



中國國電  
CHINA GUODIAN

# 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



2016  
Annual Report  
年度報告

\* For identification purpose only  
僅供識別

# TOP 10 MILESTONES OF GUODIAN TECH 2016

## 國電科環2016年度十大新聞



龍源工程新疆哈密EPC項目如期“雙投”  
Two Units of Longyuan Engineering Hami EPC Project Put into as scheduled



李克強參觀國家瀾滄合作展會國電集團展台  
Li Keqiang visited China Guodian Corporation Booth in Lancang-Mekong Cooperation Exhibition



國資委副主任黃丹華到國電科環基層黨支部講黨課  
Huang Danhua, the Deputy Director of SASAC, gave a Lecture for the Grassroots Party Branch of Guodian Tech



中國共產黨國電科技環保集團股份有限公司第一次代表大會勝利召開  
The First Congress of the Communist Party of the PRC for Guodian Technology & Environment Group Corporation Limited Held Successfully



朗新明國內首台百萬機組零排放項目順利投產  
The First Domestic Million Units Zero-emission Project of Lucency Put into Production

2.02

國電智深中標系統外百萬千瓦二次再熱超超臨界機組DCS項目  
Guodian Zhishen Won the Bid of DCS Project for Outer 1,000 MW Ultrasupercritical Secondary Reheating Power Generation Equipment



2.15

龍源環保蟬聯火電廠環保產業三項第一  
Longyuan Environmental Continued Ranking First for Three Indexes in the Thermal Power Plant Environmental Protection Industry



3.23

國際商會中國國家委員會(ICC China)環境與能源委員會成立  
會議在國電科環召開  
Inaugural Meeting of ICC China Commission on Environment and Energy Held at Guodian Tech

5.10

5.26



6.24

10.24

國電聯合動力第一萬台風機下線  
The 10,000th Wind Generator of United Power Off the Assembly Line



11.17

國電科環連續四年保持全球新能源500強領先地位  
Guodian Tech Maintained the Leading Position of Global Top 500 New Energy Enterprises for Four Consecutive Years

11.29



12.06

# SIGNIFICANT COMPANY EVENTS IN 2016

## 2016年度企業大事記

1. On 2 February, unit No. 2 of the Guodian Hami Dananhu coal-electricity integration 2×660MW project (the “**Hami Project**”) contracted by Guodian Longyuan Power Technology and Engineering Co., Ltd. (“**Longyuan Power Technology & Engineering**”) successfully passed the 168-hour trial run test in one go, and achieved a high standard of commercial operation. The Hami Project achieved successive operation of two units as scheduled, and smoothly achieved notable results such as station service electricity utilization, boiler ignition, and one-time successful grid connection of two units. During the trial run, both units operated steadily, and various benchmark indicators were favourable, with an average load rate of 98.5%, and various air pollutant discharge indexes all attained the ultralow emission standard, and both units reached the advanced level of the units of the same type.
2. On 15 February, the national standard *Double-fed Variable-speed Constant-frequency Wind Turbine* prepared by Guodian United Power Technology Co., Ltd. (“**United Power**”) was issued by the General Administration of Quality Supervision, Inspection and Quarantine and Standardization Administration of China. The standard was officially implemented from 1 June 2016. After multiple stages of investigation, data collection and expert deliberation, the national standard was proven to be practical, advanced and operatable, and the main technologies have reached an internationally advanced level and are highly recognized by the industry.
3. On 15 February, Beijing Guodian Zhishen Control Technology Co., Ltd. (“**Guodian Zhishen**”) won the bid for the 2×1,000MW ultra-supercritical double reheat engineering DCS project of Guangdong Datang International Leizhou Power Station. It is the first GW level double reheat DCS project outside corporation system after Guodian Zhishen successfully applied products and technologies to the world's first GW double reheat ultra-supercritical unit of Guodian Taizhou Power Plant, and is also the key GW unit benchmark power plant of Datang Group. The power plant will be put into operation in 2018.
1. 2月2日，國電龍源電力技術工程有限責任公司(「**龍源工程**」)總承包的國電哈密大南湖煤電一體化2×660MW工程(「**哈密工程**」)2號機組一次性圓滿通過168小時試運行，高標準投產發電，哈密項目如期實現「雙投」，順利取得了兩台機組廠用受電、鍋爐點火、發電機併網一次成功等多項佳績。試運期間，兩台機組均運行穩定，各項指標優良，平均負荷率98.5%，各項大氣污染物排放指標均達到超低排放標準，達到了同類型機組的先進水平。
2. 2月15日，由國電聯合動力技術有限公司(「**聯合動力**」)主編的國家標準《雙饋式變速恒頻風力發電機組》經國家質量監督檢驗檢疫總局和國家標準化管理委員會發佈，該項標準於2016年6月1日正式實施。該標準歷經調研、資料採集、行業專家討論等多階段工作，內容具有實用性、先進性和可操作性，其主要技術達到國際先進水平，獲得行業高度認可。
3. 2月15日，北京國電智深控制技術有限公司(「**國電智深**」)中標廣東大唐國際雷州發電廠2×1,000MW超超臨界二次再熱新建工程分散控制系統(DCS)項目，是國電智深將產品和技術成功應用於國電泰州電廠世界首台百萬千瓦二次再熱超超臨界機組後，獲得的系統外首個百萬千瓦等級二次再熱DCS項目，也是大唐集團重點打造的百萬千瓦機組標桿電廠，計劃於2018年投產。



## SIGNIFICANT COMPANY EVENTS IN 2016 (CONTINUED)

### 2016年度企業大事記(續)

4. On 23 March, the Lancang River-Mekong River Cooperation Exhibition was held in Sanya, Hainan Province. Li Keqiang, a member of the standing committee of the Political Bureau of the CPC Central Committee and Premier of the State Council, visited the booth of China Guodian Corporation (“**Guodian Group**”) to better understand the industry development of “green energy” wind power and the highly efficient and clean coal utilization process of “green power station”. Premier Li was primarily concerned with the technical application of the 3MW double-fed WTG, which was independently researched and developed by United Power, and the green coal-fired integrated power station of United Power, which is a subsidiary of Guodian Technology & Environment Group Corporation Limited (the “**Company**”, or “**Guodian Tech**”).
5. On 10 May, Beijing Guodian Longyuan Environmental (“**Longyuan Environmental**”) ranked the first in three indexes released by China Electricity Council in 2015, including the categories of cumulative desulfurization and de-NOx units put into operation by a thermal power plant, and capacity of flue gas desulfurization commissioned operation unit of thermal power plant implemented in current year. Longyuan Environmental achieved outstanding results in the statistics for 11 consecutive years. By the end of 2015, Longyuan Environmental had accumulatively put 100.59GW desulfurization units, and 97.697GW de-NOx units of thermal power plant into operation. A thermal power plant flue gas desulfurization commissioned operation unit achieved a capacity 21.39GW for the year, ranking first in the industry and far exceeding the performance of that of other companies.
6. On 26 May, Ms. Huang Danhua, the deputy director, member of the Party Committee, secretary of the direct-affiliated departments and deputy team leader of “Party Building Studies” Study Coordination Leading Group of the SASAC in accordance with requirements of central government and arrangement of “Party Building Studies” in the direct-affiliated departments of SASAC, lectured on the topic of “Party Building Studies” in the first Party Branch of United Power Headquarters, which is a subsidiary of Guodian Tech.
7. On 24 June, the Inaugural Meeting of the ICC China Environment and Energy Committee was held at Guodian Tech. The committee preparation work report and regulations were passed at the meeting, whereby the chairman, executive chairman and deputy chairman were elected. Mr. Qiao Baoping, the secretary of the Leading Party Group and the Chairman of China Guodian Corporation, was elected as the Chairman of the Environment and Energy Committee, while Mr. Yang Guang, the secretary of the Leading Party Group and Chairman of Guodian Tech, was elected as the Executive Chairman.
4. 3月23日，瀾滄江－湄公河國家合作展在海南省三亞市成功舉行。中共中央政治局常委、國務院總理李克強視察了中國國電集團公司（「**國電集團**」）展台，了解「綠色能源」風電產業發展及「綠色電站」煤炭清潔高效利用情況，重點關注了國電科技環保集團股份有限公司（「**公司**」，或「**國電科環**」）所屬聯合動力自主研發的3MW雙饋式風機和綠色燃煤電站一體化電站有關產品技術應用情況。
5. 5月10日，北京國電龍源環保工程有限公司（「**龍源環保**」）在中國電力企業聯合會發佈的2015年度火電廠累計投運脫硫、脫硝新建機組、當年實施火電廠煙氣脫硫委託運營機組容量3項指標中名列第一，連續11年在該統計中取得優異成績。截至2015年底，龍源環保累計投運火電廠脫硫工程機組10,059萬千瓦，脫硝工程機組9,769.7萬千瓦，當年實施火電廠煙氣脫硫委託運營機組容量2,139萬千瓦，均列行業第一，且遠遠領先於其他公司。
6. 5月26日，按照中央要求和國資委直屬機關「兩學一做」學習教育工作安排，國資委副主任、黨委委員、直屬機關黨委書記、國資委黨委「兩學一做」學習教育協調領導小組副組長黃丹華到國電科環所屬聯合動力本部第一黨支部講「兩學一做」學習教育專題黨課。
7. 6月24日，國際商會中國國家委員會(ICC China)環境與能源委員會成立會議在國電科環召開。會議審議通過了委員會籌備工作報告和工作規程，選舉產生了委員會主席、執行主席和副主席。國電集團黨組書記、董事長喬保平當選為環境與能源委員會主席，國電科環黨組書記、董事長陽光當選委員會執行主席。



