalents were approximately RMB2,917.9 million, representing a decrease of approximately RMB1,076.2 million, or 26.9%, as compared to RMB3,994.1 million as at 31 December 2017. The decrease was mainly attributable to the cash outflow for repayment of the Group's indebtedness being higher than the cash inflow of the borrowed indebtedness during the period.

The Group's gearing ratio, which is calculated by dividing net debt (including other interest-bearing payables and interest-bearing bank loans, less cash and cash equivalents) by the sum of total equity plus net debt, increased to 53.0% as at 30 June 2018 as compared to that of 49.4% as at 31 December 2017. The increase was mainly attributable to the decrease in the Group's cash and cash equivalents being higher than the decrease in the indebtedness.

### Net current assets

As at 30 June 2018, the Group's net current assets were approximately RMB1,346.6 million, representing a decrease of approximately RMB1,445.9 million, as compared to net current assets of approximately RMB2,792.5 million as at 31 December 2017.

As at 30 June 2018, the unutilised banking facilities of approximately RMB9,091.0 million 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 RMB3,095.2 million as at 30 June 2018, which decreased by approximately RMB50.2 million, or 1.6%, from approximately RMB3,145.4 million as at 31 December 2017.

### Trade and bills receivables

Trade and bills receivables of the Group decreased by approximately RMB1,108.5 million, or 8.6%, from approximately RMB12,842.8 million as at 31 December 2017 to approximately RMB11,734.3 million as at 30 June 2018. The decrease was mainly attributable to the decrease in the balance of trade receivable as a result of the decrease in sales revenue from the wind turbine sale and the increase in collection efforts of the Group for the period and due payment of bills receivables of Guodian Solar for the period.

### 運營資金

於2018年6月30日，本集團的現金及現金等價物約為人民幣2,917.9百萬元，較2017年12月31日的人民幣3,994.1百萬元減少約人民幣1,076.2百萬元或26.9%。主要是由於本期本集團償還債項的現金流出大於借入債項的現金流入所致。

本集團的資產負債率，由淨債務（包括帶利息其他應付款項和帶利息銀行貸款減現金及現金等價物）除以總權益與淨債務之和而計算得出，與2017年12月31日的49.4%相比，上升至2018年6月30日的53.0%，上升主要是由於本集團現金及現金等價物減少大於債項減少所致。

### 流動資產淨額

於2018年6月30日，本集團流動資產淨額約為人民幣1,346.6百萬元，較2017年12月31日流動資產淨額約人民幣2,792.5百萬元減少約人民幣1,445.9百萬元。

於2018年6月30日，本集團未動用銀行授信約為人民幣9,091.0百萬元，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2018年6月30日存貨約為人民幣3,095.2百萬元，較於2017年12月31日的存貨約人民幣3,145.4萬元減少約人民幣50.2百萬元或1.6%。

### 應收賬款及票據

本集團於2018年6月30日的應收賬款及票據約為人民幣11,734.3百萬元，較於2017年12月31日的約人民幣12,842.8百萬元減少約人民幣1,108.5百萬元或8.6%，主要是由於本期本集團風機銷售收入下降及催收力度加大導致的應收賬款減少及國電光伏應收票據本期到期兌付所致。



### Deposits, prepayments and other receivables

The Group's deposits, prepayments and other receivables increased by approximately RMB1,073.3 million or 53.6%, from approximately RMB2,001.2 million as at 31 December 2017 to approximately RMB3,074.5 million as at 30 June 2018. The increase was primarily attributable to the increase in receivables from other third parties, associates and joint ventures for the period.

### Trade and bills payables

Trade and bills payables of the Group decreased by approximately RMB530.1 million, or 5.5%, from approximately RMB9,684.7 million as at 31 December 2017 to approximately RMB9,154.6 million as at 30 June 2018. The decrease was primarily due to decrease in trade and bills payables in relation to the procurement of wind turbine raw materials and environmental protection sub-contracting engineering payment and equipment payment of the Group.

### Indebtedness

The Group's total indebtedness decreased by approximately RMB191.8 million, or 1.6%, from approximately RMB11,753.0 million as at 31 December 2017 to approximately RMB11,561.2 million as at 30 June 2018. This is mainly because the Group reduces financing scale for the period. The proportion of long-term indebtedness to the total indebtedness decreased from approximately 34.5% as at 31 December 2017 to approximately 25.3% as at 30 June 2018. The decrease was primarily attributable to the increase 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 2018, 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 2018 and 30 June 2018) was approximately 4.4%, while the effective interest rate of the Group for the corresponding period in 2017 was approximately 4.7%.

### Pledged assets

As at 30 June 2018, 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 RMB1,406.1 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於2017年12月31日的約人民幣2,001.2百萬元增加至於2018年6月30日的約人民幣3,074.5百萬元，增加約人民幣1,073.3百萬元或53.6%，主要是由於本期其他應收第三方、聯營及合營企業款項增加所致。

### 應付賬款及票據

本集團於2018年6月30日的應付賬款及票據約為人民幣約9,154.6百萬元，較於2017年12月31日的約人民幣9,684.7百萬元減少約人民幣530.1百萬元或5.5%，主要是由於本集團風機原材料採購和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2018年6月30日的總債項約為人民幣11,561.2百萬元，較於2017年12月31日的約人民幣11,753.0百萬元減少約人民幣191.8百萬元或1.6%，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2017年12月31日的約34.5%減少至2018年6月30日的約25.3%，主要是由於本期本集團短期債項增加。

本集團所有借款都以人民幣計價。

本集團2018年上半年的實際利率(以總利息開支除以2018年1月1日與2018年6月30日的未償還借款的平均值釐定)約為4.4%，而本集團2017年同期的實際利率約為4.7%。

### 已抵押資產

於2018年6月30日，本集團長期帶息借款以賬面值合共約人民幣1,406.1百萬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。

### Contingent liabilities

The Group's contingent liabilities decreased by approximately RMB1,289.9 million, or 46.8%, from approximately RMB2,754.6 million as at 31 December 2017 to approximately RMB1,464.7 million as at 30 June 2018. The Group's contingent liabilities at the end of the period primarily consisted of bids, performance, quality and litigation guarantees.

### Major investment

In the first half of 2018, the Group fulfilled a total investment amount of RMB95.96 million, of which the capital investment amount was RMB86.55 million, which was used to construct the Jiangsu Suqian Phase II Desulfurization and Denitrification Concession Project (the installation project progress smoothly and is expected to commence production by the end of 2018) and the Inner Mongolia Chifeng Chaghanhua Experimental Wind Power Project (the project started in May 2018, part of the earthwork construction was completed and is expected to commence production in 2019); the amount of technological upgrading investment was RMB9.41 million, which was mainly used for denitrification renovation and warehouse expansion, etc.

### Sale or deemed as sales

According to the Agreement on Purchase of Assets by Issuance of Shares and its supplementary agreements signed by the Company and Tianjin Zhanghuan Semiconductor Co., Ltd. ("Zhonghuan"), the Company will dispose 90% equity interest in Guodian Solar to Zhonghuan, and Zhonghuan will issue 83,983,137 ordinary shares to the Company as consideration. The disposal was approved by the Securities Regulatory Commission of China on 7 May 2018. On 30 June 2018, the Company completed the disposal of 90% equity interest in Guodian Solar to Zhonghuan. On 16 August 2018, the non-public issued consideration shares of Zhonghuan were listed on the Shenzhen stock exchange.

Save as disclosed above, the Group did not have any other material sales or deemed as sales during the six months ended 30 June, 2018.

### Market risk

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

### 或有負債

本集團的或有負債從2017年12月31日的約人民幣2,754.6百萬元減少至2018年6月30日的約人民幣1,464.7百萬元，減少約人民幣1,289.9百萬元，或46.8%。本集團期末的或有負債主要包括投標保函、履約保函、質量保函及訴訟擔保。

### 重大投資

2018年上半年，本集團完成投資金額共計人民幣95.96百萬元，其中，基建投資金額為人民幣86.55百萬元，用於建設江蘇宿遷二期脫硫、脫硝特許經營項目(目前安裝工程進展順利，計劃2018年底投產)及內蒙古赤峰查乾花實驗風力發電項目(項目於2018年5月開工，已完成部分土方施工，預計2019年投產)；技改投資金額為人民幣9.41百萬元，主要用於脫硝改造、倉庫擴建等。

### 出售或視為出售

根據本公司與天津中環半導體股份有限公司(「中環股份」)簽訂的發行股份購買資產協議及其補充協議，本公司將其對國電光伏的90%股權出售予中環股份，且中環股份向本公司發行83,983,137股普通股作為代價。該項處置於2018年5月7日通過中國證券監督管理委員會的審核批准。於2018年6月30日，本公司完成其對國電光伏的90%股權出售予中環股份。於2018年8月16日，中環股份本次非公开发行的代價股份已於深圳證券交易所上市。

除以上已披露者，於截至2018年6月30日止6個月內，本集團無任何其他重大出售或視為出售。

### 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、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。

### Credit and counterparty risk

The Group's credit risk is primarily attributable to its bank deposits and cash in-hand, trade and bills receivables, deposits, prepayments and other receivables, gross amounts due from customers from construction contracts 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.

### 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 arises.

### 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.

### 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及庫存現金、應收賬款及票據、按金、預付款項和其他應收款項、應收建造合同客戶款項總額及其他非流動資產。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，並持續監控應收該等客戶的未償還應收款項。本集團的信用評估注重客戶的付款記錄、付款能力，並考慮行業和客戶的具體因素，以及整體宏觀經濟環境。本集團一般要求其客戶按照合約協議條款支付進度付款和其他債務。

### 利率風險

本公司有重大借款，其經營活動顯著依賴於以具有競爭力的利率獲得信貸。本公司借款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。



### 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 2018, the Group's exchange gain was approximately RMB1.21 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.

### Subsequent events

Since 30 June 2018 and up to the date of this interim report, there was no event that had a significant impact on the Group's operational, financial or business prospects.

### 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2018年6月30日止6個月發生匯率收益約人民幣1.21百萬元。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進入。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。

### 期後事項

自2018年6月30日至本中期報告日期，未發生對本集團營運、財務或經營前景產生重大影響的事件。

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 2018, 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 2018. 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，視企業管治為為股東創造價值不可或缺的一部份，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，建立有由股東大會、董事會、監事會及高級管理層有效制衡、獨立運作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2018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2018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. 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 2018 and the unaudited interim financial statements for the six months ended 30 June 2018 prepared in accordance with No. 34 “Interim Financial Reporting” of International Financial Reporting Standards (“**IFRS**”).

### (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 Group 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 Group 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。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2018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《國際財務報告準則》(「**國際財務報告準則**」)第34號「中期財務報告」的規定編製的截至2018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，本集團遵守上市規則第13.10(B)條中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，本集團也遵守上市規則第13.10(B)條中關於海外監管公告的相關規定。

## (6) Risk Management and Internal Control

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

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

### Internal Control

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

The Company has also established the finance and property department, the audit department and the 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.

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.

## (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》。

本公司已設立了財務產權部、審計部和監察部，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。

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。



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

### Risk Management

**System construction:** At present, the Group's comprehensive risk management system pilot construction has completed "two systems, two handbooks, three databases, one report" (i.e. comprehensive risk management rule and basic system of internal control; risk management operation handbook and internal control handbook; risk information database, risk case database and risk index database; internal control evaluation report), initially realized the standardization and systematization of risk management and internal control.

**Architectural construction:** The Group's comprehensive risk management system has extended laterally to every department horizontally and vertically to every subsidiary. The Board of Directors is the top decision-making organization in respect of comprehensive risk management. The Company has set up a leadership group for the construction of risk management system led by the president and composed members of the heads of each department. The officer of each department is responsible for organizing and carrying out daily work in respect of comprehensive risk management; and also established an comprehensive risk management leadership group at subsidiaries, with specific management responsibilities of all levels.

**Work implementation:** The first half of 2018, 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.

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，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：**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。

**工作實施：**2018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。



In January 2018, the overall internal control self-evaluation of the Group for 2017 was completed. The Group is not aware of any material issues nor any material defaults of the internal control. In the first half of 2018, the Group carried out the internal control evaluation to one subsidiary by the way of independent implementation. The evaluation covers financial management, operation monitoring, compliance monitoring and risk management. The Board of Directors believes that the current monitoring system of the Company is effective and adequate and considers that the resources, qualifications and experiences of the staff of the Company's accounting and financial reporting functions, its training programs and budgets thereof are adequate. The Board of Directors will continue to monitor the risk management and internal control systems in future and plan to set up the risk management committee under the Board of Directors.

#### Management of Inside Information

In order to promote fairness, transparency, accountability and responsibility, which are the core principles of good corporate governance, the Group notifies the Stock Exchange and discloses to Shareholders and other holders of its listed securities 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").

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 of Guodian Technology & Environment Group Corporation Limited" 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.

本公司於2018年1月完成了2017年集團整體內部控制自評價工作，未發現本公司內部控制存在任何重大問題，或出現任何重大失誤。2018年上半年本集團通過自主實施的方式，對一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，並計劃在董事會下設立風險管理委員會。

#### 內幕消息管理

為推行良好公司管治的核心原則，即公正、透明、問責及負責，本集團會適時根據上市規則及《證券及期貨條例》(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。

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《國電科技環保集團股份有限公司內幕信息管理辦法》。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) Connected Transaction Management

In order to strengthen the Company's management of connected transactions, the Company has established the "Management Rules on the Conduct of Connected Transactions of Guodian Technology & Environment Group Corporation Limited" and 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 has provided 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.

## (7) 關連交易管理

本公司制定了《國電科技環保集團股份有限公司關連交易管理辦法》，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。

### 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 2018 was unaudited, but was reviewed by KPMG, 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 2018, 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 2018.

### 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 2018.

### Material Legal Proceedings

On 24 July 2017, a subsidiary of the Group, whose operations were discontinued, was sued by a supplier, and was required to pay the remaining RMB114.4 million and overdue interest according to the sales contract. As at the date of this interim report, the case was still pending. The Group has included the maximum expected losses of the case in the financial statements for the year ended 31 December 2017.

Save as disclosed above, for the six months ended 30 June 2018, the Directors of the Company believe that other litigations and arbitrations of the Group involved will not have a material adverse effect on the financial position, operating results and business of the Group.

### Interim Dividends

The Board recommends not to distribute any interim dividend for the six months ended 30 June 2018.

### Changes of Information of Directors, Supervisors and Chief Executive

The following is updated information of the Directors and Supervisors required to be disclosed pursuant to Rule 13.51B(1) of the Listing Rules:

As a result of the consolidation of Guodian Group and China Energy and the adjustment of personnel positions, Mr. Wang Zhongqu, a non-executive Director, is currently the chief supervisor of the Production Safety Department of China Energy (formerly the chief supervisor of production safety and head of the Production Safety Department of Guodian Group); and Mr. Zhang Wenjian, a non-executive Director, is currently the head of the Technology Department and Deputy Secretary of China Energy (formerly the head of the Technology and Integrated Industry Department of Guodian Group).

### 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2018年6月30日止6個月的中期財務報告未經審核，但已由畢馬威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2018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2018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2018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

於2017年7月24日，本集團已終止經營的一家附屬公司遭其供貨商起訴，要求根據銷售合同支付剩餘貨款人民幣114.4百萬元及若干逾期利息。截止本中期報告日，該案件尚在審理中。對該訴訟，本集團已將預計的最大損失計入截至2017年12月31日止年度財務報表。

除上述披露外，截至2018年6月30日6個月止，本公司董事認為本集團涉及的其他訴訟及仲裁不會對本集團的財務狀況、經營業績及業務產生實質性不利影響。

### 中期股息

董事會建議不派發截至2018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的變動

下列為根據上市規則第13.51B(1)條規定須予披露有關董事及監事之更新資料：

因國電集團與國家能源集團合併事宜及個人任職調整，本公司非執行董事王忠渠先生現任國家能源集團安全生產總監（原為國電集團安全生產總監及安全生產部主任）；及本公司非執行董事張文建先生現任國家能源集團科技部（科技委辦公室）主任及副書記（原為國電集團科技與綜合產業部主任）。

## OTHER INFORMATION (CONTINUED) 其他資料(續)



Mr. Yeung Chi Tat, resigned as an independent non-executive director and appointed as the vice president of ANTA Sports Products Limited (Stock code: 2020), a listed company in Hong Kong, with effect from 1 June 2018.

As a result of the consolidation of Guodian Group and China Energy and the adjustment of personnel positions, Mr. Luan Baoxing, a Supervisor, is currently the head of the Financial Property Department and Deputy Secretary of China Energy (formerly the head of the Financial Management Department of Guodian Group); Mr. Xu Xingzhou, a Supervisor, is currently the team leader of the Party Committee Inspection Team of China Energy (formerly the head of the Human Resources Department of Guodian Group); and Mr. Yang Xiangbin, a Supervisor, is currently the head of the Capital Operation Department of China Energy (formerly the head of the Capital and Asset Management Department of Guodian Group).

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

As at 30 June 2018, Mr. YAN Andrew Y., a non-executive Director of the Company, was interested in 288,200,000 shares of the Company. Please refer to the paragraph headed "Substantial Shareholders' Interests in the Shares" for more information. 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.

### Substantial Shareholders' Interests in the Shares

As at 30 June 2018, to the best knowledge of the Directors, the following persons (save as otherwise disclosed, and 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):

楊志達先生已辭任香港上市公司安踏體育用品有限公司(股份代號: 2020)之獨立非執行董事並獲委任為該上市公司的副總裁, 自2018年6月1日生效。

因國電集團與國家能源集團合併事宜及個人任職調整, 本公司監事樂寶興先生現任國家能源集團財務產權部主任及副書記(原為國電集團財務管理部主任); 本公司監事許興洲先生現任國家能源集團黨組巡視組組長(原為國電集團人力資源部主任); 及本公司監事楊向斌先生現任國家能源集團資本運營部主任(原為國電集團資本與資產管理部主任)。

### 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2018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股股份。更多資料請見「主要股東於股份之權益」。除上文所披露者之外, 本公司各董事、監事及高級管理人員概無在本公司或其任何相聯法團(定義見《證券及期貨條例》第XV部)的股份、相關股份或債權證中擁有任何根據《證券及期貨條例》第XV部第7及8分部須知會本公司及聯交所的權益或淡倉(包括根據《證券及期貨條例》的該等條文被當作或視為擁有的權益或淡倉), 或根據《證券及期貨條例》第352條登記於該條所指登記冊的權益或淡倉, 或根據《標準守則》須知會本公司及聯交所的權益或淡倉。

### 主要股東於股份之權益

於2018年6月30日, 就董事所知, 下列人士(除另有披露外, 及本公司董事、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 <sup>(1)</sup> 佔有關股本類別 之百分比 <sup>(1)</sup> %	Percentage in the Total Share Capital <sup>(1)</sup> 佔股本總數 之百分比 <sup>(1)</sup> %
Guodian Group <sup>(2)</sup> 國電集團 <sup>(2)</sup>	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 <sup>(2)</sup> (Long position) (好倉)	100.00	78.40

## OTHER INFORMATION (CONTINUED) 其他資料(續)

Name of Shareholders 股東姓名/名稱	Class of Share 股份類別	Capacity 身份	Number of Shares/ Underlying Shares Held 持有股份/ 相關股份數目 (Share) (股)	Percentage in the Relevant Class of Share Capital <sup>(1)</sup> 佔有關股本類別 之百分比 <sup>(1)</sup> %	Percentage in the Total Share Capital <sup>(1)</sup> 佔股本總數 之百分比 <sup>(1)</sup> %
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 <sup>(2)</sup> (Long position) (好倉)	49.99	39.19
Mr. YAN Andrew Y. 閻焱先生	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 <sup>(3)</sup> (Long position) (好倉)	22.00	4.75
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 <sup>(3)</sup> (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 <sup>(3)</sup> (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 <sup>(3)</sup> (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 2018. As at 30 June 2018, 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) Guodian Group holds, directly or indirectly, 100.0% of the domestic shares of the Company via Guodian Power Development Co., Ltd. ("Guodian Power"). Guodian Group had 46.00% of the interests directly in the total shares of Guodian Power and Guodian Power had 49.99% of the domestic shares of the Company. Therefore, Guodian Group is deemed to be interested in the domestic shares of the Company held by Guodian Power.

**附註：**

- (1) 該百分比是以本公司於2018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2018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) 國電集團透過國電電力發展股份有限公司(「國電電力」)直接及間接持有本公司100.0%的內資股。國電集團於國電電力股份總額中直接持有46.00%的權益，國電電力擁有本公司49.99%的內資股。因此，國電集團被視為擁有國電電力所持有的本公司內資股的權益。



## OTHER INFORMATION (CONTINUED)

### 其他資料(續)



After the Consolidation (as detailed in the Company's announcement dated 27 August 2018), the controlling shareholder of the Company was changed from Guodian Group to China Energy.

- (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.

於合併後(詳情見本公司日期為2018年8月27日的公告),本公司控股股東由國電集團變更為國家能源集團。

- (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被視作為擁有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 2018, the Group had a total of 6,778 employees. The remuneration of employees of the Group comprises 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2018年6月30日,本集團共聘用6,778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 formation, the Group has been always attached importance to the sustainable development of corporate operation, society and environment, taken advantage of the science and technology environmental protection company, actively fulfilled the corporate prospect of “World Share of Green Science and Technology” and integrated this concept into the daily operation activity.

### 1. Energy Conservation, Environmental Protection and Green Development

#### 1.1 Exploit the Advantages and Promote the Environmental Industry

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

At present, the Group is China's largest conventional coal-fired power plant energy conservation and environment protection service provider and leading manufacturer of renewable energy system and equipment; and it promotes the development of the industry with leading technology. In its development process, this 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 2018, 17 desulfurization units of Longyuan Environmental commenced production, including five units were newly built, with a capacity of 2,070MW, and 12 units with a capacity of 5,790MW were reconstructed; 11 denitrification units commenced production, including four units with a capacity of 3,320MW were newly built, and seven units with a capacity of 3,240MW were reconstructed. The accumulatively installed capacity of the desulfurization units input by Longyuan Environmental in thermal power plants was 233GW, and the installed capacity of flue gas denitrification units was 150GW, ranking the first in China for 12 consecutive years. According to the national average thermal power operation hours of about 4,200 hours, the SO<sub>2</sub> emission reduced for the first half of 2018 was about 2,971.1 kt and the nitrogen oxides emission reduced was about 502.4 kt.