## SIGNIFICANT COMPANY EVENTS IN 2016 (CONTINUED)

### 2016年度企業大事記(續)

8. On 1 July, Guodian Tech and Tianjin Zhonghuan Semiconductor Co., Ltd. signed the sale and purchase agreement on the disposal of shares in Guodian Solar.
8. 7月1日，國電科環與天津中環半導體股份有限公司就出售國電光伏股份簽署買賣協議。
9. On 22 July, “desulfurizer preparation by calcium-based industrial solid waste and de-NO<sub>x</sub> solid waste regeneration technology and demonstration”, the key project of the “863 Plan” in the resource and environmental technology field undertaken by Longyuan Environmental, successfully passed inspection. This project carried out research on resource utilization technology with a focus on flues gas de-NO<sub>x</sub> catalyst and calcium-based industrial solid waste (acetylene sludge and white mud in papermaking) disposition and resource utilization issues, and set up solid waste utilization demonstrations in desulfurization and de-NO<sub>x</sub> system of coal-fired power plant, establishing waste de-NO<sub>x</sub> catalyst regeneration technology with proprietary intellectual property rights.
9. 7月22日，龍源環保公司承擔的「863計劃」資源環境技術領域重點課題「鈣基工業固廢制備脫硫劑及脫硝固廢再生技術與示範」通過驗收。該課題主要針對廢煙氣脫硝催化劑及大宗鈣基工業固廢（電石渣、造紙白泥）的處置和資源化利用問題，開展資源化利用技術研究，並在燃煤電廠脫硫脫硝系統上建立固廢利用示範，形成了具有自主知識產權的廢脫硝催化劑再生技術。
10. On 10 August, Longyuan Power Technology & Engineering won the bid for the 2×350MW “Building Large Generator Unit and Shutting down Small Generator Unit” Nonlocal Expansion EPC Project of Guodian Lanzhou Thermal Power Co., Ltd.
10. 8月10日，龍源工程成功中標國電蘭州熱電有限公司2×350MW「上大壓小」異地擴建工程總承包項目。
11. On 2 September, the “Coal-fired Power Plant Low-cost And Ultra-low Emission Control Technology and Scale Equipment” led by China Guodian Corporation and implemented by Longyuan Environmental won the “2016 Specialized Project Initiation of National Key R&D Plan ‘Research on Air Pollution Cause and Control Technology’” of the Ministry of Science and Technology. The project set six sub-projects, whereby Longyuan Environmental undertook two tasks of “High-sulfur/high-alkali coal ultra-low emission technology-equipment integration and application” and “ultra-super low emission technology-equipment integration and application”. This project aimed at developing a flue gas overall optimization and comprehensive treatment process and an integrated design method for power plant firing high-sulfur and high-alkali coal, strengthening the whole-process collaborative deep removal of pollutants and pollution control unit linkage, creating ultra-super low pollutants emission technologies for coal-fired power plant, and to carry out demonstrations on 600MW or larger coal-fired units.
11. 9月2日，由集團公司牽頭、龍源環保組織實施的「燃煤電站低成本超低排放控制技術及規模裝備」項目，獲得科技部「關於國家重點研發計劃「大氣污染成因與控制技術研究」重點專項2016年度項目立項」。項目下設6個課題，龍源環保承擔了其中「高硫／高碱煤超低排放技術與裝備集成及應用」和「超超低排放技術裝備集成及應用」兩個課題的研發任務。該課題旨在研發一種燃用高硫煤和高碱煤電廠煙氣整體優化綜合治理工藝及一體化的設計方法，強化污染物的全過程協同深度脫除及污染控制單元聯動，打造出燃煤電廠污染物超超低排放技術路線，並在600MW等級及以上燃煤機組上進行工程示範。

## SIGNIFICANT COMPANY EVENTS IN 2016 (CONTINUED)

### 2016年度企業大事記(續)

- 12.** On 24 October, the First CPC Congress of Guodian Technology & Environment Group Corporation Limited was held successfully. The congress delivered and passed the *Election Method of the First CPC Congress of Guodian Technology & Environment Group Corporation Limited*, the name list of Party Committee and Discipline Inspection Commission candidates, and elected the members of the first Party Committee and Discipline Inspection Commission. The first CPC Committee of Guodian Technology & Environment Group Corporation Limited held the first plenary meeting and elected the secretary and deputy secretary of the Party Committee; the first Discipline Inspection Commission of CPC Guodian Technology & Environment Group Corporation Limited also held the first plenary meeting, and elected the secretary of the Disciplinary Inspection Commission.
- 12.** 10月24日，中國共產黨國電科技環保集團股份有限公司第一次代表大會勝利召開。會議審議通過了《中國共產黨國電科技環保集團股份有限公司第一次代表大會選舉辦法》、「兩委」委員候選人名單，並選舉產生了公司第一屆黨委委員和紀委委員。中國共產黨國電科技環保集團股份有限公司第一屆委員會召開了第一次全體會議，選舉產生了黨委書記、黨委副書記；中國共產黨國電科技環保集團股份有限公司第一屆紀律檢查委員會召開了第一次全體會議，選舉產生了紀委書記。
- 13.** On 17 November, the 10,000th set of WTG-2MW-121 ultra-low wind speed WTG unit of United Power, a subsidiary of Guodian Tech, was finished in Baoding, Hebei Province. This WTG is the key model of new generation in low wind speed of Guodian Group with full proprietary intellectual property rights.
- 13.** 11月17日，國電科環所屬國電聯合動力技術有限公司第10,000台風機—2MW-121超低風速風電機組在河北保定下線。該風機是中國國電具有完全自主知識產權的新一代低風速主力機型。
- 14.** On 29 November, the first GW unit zero discharge of desulfurization waste water project undertaken by Nanjing Lucency, Guodian Hanchuan Power Generation Co., Ltd. desulfurization wastewater deep processing (zero discharge) project, was put into operation successfully. All indexes complied with or were superior to the initial design requirements, and the first batch of highly-pure crystal salt was produced. The smooth commissioning of the project marked a new breakthrough by Lucency in the research and application of zero wastewater discharge technology of thermal power plants, and played a positive role in demonstrations of promoting comprehensive wastewater treatment and realizing zero discharge of thermal power plants.
- 14.** 11月29日，南京朗新明承建的國內首個百萬千瓦機組脫硫廢水零排放項目—國電漢川發電有限公司全廠脫硫廢水深度處理(零排放)項目順利投產，各項指標均符合或優於設計要求，並產出首批高純度結晶鹽。該項目的順利投產標誌著朗新明在火力發電企業全廠廢水零排放技術研發與應用方面實現新的突破，對推動火電廠加強廢水綜合整治、實現零排放具有積極的示範意義。