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及可再生能源製造及服務兩大核心業務板塊，對環境產生了積極影響，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、龍源技術及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：2018年上半年，龍源環保脫硫裝置共投產17台，其中新建機組5台，容量共2,070MW，技術改造機組12台，容量共5,790MW；脫硝裝置共投產11台，其中新建機組4台，容量共3,320MW，技術改造機組7台，容量共3,240MW。龍源環保歷史累計投運火電廠脫硫裝置裝機容量2.33億千瓦，煙氣脫硝裝置裝機容量1.50億千瓦，連續12年排名全國第一。按照全國火電平均運行小時數約4,200小時計算，2018年上半年減排二氧化硫約297.11萬噸，減排氮氧化物約50.24萬噸。

As at June 30, 2018, the total installed capacity of the desulfurization franchised projects of Longyuan Environmental was 15,890MW; the total installed capacity of the desulfurization franchised operation and maintenance projects was 35,300MW and the total installed capacity of denitrification franchised projects was 11,100MW. According to the first-half of 2018 operation time of the thermal power franchised projects of the enterprise for 2,413.24 hours, the first-half emission reduction of SO<sub>2</sub> in the desulfurization franchised project reached 187,500t; the first-half emission reduction of SO<sub>2</sub> of the desulfurization franchised and operation and maintenance projects reached 604,400t; and the first-half emission reduction of nitrogen oxides in the denitrification franchised project reached 23.8 kt.

**Low-nitrogen combustion:** In the first half of 2018, 18 boiler combustion nitrogen reduction devices were newly built by Longyuan Technology; totally 569 boilers were put into operation, with an installed capacity up to 162GW. According to the national average thermal power operation hours of about 4,200, the nitrogen oxides emission reduced was about 340.2 kt in the first half of 2018.

**Sewage treatment:** There were 17 sewage treatment plants (stations) operated by Lucency, involving the operation of sewage treatment, reclaimed water and water supply, and with the treatment capacity of 1,450kt/d. As at June 30, 2018, the sewage treatment plant treated 105,700kt sewage (including reclaimed water) and reduced accumulatively 30.5kt COD emission in total.

#### *Business of Energy Conservation Solutions*

**Energy conservation:** The Group has implemented about 240 contracted energy management projects accumulatively. The contracted energy management projects have saved about 240kt coal equivalent in the recent three years. In the first half of 2018, the newly established Longyuan energy saving contracts were 11, saving more than 14.5kt coal equivalent.

於2018年6月30日，龍源環保所屬脫硫特許經營項目的總裝機容量為15,890MW，所屬脫硫特許經營加運營維護項目共35,300MW，所屬脫硝特許經營項目的總裝機容量為11,100MW。按所屬企業火電特許項目2018年上半年機組利用2,413.24小時計算，特許脫硫項目半年減排二氧化硫量達18.75萬噸，特許經營與運維項目半年減排二氧化硫量達60.44萬噸，特許脫硝項目半年減排氮氧化物達2.38萬噸。

**低氮燃燒：**2018年上半年，龍源技術新建鍋爐燃燒降氮裝置18台爐，歷史累計投運569台爐，裝機容量達1.62億千瓦。按全國火電平均運行小時數約4,200小時計算，2018年上半年減排氮氧化物約34.02萬噸。

**污水處理：**朗新明運營的污水處理廠(站)為17座，涉及污水、中水、供水運營業務，處理能力為145萬噸/天。截至2018年6月30日，污水處理廠2018年上半年處理污水(含中水、供水)共10,570萬噸，COD半年減排量達3.05萬噸。

#### *節能解決方案業務*

**能源節約：**本集團累計共實施合同能源管理項目約240項，合同能源管理項目近三年年均節約標準煤約24萬噸。2018年上半年，龍源節能新簽合同11項，新增節約標準煤已逾1.45萬噸。



The oil-saving ignition products of Longyuan Technology kept leading in the industry and Longyuan Technology is the only enterprise from China with offshore plasma ignition business. Longyuan Technology continues to carry out small-scale plasma ignition system design optimization, and constantly reduces system costs and enhances product competitiveness. The plasma ignition technology has been successfully applied to 824 equipment sets, with an installed capacity of 360 kW and global market share over 80%, and has saved more than 10Mt oil.

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824台設備，裝機容量達3.6億千瓦，全球市場佔有率逾80%，累計節油超過1,000萬噸。

### 1.1.2 Renewable Energy Equipment Manufacturing and Services

### 1.1.2 可再生能源製造及服務

#### WTG Products and Services

#### 風機產品及服務業務

Carbon dioxide emission reduction: In the first half of 2018, United Power produced 192 wind turbines (including 1 1.5MW wind turbine, 191 2MW wind turbines, 0 3MW wind turbines, with a total capacity of 383.5MW). In total, United Power produced and sold 11 thousand wind turbines with a total capacity of 17,798.5MW. According to the annual utilization time of 1,800 hours, in the first half, United Power saved approximately 4,949.8kt coal equivalent, reduced the emission of approximately 13,529.8kt carbon dioxide, 4.2kt SO<sub>2</sub>, 4kt nitrogen oxides and 0.95kt soot. In the first half, Chifeng Wind Power, a branch of the Group, accumulatively generated 145,597.7kWh electricity from wind power and PV power, equivalent to reduction of the emission of 122.9kt carbon dioxide<sup>1</sup>.

二氧化碳減排：2018年上半年，聯合動力生產風機192台（其中1.5MW風機1台，2MW風機191台，3MW風機0台，合計383.5MW）。聯合動力累計產銷風機1.1萬台，合17,798.5MW，按年利用1,800小時考慮，上半年節約標煤約494.98萬噸，減排二氧化碳約1,352.98萬噸，減排二氧化硫0.42萬噸，減排氮氧化物0.4萬噸，減排煙塵0.095萬噸。本集團分公司赤峰風電上半年累計風力和光伏發電14,559.77萬千瓦時，相當於減排溫室氣體二氧化碳12.29萬噸<sup>1</sup>。

### 1.1.3 International Development

### 1.1.3 國際化發展

At present, the plasma ignition devices of the Group have entered the markets of South Korea, Russia, India and Turkey, etc. Its wind turbine equipment has entered the markets of the United States and South Africa. Its environmental protection equipment has entered the market of Indonesia. Its automatic control systems and engineering services have entered the markets of India, Indonesia and Africa.

目前，本集團生產的等離子體點火裝置進入了韓國、俄羅斯、印度及土耳其等市場；風機設備進入美國及南非市場；環保設備進入印尼市場；自動化控制系統及工程服務進入印度、印尼及非洲市場。

<sup>1</sup> Latest authority data publically available: China Electricity Council China Electricity Industry Annual Development Report (2018) 2017 standard coal consumption 309g/kWh for power supply in the national thermal power plants with 6,000 kWh and above, the discharge amounts of carbon dioxide, soot, sulfur dioxide and nitrogen oxide are 844, 0.06, 0.26 and 0.25 g/kWh respectively.

<sup>1</sup> 可公開獲取的最新權威數據：中電聯中國電力行業年度發展報告(2018)，2017年全國6,000千瓦及以上火電廠供電標準煤耗309克/千瓦時，二氧化碳、煙塵、二氧化硫和氮氧化物排放量分別為844、0.06、0.26和0.25克/千瓦時。

## 1.2 Saving Energy and Resource, Building Conservation-Oriented Enterprise

The Group, as an advanced environmental protection service enterprise, in its development process, strictly complies with the “*Environmental Protection Law of the People’s Republic of China*”, the *Energy Conservation Law of the People’s Republic of China*” 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 the basis of their own business characteristics. Under the call of the Group, United Power has formulated the “*Energy Conservation and Consumption Reduction Management System*”; Chifeng Wind Power has formulated the *System Governing the Saving Use of Resources and Energy*”, covering power saving, fuel saving, water saving and other management measures and according to the requirements under the Health, Safety and Environment Integrated Management System (the “**HSE Management System**”), has implemented energy conservation and consumption reduction management. The Group, via rules and regulations, further requires each subsidiary to effectively encourage saving, curb wasting, and constantly optimize the external and internal environment for the construction of conservation-oriented enterprise, so as to form a long-term mechanism for saving resources and ensure the continuous and deep construction of conservation-oriented enterprise.

### 1.2.1 Energy Management

The Group’s energy consumption in the production and operation process mainly includes: electricity, gasoline, diesel and natural gas, etc. Electricity consumption mainly comes from the production process of wind turbine, blade, desulfurization catalyst and other products; the debugging of large automation systems and other equipment; the lighting for the project construction, the operation of motor and welding machine; the operation of the wind farm equipment and office used electricity, etc. Gasoline consumption mainly comes from the use and maintenance of commercial vehicles and equipment repair vehicles. Diesel consumption mainly comes from the vehicles to transport wind turbines, blades, desulfurization catalysts and other products and the operation of diesel generators in the power plants. Natural gas consumption mainly comes from the heating and paint baking in the blade production workshop, 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。

Each subsidiary of the Group, in order to strictly implement the energy management system, has established a relevant responsible department 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 count the statistics for the consumption of electricity and steam and submit the statistics to Longyuan Catalyst after summarizing in the form of Daily Production Briefing. If a department had a defect, the work safety department would analyze the problem and submit the analysis result to Longyuan Catalyst. And at the same time, Longyuan Catalyst would, according to the production situation of every project, prepare the statistics for the production energy consumption of such project and then the financial department would have the cost accounting and analysis of the energy consumption of the project.

#### 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., the domestic water for catering, bathroom, etc., the water for lawns and fire control, etc. The Group has not identified significant risks of water shortages in terms of seeking suitable sources of water.

According to the requirements of the water resource management system of the Group, the Office of the Group is responsible for the water resource management of the Group. In terms of water conservation, the Group has taken measures mainly including: Carry on trainings and promotions to raise the awareness of employees on water conservation; Improve the recycling rate of waste water, e.g. the plant industrial waste water of the desulfurization catalyst can be used as the replenishing water of the ammonia washing tower after the pollutants are removed, and the steam condensed water can be used for cleaning and washing in the production processes and the mixing pit; Strengthen daily maintenance and management of water supply equipment, timely repair damaged water supply facilities, regularly check and replace water supply appliances such as faucets, pipeline valves and flushing valves.

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」匯總後上報龍源催化劑，對能耗出現異常的部門，由安全生產部分分析並予以解決並上報龍源催化劑。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，本集團辦公室負責本集團水資源管理工作。在節約用水方面，本集團的主要措施包括：培訓及宣傳提高員工節約用水意識；提高廢水的回收利用，例如脫硫催化劑廠區工業廢水經去除污染物後可用作氨洗滌塔的補水，蒸汽冷凝水可用於生產工藝流程和混煉地坑清潔衝洗等；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、管道閥門及衝水閥等供水器具。

### 1.2.3 Use of Packaging Materials

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

Every subsidiary of the Group, in respect of the management of packaging materials, established relevant management rules and regulations. For example, United Power established the *Regulations Governing Packaging Materials*, Longyuan Electrical established the *Regulations Governing the Use of Packages*, etc., covering 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 *Environmental Prevention and Control of Solid Waste Pollution Law of the PRC*, the *Prevention and Control of Atmospheric Pollution Law of the PRC* and other applicable laws and regulations. Guided by the *13th Five-Year Plan for Ecological Environment Protection* and the *13th Five-Year Plan for Energy Conservation and Emission Reduction*, the Group strived to reduce the impact of various kinds of waste on the environment, strictly regulated waste emission management, and reasonably carried out recycling and utilization and safe disposal of waste with the ultimate goal of reducing waste emission. In the first half of 2018, 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、塑料薄膜、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制度。

## 1.3 清潔環保 減少污染物排放

本集團嚴格遵守《中華人民共和國環境保護法》、《中華人民共和國固體廢物污染環境防治法》、《中華人民共和國大氣污染防治法》等法規，以國家《「十三五」生態環境保護規劃》及《「十三五」節能減排綜合工作方案》為指導，高度重視各類廢棄物對環境的影響，嚴格規範廢棄物的排放管理，以減少廢棄物排放為最終目標，合理開展廢物回收利用和安全處置工作，2018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、墨盒、報廢的辦公電子產品等。

In terms of the above hazardous waste, every subsidiary of the Group establishes relevant management rules and regulations. For example, Longyuan Catalyst has established the *Measures for the Management and Control of Waste*; Guodian Zhishen has established the *Measures Governing Solid Waste*; Chifeng Wind Power has established the *Regulations for the Environment-friendly Management of Waste Mineral Oil*, etc. and the relevant department of each subsidiary is responsible for the management of waste.

### 1.3.2 Non-hazardous Waste Management

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

Steel scraps and iron chips produced by mechanical processing are stored in designated areas and managed by special 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 SO<sub>2</sub>, nitrogen oxides and particulate matters, wherein, Sulfur dioxide mainly comes from emissions from the Company's vehicles. Nitrogen oxides mainly come from the production emissions of United Power, excluding vehicle emissions. Particulate matters mainly come from the production emissions of United Power and Longyuan Catalyst, excluding vehicle emissions.

針對以上有害廢棄物，本集團各附屬公司建立了相關的管理制度和辦法，如龍源催化劑制定的《廢棄物管理控制辦法》，國電智深制定的《固體廢棄物管理辦法》，赤峰風電製定的《廢礦物油環保管理制度》等，並由集團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。

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 matters, SO<sub>2</sub> and nitrogen oxides. For exhaust gas generated by the paint spraying equipment, use the "dry-type paint fog filter + activated carbon absorber" device to carry out purification treatment. At the same time, the filtering plate can be taken down easily and the filtering material should be replaced regularly. In the process of producing and manufacturing wind turbine blades, the semi-finished blade after solidification should be cut and polished, thus producing particulate matter. After being collected and treated properly, exhaust gas is emitted into atmosphere if meeting the *Emission Standard of Air Pollutants for Industrial Kiln and Furnace* (GB9078-1996).

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。對於噴漆設備產生的廢氣，採用「幹式漆霧過濾器+活性炭吸附塔」裝置淨化處理。同時，濾板可以方便的取下，定期更換過濾材料。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》(GB9078-1996)排放入大氣。

## 2. Employee Care and Common Growth

The Group has always insisted that employees are the most precious wealth and the sources for the sustainable development of an 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

The Group has established a clear and transparent HR system, including 22 HR rules and regulations such as the "Measures Governing Staff Employment and Appointment Use (Tentative)" and the "Interim Measures Governing Total Salary", etc. On the basis of the rules and regulations of the Group, the HR department of the HQ has established 10 rules and regulations including the "Interim Measures Governing the Remuneration of HQ" and the "Measures Governing the Education and Training of the Employees of the HQ".

As at June 30, 2018, the Group had in total 6,778 employees, including 2,702 workers, 2,173 technicians and 1,903 other employees; or including 4,841 male employees, accounting for 71.42% of the total, and 1,937 female employees, accounting for 28.58% of the total. In the management level, 22% were female officers, the same proportion as the proportion of female employees to the total. There were 3,822 employees aged 35 and below, accounting for 56.39% of the total; 1,807 employees aged 36-45, accounting for 26.66%; 1048 employees aged 46-55, accounting for 15.46%; 101 aged 56 and above, accounting for 1.49%. The age structure of the employees was reasonable. Except 18 employees working in Hong Kong, the other 6,760 employees 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集團公司相關規定，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)》及《工資總額管理暫行辦法》等人力資源制度22項。以集團制度為基礎，本部人力資源部制定了《本部薪酬管理暫行辦法》及《本部員工教育培訓管理辦法》等10項制度。

於2018年6月30日，本集團共有員工6,778人，工人2,702人，技術人員2,173人，其他僱員1,903人；男性員工4,841人，佔員工總數的71.42%，女性員工1,937人，佔28.58%；管理層中，女性約佔22%，與員工比例相近；35歲及以下員工3,822人，佔員工總數的56.39%，36-45歲員工1,807人，佔26.66%，46-55歲員工1048人，佔15.46%，56歲以上員工101人，佔1.49%，年齡構成比較合理；現有18位員工在香港辦公室外，其餘6,760名員工均在中國大陸。

### **Employment according to Law**

In terms of employment, 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 the employees.

In terms of avoiding child labor and forced work, the Group perfects employees employment system and eliminates entirely illegal employment according to the applicable national rules and regulations, for example, it checks the identity information of employees according to the national "Provisions on the Prohibition of Using Child Labor", effectively avoiding child labor; the "Employment Contract" entered into with employees sets forth "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 eight hours", effectively protecting the legal rights and interests of the employees and avoiding the phenomenon of forced work. 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 2018, 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 perfected the gross pay management system orienting market value and based on performance evaluation. In addition, according to the applicable national regulations and the relevant measures of Guodian Group, the Group has established and implemented the "Interim Measures Governing Gross Pay and the Interim Measures Governing the Annual Pay for the Officers of the Enterprise", and established the remuneration system linking wage income with performance assessment, concentrated corporate advantageous resources to incline towards core talents, fully reflected talent value and explored marketization stimulation means such as professional manager, post dividend and commercialization of research findings.

### **依法僱傭**

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

在防止僱傭童工和強制勞工方面，我們依據國家相關規定完善用工制度，從源頭上消除違規隱患：嚴格按照國家《禁止使用童工規定》的要求核定員工身份信息，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。2018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集團公司相關辦法，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。

The HQ of the Group has implemented the *“Interim Measures Governing Remuneration, the Measures Governing Remuneration Payment of the HQ”*, the *“Interim Measures Governing the Department Performance Evaluation of the HQ”* and the *“Interim Measures Governing the Employees Performance Evaluation of the HQ”* in order to standardize remuneration payment and stress the principles of value creation and working more and getting more. Every subsidiary has established its own management measures according to the above principles and according to the regulations and rules of the HQ, and then filed the same with the Group.

### **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 State and local governments to ensure employees to be treated equally in terms of endowment, medical treatment, and work-related injury, unemployment and birth and other aspects in accordance with the law. In the first half of 2018, no social security violations and defaults of payment occurred.

The Group arranges employees' working hours and vacations in accordance with the regulations of the State, and implements a system of paid annual leave. According to the *“Regulation of the State Council on the Treatment of Staff's Visiting Relatives”* and the Group's relevant regulations, the Group headquarters, take into consideration of actualities, has established the *“Management of Employee Visiting Vacation of the Headquarters of Guodian Technology & Environment Group Corporation Limited”* to solve the family visit problems of the staff who are far from home.

## **2.2 Occupational Health and Safety (OHS)**

The Group always regards the occupational health and safety protection of employees as the top priority, and always strictly enforces the relevant 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 improves and perfects the work environment management and occupational health and safety management system.

本集團本部施行《本部薪酬管理暫行辦法》、《本部薪酬支付管理辦法》、《本部部門績效考核管理暫行辦法》及《本部員工績效考核管理暫行辦法》，規範薪酬支付，突出價值創造及多勞多得導向原則。各子公司依據上述原則，參照本部規定制定各公司相應管理辦法並報本集團備案。

### **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。2018年上半年未發生任何社會保險違規及欠繳現象。

本集團依照國家規定安排員工工作時數及休假，並實施帶薪年假制度。為適當解決員工同親屬長期遠居兩地的探親問題，根據《國務院關於職工探親待遇的規定》和集團公司有關規定，結合公司本部實際情況，制定實施《國電科技環保集團股份有限公司本部員工探親休假管理辦法》。

## **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管理為重中之重，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。



### **Health Protection**

The main occupational hazards of each unit of the Group include dust, noise, welding soot, and toxic chemical. All the relevant units set up occupational disease prevention and control leading group to supervise the implementation of occupational disease prevention and control measures. All units voluntarily accept the supervision and inspection of occupational health supervision agencies, and promptly correct problems according to the opinions and suggestions put forward by occupational health supervision agencies. On a yearly basis, the Group organizes occupational health inspections of relevant workers, strengthens inspection and maintenance of workplaces with occupational disease hazards, ensures the normal operation of occupational disease protection facilities, issues effective personal protective articles regularly, and supervises workers to wear them when they are on duty.

### **Safety Protection**

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

In the first half of 2018, the HQ of the Group had two major safety inspections in total, i.e., safety inspection in spring, safety inspection under the title of “Safety Month” respectively, completed the inspection of 30 safety projects, found 1,143 problems and eliminated such problems in time.

In the first half of 2018, both of the number of deaths and death rate for business of the Group were zero.

## **2.3 Employee Care and Team Construction**

In the course of driving the change and shaping the culture, the Group adheres to the “Human-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.

### **健康保護**

本集團各單位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，各相關單位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。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，並定期發放有效個人防護用品，監督勞動者在上崗時配戴。

### **安全保障**

本集團目前編製了34個安全生產相關制度，主要有《工程項目安全管理考核制度》、《安全生產責任制度》及《安全教育培訓制度》等，並成立了安全委員會以保障安全制度的貫徹實施。

2018年上半年，本集團本部開展了春季及安全月共2次安全大檢查工作，共完成30個項目的檢查工作，查出問題1,143項，及時排除安全隱患。

2018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征程中，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。

The Group attaches great importance to perfecting the corporate democratic management system, arranging and implementing the proposals of the congress of employees, and deepening the “People Benefit Project”. In the first half of 2018, the Group actively carried out daily condolence for the front line employees, in need employees and guided its subsidiaries to establish the special funds to help employees with difficulties. About RMB280,000 relief funds were allocated.

The Group, based on serving the needs of the employees, pays much attention to the physical and mental health of the employees and strengthens the linkage between the upper and lower levels. The Group jointly organized the second “Kehuan Cup” basketball competition with its subsidiaries; movie viewing on Women’s Day, walks on foot and health knowledge lectures and other activities, which were in the deep favor of the employees.

本集團注重健全完善企業民主管理體系，整理落實職代會提案，深化「惠民工程」，2018年上半年，積極開展一線職工、困難職工及員工日常慰問，指導附屬企業建立困難幫扶專項資金，加大困難職工幫扶力度，發放專項救助資金約28萬元。

本集團以服務職工需求為根本，高度關注員工身心健康，強化上下聯動，與附屬各單位工會聯合舉辦了第二屆「科環盃」籃球聯賽、婦女節觀影活動、健步走及健康知識講座等活動，深受職工歡迎。

### 3 Innovative Operation and High-Quality Service

#### 3.1 Fight Corruption and Promote Clean Governance

In the first half of 2018, 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, seriously carried out anti-corruption activities, and formed a good atmosphere of honest practice.

In order to draw the line for the professional behavior of employees and prevent corruption, the Group has formulated and issued the “Measures for the Inspection of the Party Committee of Guodian Technology & Environment Group Corporation Ltd. (Trial)” on the basis of relevant measures such as the “Measures for the Inspection of the Party Group of the China Energy Group of the Communist Party of China” and the “Opinions on Establishing the Inspection System by the Party Committee of the Subsidiaries” to clearly define the purpose and principles of the inspection work, therefore further perfect the system of discipline inspection and supervision.

### 3 創新經營、高質服務

#### 3.1 依法依規反腐倡廉

2018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，依據《中共國家能源集團黨組巡視工作辦法》及《關於子分公司黨委建立巡察制度的意見》等相關制度，本集團制定印發了《國電科技環保集團股份有限公司黨委巡察工作辦法（試行）》，明確巡察工作目的、原則等內容，進一步完善了紀檢監察制度體系。

In the first half of 2018, the Group formulated and issued the "Working Task Book for the "Year of Intensification of the Development of Three Non-corruption Mechanisms" clarifying "62 tasks in 7 aspects" and the responsible person, timetable and road map, and signed the "2018 Supervision Responsibility on Integrity and Discipline Construction within the Party Organization" with the Secretaries of the Disciplinary Committee of the affiliated units to urge the Disciplinary Committees at all levels to perform their duties. The Group organized affiliated units to further arrange and improve the key areas and key links in the process of power operation and carefully look up risk points that may occur in terms of ideology and moral, external environment, institutional mechanisms and position responsibilities according to the changes in the business sector. In the first half of 2018, the Group did not have any corruption lawsuits filed concluded against any of its companies or 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 has established a strong and powerful technology R&D system with rational division of labor and clear architecture.

Intellectual property rights: The Group pays attention to innovation incentive and intellectual property rights protection, requiring each branch or subsidiary to formulate relevant intellectual property rights management and protection measures and sign non-disclosure agreement with technical personnel with intellectual property rights owned by the enterprise, reward the technical personnel in respect of intellectual property rights, thus not only protecting the technology, but also arousing the enthusiasm of the employees in invention and creation.

In the first half of 2018, the Group acquired 149 intellectual property rights accumulatively, including 24 national invention patents. The Group has acquired 2,051 intellectual property rights in history, including 19 international invention patents and 470 national invention patents. Around the core business, the Group created a total of 86 mature technologies. In the past three years, its 54 items of new technology industrialization have realized business income of more than RMB10 billion, and scientific and technological innovation has provided the source and motive force for the sustainable development of the Group.

2018年上半年，本集團制訂印發《「三不腐機制建設深化年」工作任務書》，明確「7個方面62項任務」以及責任人、時間表、路線圖並與所屬單位紀委書記簽訂《2018年黨風廉政建設監督責任書》，督促各級紀委履職盡責擔當。組織所屬單位根據業務板塊變動情況，進一步梳理完善權力運行過程中的重點領域和關鍵環節，認真查找在思想道德、外部環境、制度機制和崗位職責等方面可能發生不廉潔行為的風險點。2018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。

本集團上半年共獲得知識產權149項，其中國家發明專利24項。本集團歷史累計獲得知識產權2,051項，其中國際發明專利19項、國家發明專利470項。本集團圍繞核心業務歷史累計共形成了86項成熟技術。近三年來形成的54項新技術產業化實現營業收入超過百億元，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

On the basis of strict implementation of the relevant national laws and regulations such as the “*Law of the People’s Republic of China on Tenders and Bids*” and the relevant provisions of the China Energy Group as well as the original procurement system of the Group, the Group further elaborated the relevant systems of the management of suppliers in the first half of 2018. The Group’s procurement work adheres to the “Four Unifications” on procurement of the China Energy Group: unified plan, unified standard, unified process, and unified platform. In the procurement process, the bid evaluation committee and the review group members are strictly required to implement the relevant provisions regarding confidentiality disciplines and withdrawal by petition of China Energy. The subsidiaries further optimize the annual procurement plan, draw on the advanced experience in the industry, improve the development process of the qualified suppliers of manufacturing enterprises, and adjust the development plan in a timely manner; introduces the excellent suppliers which are prominent enterprises in the industry, and accelerates the verification and trial use section of the new developed suppliers, work out a reasonable development plan, and rationally elaborate the procurement plan.

### 4.2 Establish Good Customer Relationship

The Group’s main customers are thermal power and wind power generation companies, as well as some local governments with municipal water operation needs. 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 be abided by the confidentiality provisions as stipulated in the contract. For a long time, the Group has maintained a good relationship with customers, and its customer satisfaction has kept improving. In the first half of 2018, there was no violation that had a significant impact on the Group.

## 4. 攜手共贏 奉獻社會

### 4.1 供應商合作與管理

在嚴格執行《中華人民共和國招標投標法》等相關國家法規和國家能源集團相關規定以及本集團原有採購制度的基礎上，2018年上半年，本集團在供應商管理上，進一步細化相關制度。本集團採購工作堅持國家能源集團採購工作的四個統一：統一計劃、統一標準、統一流程、統一平台。於採購過程中，嚴格要求評標委員會、評審小組成員執行國家能源集團相關保密紀律和申請迴避規定。附屬公司進一步優化年度採購方案，學習行業內先進經驗，優化製造企業合格供應商開發流程，並及時調整開發計劃；引進行業內排名靠前的企業的優秀供應商，加快新開發供應商驗證試用環節，制定合理的開發計劃，並合理策劃採購方案。

### 4.2 構建良好客戶關係

本集團主要客戶為從事火電及風電業務的發電單位，以及有市政水務運營需求的部分地方政府。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。2018年上半年，未發生對本集團有重大影響的違規事件。

#### 4.3 Fulfilling Corporate Social Responsibility

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

The Group established the “Green Ribbon” Youth Volunteer Association to be committed to creating the characteristic voluntary service activities, spreading the concept of green energy, and establishing a good corporate image. At present, three series of voluntary service brands have come into, that is, “Energy Knowledge into Campus”, “Unite Love, Seed Love” and “Green Ribbon Superbody Everywhere”. In the first half of 2018, the “Green Ribbon” Youth Volunteer Association and Chifeng Municipal Committee jointly held the “Light up Micro-wish with Youth” activity and three energy knowledge campus lectures, helping 214 poor children to realize their wishes and donating materials worthy of about RMB44,000. During the reporting period, the “Green Ribbon” Youth Volunteer Association has carried out activities more than 30 hours throughout the country. The Phase-II construction of “Romantic China Energy” dating platform undertaken by the Group acts as the exchange platform for nearly 300 single young people.

In the future, the “Green Ribbon” Youth Volunteer Association will continue to spread the excellent Chinese traditional culture including the concepts of unity, harmony, relief from distress, etc., constantly hold the “Light up Micro-wish with Youth” activity, “One-to-One” student aid, caring empty nesters, constructing love bookstore, “Learning from Lei Feng” youth activity and other activities. The “Romantic China Energy” dating platform undertaken by the Group will be more devoted to solving the marriage problems for single young people inside and outside the system and organizing multiple forms of friend making activities.

#### 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。

本集團的「綠絲帶」青年志願者協會致力於創建富有本企業特色的志願服務活動，傳播綠色能源理念，樹立良好的企業形象。目前已形成了「能源知識進校園」「團聚愛播種愛」及「無處不在的綠絲帶超體」三大系列志願服務品牌。2018年上半年，「綠絲帶」志願者協會聯合赤峰團市委開展「青春點亮微心願」活動，舉辦3次能源知識進校園講座，幫助214名貧困兒童實現心願，捐贈物資價值約4.4萬元。於報告年度內，「綠絲帶」志願者協會在全國範圍開展活動總計30個小時以上。「浪漫國能」青年交友平台建設二期，為近300名單身青年牽線搭橋。

未來，「綠絲帶」志願者協會將繼續傳播團結和睦、扶危濟困等觀念的中華優秀傳統文化，持續開展「青春點亮微心願」、「一對一」助學、關愛空巢老人、建立愛心書屋及學雷鋒青年行等系列活動。「浪漫國能」青年交友平台將更加致力於解決系統內外單身青年的婚戀問題，組織多種形式的交友活動。

# REVIEW REPORT

## 審閱報告



**Review report to the board of directors of  
Guodian Technology & Environment Group Corporation Limited**  
(a joint stock company incorporated in the People's Republic of China with  
limited liability)

### Introduction

We have reviewed the interim financial report set out on pages 62 to 125 which comprises the consolidated statement of financial position of Guodian Technology & Environment Group Corporation Limited (the "Company") as at 30 June 2018 and the related consolidated statement of profit or loss, consolidated statement of profit or loss and other comprehensive income and consolidated statement of changes in equity and condensed consolidated cash flow statement for the six month period then ended and explanatory notes. The Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited require the preparation of an interim financial report to be in compliance with the relevant provisions thereof and International Accounting Standard 34, *Interim financial reporting*, issued by the International Accounting Standards Board. The directors are responsible for the preparation and presentation of the interim financial report in accordance with International Accounting Standard 34.

Our responsibility is to form a conclusion, based on our review, on the interim financial report and to report our conclusion 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 the interim financial report consists of making enquiries, 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.

### 審閱報告

**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)

### 引言

我們已審閱列載於第62頁至第125頁國電科技環保集團股份有限公司(「貴公司」)的中期財務報告，此中期財務報告包括於2018年6月30日的合併財務狀況表與截至該日止6個月期間的合併損益表、合併損益及其他綜合收益表及合併權益變動表及簡明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報告。

我們的責任是根據我們的審閱對中期財務報告作出結論，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信息的審閱*」進行審閱。中期財務報告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。



## 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 report as at 30 June 2018 is not prepared, in all material respects, in accordance with International Accounting Standard 34, *Interim financial reporting*.

#### **KPMG**

*Certified Public Accountants*  
8th Floor, Prince's Building  
10 Chater Road  
Central, Hong Kong

23 August 2018

### 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2018年6月30日的中期財務報告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」的規定編制。

#### **畢馬威會計師事務所**

執業會計師  
香港中環  
遮打道10號  
太子大廈8樓

2018年8月23日

# CONSOLIDATED STATEMENT OF PROFIT OR LOSS

## 合併損益表

For the six months ended 30 June 2018 – unaudited 截至2018年6月30日止6個月—未經審計  
(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	
		2018	2017 (Note) (附註)
		RMB'000 人民幣千元	RMB'000 人民幣千元 (restated) (重述)
	Note 附註		
<b>Continuing operations</b>	<b>持續經營業務</b>		
Revenue	收入	4,626,865	4,989,689
Cost of sales	銷售成本	<b>(3,631,377)</b>	(3,816,896)
<b>Gross profit</b>	<b>毛利</b>	<b>995,488</b>	1,172,793
Other revenue	其他收入	117,567	140,861
Other net income	其他收益淨額	11,229	547,617
Selling and distribution expenses	銷售及分銷開支	<b>(316,786)</b>	(433,237)
Administrative expenses	行政開支	<b>(674,452)</b>	(814,817)
<b>Profit from operations</b>	<b>經營利潤</b>	<b>133,046</b>	613,217
Finance costs	財務成本	(261,659)	(286,169)
Share of profits less losses of associates	應佔聯營公司利潤減虧損	<b>32,129</b>	37,600
<b>(Loss)/profit before taxation from continuing operations</b>	<b>來自持續經營業務之稅前(虧損)/利潤</b>	<b>(96,484)</b>	364,648
Income tax	所得稅	<b>25,489</b>	(140,388)
<b>(Loss)/profit for the period from continuing operations</b>	<b>本期來自持續經營業務之(虧損)/利潤</b>	<b>(70,995)</b>	224,260
<b>Discontinued operation</b>	<b>已終止經營業務</b>		
Loss for the period from discontinued operation	本期來自已終止經營業務之虧損	<b>(849)</b>	(83,460)
<b>(Loss)/profit for the period</b>	<b>本期(虧損)/利潤</b>	<b>(71,844)</b>	140,800

Note: The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated due to the initial application (see Note 3). The consolidated statement of profit or loss has been restated due to acquisition of a subsidiary under common control (see Note 23).

附註：本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述（見附註3）。合併損益表因收購同一控制下的附屬公司而重述（見附註23）。

The notes on pages 70 to 125 form part of this interim financial report.

第70頁至第125頁的附註為本中期財務報告的組成部分。



# CONSOLIDATED STATEMENT OF PROFIT OR LOSS (CONTINUED)

## 合併損益表(續)

For the six months ended 30 June 2018 – unaudited 截至2018年6月30日止6個月 – 未經審計  
(Expressed in RMB) (以人民幣列示)

		Six months ended 30 June 截至6月30日止6個月	
		2018	2017 (Note) (附註)
		<i>RMB'000</i> 人民幣千元	<i>RMB'000</i> 人民幣千元 (restated) (重述)
		Note 附註	
<b>Attributable to:</b>	<b>歸屬於：</b>		
Equity shareholders of the Company	本公司權益股東	<b>(56,015)</b>	133,969
Non-controlling interests	非控股權益	<b>(15,829)</b>	6,831
<b>(Loss)/profit for the period</b>	<b>本期(虧損)/利潤</b>	<b>(71,844)</b>	140,800
<b>Basic and diluted (loss)/earnings per share</b> (Expressed in RMB cent)	<b>每股基本及攤薄(虧損)/收益</b> (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	<b>(0.92)</b>	2.21
– Continuing operations	– 持續經營業務	<b>(0.91)</b>	3.56
– Discontinued operation	– 已終止經營業務	<b>(0.01)</b>	(1.35)

Note: The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated due to the initial application (see Note 3). The consolidated statement of profit or loss has been restated due to acquisition of a subsidiary under common control (see Note 23).

附註：本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述(見附註3)。合併損益表因收購同一控制下的附屬公司而重述(見附註23)。

The notes on pages 70 to 125 form part of this interim financial report.

第70頁至第125頁的附註為本中期財務報告的組成部分。

# CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

## 合併損益及其他綜合收益表

For the six months ended 30 June 2018 – unaudited 截至2018年6月30日止6個月—未經審計  
(Expressed in RMB) (以人民幣列示)



		Six months ended 30 June 截至6月30日止6個月	
		2018	2017 (Note) (附註)
		RMB'000 人民幣千元	RMB'000 人民幣千元 (restated) (重述)
<b>(Loss)/profit for the period</b>	本期(虧損)/利潤	<b>(71,844)</b>	140,800
<b>Other comprehensive income for the period (after tax and reclassification adjustments):</b>	本期其他綜合收益(稅後及重新分類調整後):		
Item 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 – net movement in fair value reserve (non-recycling)	– 以公允價值計量且其變動計入其他綜合收益的股權投資—淨變動計入公允價值儲備(不重新計入)	<b>(8,893)</b>	–
Item 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	<b>59</b>	(212)
<b>Other comprehensive income for the period</b>	本期其他綜合收益	<b>(8,834)</b>	(212)
<b>Total comprehensive income for the period</b>	本期綜合收益總額	<b>(80,678)</b>	140,588
<b>Attributable to:</b>	歸屬於:		
Equity shareholders of the Company	本公司權益股東	<b>(64,849)</b>	133,757
Non-controlling interests	非控股權益	<b>(15,829)</b>	6,831
<b>Total comprehensive income for the period</b>	本期綜合收益總額	<b>(80,678)</b>	140,588

*Note:* The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated due to the initial application (see Note 3). The consolidated statement of profit or loss and other comprehensive income has been restated due to acquisition of a subsidiary under common control (see Note 23).

*附註:* 本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述(見附註3)。合併損益及其他綜合收益表因收購同一控制下的附屬公司而重述(見附註23)。

The notes on pages 70 to 125 form part of this interim financial report.

第70頁至第125頁的附註為本中期財務報告的組成部分。

# CONSOLIDATED STATEMENT OF FINANCIAL POSITION

## 合併財務狀況表

As at 30 June 2018 – unaudited 於2018年6月30日 – 未經審計  
(Expressed in RMB) (以人民幣列示)

			<b>At 30 June</b>	At 31 December
			<b>6月30日</b>	12月31日
			<b>2018</b>	2017
				(Note)
				(附註)
	Note		<b>RMB'000</b>	RMB'000
	附註		人民幣千元	人民幣千元
<b>Non-current assets</b>		<b>非流動資產</b>		
Property, plant and equipment	11	物業、廠房及設備	<b>4,357,888</b>	4,472,199
Investment properties		投資性物業	<b>230,418</b>	235,197
Lease prepayments		預付土地租賃款	<b>306,245</b>	309,883
Intangible assets		無形資產	<b>1,157,481</b>	1,163,921
Goodwill		商譽	<b>57,591</b>	57,591
Interests in associates		對聯營公司的投資	<b>367,377</b>	419,952
Other equity investments		其他權益投資	<b>236,348</b>	162,187
Other non-current assets		其他非流動資產	<b>3,316,464</b>	3,306,106
Deferred tax assets		遞延稅項資產	<b>789,068</b>	724,191
<b>Total non-current assets</b>		<b>非流動資產總額</b>	<b>10,818,880</b>	10,851,227
<b>Current assets</b>		<b>流動資產</b>		
Inventories		存貨	<b>3,095,217</b>	3,145,414
Gross amounts due from customers for contract work		應收建造合同客戶款項總額	<b>1,483,963</b>	1,324,257
Trade and bills receivables	12	應收賬款及票據	<b>11,734,311</b>	12,842,798
Deposits, prepayments and other receivables		按金、預付款項及其他應收款項	<b>3,074,524</b>	2,001,198
Tax recoverable		可收回稅項	<b>211,104</b>	132,988
Restricted deposits		受限制存款	<b>173,650</b>	192,835
Cash at bank and on hand	13	銀行存款及庫存現金	<b>3,248,950</b>	4,305,074
Assets held for sale	14	持有待售資產	-	812,459
<b>Total current assets</b>		<b>流動資產總額</b>	<b>23,021,719</b>	24,757,023
<b>Current liabilities</b>		<b>流動負債</b>		
Borrowings	15	借款	<b>8,640,180</b>	7,699,284
Trade and bills payables	16	應付賬款及票據	<b>9,154,628</b>	9,684,721
Other payables		其他應付款項	<b>3,053,189</b>	3,372,339
Gross amounts due to customers for contract work		應付建造合同客戶款項總額	<b>666,448</b>	922,598
Income tax payable		應付所得稅	<b>18,326</b>	44,312
Provision for warranty		質保金撥備	<b>142,366</b>	170,558
Liabilities held for sale	14	持有待售負債	-	70,679
<b>Total current liabilities</b>		<b>流動負債總額</b>	<b>21,675,137</b>	21,964,491

Note: The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated due to the initial application (see Note 3).

附註：本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述（見附註3）。

The notes on pages 70 to 125 form part of this interim financial report.

第70頁至第125頁的附註為本中期財務報告的組成部分。

# CONSOLIDATED STATEMENT OF FINANCIAL POSITION (CONTINUED)

## 合併財務狀況表(續)

As at 30 June 2018 – unaudited 於2018年6月30日 – 未經審計  
(Expressed in RMB) (以人民幣列示)



		<b>At 30 June</b>	At 31 December
		<b>6月30日</b>	12月31日
		<b>2018</b>	2017
			(Note)
			(附註)
	Note	<b>RMB'000</b>	RMB'000
	附註	人民幣千元	人民幣千元
<b>Net current assets</b>	<b>流動資產淨額</b>	<b>1,346,582</b>	2,792,532
<b>Total assets less current liabilities</b>	<b>總資產減流動負債</b>	<b>12,165,462</b>	13,643,759
<b>Non-current liabilities</b>	<b>非流動負債</b>		
Borrowings	借款	15 <b>2,921,035</b>	4,053,705
Deferred income	遞延收益	<b>364,180</b>	368,557
Deferred tax liabilities	遞延稅項負債	<b>151,458</b>	207,269
Provision for warranty	質保金撥備	<b>670,282</b>	676,958
Other non-current liabilities	其他非流動負債	<b>414,389</b>	404,005
<b>Total non-current liabilities</b>	<b>非流動負債總額</b>	<b>4,521,344</b>	5,710,494
<b>NET ASSETS</b>	<b>資產淨額</b>	<b>7,644,118</b>	7,933,265
<b>CAPITAL AND RESERVES</b>	<b>資本及儲備</b>		
Share capital	股本	<b>6,063,770</b>	6,063,770
Reserves	儲備	<b>(1,380,675)</b>	(1,199,226)
<b>Total equity attributable to equity shareholders of the Company</b>	<b>歸屬於本公司權益股東的權益總額</b>	<b>4,683,095</b>	4,864,544
Non-controlling interests	非控股權益	<b>2,961,023</b>	3,068,721
<b>TOTAL EQUITY</b>	<b>權益總額</b>	<b>7,644,118</b>	7,933,265

Note: The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated due to the initial application (see Note 3).

附註：本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述(見附註3)。

Approved and authorised for issue by the Board of Directors on 23 August 2018.

董事會於2018年8月23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 125 form part of this interim financial report.