## SIGNIFICANT COMPANY EVENTS IN 2016 (CONTINUED)

### 2016年度企業大事記(續)

- 15.** On 6 December, the top 500 global new energy enterprises in 2016 were officially presented in Wuhan. By accurate market judgment and first-class product quality and superior service, Guodian Tech became a reputed and advanced enterprise in the categories of environmental protection, energy conservation and the renewable energy fields in the power industry of China, ranked 24th on the list and was awarded the “Distinguished Contribution Award”. United Power, a subsidiary of Guodian Tech, was listed in “Global top 500 New Energy Enterprises” again and won the “Independent Innovation Award” and “Social Responsibilities Award” due to its excellent creative ability and outstanding industrial contribution in the field of new energy.
- 15.** 12月6日，2016年全球新能源企業500強榜單在武漢隆重揭曉，國電科環憑藉準確的市場判斷、一流的產品質量和服務，成為中國電力行業中享有盛譽的環保節能和可再生能源領域的先進企業，位列榜單第24位並榮獲「卓越貢獻獎」。國電科環所屬聯合動力憑藉在新能源領域卓越的創新能力和產業突出貢獻，再度蟬聯「全球500強新能源企業」，並斬獲「自主創新獎」及「社會責任大獎」。
- 16.** On 21 December, the “key technology and application of new energy power generation dispatching and operation” project which United Power partook in won the Second Prize at the 2016 National Science and Technology Progress Awards. In this project, United Power mainly solved issues related to wind farm active power control, failure ride-through control and reactive stable control technology. United Power’s effort greatly improved the absorption space of power grid for new energy, accumulatively increasing the ability to absorb new energy by over 30 billion KWH, and also effectively improved the safety standard of new energy grid connections in order to avoid large-scale off-grid incidents.
- 16.** 12月21日，聯合動力參加研究的「新能源發電調度運行關鍵技術及應用」項目獲得2016國家科技進步二等獎。該項目中，聯合動力主要攻克了風電場有功功率控制、故障穿越控制和無功穩定控制技術，大幅提升了電網對新能源的消納空間，累計多消納新能源電量300多億千瓦時，同時有效提高了新能源併網的安全性，避免大規模脫網事故發生。



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# CORPORATE INFORMATION

## 公司資料

### Directors

#### Executive Directors

Mr. YANG Guang (*Chairman*)  
Mr. CHEN Dongqing (*President*)  
Mr. TANG Chaoxiong

#### Non-executive Directors

Mr. WANG Zhongqu  
Mr. ZHANG Wenjian  
Mr. FENG Shuchen  
Mr. YAN Andrew Y.

#### Independent Non-executive Directors

Mr. SHEN Xiaoliu  
Mr. QU Jiuhui  
Mr. XIE Qiuye  
Mr. FAN Ren Da Anthony

### Supervisors

Mr. LUAN Baoxing<sup>(1)</sup>  
Mr. XU Xingzhou  
Mr. YANG Xiangbin<sup>(2)</sup>  
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  
Hong Kong, Central

#### PRC

Beijing Dacheng Law Office (as to PRC Law)  
7/F, Building D, Parkview Green Fangcaodi, No. 9, Dongdaqiao Road  
Chaoyang District, Beijing, PRC (100020)

### Auditors

#### International

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

### 董事

#### 執行董事

陽 光先生(*主席*)  
陳冬青先生(*總經理*)  
唐超雄先生

#### 非執行董事

王忠渠先生  
張文建先生  
馮樹臣先生  
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  
范仁達先生

### 監事

樂寶興先生<sup>(1)</sup>  
許興洲先生  
楊向斌先生<sup>(2)</sup>  
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

北京大成律師事務所(有關中國法律)  
中國北京市朝陽區東大橋路9號  
僑福芳草地大廈D座7層(100020)

### 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

## CORPORATE INFORMATION (CONTINUED)

### 公司資料(續)

#### PRC

Union Power Certified Public Accountants  
(Special General Partnership)  
15/F, Building No. 7  
Block No. 16 Xi Si Huan Zhong Road  
Haidian District, Beijing, PRC

#### Joint Company Secretaries

Mr. CAI Zhaowen<sup>(3)</sup>  
Ms. MOK Ming Wai<sup>(4)</sup>

#### Authorized Representatives

Mr. YANG Guang  
Ms. MOK Ming Wai

#### Legal Address

Suite 1101, 11/F, Building No. 1  
Block No. 16 Xi Si Huan Zhong Road  
Haidian District, Beijing, PRC

#### Head Office in the PRC

Building No. 1  
Block No. 16 Xi Si Huan Zhong 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 Jiuhui  
Mr. TANG Chaoxiong

#### Audit Committee

Mr. FAN Ren Da Anthony (*Chairman*)  
Mr. SHEN Xiaoli  
Mr. ZHANG Wenjian

#### 中國

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

#### 聯席公司秘書

蔡兆文先生<sup>(3)</sup>  
莫明慧女士<sup>(4)</sup>

#### 授權代表

陽 光先生  
莫明慧女士

#### 法定地址

中國北京市海淀區  
西四環中路16號院  
1號樓11層1101室

#### 中國主要辦事處

中國北京市海淀區  
西四環中路16號院  
1號樓

#### 香港主要營業地點

香港  
銅鑼灣怡和街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

#### 審計委員會

范仁達先生(*主席*)  
申曉留先生  
張文建先生



## CORPORATE INFORMATION (CONTINUED)

### 公司資料(續)

#### Remuneration and Appraisal Committee

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

#### Strategic Committee

Mr. YANG Guang (*Chairman*)  
Mr. SHEN Xiaoliu  
Mr. FENG Shuchen  
Mr. YAN Andrew Y.  
Mr. CHEN Dongqing

#### H Share Registrar

Computershare Hong Kong Investor Services Limited

#### Website Address

www.01296.hk

#### Principal Banks

Industrial and Commercial Bank of China Limited  
(Beijing Wukesong Olympic Branch)  
Bank of Communications Corporation Limited (Hong Kong Branch)

- (1) Mr. Luan Baoxing was appointed as a supervisor of the Company on 9 September 2016 at the second Extraordinary General Meeting of the Company in 2016, and was appointed as Chairman of the Board of Supervisors on 9 September 2016 at the 3rd meeting of the second session of the Board of Supervisors in 2016. Please refer to the announcement of the Company dated 9 September 2016 for further details.
- (2) Mr. Yang Xiangbin was appointed as a supervisor of the Company on 9 September 2016 at the second Extraordinary General Meeting of the Company in 2016. Please refer to the announcement of the Company dated 9 September 2016 for further details.
- (3) Mr. CAI Zhaowen was appointed as the joint company secretary of the Company at the 2nd meeting of the second session of the Board in 2017 on 30 March 2017. Please refer to the announcement of the Company dated 30 March 2017 for further details.
- (4) Ms. MOK Ming Wai was appointed as the Company Secretary and an authorized representative of the Company at the 13th meeting of the second session of the Board in 2016 on 29 November 2016. Please refer to the announcement of the Company dated 29 November 2016 for further details.