第70頁至第125頁的附註為本中期財務報告的組成部分。

# CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

## 合併權益變動表

For the six months ended 30 June 2018 – unaudited 截至2018年6月30日止6個月—未經審計  
(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						Non-controlling interests 非控股權益	Total equity 權益總額
		Share capital 股本	Capital reserve 資本儲備	PRC statutory reserve 中國法定公積	Exchange reserve 匯兌儲備	Accumulated losses 累計虧損	Sub-total 小計		
		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	RMB'000 人民幣千元	RMB'000 人民幣千元	
<b>Balance at 1 January 2017 (as previously reported)</b>	<b>2017年1月1日結餘(往期披露)</b>	6,063,770	1,071,707	129,332	2,282	(2,348,260)	4,918,831	3,076,379	7,995,210
Impact on acquisition of a subsidiary under common control	收購同一控制下附屬公司的影響	-	30,000	-	-	43,345	73,345	-	73,345
<b>Balance at 1 January 2017 (restated)</b>	<b>2017年1月1日結餘(重述)</b>	6,063,770	1,101,707	129,332	2,282	(2,304,915)	4,992,176	3,076,379	8,068,555
<b>Changes in equity for the six months ended 30 June 2017:</b>	<b>截止2017年6月30日止6個月權益變動:</b>								
Profit for the period (restated)	本期利潤(重述)	-	-	-	-	133,969	133,969	6,831	140,800
Other comprehensive income	其他綜合收益	-	-	-	(212)	-	(212)	-	(212)
Total comprehensive income (restated)	本期綜合收益總額(重述)	-	-	-	(212)	133,969	133,757	6,831	140,588
Dividends to the previous equity owner of the subsidiary acquired under common control	向收購的同一控制下附屬公司的原權益所有者支付股息	-	-	-	-	(38,489)	(38,489)	-	(38,489)
Disposal of subsidiaries	處置附屬公司	-	-	-	-	-	-	(112,762)	(112,762)
<b>Balance at 30 June 2017 (restated)</b>	<b>2017年6月30日結餘(重述)</b>	6,063,770	1,101,707	129,332	2,070	(2,209,435)	5,087,444	2,970,448	8,057,892
<b>Balance at 1 July 2017 (restated)</b>	<b>2017年7月1日結餘(重述)</b>	6,063,770	1,101,707	129,332	2,070	(2,209,435)	5,087,444	2,970,448	8,057,892
<b>Changes in equity for the six months ended 31 December 2017:</b>	<b>截止2017年12月31日止6個月權益變動:</b>								
(Loss)/profit for the period	本期(虧損)/利潤	-	-	-	-	(90,266)	(90,266)	40,236	(50,030)
Other comprehensive income	其他綜合收益	-	-	-	(1,075)	-	(1,075)	-	(1,075)
Total comprehensive income	本期綜合收益總額	-	-	-	(1,075)	(90,266)	(91,341)	40,236	(51,105)
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	-	-	-	-	-	-	(25,365)	(25,365)
Acquisition of a subsidiary under common control	收購同一控制下附屬公司	-	(48,157)	-	-	-	(48,157)	-	(48,157)
Reclassification of non-controlling interests due to liquidation of a subsidiary	因清算附屬公司重分類非控股權益	-	-	-	-	(83,402)	(83,402)	83,402	-
<b>Balance at 31 December 2017 (Note)</b>	<b>2017年12月31日結餘(附註)</b>	6,063,770	1,053,550	129,332	995	(2,383,103)	4,864,544	3,068,721	7,933,265

**Note:** The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated due to the initial application (see Note 3). The consolidated statement of changes in equity has been restated due to acquisition of a subsidiary under common control (see Note 23).

**附註:** 本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述(見附註3)。合併權益變動表因收購同一控制下的附屬公司而重述(見附註23)。

The notes on pages 70 to 125 form part of this interim financial report.

第70頁至第125頁的附註為本中期財務報告的組成部分。

# CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (CONTINUED)

## 合併權益變動表(續)

For the six months ended 30 June 2018 – unaudited 截至2018年6月30日止6個月 – 未經審計  
(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 股本	Capital reserve 資本儲備	PRC statutory reserve 中國法定公積	Exchange reserve 匯兌儲備	Fair value reserve (non-recycling) 公允價值儲備 (不重新計入)	Accumulated losses 累計虧損	Sub-total 小計	Non-controlling interests 非控股權益	Total equity 權益總額
		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	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
<b>Balance at 31 December 2017</b>	<b>2017年12月31日結餘</b>	6,063,770	1,053,550	129,332	995	-	(2,383,103)	4,864,544	3,068,721	7,933,265
Impact on initial application of IFRS 15	初次應用《國際財務報告準則》第15號的影響	-	-	-	-	-	(27,733)	(27,733)	-	(27,733)
Impact on initial application of IFRS 9	初次應用《國際財務報告準則》第9號的影響	-	-	-	-	11,482	(100,223)	(88,741)	(28,276)	(117,017)
<b>Balance at 1 January 2018</b>	<b>2018年1月1日結餘</b>	6,063,770	1,053,550	129,332	995	11,482	(2,511,059)	4,748,070	3,040,445	7,788,515
<b>Changes in equity for the six months ended 30 June 2018:</b>	<b>截止2018年6月30日止6個月權益變動:</b>									
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	-
<b>Balance at 30 June 2018</b>	<b>2018年6月30日結餘</b>	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 125 form part of this interim financial report.

第70頁至第125頁的附註為本中期財務報告的組成部分。

# CONDENSED CONSOLIDATED CASH FLOW STATEMENT

## 簡明合併現金流量表

For the six months ended 30 June 2018 – unaudited 截至2018年6月30日止6個月－未經審計  
(Expressed in RMB) (以人民幣列示)

		Six months ended 30 June 截至6月30日止6個月	
		2018 <b>RMB'000</b> 人民幣千元	2017 <b>RMB'000</b> 人民幣千元 (restated) (重述)
	Note 附註		
<b>Operating activities</b> 經營活動			
Cash used in operations		<b>(158,459)</b>	(115,813)
Income tax paid		<b>(159,994)</b>	(187,548)
<b>Net cash used in operating activities</b>		<b>(318,453)</b>	(303,361)
<b>Investing activities</b> 投資活動			
Payment for the purchase of property, plant and equipment, lease prepayments and intangible assets		<b>(126,237)</b>	(62,452)
Proceeds from disposal of subsidiaries		-	685,122
Other cash flows arising from investing activities		<b>(178,957)</b>	(465,302)
<b>Net cash (used in)/generated from investing activities</b>		<b>(305,194)</b>	157,368
<b>Financing activities</b> 籌資活動			
Proceeds from borrowings		<b>5,465,000</b>	4,510,500
Repayment of borrowings		<b>(5,700,051)</b>	(6,423,829)
Decrease in restricted deposits		<b>139,287</b>	54,036
Increase in restricted deposits		<b>(120,102)</b>	(329,974)
Dividends paid to the previous equity owner by the subsidiary acquired under common control		-	(34,800)
Interest paid		<b>(223,507)</b>	(237,431)
Other cash flows arising from financing activities		<b>(13,815)</b>	(8,000)
<b>Net cash used in financing activities</b>		<b>(453,188)</b>	(2,469,498)
<b>Net decrease in cash and cash equivalents</b>		<b>(1,076,835)</b>	(2,615,491)
<b>Cash and cash equivalents at 1 January</b>		<b>3,994,074</b>	4,443,102
<b>Effect of foreign exchanges rate changes</b>		<b>680</b>	(4,520)
<b>Cash and cash equivalents at 30 June</b>		<b>2,917,919</b>	1,823,091

Note: The condensed consolidated cash flow statement has been restated due to acquisition of a subsidiary under common control (see Note 23).

附註：簡明合併現金流量表因收購同一控制下的附屬公司而重述(見附註23)。

The notes on pages 70 to 125 form part of this interim financial report.

第70頁至第125頁的附註為本中期財務報告的組成部分。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT

## 未經審計的中期財務報告附註

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 1 Organisation

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”).

### 2 Basis of preparation

This interim financial report has been prepared in accordance with the applicable disclosure provisions of the Rules Governing the Listing of Securities on the Stock Exchange, including compliance with International Accounting Standard (“IAS”) 34, *Interim financial reporting*, issued by the International Accounting Standards Board (“IASB”). It was authorised for issue on 23 August 2018.

The interim financial report has been prepared in accordance with the same accounting policies adopted in the 2017 annual financial statements, except for the accounting policy changes that are expected to be reflected in the 2018 annual financial statements. Details of any changes in accounting policies are set out in Note 3.

The preparation of an interim financial report 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 report contains condensed consolidated financial statements 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 (the “Group”) since the 2017 annual financial statements. The condensed consolidated interim financial statements 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.

This interim financial report is unaudited, but has been reviewed by KPMG 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. KPMG’s independent review report to the Board of Directors is included on pages 60 to 61.

### 1 組織

國電科技環保集團股份有限公司(「本公司」)前身為國電科技環保集團有限公司，為國有有限責任企業成立於2001年4月6日。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。

### 2 編製基礎

本中期財務報告已依據上市規則的相關披露條文編製，包括遵守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」。本中期財務報告於2018年8月23日經授權發出。

除預計將在2018年年度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2017年年度財務報告所採納的相同會計政策。有關會計政策變化詳情，請參見附註3。

按照《國際會計準則》第34號編製中期財務報告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。

本中期財務報告內含簡明合併財務報表及選定的解釋性註釋。註釋包括對了解本集團自2017年度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。簡明合併中期財務報表及其註釋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信息包括在內。

本中期財務報告未經審計，但已由畢馬威會計師事務所按照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信息的審閱」進行了審閱。畢馬威會計師事務所致董事會的獨立審閱報告載於第60頁至第61頁。





# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

## 2 Basis of preparation (continued)

This interim financial report has been prepared assuming the Group will continue as a going concern notwithstanding the net cash used in operating activities of RMB318,453,000 for the six months ended 30 June 2018. The Group has unutilised banking facilities of RMB9,090,975,000 as at 30 June 2018 to fulfil its future capital commitments and other financial requirements. 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 report on a going concern basis.

## 3 Changes in accounting policies

### (a) Overview

The IASB has issued a number of new IFRSs and amendments to IFRSs that are first effective for the current accounting period of the Group. Of these, the following developments are relevant to the Group's financial statements:

- IFRS 9, *Financial instruments*
- IFRS 15, *Revenue from contracts with customers*
- IFRIC 22, *Foreign currency transactions and advance consideration*

The Group has not applied any new standard or interpretation that is not yet effective for the current accounting period.

The Group has been impacted by IFRS 9 in relation to classification of financial assets and measurement of credit losses, and impacted by IFRS 15 in relation to the timing of revenue recognition. Details of the changes in accounting policies are discussed in Note 3(b) for IFRS 9 and Note 3(c) for IFRS 15.

## 2 編製基礎(續)

儘管本集團截至2018年6月30日止六個月在經營活動中使用的淨現金為人民幣318,453,000元，本中期財務報告是以假設本集團持續經營的基礎編製。於2018年6月30日，本集團擁有金額為人民幣9,090,975,000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。董事們認為，本集團將擁有能滿足其營運資金及資本開支需要所必需的流動資金。因此，董事們認為基於持續經營假設基礎編製合併財務報告是恰當的。

## 3 會計政策變更

### (a) 概況

國際會計準則理事會頒佈了若干新訂的《國際財務報告準則》和經修訂的《國際財務報告準則》，該等新訂和經修訂準則於本集團當前會計期間首次生效。其中，以下變動與本集團的財務報表相關：

- 《國際財務報告準則》第9號，「金融工具」
- 《國際財務報告準則》第15號，「客戶合約收入」
- 《國際財務報告解釋公告》第22號，「外幣交易和預付對價」

本集團並未採用任何於當前會計期間尚未生效的新準則或詮釋。

《國際財務報告準則》第9號對本集團金融資產分類及信用損失計量產生影響，且《國際財務報告準則》第15號亦對本集團的收入確認時間點產生影響。有關會計政策的變動詳情，請參閱附註3(b)和附註3(c)分別了解《國際財務報告準則》第9號和《國際財務報告準則》第15號的變動。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 3 Changes in accounting policies (continued)

### 3 會計政策變更(續)

#### (a) Overview (continued)

Under the transition methods chosen, the Group recognises cumulative effect of the initial application of IFRS 9 and IFRS 15 as an adjustment to the opening balance of equity at 1 January 2018. Comparative information is not restated. The following table gives a summary of the opening balance adjustments recognised for each line item in the consolidated statement of financial position that has been impacted by IFRS 9 and/or IFRS 15:

#### (a) 概況(續)

根據所選擇的過渡方案，本集團將初始採用《國際財務報告準則》第9號及《國際財務報告準則》第15號的累積影響確認為於2018年1月1日權益期初結餘的調整。本集團並未重述比較數據。下表概述了受《國際財務報告準則》第9號及／或《國際財務報告準則》第15號影響的合併財務報表中各個項目確認的期初結餘調整：

		At 31 December 2017 於 2017年 12月31日	Impact on initial application of IFRS 9 初始採用《國際 財務報告準則》 第9號的影響 (Note 3(b)) (附註3(b))	Impact on initial application of IFRS 15 of IFRS 15 初始採用《國際 財務報告準則》 第15號的影響 (Note 3(c)) (附註3(c))	At 1 January 2018 於 2018年 1月1日
		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
Gross amounts due from customers for contract work	應收建造合同客戶款項總額	1,324,257	(5,731)	(32,627)	1,285,899
Trade and bills receivables	應收賬款及票據	12,842,798	(115,357)	-	12,727,441
Deposits, prepayments and other receivables	按金、預付款項及其他應收款項	2,001,198	(32,810)	-	1,968,388
<b>Total current assets</b>	<b>流動資產總額</b>	24,757,023	(153,898)	(32,627)	24,570,498
Other equity investments	其他權益投資	162,187	11,482	-	173,669
Other non-current assets	其他非流動資產	3,306,106	(9,196)	-	3,296,910
Deferred tax assets	遞延稅項資產	724,191	34,595	4,894	763,680
<b>Total non-current assets</b>	<b>非流動資產總額</b>	10,851,227	36,881	4,894	10,893,002
<b>Net assets</b>	<b>資產淨額</b>	7,933,265	(117,017)	(27,733)	7,788,515
Reserves	儲備	1,199,226	88,741	27,733	1,315,700
<b>Total equity attributable to equity shareholders of the Company</b>	<b>歸屬於本公司權益股東的權益總額</b>	(4,864,544)	88,741	27,733	(4,748,070)
Non-controlling interests	非控股權益	(3,068,721)	28,276	-	(3,040,445)
<b>Total equity</b>	<b>權益總額</b>	(7,933,265)	117,017	27,733	(7,788,515)

Further details of these changes are set out in sub-sections (b) and (c) of this note.

該等變動的進一步詳情載列於本附註的(b)和(c)小節。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments*

IFRS 9 replaces IAS 39, *Financial instruments: recognition and measurement*. It sets out the requirements for recognising and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items.

The Group has applied IFRS 9 retrospectively to items that existed at 1 January 2018 in accordance with the transition requirements. The Group has recognised the cumulative effect of initial application as an adjustment to the opening equity at 1 January 2018. Therefore, comparative information continues to be reported under IAS 39.

The following table summarises the impact of transition to IFRS 9 on accumulated losses and reserves and the related tax impact at 1 January 2018.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」

《國際財務報告準則》第9號取代《國際會計準則》第39號「金融工具：確認及計量」。《國際財務報告準則》第9號規定了金融資產、金融負債及購買或出售非金融項目的若干合約的確認及計量要求。

本集團已根據過渡要求就於2018年1月1日的項目追溯採用《國際財務報告準則》第9號。本集團已將初始採用《國際財務報告準則》第9號的累積影響確認為於2018年1月1日期初權益的調整。因此，比較數據將繼續按照《國際會計準則》第39號進行匯報。

下表概述了過渡至《國際財務報告準則》第9號對累計虧損和儲備的影響，以及於2018年1月1日的相關稅務影響。

		RMB'000 人民幣千元
<b>Accumulated losses</b>	<b>累計虧損</b>	
Recognition of additional expected credit losses on:	確認以下項目的額外預期信用損失：	
– financial assets measured at amortised cost	– 以攤餘成本計量的金融資產	127,951
Related tax	相關稅項	(27,728)
Net increase in accumulated losses at 1 January 2018	於2018年1月1日累計虧損的增加額	100,223
<b>Fair value reserve (non-recycling)</b>	<b>公允價值儲備(不重新計入)</b>	
Increase in fair value reserve (non-recycling) at 1 January 2018	於2018年1月1日公允價值儲備(不重新計入)的增加額	(11,482)
<b>Non-controlling interests</b>	<b>非控股權益</b>	
Recognition of additional expected credit losses on financial assets measured at amortised cost and decrease in non-controlling interests at 1 January 2018	於2018年1月1日確認按攤餘成本計量的金融資產額外預期信用損失及非控股權益的減少數額	28,276

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

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### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

Further details of the nature and effect of the changes to previous accounting policies and the transition approach are set out below:

##### (i) *Classification of financial assets and financial liabilities*

IFRS 9 categories financial assets into three principal classification categories: measured at amortised cost, at fair value through other comprehensive income (FVOCI) and at fair value through profit or loss (FVPL). These supersede IAS 39's categories of held-to-maturity investments, loans and receivables, available-for-sale financial assets and financial assets measured at FVPL. The classification of financial assets under IFRS 9 is based on the business model under which the financial asset is managed and its contractual cash flow characteristics.

Non-equity investments held by the Group are classified into one of the following measurement categories:

- amortised cost, if the investment is held for the collection of contractual cash flows which represent solely payments of principal and interest. Interest income from the investment is calculated using the effective interest method;
- FVOCI – recycling, if the contractual cash flows of the investment comprise solely payments of principal and interest and the investment is held within a business model whose objective is achieved by both the collection of contractual cash flows and sale. Changes in fair value are recognised in other comprehensive income, except for the recognition in profit or loss of expected credit losses, interest income (calculated using the effective interest method) and foreign exchange gains and losses. When the investment is derecognised, the amount accumulated in other comprehensive income is recycled from equity to profit or loss; or

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

有關以往會計政策的變更性質和影響，以及過渡方案的進一步詳情載列如下：

##### (i) 金融資產及金融負債的分類

《國際財務報告準則》第9號將金融資產分為三個主要類別，分別為按攤餘成本計量、按公允價值計量且其變動計入其他綜合收益及按公允價值計量且其變動計入損益。該等分類取代了《國際會計準則》第39號就持有至到期投資、貸款和應收款項、可供出售金融資產以及按公允價值計量且其變動計入損益計量的金融資產的分類。《國際財務報告準則》第9號中金融資產的分類是基於實體管理金融資產的業務模式及該資產的合同現金流量特徵而釐定。

本集團持有的非權益投資分類為以下計量類別之一：

- 如果本集團持有該項投資以收取合同現金流量(僅指支付本金及利息的付款)，則按照攤餘成本計量，並採用實際利率法計量該項投資的利息收入；
- 如果該項投資的合同現金流量僅包含支付本金及利息的付款，且以收取及銷售合同現金流量的商業模式為目標，則按公允價值計量且其變動計入其他綜合收益(重新計入)計量。除預期信用損失、利息收入(以實際利率法計算)及匯兌損益於損益中確認外，公允價值的變動於其他綜合收益中確認。終止確認該等投資時，其他綜合收益中的累計金額重新計入損益中列示的權益；或



## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

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### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (i) *Classification of financial assets and financial liabilities* (continued)

- FVPL, if the investment does not meet the criteria for being measured at amortised cost or FVOCI (recycling). Changes in the fair value of the investment (including interest) are recognised in profit or loss.

An investment in equity securities is classified as FVPL unless the equity investment is not held for trading purposes and on initial recognition of the investment the Group makes an election to designate the investment at FVOCI (non-recycling) such that subsequent changes in fair value are recognised in other comprehensive income. Such elections are made on an instrument-by-instrument basis, but may only be made if the investment meets the definition of equity from the issuer's perspective. Where such an election is made, the amount accumulated in other comprehensive income remains in the fair value reserve (non-recycling) until the investment is disposed of. At the time of disposal, the amount accumulated in the fair value reserve (non-recycling) is transferred to retained earnings. It is not recycled through profit or loss. Dividends from an investment in equity securities, irrespective of whether classified as at FVPL or FVOCI (non-recycling), are recognised in profit or loss as other income.

Under IFRS 9, derivatives embedded in contracts where the host is a financial asset in the scope of the standard are not separated from the host. Instead, the hybrid instrument as a whole is assessed for classification.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (i) 金融資產及金融負債的分類(續)

- 倘該等投資不符合按攤餘成本或公允價值計量且其變動計入其他綜合收益(重新計入)計量的標準，則按公允價值計量且其變動計入損益計量。該等投資(包括利息)的公允價值變動於損益中確認。

除非該權益投資並非以買賣目的持有，且在初始確認該等投資時，本集團選擇指定該項投資按公允價值計量且其變動計入其他綜合收益(不重新計入)計量，以便隨後的公允價值變動於其他綜合收益中確認，否則權益證券投資被劃歸為公允價值計量且其變動計入損益。本集團對各個工具進行選擇，但僅在該項投資符合發行人角度下的權益定義方能進行選擇。倘若進行上述選擇，其他綜合收益中的累計金額將保留於公允價值儲備中(不重新計入)，直至出售該項投資。在出售該項投資時，公允價值儲備中(不重新計入)的累計金額將轉入留存收益，且不會通過損益重新計入。權益證券投資的股息無論是否按公允價值計量且其變動計入損益或公允價值計量且其變動計入其他綜合收益(不重新計入)計量進行分類，均於損益中確認為其他收入。

根據《國際財務報告準則》第9號，如果混合合同的主合同為準則範圍內的一項金融資產，則嵌入的衍生工具不從主合同中分拆出來。相反，該混合工具應整體進行分類評估。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

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### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (i) *Classification of financial assets and financial liabilities* (continued)

The following table shows the original measurement categories for each class of the Group's financial assets under IAS 39 and reconciles the carrying amounts of those financial assets determined in accordance with IAS 39 to those determined in accordance with IFRS 9.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (i) 金融資產及金融負債的分類(續)

下表列示了根據《國際會計準則》第39號對本集團各類金融資產的原始計量分類，並將根據《國際會計準則》第39號釐定的金融資產的帳面金額與根據《國際財務報告準則》第9號釐定的金融資產的帳面金額進行對賬。

		IAS 39 carrying amount at 31 December 2017 於2017年12月31日《國際會計準則》第39號的帳面金額 RMB'000 人民幣千元	Reclassification 重新分類 RMB'000 人民幣千元	Remeasurement 重新計量 RMB'000 人民幣千元	IFRS 9 carrying amount at 1 January 2018 於2018年1月1日《國際財務報告準則》第9號的帳面金額 RMB'000 人民幣千元
<b>Financial assets carried at amortised cost</b>	<b>以攤餘成本計量的金融資產</b>				
Cash at bank and in hand	銀行存款及庫存現金	4,305,074	-	-	<b>4,305,074</b>
Gross amounts due from customers for contract work (Note (i))	應收建造合同客戶款項總額(附註(i))	1,324,257	-	(38,358)	<b>1,285,899</b>
Trade and bills receivables	應收賬款及票據	12,842,798	-	(115,357)	<b>12,727,441</b>
Other receivables (included in deposits, prepayments and other receivables)	其他應收款項(包含在按金、預付款項及其他應收款項中)	1,164,237	-	(32,810)	<b>1,131,427</b>
Long-term trade receivables (included in other non-current assets)	長期應收賬款(包含在其他非流動資產中)	3,226,476	-	(9,196)	<b>3,217,280</b>
		22,862,842	-	(195,721)	<b>22,667,121</b>
<b>Financial assets measured at FVOCI (non-recyclable)</b>	<b>以公允價值計量且其變動計入其他綜合收益(不重新計入)計量的金融資產</b>				
Equity securities (Note (ii))	權益證券(附註(ii))	-	162,187	11,482	<b>173,669</b>
<b>Financial assets classified as available-for-sale under IAS 39 (Note (ii))</b>	<b>根據《國際會計準則》第39號分類為可供出售金融資產(附註(ii))</b>	162,187	(162,187)	-	<b>-</b>

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

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### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (i) *Classification of financial assets and financial liabilities* (continued)

Notes:

- (i) Gross amounts due from customers for contract work of RMB32,627,000 were derecognised at 1 January 2018 as a result of the initial application of IFRS 15 (see Note 3 (c)).
- (ii) Under IAS 39, equity securities not held for trading were classified as available-for-sale financial assets. These equity securities are classified as at FVPL under IFRS 9, unless they are eligible for and designated as FVOCI by the Group. At 1 January 2018, the Group designated its investments in equity securities at FVOCI (non-recycling), as the investments are held for strategic purposes.