#### 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

陽 光先生(*主席*)  
申曉留先生  
馮樹臣先生  
閻 焱先生  
陳冬青先生

#### 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  
(北京五棵松奧體支行)  
交通銀行股份有限公司(香港分行)

- (1) 樂寶興先生於2016年9月9日召開的2016年第二次臨時股東大會上獲委任為本公司監事，並於當日召開的第二屆監事會2016年第三次會議上獲委任為本公司監事會主席。有關詳情請參閱本公司日期為2016年9月9日的公告。
- (2) 楊向斌先生於2016年9月9日召開的2016年第二次臨時股東大會上獲委任為本公司監事。有關詳情請參閱本公司日期為2016年9月9日的公告。
- (3) 蔡兆文先生於2017年3月30日召開的第二屆董事會2017年第二次會議上獲聘任為本公司聯席公司秘書。有關詳情請參閱本公司日期為2017年3月30日的公告。
- (4) 莫明慧女士於2016年11月29日召開的第二屆董事會2016年第十三次會議上獲聘任為本公司公司秘書，並獲委任為本公司授權代表。有關詳情請參閱本公司日期為2016年11月29日的公告。

# CORPORATE PROFILE

## 公司介紹

Guodian Tech, formerly Guodian Technology & Environment Group Co., Ltd., was converted into a joint stock limited liability company on 16 May 2011 and listed on the Main Board of The Stock Exchange of Hong Kong Limited (the “**Stock Exchange**”) on 30 December 2011. The Company, together with its subsidiaries (the “**Group**”), is the flagship platform for environmental protection and energy conservation solutions and renewable energy equipment manufacturing and solutions businesses within the China Guodian Corporation (the “**Guodian Group**”) and its subsidiaries and associates.

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. The Company, with its advanced technologies and diversified business models, is a leading market player in the PRC in these industries. In 2016, the Company ranked 24th among the 2016 Global Top 500 New Energy Enterprises, and won the “Distinguished Contribution Award” for three consecutive years. The Company also ranked 270th of the listed enterprises on the 2016 Fortune 500 China list issued by Fortune Magazine.

In its environmental protection and energy conservation solutions business, the Group is the largest supplier of technology and integrated systems solutions to coal-fired power plants in the PRC, providing innovative and advanced technology designed to reduce pollutant emissions and to maximize efficiency of resource utilization, with the overall objective of reducing the environmental impacts of coal-fired electricity generation while 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 the core business lines being SO<sub>2</sub> and NO<sub>x</sub> emissions reductions, water treatment, plasma ignition and combustion stabilization and energy management contracts), the Group is capable of providing one-stop solutions to its customers that are tailored to meet 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 a well-established brand and is well known for its product quality and high standards of 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.

國電科環前身為國電科技環保集團有限公司，於2011年5月16日正式改製成為股份有限公司並於2011年12月30日在香港聯合交易所有限公司（簡稱「**交易所**」）主板上市。本公司及附屬公司（簡稱「**本集團**」）是中國國電集團公司（簡稱「**國電集團**」）及其附屬公司和聯營公司致力於環保節能解決方案和可再生能源設備製造及解決方案業務的旗艦平台。

本公司之主營業務分為兩部份，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。本公司憑藉其先進的技術和多元化的業務模式躋身於國內行業領先地位。2016年，本公司再次入選全球新能源企業500強，排名第24位，並連續三年獲得「全球新能源500強卓越貢獻獎」。本公司亦在《財富》雜誌發佈的2016年財富中國500強上市企業排行榜中排名第270位。

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，量身訂製滿足其客戶的特定需要。於可再生能源設備製造及服務業務方面，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。

## CORPORATE PROFILE (CONTINUED)

### 公司介紹(續)

Focusing on technological innovation and industrial applications, the Group has gained a slew of innovative achievements in relation to significant technology and product innovation through original creation, resource integration innovation and technological advancements. Among its leading technologies in the PRC and globally, the Group's plasma ignition technology is ranked first in the world. In the domestic market, the Group possesses a leading position in many technologies, including wet flue gas desulfurization, seawater desulfurization, boiler low-nitrogen combustion and flue gas denitrification. Longyuan Environmental, Yantai Longyuan Power Technology Co., Ltd. ("**Longyuan Technology**") (SZ.300105), United Power, Beijing Huadian Tianren Power Controlling Technology Co., Ltd. ("**Huadian Tianren**") and Guodian Zhishen have become well-known brand names in the PRC.

As at 31 December 2016, the Group owns four national scientific research platforms including "National Key Laboratory for Wind Power Equipment and System Technology", 12 province-level scientific research platforms and two post-doctoral scientific research workstations. The Group undertook 52 sustainable scientific research and development ("**R&D**") projects, amongst which 22 are ministerial, provincial and municipal technical projects outside the corporation system. During the year, the Group has made remarkable achievements in aspects of new WTG model research, thermal power plant ultra-clean discharge treatment, thermal power plant water saving, zero wastewater discharge and comprehensive energy conservation and technology research and development of thermal power plant. In the year 2016, the Group acquired 223 intellectual property rights, including 81 invention patents. The Company has been granted 1,697 intellectual property rights, including 19 international invention patents and 383 invention patents, gaining an absolute advantage in benchmarking its position in the industry.

The Company believes that its strategic focus on investing in and promoting R&D as a core activity to support the development of its various businesses has yielded substantial returns, allowing the Company 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 will play a key role in the sustainable growth and development of the energy and power sector in the PRC, which is indispensable to the sustainable economic growth and development in the PRC. Going forward, the Company expects to leverage on its operations in the PRC to expand internationally, with the objective of becoming a top tier supplier of integrated clean 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、煙台龍源電力技術股份有限公司(「**龍源技術**」)(SZ.300105)、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2016年12月31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、2個博士後科研工作站。本集團承擔持續科研開發(「**研發**」)項目共計52項，其中國家部委、省市等系統外立項在研科技項目共計22項。本年度在風機新機型研發、火電廠超淨排放治理、火電廠節水及廢水零排放及火電廠綜合節能技術研發等方面取得顯著成果。2016年全年，本集團新獲知識產權223項，包括發明專利81項，本公司累計擁有知識產權數量1,697項(其中國際發明專利19項，發明專利383項)，在行業對標中佔據絕對優勢。

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，本公司將以成為世界領先的綜合清潔能源技術解決方案和服務提供商為目標，力爭充分利用其在中國的業務拓展國際市場。