The measurement categories for all financial liabilities remain the same.

The carrying amounts for all financial liabilities at 1 January 2018 have not been impacted by the initial application of IFRS 9.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (i) 金融資產及金融負債的分類(續)

附註：

- (i) 因初始採用《國際財務報告準則》第15號導致於2018年1月1日終止確認應收建造合同客戶款項總額人民幣32,627,000元(參閱附註3(c))。
- (ii) 根據《國際會計準則》第39號，非持有買賣的權益證券被劃分為可供出售金融資產。該等權益證券根據《國際財務報告準則》第9號按公允價值計量且其變動計入損益計量分類，除非該等權益證券符合且本集團指定按公允價值計量且其變動計入其他綜合收益計量。於2018年1月1日，本集團指定其權益投資按公允價值計量且其變動計入其他綜合收益(不重新計入)計量，因為該項投資為以戰略目的持有。

所有金融負債的計量分類保持不變。

所有金融負債於2018年1月1日的帳面金額並未受初始採用《國際財務報告準則》第9號影響。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

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### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (ii) *Credit losses*

IFRS 9 replaces the “incurred loss” model in IAS 39 with the “expected credit loss” (“ECL”) model. The ECL model requires an ongoing measurement of credit risk associated with a financial asset and therefore recognises ECLs earlier than under the “incurred loss” accounting model in IAS 39.

The Group applies the new ECL model to the following items:

- financial assets measured at amortised cost (including long-term trade receivables, trade and bills receivables, other receivables and gross amounts due from customers for contract work)

Equity securities designated at FVOCI (non-recycling) are not subject to the ECL assessment.

##### *Measurement of ECLs*

ECLs are a probability-weighted estimate of credit losses. Credit losses are measured as the present value of all expected cash shortfalls (i.e. the difference between the cash flows due to the Group in accordance with the contract and the cash flows that the Group expects to receive).

The expected cash shortfalls of trade and other receivables and gross amounts due from customers for contract work are discounted using the effective interest rate determined at initial recognition or an approximation thereof where the effect of discounting is material.

The maximum period considered when estimating ECLs is the maximum contractual period over which the Group is exposed to credit risk.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (ii) 信用損失

《國際財務報告準則》第9號將《國際會計準則》第39號的「已發生損失」模型替換為「預期信用損失」模型。預期信用損失模型要求對與金融資產相關的信用風險進行持續計量，因此，相較於根據《國際會計準則》第39號的「已發生損失」模型，該模型更早確認預期信用損失。

本集團將新的預期信用損失模型應用於以下項目：

- 以攤餘成本計量的金融資產(其中包括長期應收賬款、應收賬款及票據、其他應收款項及應收建造合同客戶款項總額)

指定以公允價值計量且其變動計入其他綜合收益(不重新計入)計量的權益證券無須進行預期信用損失評估。

##### *預期信用損失的計量*

預期信用損失是指信用損失的概率加權估計值。信用損失是按所有預期現金短缺的現值(即：根據合同應付集團的現金流量與本集團預計收到的現金流量之間的差額)計量。

倘若折現的影響重大，應收賬款和其他應收款及應收建造合同客戶款項總額則使用初始確認時釐定的實際利率或其近似值作為折現率折現預期現金短缺。

計量預期信用損失的最長期限是最長合同期限，本集團在該期間內承擔信用風險。





## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

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### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (ii) *Credit losses* (continued)

###### *Measurement of ECLs* (continued)

In measuring ECLs, the Group takes into account reasonable and supportable information that is available without undue cost or effort. This includes information about past events, current conditions and forecasts of future economic conditions.

ECLs are measured on either of the following bases:

- 12-month ECLs: these are losses that are expected to result from possible default events within the 12 months after the reporting date; and
- lifetime ECLs: these are losses that are expected to result from all possible default events over the expected lives of the items to which the ECL model applies.

Loss allowances for trade receivables and gross amounts due from customers for contract work are always measured at an amount equal to lifetime ECLs. ECLs on these financial assets are estimated using a provision matrix based on the Group's historical credit loss experience, adjusted for factors that are specific to the debtors and an assessment of both the current and forecast general economic conditions at the reporting date.

For all other financial instruments, the Group recognises a loss allowance equal to 12-month ECLs unless there has been a significant increase in credit risk of the financial instrument since initial recognition, in which case the loss allowance is measured at an amount equal to lifetime ECLs.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (ii) 信用損失(續)

###### 預期信用損失的計量(續)

在計量預期信用損失時，本集團會考慮無需付出不當成本或努力即可獲取的合理及可提供支持的信息，其中包括有關過去事項和當前狀況的資料，以及對未來經濟狀況的預測。

預期信用損失根據以下任一基礎計量：

- 十二個月預期信用損失：該等損失為於報告日期後十二個月內可能發生的違約事件造成的損失；及
- 整個存續期預期信用損失：該等損失為由預期信用損失模型適用項目的整個存續期內所有可能的違約事件導致的損失。

應收賬款及應收建造合同客戶款項總額的損失準備是按照整個存續期的等價來計量。該等金融資產的預期信用損失為使用基於本集團歷史信用損失經驗的計提矩陣進行估計，根據債務人的具體情況及對報告日期當前的經濟條件及未來的經濟條件預測的評估進行調整。

就所有其他金融工具而言，本集團確認相當於十二個月預期信用損失的損失準備，除非自初始確認以來，金融工具的信用風險顯著增加。在這種情況下，損失準備將按照等同整個存續期預期信用損失的金額計量。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

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### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (ii) *Credit losses* (continued)

###### *Significant increases in credit risk*

In assessing whether the credit risk of a financial instrument has increased significantly since initial recognition, the Group compares the risk of default occurring on the financial instrument assessed at the reporting date with that assessed at the date of initial recognition. In making this reassessment, the Group considers that a default event occurs when (i) the borrower is unlikely to pay its credit obligations to the Group in full, without recourse by the Group to actions such as realising security (if any is held); or (ii) the financial asset is 90–365 days past due. The Group considers both quantitative and qualitative information that is reasonable and supportable, including historical experience and forward-looking information that is available without undue cost or effort.

In particular, the following information is taken into account when assessing whether credit risk has increased significantly since initial recognition:

- failure to make payments of principal or interest on their contractually due dates;
- an actual or expected significant deterioration in a financial instrument's external or internal credit rating (if available);
- an actual or expected significant deterioration in the operating results of the debtor; and
- existing or forecast changes in the technological, market, economic or legal environment that have a significant adverse effect on the debtor's ability to meet its obligation to the Group.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (ii) 信用損失(續)

###### 信用風險的顯著增加

在評估一項金融工具的信用風險自初始確認後是否顯著增加時，本集團將於報告日評估的金融工具違約風險與初始確認日的違約風險進行比較。在開展重新評估時，本集團認為當(i)借款人不可能全額履行其對本集團的信用義務，且本集團並無採取諸如變現證券(若持有)等追索行動；或(ii)該金融資產已逾期90–365天時，確定為違約事件。本集團對合理及可提供支持的定量和定性資料均進行斟酌，其中包括無需付出不當成本或努力即可取得的歷史經驗及預測資料。

尤其是在評估自初始確認後信用風險是否顯著增加時將考慮以下資料：

- 未能於合同到期日支付本金或利息；
- 金融工具外部或內部信用評級(如有)的實際或預期顯著惡化；
- 經營業績的實際或預期顯著惡化；及
- 技術、市場、經濟或法律環境的現有或預測變動對債務人履行其對本集團義務的能力產生重大不利影響。



## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (ii) *Credit losses* (continued)

###### *Significant increases in credit risk* (continued)

Depending on the nature of the financial instruments, the assessment of a significant increase in credit risk is performed on either an individual basis or a collective basis. When the assessment is performed on a collective basis, the financial instruments are grouped based on shared credit risk characteristics, such as past due status and credit risk ratings.

ECLs are remeasured at each reporting date to reflect changes in the financial instrument's credit risk since initial recognition. Any change in the ECL amount is recognised as an impairment gain or loss in profit or loss. The Group recognises an impairment gain or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account.

###### *Basis of calculation of interest income on credit-impaired financial assets*

Interest income is calculated based on the gross carrying amount of the financial asset unless the financial asset is credit-impaired, in which case interest income is calculated based on the amortised cost (i.e. the gross carrying amount less loss allowance) of the financial asset.

At each reporting date, the Group assesses whether a financial asset is credit-impaired. A financial asset is credit-impaired when one or more events that have a detrimental impact on the estimated future cash flows of the financial asset have occurred.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (ii) 信用損失(續)

###### 信用風險的顯著增加(續)

根據金融工具的性質，對信用風險顯著增加的評估是基於個別或整體開展。在基於整體開展評估時，金融工具根據共有的信用風險特徵(如：逾期狀況及風險信用評級)進行分組。

本集團於各個報告日重新計量預期信用損失，以反映自初始確認後金融工具信用風險的變化。預期信用損失的任何變化均於損益中確認為減值損益。本集團確認所有金融工具的減值損益，並通過損失準備金帳戶對其帳面金額進行相應調整。

###### 計算信用減值金融資產利息收入的基準

利息收入乃根據金融資產的帳面金額總額進行計算，惟金融資產為信用減值資產時，利息收入乃根據金融資產的攤餘成本計算(即：帳面金額總額減損失準備)。

本集團於各報告日評估金融資產是否為信用減值。當一項或多項事件對金融資產的預計未來現金流量產生不利影響時，則該金融資產為信用減值。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (ii) *Credit losses* (continued)

###### *Basis of calculation of interest income on credit-impaired financial assets (continued)*

Evidence that a financial asset is credit-impaired includes the following observable events:

- significant financial difficulties of the debtor;
- a breach of contract, such as a default or delinquency in interest or principal payments;
- it becoming probable that the borrower will enter into bankruptcy or other financial reorganisation;
- significant changes in the technological, market, economic or legal environment that have an adverse effect on the debtor; or
- the disappearance of an active market for a security because of financial difficulties of the issuer.

###### *Write-off policy*

The gross carrying amount of a financial asset or contract asset is written off (either partially or in full) to the extent that there is no realistic prospect of recovery. This is generally the case when the Group determines that the debtor does not have assets or sources of income that could generate sufficient cash flows to repay the amounts subject to the write-off.

Subsequent recoveries of an asset that was previously written off are recognised as a reversal of impairment in profit or loss in the period in which the recovery occurs.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (ii) 信用損失(續)

###### 計算信用減值金融資產利息收入的基準(續)

金融資產信用減值的跡象包括以下各可觀察事件：

- 債務人遭遇重大財務困難；
- 違反合同，如拖欠或違反支付利息或本金；
- 借款人可能進行破產清算或其他財務重組；
- 技術、市場、經濟或法律環境發生重大變化，並對債務產生不利影響；或
- 因發行人遭遇財務困難致使該證券失去活躍市場。

###### 衝銷政策

金融資產或合同資產的帳面金額總額於預計實際無法收回時衝銷(部分或全部)。通常是指當本集團釐定債務人概無產生足夠現金流量的資產或收入來源以償還衝銷的金額。

過往衝銷但隨後收回的資產於收回發生期間的損益中確認為減值轉回。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (ii) *Credit losses* (continued)

###### *Opening balance adjustment*

As a result of this change in accounting policy, the Group has recognised additional ECLs amounting to RMB163,094,000, which increased accumulated losses by RMB100,223,000 and decreased non-controlling interests by RMB28,276,000 and increased gross deferred tax assets by RMB34,595,000 at 1 January 2018.

The following table reconciles the closing loss allowance determined in accordance with IAS 39 as at 31 December 2017 with the opening loss allowance determined in accordance with IFRS 9 as at 1 January 2018.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (ii) 信用損失(續)

###### 期初結餘調整

由於會計政策的該項變化，本集團已確認額外的預期信用損失金額為人民幣163,094,000元，其中於2018年1月1日的累計虧損增加人民幣100,223,000元，而該日的非控股權益減少人民幣28,276,000元以及遞延稅項資產總額增加人民幣34,595,000元。

下表就於2017年12月31日根據《國際會計準則》第39號釐定的期末損失準備及於2018年1月1日根據《國際財務報告準則》第9號釐定的期初損失準備進行對賬。

		RMB'000 人民幣千元
Loss allowance at 31 December 2017 under IAS 39	根據《國際會計準則》第39號於2017年12月31日的損失準備	3,111,356
Additional credit loss recognised at 1 January 2018 on:	於2018年1月1日確認的額外信用損失的項目：	
– Trade and bills receivables (Note 12)	– 應收賬款及票據(附註12)	115,357
– Other receivables (included in deposits, prepayments and other receivables)	– 其他應收款項(包含在按金、預付款項及其他應收款項中)	32,810
– Gross amounts due from customers for contract work	– 應收建造合同客戶款項總額	5,731
– Long-term trade receivables (included in other non-current assets)	– 長期應收賬款(包含在其他流動資產中)	9,196
Loss allowance at 1 January 2018 under IFRS 9	根據《國際財務報告準則》第9號於2018年1月1日的損失準備	3,274,450

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 3 Changes in accounting policies (continued)

#### (b) IFRS 9, *Financial instruments* (continued)

##### (iii) Transition

Changes in accounting policies resulting from the adoption of IFRS 9 have been applied retrospectively, except as described below:

- Information relating to comparative periods has not been restated. Differences in the carrying amounts of financial assets resulting from the adoption of IFRS 9 are recognised in retained earnings and reserves as at 1 January 2018. Accordingly, the information presented for 2017 continues to be reported under IAS 39 and thus may not be comparable with the current period.
- The following assessments have been made on the basis of the facts and circumstances that existed at 1 January 2018 (the date of initial application of IFRS 9 by the Group):
  - the determination of the business model within which a financial asset is held; and
  - the designation of certain investments in equity instruments not held for trading to be classified as at FVOCI (non-recycling).
- If, at the date of initial application, the assessment of whether there has been a significant increase in credit risk since initial recognition would have involved undue cost or effort, a lifetime ECL has been recognised for that financial instrument.

### 3 會計政策變更(續)

#### (b) 《國際財務報告準則》第9號，「金融工具」(續)

##### (iii) 過渡

除下述情況外，採用《國際財務報告準則》第9號導致的會計政策變更已追溯應用：

- 有關比較期間的資料並未重述。採用《國際財務報告準則》第9號導致的金融資產帳面金額差額於2018年1月1日留存收益及儲備中確認。因此，二零一七年度編製的資料繼續根據《國際會計準則》第39號進行匯報，且該等資料與當前期間的資料不具可比性。
- 下述評估乃根據2018年1月1日(本集團初始採用《國際財務報告準則》第9號的日期)存在的事實及情況所開展：
  - 釐定持有金融資產的業務模式；及
  - 指定若干非持有買賣的權益工具投資以公允價值計量且其變動計入其他綜合收益(不重新計入)計量分類。
- 倘於初始採用日期，就初始確認後信用風險是否存在顯著增加開展的評估涉及付出不當成本或努力，則確認該金融工具的整個存續期預期風險損失。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 3 Changes in accounting policies (continued)

#### (c) IFRS 15, *Revenue from contracts with customers*

IFRS 15 establishes a comprehensive framework for recognising revenue and some costs from contracts with customers. IFRS 15 replaces IAS 18, *Revenue*, which covered revenue arising from sale of goods and rendering of services, and IAS 11, *Construction contracts*, which specified the accounting for construction contracts.

The Group has elected to use the cumulative effect transition method and has recognised the cumulative effect of initial application as an adjustment to the opening balance of equity at 1 January 2018. Therefore, comparative information has not been restated and continues to be reported under IAS 11 and IAS 18. As allowed by IFRS 15, the Group has applied the new requirements only to contracts that were not completed before 1 January 2018.

The following table summarises the impact of transition to IFRS 15 on accumulated losses and the related tax impact at 1 January 2018:

		RMB'000 人民幣千元
<b>Accumulated losses</b>	<b>累計虧損</b>	
Timing of revenue recognition – revenue from construction contracts	收入確認時點－建造合同收入	32,627
Related tax	相關稅項	(4,894)
Net increase in accumulated losses at 1 January 2018	累計虧損於2018年1月1日的增加淨額	27,733

### 3 會計政策變更(續)

#### (c) 《國際財務報告準則》第15號，「客戶合同收入」

《國際財務報告準則》第15號建立了確認來自客戶合同收入及若干成本的全面框架。《國際財務報告準則》第15號取代《國際會計準則》第18號「收入」(涵蓋銷售商品及提供服務而產生的收入)，以及《國際會計準則》第11號「建造合同」(明確建造合同的會計處理)。

本集團已選擇採用累積影響的過渡方法，並已將初始採用《國際財務報告準則》第15號的累積影響確認為於2018年1月1日期初結餘的調整。因此，比較數據並未重述，且繼續按照《國際會計準則》第11號和《國際會計準則》第18號進行匯報。在《國際財務報告準則》第15號的允許下，本集團僅將新規定應用於2018年1月1日前尚未完成的合同。

下表概述了於2018年1月1日過渡至《國際財務報告準則》第15號對累計虧損的影響以及相關稅務影響。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 3 Changes in accounting policies (continued)

#### (c) IFRS 15, Revenue from contracts with customers (continued)

Further details of the nature and effect of the changes on previous accounting policies are set out below:

##### (i) Timing of revenue recognition

Previously, revenue arising from construction contracts and provision of services was recognised over time, whereas revenue from sale of goods was generally recognised at a point in time when the risks and rewards of ownership of the goods had passed to the customers.

Under IFRS 15, revenue is recognised when the customer obtains control of the promised good or service in the contract. This may be at a single point in time or over time. IFRS 15 identifies the following three situations in which control of the promised good or service is regarded as being transferred over time:

- A. When the customer simultaneously receives and consumes the benefits provided by the entity's performance, as the entity performs;
- B. When the entity's performance creates or enhances an asset (for example work in progress) that the customer controls as the asset is created or enhanced;
- C. When the entity's performance does not create an asset with an alternative use to the entity and the entity has an enforceable right to payment for performance completed to date.

If the contract terms and the entity's activities do not fall into any of these 3 situations, then under IFRS 15 the entity recognises revenue for the sale of that good or service at a single point in time, being when control has passed. Transfer of risks and rewards of ownership is only one of the indicators that is considered in determining when the transfer of control occurs.

### 3 會計政策變更(續)

#### (c) 《國際財務報告準則》第15號，「客戶合同收入」(續)

有關以往年度會計政策變更的性質及影響的進一步詳情載列如下：

##### (i) 確認收入的時點

以往年度建造合同及提供服務產生的收入在一段時間內確認，而商品銷售產生的收入一般於貨物所有權的風險及回報轉移至客戶的時點進行確認。

根據《國際財務報告準則》第15號，收入於客戶取得合同中所承諾的貨物或服務的控制權時確認。收入可能在某個時間點或在一段時間內確認。《國際財務報告準則》第15號確定了以下所承諾貨物或提供服務的控制權被視為在一段時間內轉移的三種情況：

- A. 當實體履約時，客戶同時收到及使用實體履約所提供的利益時；
- B. 當實體履約創造或改良一項資產，且在資產被創造或改良的過程中由客戶控制時(如在產品)；
- C. 當實體履約時，不會創造出對實體而言具有替代用途的資產，且該實體對迄今完成的履約付款具有可執行權利時；

倘合同條款及實體活動並不屬於該等三種情況的任何一種，則根據《國際財務報告準則》第15號，實體於某一指定時間點(即控制權轉移時)就銷售貨物或服務確認收入。所有權風險及回報的轉移僅為釐定控制權何時轉移的一項指標。





## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 3 Changes in accounting policies (continued)

#### (c) IFRS 15, Revenue from contracts with customers (continued)

##### (i) Timing of revenue recognition (continued)

The adoption of IFRS 15 does not have a significant impact on when the Group recognises revenue from sales of goods and provision of services. However, the timing of revenue recognition from construction contracts is affected as follow:

According to the requirements of IFRS 15, a contract modification is a change in the price or point of a contract, or both. This may be described as a change order, a variation, or an amendment. When a contract modification is approved, it creates or changes the enforceable rights and obligations of the parties to the contract. This approval may be written, oral, or implied by customary business practices, and should be legally enforceable.