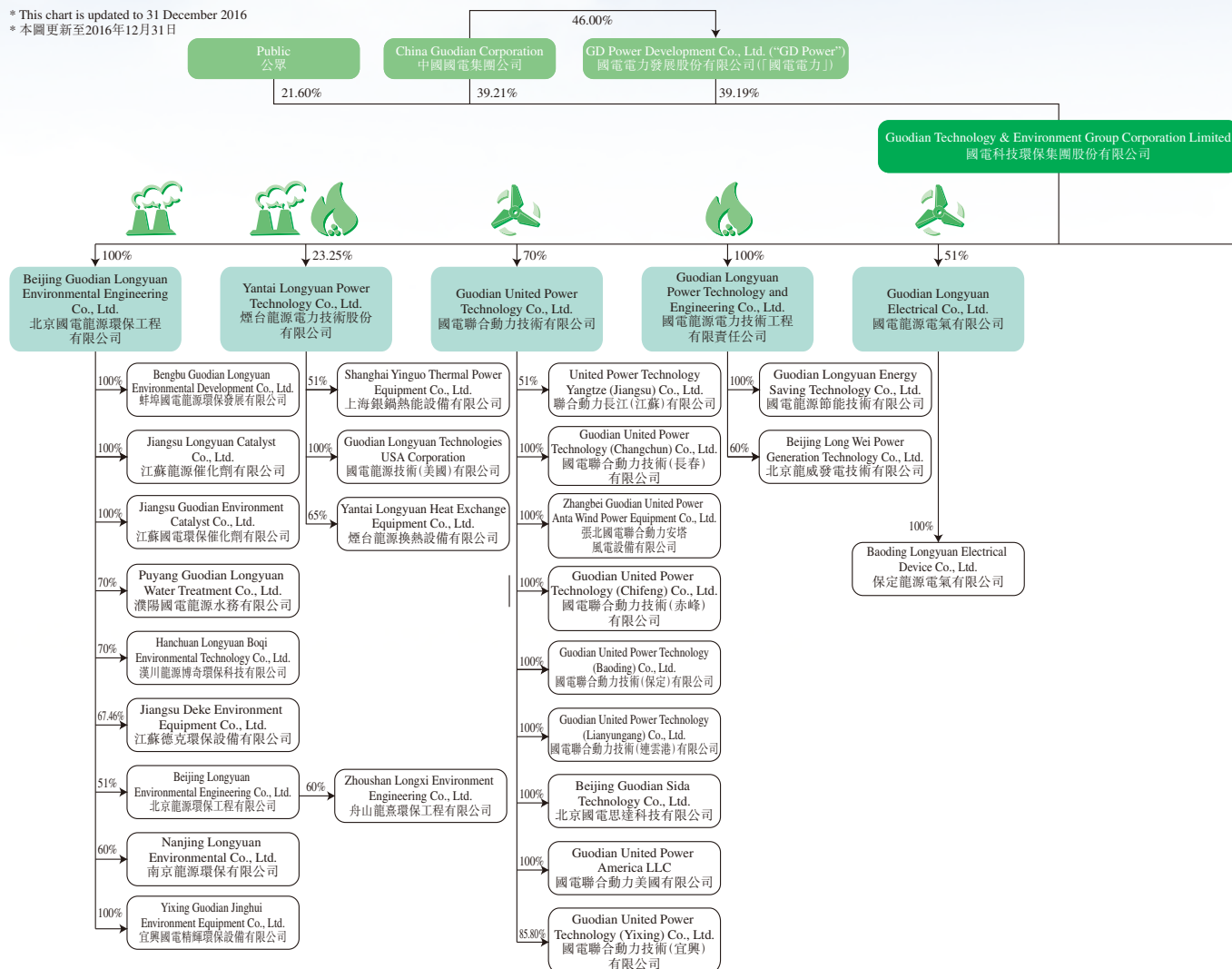


# CORPORATE STRUCTURE

## 公司架構

\* This chart is updated to 31 December 2016

\* 本圖更新至2016年12月31日



Environmental Protection  
環保



Energy Conservation Solutions  
節能解決方案

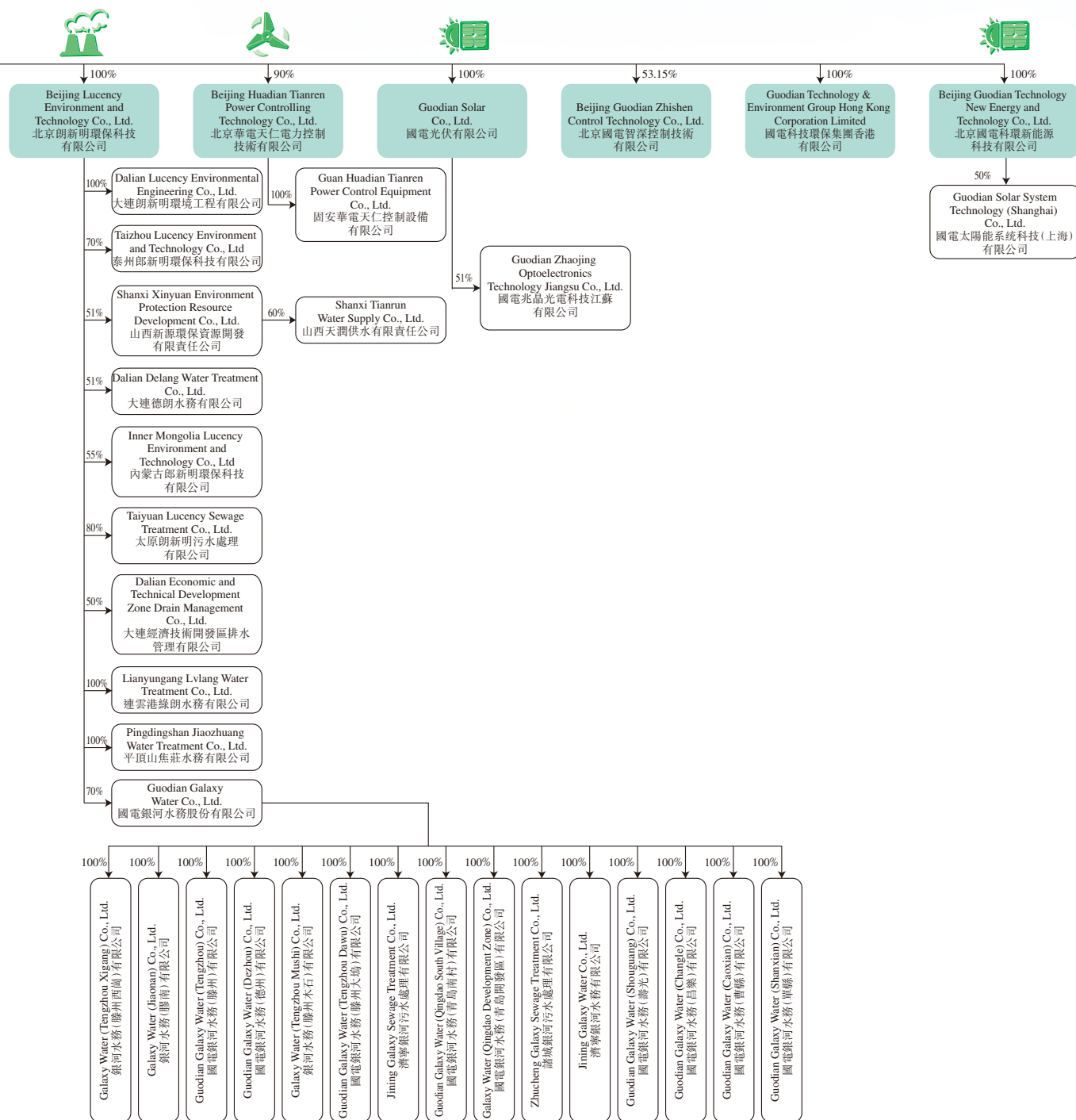


Wind Power Products and Services  
風電產品及服務



Solar Power Products and Services (Discontinued)  
太陽能產品及服務 (已終止經營)

## CORPORATE STRUCTURE (CONTINUED) 公司架構(續)



# CHAIRMAN'S STATEMENT

## 董事長致辭



### Dear Shareholders:

On behalf of the board of directors (the “Board”) of the Company, I am honored to present to you the 2016 annual report of the Group (the “Annual Report”).

In 2016, the world economy has become more complex, with China's economic growth slowing down, the structural transformation in the industry gradually deepening and the power industry in China transforming from market expansion towards quality control.

China's strict control over the development of the coal-power industry has provided opportunities for the development of the new energy-saving and “green” low-carbon environmental protection industry, and has provided new challenges and ample opportunities for the transformation of Guodian Tech. Guodian Tech will follow the energy structure adjustment and technological enhancement of electric power, comply with “innovation, coordination, green, openness and sharing”, the five development ideals as our guidance, proposed at the fifth Plenary Session of the 18th The Communist Party of China (“CPC”) Central Committee, adhere to industry development direction to cleaner and more efficient energy use, so as to make contributions to the construction of the beautiful and ecological China.

Over the years, Guodian Tech has been committed to developing and promoting environmental protection and energy conservation solutions and renewable energy technologies while focusing on the breakthrough of a batch of key core technologies, forming a strategic emerging industry cluster with comparative advantages, enhancing its corporate social responsibility (CSR) capability and promoting clean electricity production. Guodian Tech is now a leading force in environmental protection, energy conservation and renewable energy in China's electric power sector.

Going forward, the Company will continue to leverage, and further develop into a globally recognized supplier of products and services in environmental protection and energy conservation solutions and renewable energy equipment and solutions. The Company will strive to become a global leader in the provision of integrated clean technology solutions, to maximize returns to its Shareholders as well as to contribute further to society with its extraordinary performance.

Finally, on behalf of the Board, I would hereby like to extend our sincere gratitude to all the Shareholders, clients and business partners for their trust and support and to all the management and employees for their efforts and contributions.

Mr. YANG Guang  
Chairman of the Board

### 尊敬的股東：

我很榮幸代表本公司董事會（下稱「董事會」）向各位股東公佈本集團2016年年度報告（下稱「年報」）。

2016年，世界經濟走勢錯綜複雜，我國經濟增速持續放緩，產業結構轉型升級逐步深化，電力行業發展也由規模擴張型向質量效益型轉變，國家對煤電發展進行的嚴格調控，為新型節能和綠色低碳環保產業的發展提供了機會，也為國電科環轉型帶來了新的挑戰和機遇。國電科環將緊緊圍繞能源結構調整和電力技術變革，按照黨的十八屆五中全會提出的「創新、協調、綠色、開放、共享」五大發展理念為引領，堅持能源利用更加清潔、高效的產業發展方向，為建設美麗中國、生態中國貢獻力量。

多年來，國電科環致力於環保節能與可再生能源技術的開發和推廣，著眼於突破一批關鍵核心技術，形成了具有比較優勢的戰略性新興產業集群，提高了履行企業社會責任的能力和電力行業的清潔生產水平，成為中國電力行業中享有盛譽的環保節能和可再生能源領域的先進企業。

展望未來，本公司將繼續利用其控股股東國電集團所提供的平台和資源，進一步發展壯大，成為全球公認的環保與節能解決方案及可再生能源設備與解決方案領域的產品和服務提供商。本公司將力爭成為提供綜合清潔技術解決方案的全球領導者，並以優異的經營業績回報股東，回報社會！

最後，我謹代表董事會，在此衷心感謝全體股東、客戶、業務合作夥伴的信任和支持，同時也感謝管理層及員工的努力和貢獻。

陽光先生  
董事長



# PRESIDENT'S STATEMENT

## 總經理致辭



### Dear Shareholders:

In 2016, the Group insisted on the transformation development strategy, carefully implemented work arrangements of the Board, firmly adhered to the overall work principle of “progress and quality in stability”, insisted to be guided by the five developmental philosophies of “innovation, coordination, green, openness and sharing”, accelerated structural reorganization, focused on quality and effectiveness improvement, optimized

team construction, and deepened transformation and upgrade, and good development for the Group was achieved. As a result, the Group realized an operating income of RMB15,970.7 million, and the profit attributable to Equity Shareholders of the Company is RMB302.4 million for the year.

In 2016, the Company made great breakthroughs in structural optimization. For instance, facing a shrinking air cooling market and fierce competition, the Company carried out an on-exchange transfer of 60% equity in Longyuan Air Cooling, smoothly completed the equity transfer, and recovered a transfer price of approximately RMB284 million, which was 193.92% higher than the listing base price. The Company also signed a restructuring agreement with Tianjin Zhonghuan for Tianjin Zhonghuan to carry out private placement to acquire 90% equity in GD Solar, and is currently carrying out Shenzhen Stock Exchange approval formalities. Compared with 2015, assets quality was optimized, laying a sturdy foundation for the healthy development of the Company.

Moreover, the Company has made considerable progress in the scientific research commercialization and new business cultivation. For instance, the Company has made breakthroughs in the commercialization of United Power's “2MW-115 WTG technology”, Longyuan Environmental's “reinforced dust-removal ultra-low emission desulfurization technology (D-FGD)”; the zero wastewater discharge technology of Lucency has been successfully applied to the Hanchuan 1000MW unit demonstration project. In terms of the comprehensive energy-saving and transformation business, the Company won the bid of the Shizuishan Power Plant through-flow reconstruction project, which will further improve the Company's profit structure.

Going forward, the Company shall diligently implement the “155 Strategy”, set up values and create ideals, through deepening reform, reinforcing management, improving mechanism, optimizing indicators, and improving capacity. The Company shall adhere to market orientation, accelerate the business combination, increase the market competence in quality, service, cost and technique, assume the economic, political and social responsibilities, to contribute to the continuous development of the Chinese economy in the fields of energy conservation and environmental protection.

Mr. CHEN Dongqing  
President

### 尊敬的股東：

2016年，本集團堅持轉型發展戰略，認真執行董事會工作部署，牢牢把握「穩中求進，穩中求優」的工作總基調，堅持以「創新、協調、綠色、開放、共享」五大發展理念為引領，加快瘦身健體，狠抓提質增效，優化團隊建設，深化轉型升級，實現了企業平穩向好的發展。全年實現營業收入15,970.7百萬元，權益股東應佔利潤302.4百萬元。

本年度，公司在瘦身健體方面取得重大突破。例如積極應對空冷市場萎縮和競爭加劇，掛牌轉讓龍源冷卻60%股權，順利完成股權交割，收回轉讓價款約2.84億元，較掛牌底價高出193.92%；公司已與中環股份簽署了重組協議，由中環股份定向增發收購國電光伏90%股權，正在履行深交所審批手續。與2015年相比，資產質量實現優化，為公司的健康發展奠定了紮實的基礎。

此外，公司在科技成果轉化以及新業務培育方面取得了長足進步。例如聯合動力「2MW-115風機技術」、龍源環保「強化除塵的超低排放脫硫技術（D-FGD）」等技術成果轉化取得突破；朗新明廢水零排放技術在漢川百萬機組示範工程上應用取得成功；綜合節能改造業務，已中標石嘴山電廠通流改造項目，進一步改善了公司盈利結構。

展望未來，公司將深入落實「一五五」發展戰略，樹立價值創造理念，深化改革，強化管理，完善機制，優化指標，提升能力，堅持走市場化道路，加快推進業務整合，從質量、服務、成本、技術等方面提高市場競爭力，履行經濟責任、政治責任和社會責任，在節能環保、循環經濟領域為中國經濟可持續發展貢獻自己的力量。

陳冬青先生  
總經理

# SUMMARY OF FINANCIAL RESULTS

## 財務業績概要

		2012 二零一二年 RMB'000 人民幣千元	2013 二零一三年 RMB'000 人民幣千元	2014 二零一四年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元	2016 二零一六年 RMB'000 人民幣千元
<b>Continuing operations</b>	<b>持續經營業務</b>					
Revenue	收益	18,127,181	18,533,654	22,686,197	19,970,161	<b>15,775,318</b>
Profit before taxation from continuing operations	來自持續經營業務之稅前利潤	1,292,181	1,087,036	1,163,753	194,164	<b>510,262</b>
Income tax	所得稅	(236,168)	(128,006)	(197,029)	(139,872)	<b>(122,722)</b>
Profit for the year from continuing operations	本年來自持續經營業務之利潤	1,056,013	959,030	966,724	54,292	<b>387,540</b>
<b>Discontinued operations</b>	<b>已終止經營業務</b>					
(Loss)/profit for the year from a discontinued operation	本年來自已終止經營之業務(虧損)/收益	(22,042)	(99,748)	(1,103,231)	(4,744,011)	<b>(134,089)</b>
Profit/(loss) for the year	本年收益/(虧損)	1,033,971	859,282	(136,507)	(4,689,719)	<b>253,451</b>
Attributable to:	歸屬於:					
Equity shareholders of the Company	本公司權益股東	692,947	557,095	(393,374)	(4,639,616)	<b>302,372</b>
Non-controlling interests	非控股權益	341,024	302,187	256,867	(50,103)	<b>(48,921)</b>
Profit/(loss) for the year	本年收益/(虧損)	1,033,971	859,282	(136,507)	(4,689,719)	<b>253,451</b>
Basic and diluted earnings/(loss) per share (RMB)	每股基本及攤薄盈利/(虧損) (以人民幣列示)					
– Continuing and discontinued operations	– 持續經營業務和已終止經營業務	0.114	0.092	(0.065)	(0.765)	<b>0.050</b>
– Continuing operations	– 持續經營業務	0.116	0.107	0.110	(0.006)	<b>0.072</b>
– Discontinued operations	– 已終止經營業務	(0.002)	(0.015)	(0.175)	(0.759)	<b>(0.022)</b>
Total non-current assets	非流動資產總額	20,345,067	21,051,864	20,170,875	17,616,846	<b>11,878,875</b>
Total current assets	流動資產總額	25,950,620	33,554,731	36,758,174	25,335,828	<b>28,221,827</b>
Total assets	資產總額	46,295,687	54,606,595	56,929,049	42,952,674	<b>40,100,702</b>
Total current liabilities	流動負債總額	(26,763,084)	(33,817,587)	(37,841,594)	(28,686,925)	<b>(25,448,837)</b>
Total non-current liabilities	非流動負債總額	(7,391,477)	(7,906,766)	(6,347,071)	(6,362,796)	<b>(6,656,655)</b>
Net assets	資產淨額	12,141,126	12,882,242	12,740,384	7,902,953	<b>7,995,210</b>
Total equity attributable to equity shareholders of the Company	歸屬於本公司權益股東的權益總額	9,281,884	9,740,266	9,243,905	4,606,464	<b>4,918,831</b>
Non-controlling interests	非控股權益	2,859,242	3,141,976	3,496,479	3,296,489	<b>3,076,379</b>
Total equity	權益總額	12,141,126	12,882,242	12,740,384	7,902,953	<b>7,995,210</b>