If the parties have not approved a contract modification, then an entity continues to apply the requirements of the new standard to the existing contract until approval is obtained.

IAS 11 includes specific guidance on the accounting for variations in a construction contract as a variation is an instruction from a customer to change the scope of work to be performed. A variation is included in contract revenue when:

- it is probable that the customer will approve the variation; and
- the amount of revenue can be measured reliably.

This specific guidance is not carried forward into the new standard. Instead, claims and variations in construction contracts are accounted for under the new standard's general guidance on contract modifications.

The criteria in the IFRS 15 for recognising a contract modification to some contract change the timing of revenue recognition from variations. Accordingly, the timing of revenue recognition from construction contracts due to contract modifications is later under IFRS 15 than under IAS 11.

### 3 會計政策變更(續)

#### (c) 《國際財務報告準則》第15號，「客戶合同收入」(續)

##### (i) 確認收入的時點(續)

採用《國際財務報告準則》第15號對本集團何時確認商品銷售和提供服務產生的收入並無重大影響。然而，建造合約的收入確認時間點受到以下影響：

根據《國際財務報告準則》第15號的規定，合同修訂是對合同範圍或價格(或兩者兼有)的變更。該等變更可被視作變更指令、變更或修訂。合同修訂審批通過後，將形成或變更合同各方的可執行權利與義務。合同審批通過的形式可能為書面、口頭或通過商業行為慣例所隱含，且該等批准在法律上是可執行的。

倘合同各方並未審批通過合同修訂，則實體繼續對當前現有合同採用新準則的規定，直至該等合同修訂獲得批准。

《國際會計準則》第11號包含有關建造合同變更會計處理的具體指引，所謂變更是指客戶指出就合同所規定的施工範圍作出變更。當符合以下條件時，這種變更應包含在合同收入中：

- 客戶可能批准變更；及
- 收入的金額能夠可靠地計量。

該具體指引並未轉入新準則中。但是，建造合同中的索賠及變更是根據新準則就合同修訂的一般指引進行會計處理。

《國際財務報告準則》第15號就確認若干合同修訂中的一項合同修訂的標準改變了收入確認的時間點。因此，根據《國際財務報告準則》第15號因合同修訂導致的建造合同收入確認時間較根據《國際會計準則》第11號的上述收入確認時間晚。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 3 Changes in accounting policies (continued)

#### (c) IFRS 15, Revenue from contracts with customers (continued)

##### (ii) Bid commissions payable related to sales or construction contracts

The Group previously recognised bid commissions payable related to sales or construction contracts as distribution costs when they were incurred. Under IFRS 15, the Group is required to capitalise these bid commissions as costs of obtaining contracts when they are incremental and are expected to be recovered, unless the expected amortisation period is one year or less from the date of initial recognition of the asset, in which case the bid commissions can be expensed when incurred. Capitalised commissions are charged to profit or loss when the revenue from the related contracts is recognised and are included as distribution costs at that time.

This change in accounting policy does not have any material impact on the financial position and the financial result of the Group.

#### (d) IFRIC 22, Foreign currency transactions and advance consideration

This interpretation provides guidance on determining “the date of the transaction” for the purpose of determining the exchange rate to use on initial recognition of the related asset, expense or income (or part of it) arising from a transaction in which an entity receives or pays advance consideration in a foreign currency.

The Interpretation clarifies that “the date of the transaction” is the date on initial recognition of the non-monetary asset or liability arising from the payment or receipt of advance consideration. If there are multiple payments or receipts in advance of recognising the related item, the date of the transaction for each payment or receipt should be determined in this way. The adoption of IFRIC 22 does not have any material impact on the financial position and the financial result of the Group.

### 3 會計政策變更(續)

#### (c) 《國際財務報告準則》第15號，「客戶合同收入」(續)

##### (ii) 與銷售或建造合同相關的應付投標佣金

本集團過往在與銷售或建造合同相關的應付投標佣金發生時將其確認為分銷成本。根據《國際財務報告準則》第15號，本集團須將該等投標佣金資本化為取得合同的成本(當其為增量且預計將收回時)，除非預期攤銷期為自初始確認該資產之日起一年或以下，投標佣金能夠在發生時計入費用。資本化佣金於相關合同收入確認時計入損益，並列入當時的分銷成本。

該會計政策變更並未對本集團的財務狀況及財務業績產生任何重大影響。

#### (d) 《國際財務報告解釋公告》第22號，「外幣交易和預付對價」

該解釋公告為釐定「交易日期」提供指引，目的是於實體以外幣收到或支付預付對價的交易中釐定初始確認相關資產、費用或收入(或部分收入)時使用的匯率。

該解釋公告闡明「交易日期」為初始因支付或收到預付對價而產生的非貨幣性資產或負債的日期。倘於確認相關項目前具有多項付款或收款，則應以該方式確定每筆付款或收款的交易日期。採用《國際財務報告解釋公告》第22號並未對本集團的財務狀況及財務業績產生任何重大影響。



## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

### 4 Revenue and segment reporting

#### (a) Revenue

The Group is principally engaged in manufacturing and sale of wind turbines, solar cells and modules, plasma ignition equipment and other related electric equipment for power plants, construction engineering of desulphurisation, denitrification, water treatment, solar energy and other environmental protection and energy conservation projects, rental of desulphurization 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.

### 4 收入及分部報告

#### (a) 收入

本集團主要從事風力發電機、太陽能電池和組件、等離子體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、太陽能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議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 UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(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)

#### (a) Revenue (continued)

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

#### (a) 收入(續)

本期內確認的持續經營業務及已終止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					
		Continuing operations 持續經營業務		Discontinued operation 已終止經營業務		Total 總計	
		2018	2017 (Note) (附註)	2018	2017	2018	2017 (Note) (附註)
		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	RMB'000 人民幣千元
<b>Revenue from contracts with customers within the scope of IFRS15</b>	《國際財務報告準則》第15號 範圍內與客戶簽訂的合同 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	2,251,175	2,558,305	-	-	2,251,175	2,558,305
- revenue from construction contracts	- 建造合同收入	1,623,042	1,788,619	-	-	1,623,042	1,788,619
- rendering of services	- 提供服務	174,034	144,197	-	1,447	174,034	145,644
- service concession arrangement revenue	- 服務特許權協議收入	147,492	118,647	-	-	147,492	118,647
		<b>4,195,743</b>	4,609,768	-	1,447	<b>4,195,743</b>	4,611,215
<b>Revenue from other sources</b>	其它會計準則範圍內的收入						
- rental income from operating leases (Note (i))	- 經營租賃的租賃收入 (附註(i))	431,122	379,921	-	-	431,122	379,921
		<b>4,626,865</b>	4,989,689	-	1,447	<b>4,626,865</b>	4,991,136
<b>Disaggregated by geographical location of customers</b>	按客商地理位置分類						
- Mainland China	- 中國大陸	4,626,865	4,989,689	-	1,447	4,626,865	4,991,136

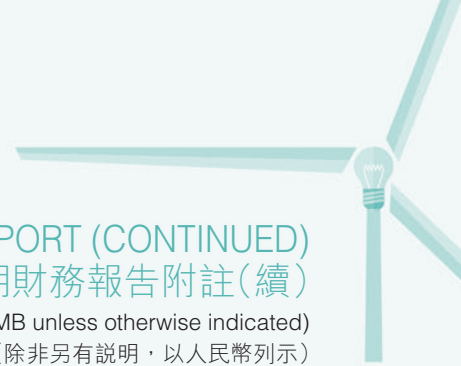
Note: The Group has initially applied IFRS 15 using the cumulative effect method. Under this method, the comparative information is not restated and was prepared in accordance with IAS 18 and IAS 11 (see Note 3(c)).

附註：本集團於2018年1月1日起應用《國際財務報告準則》第15號。根據選擇的過渡方法，由於初次應用，對比數據並未重述，遵循《國際會計準則》第18號和《國際會計準則》第11號(見附註3(c))。



## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 4 Revenue and segment reporting (continued)

#### (a) Revenue (continued)

Note:

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

#### (b) Segment reporting

The Group manages its businesses by its subsidiaries, which are organised by business lines (products and services). In a manner consistent with the way in which information is reported internally to the Group's most senior executive management for the purposes of resource allocation and performance assessment, the Group has four reportable segments.

The operation of solar power products and services segment has been discontinued since November 2015 (see Note 9).

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.

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

### 4 收入及分部報告(續)

#### (a) 收入(續)

附註：

- (i) 該金額主要為與本集團與電廠簽訂的負責脫硫及脫硝設施的運行工作以在發電過程中處理電廠生成的二氧化硫及氮氧化物之服務安排所相關的收入。本集團購買或建造設施，之後在電廠運行期負責運行設施以向電廠提供污染物處理服務。根據電廠售出的電量以及中國國家發展與改革委員會制定的收費標準收取服務費用。此等安排雖並不是法律形式上的租賃，但根據其條款與條件被視同為經營租賃。

#### (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。

本集團已於2015年11月終止運營太陽能產品以及服務分部(見附註9)。

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與太陽能發電及其他電力控制系統相關產品的銷售。

#### (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信息外，管理人員還收到有關折舊及攤銷、利息收入、財務成本、資產減值、存貨撇減以及添置分部非流動資產的分部資訊。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(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)

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 2018 and 2017 is set out below:

提供給本集團最高級行政管理人員用作進行資源分配並對截至2018年及2017年6月30日止6個月的分部業績作出評估的關於本集團可呈報分部的信息如下：

		As at/for the six months ended 30 June 2018 於2018年6月30日/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		Total
		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 太陽能產品及服務 RMB'000 人民幣千元	總計 RMB'000 人民幣千元
<b>Disaggregated by time of revenue recognition</b>	<b>按收入確認時點分類</b>						
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
<b>Revenue from external customers</b>	<b>外部客戶收入</b>	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
<b>Reportable segment revenue</b>	<b>可呈報分部收入</b>	1,957,870	684,777	1,801,021	217,352	-	4,661,020
<b>Reportable segment profit/(loss) (gross profit/(loss))</b>	<b>可呈報分部利潤/(虧損) (毛利/(毛虧))</b>	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 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
Impairment of gross amounts due from customers for contract work	建造合同應收款減值	1,494	121	-	-	-	1,615
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
<b>Reportable segment assets</b>	<b>可呈報分部資產</b>	12,080,482	3,436,890	12,537,880	2,336,976	637,172	31,029,400
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	93,768	1,751	29,915	7,572	-	133,006
<b>Reportable segment liabilities</b>	<b>可呈報分部負債</b>	8,560,721	1,727,651	9,944,207	563,065	943,278	21,738,922

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(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 2017 於2017年6月30日/截至2017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	Total 總計
		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	Solar power products and services 太陽能產品及 服務	(Note) (附註)
		RMB'000 人民幣千元	RMB'000 人民幣千元 (restated) (重述)	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 (restated) (重述)
Revenue from external customers	外部客戶收入	2,219,607	423,880	2,192,493	153,709	1,447	4,991,136
Inter-segment revenue	分部間收入	2,768	-	950	23,154	401	27,273
<b>Reportable segment revenue</b>	<b>可呈報分部收入</b>	<b>2,222,375</b>	<b>423,880</b>	<b>2,193,443</b>	<b>176,863</b>	<b>1,848</b>	<b>5,018,409</b>
<b>Reportable segment profit (gross profit/(loss))</b>	<b>可呈報分部利潤(毛利)/(毛虧)</b>	<b>430,554</b>	<b>107,883</b>	<b>550,750</b>	<b>80,503</b>	<b>(5,234)</b>	<b>1,164,456</b>
Depreciation and amortisation	折舊及攤銷	136,055	13,252	61,417	46,640	7,227	264,591
(Reversal of impairment)/impairment of property, plant and equipment	物業、廠房及設備(轉回)/減值	(6,538)	-	-	-	65,328	58,790
Impairment of intangible assets	無形資產減值	31,968	-	-	-	-	31,968
Impairment of trade and other receivables	應收賬款及其他應收款項減值	134,581	29,429	45,535	610	16,528	226,683
Impairment of other non-current assets	其他非流動資產減值	-	-	-	-	28,107	28,107
Impairment of assets held for sale	持有待售非流動資產減值	-	-	-	-	17,988	17,988
Interest income	利息收入	19,327	18,721	1,294	803	141	40,286
Finance costs	財務成本	57,964	2,460	66,795	93	5,094	132,406

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(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 (continued)

### 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(續)

		As at/for the year ended 31 December 2017 於2017年6月30日/截至2017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	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	Solar power products and services 太陽能產品及服務	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	RMB'000 人民幣千元
<b>Reportable segment assets</b>	<b>可呈報分部資產</b>	12,362,153	3,843,546	13,143,815	2,398,087	1,571,028	33,318,629
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	193,606	6,377	87,795	5,903	54	293,735
<b>Reportable segment liabilities</b>	<b>可呈報分部負債</b>	8,618,070	2,554,920	10,237,558	555,814	998,585	22,964,947

*Note:* The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, the comparative information is not restated due to the initial application (see Note 3).

*附註:* 本集團於2018年1月1日起應用《國際財務報告準則第15號》及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述(見附註3)。



# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

### 4 Revenue and segment reporting (continued)

### 4 收入及分佈報告(續)

#### (b) Segment reporting (continued)

#### (b) 分部報告(續)

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

##### (ii) 可呈報分部收入、利潤、資產和負債的調節

		Six months ended 30 June 截至6月30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	
		2018	2017	2018	2017	2018	2017
			(Note)				(Note)
		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
			(restated)				(restated)
			(重述)				(重述)
<b>Revenue</b>	<b>收入</b>						
Reportable segment revenue	可呈報分部收入	4,661,020	5,016,561	-	1,848	4,661,020	5,018,409
Elimination of inter-segment revenue	分部間收入抵銷	(34,155)	(26,872)	-	(401)	(34,155)	(27,273)
Consolidated revenue	合併收入	4,626,865	4,989,689	-	1,447	4,626,865	4,991,136
<b>Profit/(loss)</b>	<b>利潤/(虧損)</b>						
Reportable segment profit/(loss)	可呈報分部利潤/(虧損)	994,431	1,169,690	(10,040)	(5,234)	984,391	1,164,456
Elimination of inter-segment profit	分部間利潤抵銷	1,057	3,103	-	-	1,057	3,103
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)	995,488	1,172,793	(10,040)	(5,234)	985,448	1,167,559
Other revenue	其他收入	117,567	140,861	20,731	2,795	138,298	143,656
Other net income	其他收益淨額	11,229	547,617	-	98,780	11,229	646,397
Selling and distribution expenses	銷售及分銷開支	(316,786)	(433,237)	(1,046)	(823)	(317,832)	(434,060)
Administrative expenses	行政開支	(674,452)	(814,817)	(8,055)	(172,433)	(682,507)	(987,250)
Finance costs	財務成本	(261,659)	(286,169)	(2,256)	(5,094)	(263,915)	(291,263)
Share of profits less losses of associates	應佔聯營公司利潤減虧損	32,129	37,600	-	-	32,129	37,600
Consolidated (loss)/profit before taxation	合併稅前(虧損)/利潤	(96,484)	364,648	(666)	(82,009)	(97,150)	282,639

Note: The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, the comparative information is not restated due to the initial application (see Note 3).

附註：本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述（見附註3）。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 4 Revenue and segment reporting (continued)

### 4 收入及分佈報告(續)

#### (b) Segment reporting (continued)

#### (b) 分部報告(續)

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

#### (ii) 可呈報分部收入、利潤、資產和負債的調節(續)

		At 30 June 2018 2018年 6月30日	At 31 December 2017 2017年 12月31日 (Note) (附註)
		RMB'000 人民幣千元	RMB'000 人民幣千元
<b>Assets</b>	<b>資產</b>		
Reportable segment assets	可呈報分部資產	<b>31,029,400</b>	33,318,629
Inter-segment elimination	分部間抵銷	<b>(393,160)</b>	(389,189)
		<b>30,636,240</b>	32,929,440
Interests in associates	對聯營公司的投資	<b>367,377</b>	419,952
Other equity investments	其他權益投資	<b>236,348</b>	162,187
Tax recoverable	可收回稅項	<b>211,104</b>	132,988
Deferred tax assets	遞延稅項資產	<b>789,068</b>	724,191
Unallocated head office and corporate assets	未分配總部及行政資產	<b>1,600,462</b>	1,239,492
Consolidated total assets	合併資產總額	<b>33,840,599</b>	35,608,250
<b>Liabilities</b>	<b>負債</b>		
Reportable segment liabilities	可呈報分部負債	<b>21,738,922</b>	22,964,947
Inter-segment elimination	分部間抵銷	<b>(393,160)</b>	(389,189)
		<b>21,345,762</b>	22,575,758
Income tax payable	應付所得稅	<b>18,326</b>	44,312
Deferred tax liabilities	遞延稅項負債	<b>151,458</b>	207,269
Unallocated head office and corporate liabilities	未分配總部及行政負債	<b>4,680,935</b>	4,847,646
Consolidated total liabilities	合併負債總額	<b>26,196,481</b>	27,674,985

Note: The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, the comparative information is not restated due to the initial application (see Note 3).

附註：本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述(見附註3)。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(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	
		2018 RMB'000 人民幣千元	2017 RMB'000 人民幣千元	2018 RMB'000 人民幣千元	2017 RMB'000 人民幣千元	2018 RMB'000 人民幣千元	2017 RMB'000 人民幣千元
<b>Other revenue</b>	<b>其他收入</b>						
Government grants	政府補助	42,040	56,525	28	–	42,068	56,525
Interest income	利息收入	47,103	45,343	97	141	47,200	45,484
Others	其他	28,424	38,993	20,606	2,654	49,030	41,647
			(restated) (重述)				(restated) (重述)
		<b>117,567</b>	140,861	<b>20,731</b>	2,795	<b>138,298</b>	143,656
<b>Other net income</b>	<b>其他收益淨額</b>						
Net gain/(loss) on sales of raw materials	原材料銷售收益/ (虧損)淨額	7,004	7,952	–	(434)	7,004	7,518
Net gain on disposal of subsidiaries	出售附屬公司收益淨額	3,525	485,864	–	98,268	3,525	584,132
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	117	51,008	–	–	117	51,008
Net foreign exchange gain/(loss)	匯兌收益/(虧損)淨額	1,207	(2,555)	–	–	1,207	(2,555)
Others	其他	(624)	5,348	–	946	(624)	6,294
		<b>11,229</b>	547,617	–	98,780	<b>11,229</b>	646,397

### 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	
		2018 RMB'000 人民幣千元	2017 RMB'000 人民幣千元	2018 RMB'000 人民幣千元	2017 RMB'000 人民幣千元	2018 RMB'000 人民幣千元	2017 RMB'000 人民幣千元
Interest on bank and other borrowings	銀行及其他借款利息	263,173	290,812	2,256	5,094	265,429	295,906
Less: interest expenses capitalised into property, plant and equipment and construction contracts	減：資本化在物業、廠房及設備及建造合同中的利息開支	(1,514)	(4,643)	–	–	(1,514)	(4,643)
		<b>261,659</b>	286,169	<b>2,256</b>	5,094	<b>263,915</b>	291,263

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 7 (Loss)/profit before taxation

### 7 稅前(虧損)/利潤

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

稅前(虧損)/利潤已扣除/(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	
		2018	2017	2018	2017	2018	2017
			(Note) (附註)				(Note) (附註)
		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	RMB'000 人民幣千元
			(restated) (重述)				(restated) (重述)
Amortisation	攤銷						
- lease prepayments	- 預付土地租賃款	3,795	3,252	-	-	3,795	3,252
- intangible assets	- 無形資產	37,177	28,044	421	483	37,598	28,527
Depreciation	折舊						
- investment properties	- 投資性物業	4,779	4,496	-	-	4,779	4,496
- property, plant and equipment	- 物業、廠房及設備	203,834	221,572	-	6,744	203,834	228,316
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	(6,538)	-	65,328	11,049	58,790
- intangible assets	- 無形資產	-	31,968	-	-	-	31,968
- trade and other receivables	- 應收賬款及其他應收款項	57,308	210,155	(34,498)	16,528	22,810	226,683
- other non-current assets	- 其他非流動資產	612	-	-	28,107	612	28,107
- gross amounts due from customers for contract work	- 建造合同應收款減值	1,615	-	-	-	1,615	-
- assets held for sale	- 持有待售非流動資產	-	-	-	17,988	-	17,988
Research and development costs	研發成本	79,915	62,278	-	-	79,915	62,278

Note: The Group has initially applied IFRS 9 at 1 January 2018. Under the transition methods chosen, the comparative information is not restated due to the initial application (see Note 3).

附註：本集團於2018年1月1日起應用《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述（見附註3）。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(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	
		2018	2017 (Note) (附註)	2018	2017	2018	2017 (Note) (附註)
		RMB'000 人民幣千元	RMB'000 人民幣千元 (restated) (重述)	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 (restated) (重述)
<b>Current tax</b>	<b>本期稅額</b>						
Provision for the period	本期撥備	39,454	127,828	36	-	39,490	127,828
Under-provision in respect of prior years	過往年度撥備不足	16,255	79,143	147	1,451	16,402	80,594
		<b>55,709</b>	206,971	<b>183</b>	1,451	<b>55,892</b>	208,422
<b>Deferred tax</b>	<b>遞延稅項</b>						
Origination and reversal of temporary differences	暫時性差異的產生及轉回	(81,198)	(66,583)	-	-	(81,198)	(66,583)
		<b>(25,489)</b>	140,388	<b>183</b>	1,451	<b>(25,306)</b>	141,839

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 2017: 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 tax exempted or taxed at preferential rates of 12.5% or 15% (six months ended 30 June 2017: 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 jurisdiction.

*Note:* The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, the comparative information is not restated due to the initial application (see Note 3).

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在本期估計的應繳稅利潤按法定稅率25%(截至2017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免稅政策或享受12.5%或15%(截至2017年6月30日止6個月: 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。

*附註:* 本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述(見附註3)。



## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

### 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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#### 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 constitute 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 statements.

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. Such assets and liabilities were presented as non-current assets and disposal groups held for sale in the consolidated statement of financial position.