# 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 entitled “Key Industry Developments” in this annual report, have been derived from various publicly available official publications. The Company believes that these sources are appropriate 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 material fact has been omitted that would render such information false or misleading. The information has not been independently verified by the Company or relevant parties. The Company makes no representation as to the accuracy of the information contained in such sources, and which may not be consistent with other information compiled within or outside the PRC. Accordingly, such information may not be accurate and should not be unduly relied upon for your investment in the Company.**

**This annual 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 Company'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 business, financial condition and results of operations may be adversely affected and may vary materially from those described herein as anticipated, believed or expected.**

本年報中如「主要行業發展」部份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信息乃摘自不同的官方公開刊物。本公司相信有關數據源為恰當的數據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。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，而該等數據可能與中國境內外編製的其他數據不一致。因此，該等數據未必準確，閣下投資於本公司時不應過度依賴上述資料。

本年報載有基於本公司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、本集團或本公司的管理層時，即指前瞻性陳述。此類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，本集團的業務、財務狀況及經營業績或會受不利影響且可能與本公告所述的預計、相信或預期者大不相同。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### 2016 Industry and Business Overview

##### Key Industry Developments

In 2016, the PRC government continued to introduce new regulations and policy initiatives applicable to the PRC power and power-related industries, amid risks and challenges under the new normal of economic growth. The main purpose of these initiatives is to adjust the energy structure, enhance the proportion of clean energy supply, effectively control the scale of coal power production capacity, and promote the green and efficient development and utilization of coal. It is expected that during the "Thirteenth Five-Year" Plan period, the installed capacity of coal power will increase by up to 200 million KW (referring to the original data derived from relevant national policies, hereinafter inclusive, 100 million KW=100,000 MW), and the installed capacity of wind power will increase by 79 million KW. China will strengthen its power system peak regulation capacity and it is expected that the scale of the heat and electricity cogenerating units and conventional coal power flexibility transformation will reach about 133 million KW and 86 million KW (10,000 KW=10MW) respectively during the "Thirteenth Five-Year" Plan period, which may promote the development of environmental protection and energy and water saving related industries.

For the purpose of this 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. In January 2016, the National Development and Reform Commission ("NDRC") issued the "Guiding Opinions on Implementation of Third Party Treatment of Environmental Pollution in Coal-fired Power Plants" (Fa Gai Huan Zi [2015] No. 3191) (《關於在燃煤電廠推行環境污染第三方治理的指導意見》(發改環資[2015]3191號)) (the "**Opinions I**").

The Opinions I proposed a third party "treatment mechanism which was oriented by the pollution treatment being market-oriented, professionalized, and industrialized". Such system and mechanism shall attract and expand social capital as regards the treatment of environmental pollution, innovate the safety and stabilization measures in relation to environmental protection facilities in coal-fueled power stations while stabilizing emissions operations in line with economical rates for discharge, and promote the sustainable and healthy development of the environmental protection industry.

#### 2016年行業和業務回顧

##### 主要行業發展

2016年，面對經濟發展新常態下的風險挑戰，中國政府陸續出台了適用於中國電力及與電力相關行業的新法規及政策措施。該等措施主要目的是調整能源結構，提高清潔能源供應比例，有效控制煤電產能規模，推進煤炭綠色高效開發利用。預計「十三五」期間煤電裝機增加2億千瓦（引用國家政策原數據，下同，1億千瓦 = 100,000兆瓦）以內，風電裝機增加0.79億千瓦。中國將加強電力系統的調峰能力建設，預計「十三五」期間熱電聯產機組和常規煤電靈活性改造規模分別達到1.33億千瓦和8,600萬千瓦（1萬千瓦 = 10兆瓦）左右，或將帶動環保節能節水相關產業的發展。

就本報告而言，「中國」是指中華人民共和國，這裏不包括台灣、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影響：

1. 2016年1月，國家發展改革委（「發改委」）印發《關於在燃煤電廠推行環境污染第三方治理的指導意見》（發改環資[2015]3191號）（《意見一》）。

《意見一》提出以污染治理「市場化、專業化、產業化」為導向，吸引和擴大社會資本投入環境污染治理，創新燃煤電廠環保設施安全穩定經濟達標排放運行、促進環保產業持續健康發展的第三方治理機制。



## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

From 2007 to 2010, a pilot project relating to the concession of flue gas desulfurization and denitrification for coal-fired power plants in the power industry achieved success with the joint endeavors of the NDRC and the Ministry of Environmental Protection. In respect of the application of this pilot project, third party treatment of environmental pollution will improve the quality of engineering construction of coal-fueled power plants in pollution treatment; contribute to the stable operation of the pollution treatment facilities and attain the set standard; be beneficial to the development of social capital and reduce the capital pressure on the construction of environmental protection facilities in the power industry; maximize the professional advantages of environmental service companies and foster the development of the environmental protection service industry to a sustainable and healthy level.

The issuance of the Opinions I will foster the sustainable and healthy development of the Group's environmental protection industry.

2. In February 2016, the National Energy Administration ("NEA") indicated that the supply-side reform in relation to the energy industry shall be implemented from seven perspectives.

The meeting of a leadership team for comprehensively intensifying reform held by the NEA indicated that under the new normal of slowing growth in energy consumption, fast-paced structural optimization, and the shift in momentum, the development of the energy model should transit from an extensive development model to a model that improves quality and increases efficiency, and energy-related work should have more focus on reform and technological innovation, instead of emphasizing on project approval. The implementation of supply-side structural reform in the energy field should focus on 7 perspectives: first, to resolve overcapacity in the coal industry. The Guideline to Resolve Overcapacity and Difficulties in Development of the Coal Industry (《關於煤炭行業化解過剩產能實現脫困發展的意見》) should be implemented for the purpose of shutting down more than 1,000 underdeveloped coal mines, with a total capacity of 60 million tons by 2016, thereby promoting the merger and restructure in coal industry; second, to resolve overcapacity of coal power. By leveraging on market mechanisms, the market-oriented reform of electric power should be accelerated and in principle, newly-approved generators should be involved in trading in the electric market; third, to solve problems of grid curtailment of hydropower, wind power and solar power. The government will optimize and control increment volume, effectively controlling the pace of development of hydropower and nuclear power in accordance with relevant plans, and develop wind power, photovoltaic energy, biomass and geothermal power based primarily on local consumption; fourth, to accelerate the implementation of electric power system reform. The government will, with its best endeavors, motivate all regions across the nation

2007-2010年期間，發改委聯合環境保護部在電力行業開展的燃煤電廠煙氣脫硫、脫硝特許經營試點工作取得成功。從試點及實際應用情況看，環境污染第三方治理有利於提高燃煤電廠污染治理工程建設質量；有利於污染治理設施穩定達標運行；有利於引進社會資本、緩解電力企業環保設施建設資金壓力；有利於發揮環境服務公司的專業優勢、促進環保服務業持續健康發展。