As at the date of this interim financial report, the disposal of aforementioned assets/liabilities has been completed (see Note 14).

#### 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，管理層決定終止太陽能產品和服務分部的所有經營業務，該分部是本集團的一個主要經營業務。因此，本集團在太陽能產品及服務分部的經營成果在合併財務報表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議，提議處置太陽能產品及服務分部的主要資產／負債。於報告期末，該部分資產及負債在合併財務報表中以持有待售的非流動資產及出售組別列示。

於此中期財務報告日期，上述提及的資產／負債的處置已完成(見附註14)。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

### 9 Discontinued operation (continued)

### 9 已終止經營業務(續)

		<b>Six months ended 30 June</b>	
		<b>截至6月30日止6個月</b>	
		<b>2018</b>	2017
		<b>RMB'000</b>	RMB'000
		<b>人民幣千元</b>	人民幣千元
	Note 附註		
<b>Revenue</b>	收入	–	1,447
Cost of sales	銷售成本	<b>(10,040)</b>	(6,681)
<b>Gross loss</b>	<b>毛虧</b>	<b>(10,040)</b>	(5,234)
Other revenue	其他收入	<b>20,731</b>	2,795
Other net income	其他收益淨額	–	98,780
Selling and distribution expenses	銷售及分銷開支	<b>(1,046)</b>	(823)
Administrative expenses	行政開支	<b>(8,055)</b>	(172,433)
<b>Profit/(loss) from operation</b>	<b>經營利潤/(虧損)</b>	<b>1,590</b>	(76,915)
Finance costs	財務成本	<b>(2,256)</b>	(5,094)
<b>Loss before taxation from discontinued operation</b>	<b>已終止經營業務的稅前虧損</b>	<b>(666)</b>	(82,009)
Income tax	所得稅	<b>(183)</b>	(1,451)
<b>Loss for the period from discontinued operation</b>	<b>已終止經營業務的本期虧損</b>	<b>(849)</b>	(83,460)
<b>Attributable to:</b>	<b>歸屬於：</b>		
Equity shareholders of the Company	本公司權益股東	<b>(849)</b>	(81,793)
Non-controlling interests	非控股權益	–	(1,667)
<b>Loss for the period from discontinued operation</b>	<b>已終止經營業務的本期虧損</b>	<b>(849)</b>	(83,460)

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 9 Discontinued operation (continued)

The net cash flows incurred by the discontinued operation are as follows:

		Six months ended 30 June 截至6月30日止6個月	
		2018 RMB'000 人民幣千元	2017 RMB'000 人民幣千元
Net cash generated from/(used in) operating activities	經營活動中產生/(使用)的淨現金	130,239	(25,534)
Net cash generated from investing activities	投資活動中產生的淨現金	-	40,452
Net cash used in financing activities	融資活動中使用的淨現金	(121,865)	(26,211)
Net cash inflow/(outflow)	淨現金流入/(流出)	8,374	(11,293)

### 10 (Loss)/earnings per share

The calculation of basic (loss)/earnings per share is based on the loss attributable to ordinary equity shareholders of the Company of RMB56,015,000 (six months ended 30 June 2017: profit of RMB133,969,000 (restated)) and the weighted average of 6,063,770,000 ordinary shares (six months ended 30 June 2017: 6,063,770,000 ordinary shares) in issue during the interim period.

There were no dilutive potential ordinary shares in existence during the six months ended 30 June 2018 and 2017.

(Loss)/profit attributable to ordinary equity shareholders of the Company used in the basic and diluted (loss)/earnings per share calculations:

		Six months ended 30 June 截至6月30日止6個月	
		2018 RMB'000 人民幣千元	2017 (Note) (附註) RMB'000 人民幣千元 (restated) (重述)
- From continuing operations	- 持續經營業務	(55,166)	215,762
- From discontinued operation	- 已終止經營業務	(849)	(81,793)
		(56,015)	133,969

Note: The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, the comparative information is not restated due to the initial application (see Note 3).

### 9 已終止經營業務(續)

已終止經營業務產生的淨現金流如下：

### 10 每股(虧損)/收益

每股基本(虧損)/收益的計算依據為歸屬於本公司普通股股東的虧損人民幣56,015,000元(截至2017年6月30日止6個月：盈利人民幣133,969,000元(重述))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2017年6月30日止6個月：6,063,770,000股普通股)。

截至2018年及2017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)/收益時使用的歸屬於本公司普通股股東的(虧損)/盈利為：

附註：本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述(見附註3)。





## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(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 2018, the Group acquired items of property, plant and equipment with a cost of RMB100,646,000 (six months ended 30 June 2017: RMB43,698,000). Items of property, plant and equipment with a net book value of RMB74,000 were disposed of during the six months ended 30 June 2018 (six months ended 30 June 2017: RMB1,973,000), resulting in a gain on disposal of RMB117,000 (six months ended 30 June 2017: a loss of RMB2,326,000), which is included in "other net income" in the consolidated statement of profit or loss.

#### (b) Impairment losses

During the six months period ended 30 June 2018, 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 fair value less cost of disposal model, and recognised impairment losses on property, plant and equipment with an aggregate amount of RMB11,049,000 (six months ended 30 June 2017: RMB58,790,000).

### 11 物業、廠房及設備

#### (a) 購置與處置

截至2018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100,646,000元(截至2017年6月30日止6個月：人民幣43,698,000元)；同期處置的物業、廠房及設備的帳面淨值為人民幣74,000元(截至2017年6月30日止6個月：人民幣1,973,000元)，導致處置收益為人民幣117,000元(截至2017年6月30日止6個月：處置損失人民幣2,326,000元)並計入合併損益表中的「其他收益淨額」。

#### (b) 減值虧損

截至2018年6月30日止六個月期間，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11,049,000元(截至2017年6月30日止6個月：人民幣58,790,000元)。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 12 Trade and bills receivables

### 12 應收賬款及票據

		<b>At 30 June</b> <b>6月30日</b> <b>2018</b>	At 31 December 12月31日 2017 (Note) (附註)
		<b>RMB'000</b> 人民幣千元	<b>RMB'000</b> 人民幣千元
Trade receivables for contract work due from:	合同工程的應收賬款：		
– related parties under China Guodian Corporation (“Guodian”)	– 中國國電公司(「國電」)下屬的關聯方	<b>1,997,825</b>	1,991,821
– associates	– 聯營公司	<b>14,018</b>	14,018
– third parties	– 第三方	<b>2,935,768</b>	3,005,343
		<b>4,947,611</b>	5,011,182
Bills receivable for contract work due from:	合同工程的應收票據：		
– related parties under Guodian	– 國電下屬的關聯方	<b>335,791</b>	693,548
– third parties	– 第三方	<b>220,800</b>	209,639
		<b>556,591</b>	903,187
Trade receivables for operating leases due from:	經營租賃的應收賬款：		
– related parties under Guodian	– 國電下屬的關聯方	<b>165,865</b>	76,066
– third parties	– 第三方	<b>28,810</b>	24,576
		<b>194,675</b>	100,642
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：		
– Guodian	– 國電	<b>3,473</b>	2,908
– related parties under Guodian	– 國電下屬的關聯方	<b>2,565,712</b>	2,302,395
– associates	– 聯營公司	<b>38,439</b>	38,439
– third parties	– 第三方	<b>4,162,680</b>	4,676,340
		<b>6,770,304</b>	7,020,082
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 Guodian	– 國電下屬的關聯方	<b>752,769</b>	800,179
– third parties	– 第三方	<b>586,606</b>	1,023,246
		<b>1,339,375</b>	1,823,425
		<b>13,808,556</b>	14,858,518
Less: loss allowance	減：壞賬撥備	<b>(2,074,245)</b>	(2,015,720)
		<b>11,734,311</b>	12,842,798

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

### 12 Trade and bills receivables (continued)

Note: The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated due to the initial application (See Note 3).

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

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

As of the end of the reporting period, the aging 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:

		<b>At 30 June</b> <b>6月30日</b> <b>2018</b>	At 31 December 12月31日 2017 (Note) (附註)
		<b>RMB'000</b> 人民幣千元	<b>RMB'000</b> 人民幣千元
Within 1 year	1年以內	<b>7,920,788</b>	8,554,641
Between 1 to 2 years	1至2年內	<b>1,841,456</b>	2,156,939
Between 2 to 3 years	2至3年內	<b>1,422,585</b>	1,862,106
Over 3 years	3年以上	<b>549,482</b>	269,112
		<b>11,734,311</b>	12,842,798

The movement in the loss allowance for during the period/year, including both specific and collective loss components, is as follows:

		<b>Six months</b> <b>ended 30 June</b> <b>截至6月30日</b> <b>止6個月</b> <b>2018</b>	Year ended 31 December 截至12月31日 止年度 2017 (Note) (附註)
		<b>RMB'000</b> 人民幣千元	<b>RMB'000</b> 人民幣千元
At 1 January	於1月1日	<b>2,131,077</b>	2,059,577
Impairment losses recognised	確認的減值虧損	<b>102,278</b>	384,378
Reversal of impairment losses	減值虧損轉回	<b>(111,350)</b>	(348,501)
Uncollectible amounts written-off	無法收回金額撇減	<b>(47,760)</b>	(79,734)
At 30 June/31 December	於6月30日/12月31日	<b>2,074,245</b>	2,015,720

### 12 應收賬款及票據(續)

附註：本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述（見附註3）。

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。

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。

於報告期末，基於發票日期（或收入確認之日，以較早者為準）的應收賬款及票據及減壞賬撥備的賬齡分析如下：

本期/年度壞賬撥備（包括個別和整體損失）的變動如下表所示：

## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 12 Trade and bills receivables (continued)

*Note:* The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated due to the initial application (See Note 3).

### 12 應收賬款及票據(續)

*附註：*本集團於2018年1月1日起應用《國際財務報告準則》第15號及《國際財務報告準則》第9號。根據選擇的過渡方法，由於初次應用，對比數據並未重述(見附註3)。

### 13 Cash at bank and on hand

### 13 銀行存款及庫存現金

		<b>At 30 June</b> <b>6月30日</b> <b>2018</b> <b>RMB'000</b> <b>人民幣千元</b>	At 31 December 12月31日 2017 RMB'000 人民幣千元
Cash on hand	庫存現金	<b>2</b>	55
Cash at bank	銀行存款	<b>994,509</b>	392,637
Cash at related parties under Guodian	於國電下屬的關聯方存放的現金	<b>2,254,439</b>	3,912,382
		<b>3,248,950</b>	4,305,074
Representing:	包括：		
– cash and cash equivalents	– 現金及現金等價物	<b>2,917,919</b>	3,994,074
– deposits with banks over three months of original maturity	– 初始到期日三個月以上的 銀行存款	<b>331,031</b>	311,000
		<b>3,248,950</b>	4,305,074

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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## 14 Disposal groups and non-current assets held for sale

## 14 分類為持有待售的處置組別和非流動資產

(a) The movements of assets and liabilities of disposal groups and non-current assets held for sale during the six months are as follows :

(a) 六個月期間內持有待售的處置組別和非流動資產的變動情況如下：

		<b>Six months ended 30 June 截至2018年 6月30日止六個月 2018 RMB'000 人民幣千元</b>	Year ended 31 December 截至2017年 12月31日止年度 2017 RMB'000 人民幣千元
<b>Assets</b>			
At 1 January	於1月1日	<b>812,459</b>	2,699,889
Transfer into assets held-for-sale during the year	本年度轉入持有待售資產	-	34,613
Net decrease after reclassified as assets held-for-sale	重新分類為持有待售資產後的減少淨額	<b>11,696</b>	(22,997)
Decrease through disposal of subsidiaries (Note)	通過處置附屬公司減少(附註)	<b>(824,155)</b>	(1,881,078)
Impairment	減值	-	(17,968)
At 30 June/31 December	於6月30日/12月31日	-	812,459
<b>Liabilities</b>			
At 1 January	於1月1日	<b>70,679</b>	1,196,294
Transfer into liabilities held-for-sale during the year	本年度轉入持有待售資產	-	8,556
Net decrease after reclassified as liabilities held-for-sale	重新分類為持有待售資產後的減少淨額	-	(15,797)
Decrease through disposal of subsidiaries (Note)	通過處置附屬公司減少(附註)	<b>(70,679)</b>	(1,118,374)
At 30 June/31 December	於6月30日/12月31日	-	70,679

## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 14 Disposal groups and non-current assets held for sale (continued)

*Note:*

Pursuant to the announcement published by the Company on 3 May 2016 and 4 July 2016, the Company entered into a cooperation framework agreement and sale and purchase agreement with Tianjin Zhonghuan Semiconductor Co., Ltd. ("Zhonghuan Semiconductor"), a listed Company on the Shenzhen Stock Exchange, to dispose 90% of equity interest in Guodian Solar Co., Ltd. ("Guodian Solar") to Zhonghuan Semiconductor, and Zhonghuan Semiconductor will issue ordinary shares as consideration. Guodian Solar will cease to be a subsidiary of the Company upon completion of the disposal. On 7 May 2018, the disposal has been approved by the China Securities Regulatory Commission.

During the six months ended 30 June 2018, the Company completed the disposal of 90% of equity interest in Guodian Solar to Zhonghuan Semiconductor. According to the sales and purchase agreement, Zhonghuan Semiconductor should issue 83,983,137 ordinary shares ("Consideration Shares") to the Company.

As at 30 June 2018, Zhonghuan Semiconductor has not finished the procedures to issue the Consideration Shares to the Company and the rights to acquire Consideration Shares is accounted for as receivable from the disposal of a subsidiary and presented in "deposits, prepayments and other receivables", and is measured at FVPL subsequently until Zhonghuan Semiconductor issues the Consideration Shares to the Company on 16 August 2018.

#### (b) Cumulative income or expenses include in other comprehensive income

There are no cumulative income or expenses included in other comprehensive income relating to these disposal groups.

### 14 分類為持有待售的處置組別和非流動資產(續)

*附註：*

根據本公司於2016年5月3日和2016年7月4日發佈的公告，本公司與天津中環半導體股份有限公司(「中環股份」)訂立合作框架協定和買賣協議，該公司於深圳證券交易所掛牌上市；本公司亦將其對國電光伏有限公司(「國電光伏」)的90%股權出售予中環股份，且中環股份將發行普通股作為代價。國電光伏將於該項處置之時不再是本公司的附屬公司。該項處置於2018年5月7日通過中國證券監督管理委員會的審核批准。

於截至2018年6月30日止六個月期間內，本公司完成其對國電光伏的90%股權出售予中環股份。根據相關買賣協議，中環股份應向本公司發行83,983,137股普通股(「代價股份」)。

於2018年6月30日，中環股份尚未完成向本公司發行代價股份的程序，且收購代價股份的權利乃按出售附屬公司所得款項進行會計處理，在「按金、預付款項及其他應收款項」中列報，並於隨後按公允價值計量且其變動計入損益計量，直至中環股份於2018年8月16日向本公司發行代價股份。

#### (b) 計入其他綜合收益的累計收入或費用

本公司並無與此處置組別相關的計入其他綜合收益的累計收入或費用。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 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 6月30日 2018 RMB'000 人民幣千元	At 31 December 12月31日 2017 RMB'000 人民幣千元
Bank loans	銀行貸款		
– secured (Note)	– 抵押(附註)	367,490	269,500
– unsecured	– 無抵押	62,200	160,200
Other loans	其他貸款		
– related parties under Guodian (secured) (Note)	– 國電下屬的關聯方(抵押)(附註)	179,026	186,526
– related parties under Guodian (unsecured)	– 國電下屬的關聯方(無抵押)	120,000	–
– financial institutions (secured) (Note)	– 金融機構(抵押)(附註)	398,391	436,432
Private placement notes	私人配售債務融資工具	2,443,335	2,448,470
Corporate bonds	公司債券	2,083,773	2,035,361
		<b>5,654,215</b>	5,536,489
Less: current portion of long-term borrowings	減：長期借款的即期部分	<b>(2,733,180)</b>	(1,482,784)
		<b>2,921,035</b>	4,053,705

Note: Secured long-term interest-bearing borrowings as at 30 June 2018 were guaranteed and/or secured by concession assets, trade receivables and long-term service concession receivables with total carrying value of RMB1,406,058,000 (31 December 2017: RMB1,238,181,000) and income stream of certain subsidiaries.

附註：於2018年6月30日，抵押的長期帶息借款為已擔保及／或以帳面價值總額為人民幣1,406,058,000元(2017年12月31日：人民幣1,238,181,000元)的特許經營權資產、應收賬款及服務特許權長期應收款和若干附屬公司的收費權益作抵押。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 15 Borrowings (continued)

### 15 借款(續)

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

#### (b) 短期帶息借款包括：

		<b>At 30 June</b>	At 31 December
		<b>6月30日</b>	12月31日
		<b>2018</b>	2017
		<b>RMB'000</b>	RMB'000
		人民幣千元	人民幣千元
Bank loans	銀行貸款		
– secured (Note)	– 抵押(附註)	<b>500,000</b>	–
– unsecured	– 無抵押	<b>4,657,000</b>	5,616,500
Other loans	其他貸款		
– Guodian (unsecured)	– 來自國電的其他貸款(無抵押)	<b>600,000</b>	600,000
– related parties under Guodian (unsecured)	– 國電下屬的關聯方(無抵押)	<b>150,000</b>	–
Current portion of long-term borrowings	長期借款的即期部分	<b>2,733,180</b>	1,482,784
		<b>8,640,180</b>	7,699,284

Note: Secured short-term interest-bearing borrowings as at 30 June 2018 were secured by trade receivables with carrying value of RMB767,139,000 (31 December 2017: RMB Nil).

附註：在2018年6月30日，帳面價值為人民幣767,139,000元的應收賬款為有抵押的短期帶息借款提供了擔保(2017年12月31日：人民幣零元)。

### 16 Trade and bills payables

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

### 16 應付賬款及票據

預計所有應付賬款及票據將在一年內結清。

### 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 2018 and 2017.

#### (a) 就中期應向權益股東支付的股息

截至2018年及2017年6月30日止6個月，董事會不建議派發任何中期股息。

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

The 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 2018 and 2017.

#### (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2018年及2017年6月30日止6個月，董事會未批准或派發任何以前年度相關的股息。





## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

### 18 Fair value measurement of financial instruments

#### (a) Financial assets and liabilities measured at fair value

##### (i) Fair value hierarchy

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

- Level 1 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 has the financial manager performing valuations for the financial instruments, including the unlisted equity securities and receivables from the disposal of a subsidiary. The financial manager reports directly to the chief financial officer and the audit committee. A valuation report with analysis of changes in fair value measurement is prepared by the financial manager at each interim and annual reporting date, and is reviewed and approved by the chief financial officer. Discussion of the valuation process and results with the chief financial officer and the audit committee is held twice a year, to coincide with the reporting dates.

### 18 金融工具的公允價值計量

#### (a) 按公允價值計量的金融資產及負債

##### (i) 公允價值層級

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

- 第一層級估值：只使用第一層級輸入值(即相同資產或負債於計量日期在活躍市場的未經調整報價)來計量公允價值；
- 第二層級估值：使用第二層級輸入值(即未達第一層級的可觀察輸入值)並捨棄重大不可觀察輸入值來計量公允價值。不可觀察輸入值是指欠缺市場資料的輸入值；
- 第三層級估值：採用重大不可觀察輸入值來計量公允價值。

本集團的財務經理負責對金融工具(包括非上市權益證券及出售一間附屬公司的應收款項)進行估值。該財務經理直接向首席財務官和審計委員會匯報。該財務經理負責於在各中期及年度報告日期編備內載公允價值計量變動分析的估值報告，以供首席財務官審批。該財務經理為配合以上報告日期，與首席財務官及審計委員會一年兩次商討估值程序和結果。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)



### 18 Fair value measurement of financial instruments (continued)

#### (a) 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 2018:

	Fair value at 30 June 2018 於2018年 6月30日的 公允價值  RMB'000 人民幣千元	Fair value measurements as at 30 June 2018 categorised into 於2018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 RMB'000 人民幣千元	Level 3 第3層級 RMB'000 人民幣千元
Financial assets:	金融資產：		
Receivable from the disposal of a subsidiary (Note 14(a))	處置附屬公司的應收 款項(附註14(a))	657,588	657,588
Other equity investments in unlisted companies (Note)	對非上市公司的其他 權益投資(附註)	236,348	236,348

Note: As at 31 December 2017, the equity investments are classified as available-for-sale securities and measured at cost less impairment losses as these investments in unlisted companies do not have a quoted market price in an active market for an identical instrument and whose fair value cannot otherwise be reliably measured. Available-for-sale financial assets were reclassified to financial assets measured at fair value and designated at FVOCI (non-recycling) upon the adoption of IFRS 9 at 1 January 2018 (see Note 3(b)(i)).

During the six months ended 30 June 2018 and 2017, there were no transfers between Level 1 and Level 2, or transfers into or out of Level 3 (except for the initial adoption of IFRS 9).

### 18 金融工具的公允價值計量(續)

#### (a) 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6月30日本集團按公允價值計量的金融工具：

附註：於2017年12月31日，由於這些對非上市公司的投資無法在活躍市場獲得報價且無法可靠地計量其公允價值，因此該等權益投資被劃歸為可供出售證券，並按成本減減值虧損計量。於2018年1月1日採用《國際財務報告準則》第9號後，可供出售金融資產重新分類為按公允價值計量且其變動計入損益計量的金融資產及指定按公允價值計量且其變動計入其他綜合收益計量的金融資產(不重新計入)(見附註3(b)(i))。

於截至2017年及2018年6月30日止六個月期間，本集團未發生第1、2層級之間的轉換，或轉入或由第3層級轉出(初始採用《國際財務報告準則》第9號除外)。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(除非另有說明，以人民幣列示)

### 18 Fair value measurement of financial instruments (continued)

### 18 金融工具的公允價值計量(續)

#### (a) Financial assets and liabilities measured at fair value (continued)

#### (a) 按公允價值計量的金融資產及負債(續)

#### (ii) Information about Level 3 fair value measurements

#### (ii) 公允價值層級第三層級所計量公允價值的資料

	Valuation techniques 估值技術	Significant unobservable inputs 重大不可觀察輸入值	Range 範圍
Unlisted equity instruments 非上市權益工具	Market comparable companies 市場可比較企業	Discount for lack of marketability 就缺乏市場流通性折讓	40% 40%

The fair value of unlisted equity instruments is determined using the price/earning ratios or price/book value ratios of comparable listed companies adjusted for lack of marketability discount. The fair value measurement is negatively correlated to the discount for lack of marketability. As at 30 June 2018, it is estimated that with all other variables held constant, a decrease/increase in discount for lack of marketability by 1% would have increased/decreased the Group's other comprehensive income by RMB2,561,000 (31 December 2017: RMB2,709,000).

非上市權益工具的公允價值採用可比較上市企業的市價盈利率或價格與帳面值的比率進行確定，並根據就缺乏市場流通性的折讓進行調整。公允價值計量與就缺乏市場流通性的折讓存在負相關的關係。於2018年6月30日，假設所有其他變數維持不變，預計就缺乏市場流通性的折讓減少/增加1%，本集團的其他綜合收益將增加/減少人民幣2,561,000元(2017年12月31日：人民幣2,709,000元)。

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

本期第3層級公允價值計量下的結餘變動如下：

		At 30 June 2018 於2018年6月30日 RMB'000 人民幣千元
Unlisted equity securities At 1 January	非上市權益證券 於1月1日	-
Adjustment on initial application of IFRS 9 (Note 3(b))	就初始採用《國際財務報告準則》第9號的調整 (附註3(b))	173,669
Additional securities recognised	已確認的額外證券	71,572
Changes in fair value recognised in other comprehensive income	於損益內確認的公允價值變動	(8,893)
At 30 June	於6月30日	236,348

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

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### 18 Fair value measurement of financial instruments (continued) 18 金融工具的公允價值計量(續)

#### (a) Financial assets and liabilities measured at fair value (continued)

##### (ii) Information about Level 3 fair value measurements (continued)

From 1 January 2018, any gains or losses arising from the remeasurement of the Group's unlisted equity securities held for strategic purposes are recognised in the fair value reserve (non-recycling) in other comprehensive income. Upon disposal of the equity securities, the amount accumulated in other comprehensive income is transferred directly to retained earnings. Prior to 1 January 2018, any gains arising from the disposal of the unlisted equity securities were presented in the "Other net income" line item in the consolidated statement of profit or loss.

#### (b) 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 values as at 31 December 2017 and 30 June 2018 except for the following financial instruments, for which their carrying amounts and fair value are disclosed below:

#### (a) 按公允價值計量的金融資產及負債(續)

##### (ii) 公允價值層級第三層級所計量公允價值的資料(續)

自2018年1月1日起，因重新計量本集團就戰略目的持有的非上市權益證券而產生的任何收益或虧損於其他綜合收益的公允價值儲備(不重新計入)中進行確認。在出售該等權益證券後，其他綜合收益中的累計金額將直接轉入留存收益。於2018年1月1日前，出售該等非上市權益證券產生的收益於合併損益表中的「其他收益淨額」項目中列報。

#### (b) 非按公允價值列賬的金融資產和金融負債的公允價值

按成本或攤餘成本入帳的本集團金融工具的帳面金額與其於2017年12月31日和2018年6月30日的數值並無重大差異，惟以下各項金融工具外，該等金融工具的帳面金額及公允價值披露如下：

		At 30 June 2018 於2018年6月30日		At 31 December 2017 於2017年12月31日	
		Carrying amount 帳面金額 RMB'000 人民幣千元	Fair value 公允價值 RMB'000 人民幣千元	Carrying amount 帳面金額 RMB'000 人民幣千元	Fair value 公允價值 RMB'000 人民幣千元
Unlisted equity securities	非上市權益證券	-	-	162,187	173,669
Long-term receivables	長期應收款項	3,639,505	3,393,175	1,783,276	1,690,112
Fixed rate long-term bank loans	固定利率長期銀行貸款	(564,327)	(565,012)	(1,059,954)	(1,063,934)
Private placement notes and corporate bonds	私募債券和公司債券	(4,527,108)	(4,477,886)	(4,483,831)	(4,477,886)
Other non-current liabilities	其他非流動負債	(414,389)	(395,598)	(404,005)	(385,685)

NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)  
未經審計的中期財務報告附註(續)

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19 Commitments outstanding not provided for in the interim financial report      19 中期財務報告中未列出的承擔

(a) Capital Commitments

(a) 資本承擔

		<b>At 30 June</b>	At 31 December
		<b>6月30日</b>	12月31日
		<b>2018</b>	2017
		<b>RMB'000</b>	RMB'000
		人民幣千元	人民幣千元
Contracted for	已訂約	<b>35,879</b>	35,994
Authorised but not contracted for	已授權但未訂約	<b>291,763</b>	292,688
		<b>327,642</b>	328,682

(b) Lease Commitments

(b) 經營租賃承擔

		<b>At 30 June</b>	At 31 December
		<b>6月30日</b>	12月31日
		<b>2018</b>	2017
		<b>RMB'000</b>	RMB'000
		人民幣千元	人民幣千元
With 1 year	1年內	<b>22,634</b>	15,965
After 1 year but within 5 years	1年後但5年內	<b>11,139</b>	10,129
		<b>33,773</b>	26,094

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

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### 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 and litigation guarantees in respect of the Group's application for assets preservation against debtors as follows:

		<b>At 30 June</b>	At 31 December
		<b>6月30日</b>	12月31日
		<b>2018</b>	2017
		<b>RMB'000</b>	RMB'000
		<b>人民幣千元</b>	人民幣千元
Bid guarantees provided to:	向如下公司提供的投標擔保：		
– related parties under Guodian	– 國電下屬的關聯方	<b>25,858</b>	4,962
– third parties	– 第三方	<b>25,210</b>	10,154
Performance guarantees provided to:	向如下公司提供的履約擔保：		
– related parties under Guodian	– 國電下屬的關聯方	<b>759,933</b>	1,193,003
– third parties	– 第三方	<b>637,470</b>	1,546,471
Legal guarantees provided to:	向如下公司提供的訴訟擔保：		
– third parties	– 第三方	<b>16,200</b>	–
		<b>1,464,671</b>	2,754,590

As of 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，以及本集團關於申請債務人資產保護作出的訴訟擔保，如下所述：

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

#### (b) 訴訟或有事項

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

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

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

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## 21 Material related party transactions

### (a) Transactions with related parties

The Group is part of a larger group of companies under Guodian and has significant transactions and relationships with Guodian and related parties under Guodian.

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

本集團是國電下屬的眾多公司的一部分，與國電及國電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	
		2018 RMB'000 人民幣千元	2017 RMB'000 人民幣千元 (restated) (重述)
<i>Sale of goods to</i>	<i>出售貨物予</i>		
Guodian	國電	<b>3,476</b>	23,983
Related parties under Guodian	國電下屬的關聯方	<b>1,878,660</b>	1,459,246
Associates	聯營公司	<b>87</b>	7,255
<i>Construction service provided to</i>	<i>提供建造服務予</i>		
Related parties under Guodian	國電下屬的關聯方	<b>1,301,992</b>	1,396,122
Associates	聯營公司	<b>173</b>	21,927
<i>Service provided to</i>	<i>提供服務予</i>		
Related parties under Guodian	國電下屬的關聯方	<b>153,846</b>	139,081
<i>Lease to</i>	<i>出租予</i>		
Related parties under Guodian	國電下屬的關聯方	<b>407,276</b>	335,081
<i>Lease from</i>	<i>出租自</i>		
Related parties under Guodian	國電下屬的關聯方	<b>6,679</b>	3,081
<i>Purchase of goods from</i>	<i>購買商品自</i>		
Related parties under Guodian	國電下屬的關聯方	<b>81,886</b>	65,463
Associates	聯營公司	<b>3,839</b>	5,158
<i>Service provided by</i>	<i>服務提供自</i>		
Related parties under Guodian	國電下屬的關聯方	<b>10,313</b>	46,088

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

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### 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	
		2018 <b>RMB'000</b> 人民幣千元	2017 <b>RMB'000</b> 人民幣千元 (restated) (重述)
<i>Working capital provided to Associates</i>	提供周轉資金予聯營公司	<b>203,962</b>	36,969
<i>Working capital received from Associates</i>	償還周轉資金自聯營公司	<b>4,893</b>	2,760
<i>Working capital repaid to Related parties under Guodian Associates</i>	償還周轉資金予國電下屬的關聯方聯營公司	<b>121</b> <b>258</b>	– –
<i>Loans received from Guodian</i>	貸款借取自國電	<b>500,000</b>	600,000
<i>Related parties under Guodian</i>	國電下屬的關聯方	<b>270,000</b>	100,000
<i>Loans repaid to Guodian</i>	償還貸款予國電	<b>500,000</b>	600,000
<i>Related parties under Guodian</i>	國電下屬的關聯方	<b>7,500</b>	3,000
<i>Interest expenses paid to Guodian</i>	支付利息費用予國電	<b>11,722</b>	10,020
<i>Related parties under Guodian</i>	國電下屬的關聯方	<b>7,174</b>	4,643
<i>Interest income received from Related parties under Guodian</i>	收取利息收入自國電下屬的關聯方	<b>23,479</b>	9,731
<i>Net deposits withdrawn from Related parties under Guodian</i>	支取存款淨額自國電下屬的關聯方	<b>1,657,944</b>	1,850,702
<i>Purchase wealth-management products from Related parties under Guodian</i>	購買理財產品自國電下屬的關聯方	–	553,000
<i>Dividend paid to Related parties under Guodian</i>	支付股息予國電下屬的關聯方	–	34,800





# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

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## 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, 15 and 16 in the interim financial report, as of 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

除本中期財務報告附註12、15和16的披露外，於報告期末，本集團與關聯方的重大餘額如下：

		<b>At 30 June</b>	At 31 December
		<b>6月30日</b>	12月31日
		<b>2018</b>	2017
		<b>RMB'000</b>	RMB'000
		人民幣千元	人民幣千元
<i>Other non-current assets</i>	<i>其他非流動資產</i>		
Related parties under Guodian	國電下屬的關聯方	<b>1,054,233</b>	1,061,184
<i>Gross amount due from customers for contract work</i>	<i>應收建造合同客戶款項總額</i>		
Related parties under Guodian	國電下屬的關聯方	<b>1,054,792</b>	670,522
<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 Guodian	國電下屬的關聯方	<b>623,730</b>	570,563
Associates	聯營公司	<b>368,163</b>	736,634
<i>Cash at bank and on hand</i>	<i>銀行存款及庫存現金</i>		
Related parties under Guodian	國電下屬的關聯方	<b>2,254,439</b>	3,912,382
<i>Trade and bills payables</i>	<i>應付賬款及票據</i>		
Related parties under Guodian	國電下屬的關聯方	<b>92,663</b>	72,735
Associates	聯營公司	<b>13,559</b>	13,269
<i>Other payables</i>	<i>其他應付款項</i>		
Guodian	國電	<b>600,604</b>	602,443
Related parties under Guodian	國電下屬的關聯方	<b>568,708</b>	91,173
<i>Gross amount due to customers for contract work</i>	<i>應付建造合同客戶款項總額</i>		
Related parties under Guodian	國電下屬的關聯方	<b>354,865</b>	333,581
Associates	聯營公司	<b>2,029</b>	-

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

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### 21 Material related party transactions (continued)

### 21 重大關聯方交易(續)

#### (c) Commitments with related parties

As of 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 report were as follows:

		<b>At 30 June</b>	At 31 December
		<b>6月30日</b>	12月31日
		<b>2018</b>	2017
		<b>RMB'000</b>	RMB'000
		<b>人民幣千元</b>	人民幣千元
<i>Sale of goods to</i>	<i>出售商品予</i>		
Related parties under Guodian	國電下屬的關聯方	<b>4,506,079</b>	4,575,958
<i>Construction service to be provided to</i>	<i>提供建造服務予</i>		
Related parties under Guodian	國電下屬的關聯方	<b>4,436,662</b>	3,674,878

#### (d) Contribution to defined contribution retirement plans

The Group participates in various defined contribution retirement plans organised by relevant local government authorities and Guodian for its staff. As at 30 June 2018 and 31 December 2017, 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 2018 amounted to RMB64,456,000 (six months ended 30 June 2017: RMB61,822,000 (restated)).

#### (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"). Guodian, 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 Guodian and related parties under Guodian 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.

#### (c) 與關聯方的承擔

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

#### (d) 界定供款退休計劃的供款

本集團參加了相關政府機構及國電內部組織的各種界定供款退休計劃。於2018年6月30日和2017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2018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64,456,000元(截至2017年6月30日止6個月：人民幣61,822,000元(重述))。

#### (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」)。國電(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。

除上述與國電及國電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。



## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
(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)

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 report, 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 provide 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.

- Purchase of materials and receiving construction services; and

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.

### 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)

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

考慮到關聯方關係對交易的潛在影響、本集團的審批程序以及融資政策，以及為瞭解關聯關係對本中期財務報告的潛在影響而需要的信息，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信息：

- 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。

- 材料購買及獲得建造服務；及

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。

# NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED)

## 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 21 Material related party transactions (continued)

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

- 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)

- 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	
		2018	2017
		RMB'000	RMB'000
		人民幣千元	人民幣千元
Salaries and other emoluments	工資和其他酬金	2,729	2,342
Retirement scheme contributions	退休計劃供款	426	353
		<b>3,155</b>	2,695



## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

(Expressed in RMB unless otherwise indicated)  
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### 22 Accounting judgements and estimates

The Group believes that the critical accounting judgements and estimates as disclosed in the 2017 annual financial statements are material to an understanding of this interim financial report.

### 23 Comparative figures

The Group has initially applied IFRS 15 and IFRS 9 at 1 January 2018. Under the transition methods chosen, comparative information is not restated. Further details of the changes in accounting policies are disclosed in Note 3.

During the year ended 31 December 2017, the Company acquired 100% of the equity interests in Beijing Guodian Lantian Energy Saving Science and Technology Development Co., Ltd (“Lantian Company”) from Guodian Science and Technology Research Institute.

As the Company and Lantian Company are under common control of Guodian, the above acquisition has been recorded as a business combination under common control. The assets and liabilities of Lantian Company have been recognised at the carrying amounts recognised previously in Guodian’s consolidated financial statements. The consolidated statements of profit or loss, consolidated statements of profit or loss and other comprehensive income, consolidated statement of changes in equity and condensed consolidated cash flows statement of the Group have been restated as if the combination had occurred prior to the start of the earliest period presented.

### 24 Non-adjusting events after the reporting period

On 5 February 2018, Guodian and China Energy Investment Corporation Limited (“China Energy”, formerly China Shenhua Energy Company Limited) formally entered into a consolidation agreement to start the process of joint reorganisation. Upon the completion of the joint reorganisation, China Energy will be the parent and ultimate holding company of the Group.

### 22 會計判斷及估計

本集團相信在2017年年度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報告是重要的。

### 23 對比數據

本集團於2018年1月1日起應用國際財務報告準則第15號及國際財務報告準則第9號。根據選擇的過渡方法，對比數據並未重述。有關會計政策變更的更多詳情於附註3披露。

截至2017年12月31日止年度，本集團從國電科技研究院收購北京國電藍天節能科技開發有限公司(「藍天公司」)100%股權。

由於本公司和藍天公司都處於國電集團的同一控制下，上述收購被確認為一項同一控制下的企業合併。藍天公司的各項資產及負債按往期在國電集團合併財報中確認的帳面價值確認。本集團合併損益表、合併損益及其他綜合收益表、合併權益變動表及簡明合併現金流量表已按照合併發生在列報的最早期的假設重新編製。

### 24 報告期後非調整事項

於2018年2月5日，國電集團和國家能源投資集團有限責任公司(「國家能源集團」，前身為神華集團有限責任公司)正式簽署合併協議，開始合併重組。合併重組完成後，國家能源集團將成為本集團母公司和最終控股公司。

## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

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### 25 Possible impact of amendments, new standards and interpretations issued but not yet effective for the six months ended 30 June 2018

A number of amendments and new standards are effective for annual periods beginning after 1 January 2018 and earlier application is permitted. The Group has not early adopted any new or amended standards in preparing this interim financial report.

#### IFRS 16, *Leases*

As disclosed in the 2017 annual financial statements, currently the Group classifies leases into finance leases and operating leases and accounts for the lease arrangements differently, depending on the classification of the lease. The Group enters into some leases as the lessor and others as the lessee.

IFRS 16 is not expected to impact significantly on the way that lessors account for their rights and obligations under a lease. However, once IFRS 16 is adopted, lessees will no longer distinguish between finance leases and operating leases. Instead, subject to practical expedients, lessees will account for all leases in a similar way to current finance lease accounting, i.e. at the commencement date of the lease the lessee will recognise and measure a lease liability at the present value of the minimum future lease payments and will recognise a corresponding "right-of-use" asset. After initial recognition of this asset and liability, the lessee will recognise interest expense accrued on the outstanding balance of the lease liability, and the depreciation of the right-of-use asset, instead of the current policy of recognising rental expenses incurred under operating leases on a systematic basis over the lease term. As a practical expedient, the lessee can elect not to apply this accounting model to short-term leases (i.e. where the lease term is 12 months or less) and to leases of low-value assets, in which case the rental expenses would continue to be recognised on a systematic basis over the lease term.

### 25 已發佈但尚未在截至2018年6月30日止6個月生效的修訂、新訂的準則及詮釋可能產生的影響

自2018年1月1日開始及以後年度，若干修訂、新訂準則及解釋開始生效，同時在以前年度發生且提前適用於新準則的修訂是被認可的。本集團在編製本期財務報表時尚未提前採用任何新訂或修訂準則。

#### 《國際財務報告準則》第16號，*租賃*

如2017年度財務報表所披露，本集團目前根據租賃的分錄將租賃分類為融資租賃及經營租賃並分別入帳。本集團作為承租人訂立部分租賃，而其餘則以出租人訂立租賃。

預期《國際財務報告準則》第16號將不會嚴重影響出租人將彼等於租約項下的權利及義務入帳的方式。然而，一旦採納《國際財務報告準則》第16號，承租人將不再區分融資租約及經營租約。相反，受實際權益方法的規限，承租人將以與現有融資租約會計處理方法類似的方式將所有租約入帳，即於該租約開始日期，承租人將按未來最低租賃款項的現值確認及計量租賃負債，及將確認相應的「使用權」資產。於初步確認該資產及負債後，承租人將確認租賃負債結餘所累計的利息開支及使用權資產折舊，而非於租期內按系統基準確認根據經營租約所產生的租賃開支的現有政策。作為實際的權益方法，承租人可選擇不將此會計模式應用於短期租賃（即租期為12個月或以下）及低價值資產的租賃，於該等情況下，租金開支將繼續於租期內按系統基準確認。



## NOTES TO THE UNAUDITED INTERIM FINANCIAL REPORT (CONTINUED) 未經審計的中期財務報告附註(續)

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### 25 Possible impact of amendments, new standards and interpretations issued but not yet effective for the six months ended 30 June 2018 (continued)

IFRS 16 will primarily affect the Group's accounting as a lessee of leases for properties, plant and equipment which are currently classified as operating leases. The application of the new accounting model is expected to lead to an increase in both assets and liabilities and to impact on the timing of the expense recognition in the statement of profit or loss over the period of the lease. At 30 June 2018 the Group's future minimum lease payments under non-cancellable operating leases amount to RMB33,773,000 for properties. Some of these amounts may therefore need to be recognised as lease liabilities, with corresponding right-of-use assets, once IFRS 16 is adopted. The Group will need to perform a more detailed analysis to determine the amounts of new assets and liabilities arising from operating lease commitments on adoption of IFRS 16, after taking into account the applicability of the practical expedient and adjusting for any leases entered into or terminated between now and the adoption of IFRS 16 and the effects of discounting.

IFRS 16 is effective for annual periods beginning on or after 1 January 2019. The standard offers different transition options and practical expedients, including the practical expedient to grandfather the previous assessment of which existing arrangements are, or contain, leases. If this practical expedient is chosen, the Group will apply the new definition of a lease in IFRS 16 only to contracts that are entered into on or after the date of initial application. If the practical expedient is not chosen, the Group will need to reassess all of its decisions about which existing contracts are, or contain, leases, using the new definition. Depending on whether the Group elects to adopt the standard retrospectively or follow a modified retrospective method of recognising a cumulative-effect adjustment to the opening balance of equity at the date of initial application, the Group may or may not need to restate comparative information for any changes in accounting resulting from the reassessment.

### 25 已發佈但尚未在截至2018年6月30日止6個月生效的修訂、新訂的準則及詮釋可能產生的影響(續)

《國際財務報告準則》第16號將主要影響本集團作為租約承租人就物業、廠房及設備(現時分類為經營租約)的會計處理方法。預期應用新會計模式將導致資產及負債均有所增加，及影響租期內於損益表確認開支的時間。於2018年6月30日，本集團於不可撤銷經營租約項下就辦公室物業的未來最低租賃款項將達人民幣33,773,000元。因此，一旦採納《國際財務報告準則》第16號，若干該等款項可能須確認租賃負債及相應的使用權資產。經考慮實際權益方法的適用性及調整現時與採納《國際財務報告準則》第16號之間訂立或終止的任何租約及貼現影響後，本集團將須進行更為詳細的分析以釐定於採納《國際財務報告準則》第16號時經營租約承擔所產生的新資產及負債的金額。

《國際財務報告準則》第16號將於2019年1月1日或之後開始之年度期間生效。該準則提供不同之過渡選擇及可行權宜方法，包括融入先前評估之可行權宜方法，當中現有安排為(或包含)租賃。倘選擇此可行權宜方法，本集團僅將《國際財務報告準則》第16號對租賃之新定義應用於首次應用日期或之後訂立之合約。倘並無選擇可行權宜方法，本集團將須使用新定義重新評估其對哪些現有合約為(或包含)租賃而作之所有決定。視乎本集團是否選擇以追溯方式採納準則，或遵從經修訂可追溯方式確認對首次應用當日權益期初結餘之累計效應調整，本集團未必需要重列因重新評估而引致任何會計變動之比較數據。



# 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

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國電科環官微



財務報告



公司公告



公益活動