《意見一》的頒布有利於本集團環保產業的持續健康發展。

2. 2016年2月，國家能源局(「國家能源局」)指出從七方面推進能源領域供給側改革。

國家能源局召開全面深化改革領導小組會議指出，在能源消費增長減速換擋、結構優化步伐加快、發展動力開始轉換的新常態下，能源發展方式要從粗放式發展向提質增效轉變，能源工作方式要從審批項目為主向推進改革和技術創新轉變。推進能源領域供給側結構性改革要著重抓好七項工作：一是化解煤炭行業過剩產能。落實國務院《關於煤炭行業化解過剩產能實現脫困發展的意見》，力爭2016年關閉落後煤礦1,000處以上，合計產能6,000萬噸，推動煤炭行業兼併重組；二是化解煤電過剩產能。利用市場機制倒逼，加快推進電力市場化改革，新核准的發電機組原則上參與電力市場交易；三是着力解決棄水、棄風、棄光問題。優化控制增量，根據規劃有效把握水電、核電發展節奏，發展風電、光伏、生物質能、地熱能以就近消納為主；四是加快推進電改落地。充分調動各地積極性，加快建立電力市場，實現直接交易，放開上網電價和銷售電價，嚴格管控電網企業輸配電價；五是穩步推進石

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

to accelerate the establishment of an electric power market for direct trading. It will also release its control over on-grid tariff and the selling price of electricity, while maintaining stringent control over the price of power transmission and distribution by grid enterprises; fifth, to steadily promote the reform of the oil and natural gas system. After considering and introducing the Certain Opinions on Deepening Reform of Oil and Natural Gas System (《關於深化石油天然氣體制改革的若干意見》), the central government undertook research and formulated customized reform proposals and relevant supporting documents. Comprehensive pilot projects or customized pilot projects for oil and gas reform will also be implemented in some provinces and municipalities; sixth, to enhance poverty alleviation through access to energy. The government will implement the new phase of transition and upgrade project for the grid system in rural areas, and promote targeted poverty alleviation and one-to-one aid program; seventh, to increase the overall operating efficiency of the energy system. The government will optimize energy-consuming industries and the distribution of energy exploitation, and reduce dependence on long-distance energy delivery, thus promoting coordinated development of energy and its complementary utilization, and increasing the intelligence level and the operating efficiency of energy system.

Faced with the increasing downward pressure in the economy, the Group will implement corporate transition and upgrade with determination. The Guideline provided directional guidance for the transition and upgrade of the Group.

3. In March 2016, the NEA issued the Guiding Opinions on Energy Related Work for 2016 (the “**Opinions II**”).

The Opinions II stated: to promote the innovation of energy technology, to research and develop innovative promotion and a collaboration mechanism for advanced technology equipment. To implement pilot exercise of secondary reheating of the ultra supercritical units, ultra supercritical cycle fluidised bed boilers of great capacity and other advanced technology and equipment. To construct demonstrative engineering projects including provision of heat created by wind power, production of hydrogen etc. To explore new commercial models for local absorption and consumption of wind power and photovoltaic energy. To conduct overall planning to resolve wind power, solar power, hydropower curtailment and other outstanding problems relating to the development of the industry. To explore a targeted management mechanism for the development and utilization of renewable energy through the pilot projects.

油天然氣體制改革。在中央審議出台《關於深化石油天然氣體制改革的若干意見》後，抓緊研究制定專項改革方案和相關配套文件，在部份省市開展油氣改革綜合試點或專項試點；六是加強能源扶貧。實施新一輪農網改造升級工程，推進定點扶貧和對口支援；七是提高能源系統整體運行效率。優化高耗能產業和能源開發佈局，降低對遠距離能源輸送的依賴。推動能源協調發展和互補利用，提高能源系統的智能化水平和運行效率。

面臨經濟下行壓力增大，本集團將堅定不移的實施企業轉型升級。該指示為本集團企業轉型升級提供了方向性指導。

3. 2016年3月，國家能源局發佈《2016年能源工作指導意見》(《**意見二**》)。

《意見二》指出：推進能源科技創新，研究建立先進技術裝備創新推廣協作機制。示范應用超超臨界機組二次再熱、大容量超超臨界循環流化床鍋爐等先進技術裝備。開展風電供暖、制氫等示范工程建設。探索風電、光伏就地消納利用商業新模式。統籌解決棄風、棄光、棄水等行業發展突出問題。探索試點可再生能源開發利用目標管理機制。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

To steadily develop wind power. To promote the healthy development of the “**Three-North**” Areas, and encourage and accelerate the development of wind power in the eastern, central and southern regions. To promote the planning and construction of new Phase III energy power generation bases in Zhundong, Ximeng, Jinbei and Zhangjiakou, to increase the proportion of externally delivered power volume generated by new energy. To research and solve the technical bottleneck and mechanism barrier as to the development of offshore wind power, and promote the healthy and sustained development of offshore wind power.

To implement ultra-low emission and energy conservation and transformation of coal power. During the “**Thirteenth Five-Year**” period, the state planned to implement the ultra-low emission transformation of approximately 420 million KW, energy conservation and transformation of approximately 340 million KW, with an estimated aggregate investment of approximately RMB150 billion (**all amounts in this annual report refer to RMB unless otherwise indicated**). In 2016, it is planned to launch a group of pilot projects on ultra-low emission transformation and energy conservation and transformation. To adjust the efficiency standards and minimum limit standards of coal-fired units. To implement the valuation of pilot projects of coal power and energy conservation, to promote the application of advanced and mature technologies.

The Group has thoroughly grasped relevant advanced technology including the DCS control system for secondary reheating of ultra supercritical units, ultra-low emission and energy conservation transformation, etc., and has made significant improvements in the wind turbine manufacturing segment and economic operation of wind power. The issuance of the Opinions II enables the Group to be more confident in facing the future transformation of the energy industry.

4. On 28 June 2016, the NDRC announced that there would continue to be adjustments in the on-grid price and selling price of coal-fired units from 1 January 2017.

According to the figures published in June 2016, the national price of thermal coal was RMB315/ton, and the average price from January to June 2016 was RMB320/ton, representing a decrease of approximately RMB43/ton as compared with the average level for the whole year of 2015. Pursuant to this amount and the newly amended thermal coal power price linkage mechanism, the on-grid price and selling price of coal-fired units will continue to be adjusted from 1 January 2017, which will bring further operating pressure to thermal power generation enterprises, and at the same time, transferring part of the pressure to the Group.

穩步發展風電。推動「**三北**」地區風電健康發展，鼓勵東中部和南部地區風電加快發展。推進淮東、錫盟、晉北、張家口三期新能源發電基地規劃建設，提高新能源發電外送電量比重。研究解決制約海上風電發展的技術瓶頸和體制障礙，促進海上風電健康持續發展。

實施煤電超低排放和節能改造。「**十三五**」期間，全國計劃實施超低排放改造約4.2億千瓦，節能改造約3.4億千瓦，預計總投資約1,500億元(人民幣，除特別註明，**本年報中所有金額均為人民幣**)。2016年，啟動一批超低排放改造示范項目和節能改造示范項目。修訂煤電機組能效標準和最低限值標準。開展煤電節能改造示范項目評估，推廣應用先進成熟技術。

本集團已成熟掌握超超臨界機組二次再熱DCS控制系統、超低排放和節能改造等相關先進技術，並在風機製造板塊和風電經濟運營方面得到顯著提升。《意見二》的發佈使本集團更加有信心面對未來能源產業的變革。

4. 2016年6月28日，國家發改委宣佈2017年1月1日將繼續調整燃煤機組上網電價和銷售電價。

根據2016年6月公佈的數據，全國電煤價格每噸315元，2016年1-6月份平均為每噸320元，較2015年全年平均水平下降了約每噸43元。按照這個幅度，按照新修訂的煤電價格聯動機制，2017年1月1日將繼續調整燃煤機組上網電價和銷售電價。這將為火力發電企業帶來新一輪的經營壓力，同時也會將部份壓力傳導至本集團。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

5. On 8 August 2016, the State Council issued “*The Working Plan to Reduce Cost of Enterprises in Real Economy*” (《降低實體經濟企業成本工作方案》)(the “**Working Plan**”). The Working Plan pointed out that the reform of energy fields shall be accelerated so as to steer competitive pricing; to accelerate the market-oriented reform in the fields of electricity, oil, natural gas and etc.; to improve the on-grid connection mechanism in photovoltaic energy, wind power and other new energy; to basically liberalize the competitive fields and all sectors' price control in 2017 to set up a fully competitive mechanism with an aim to make the energy price fully reflect changes in the market supply and demand and to enhance the price flexibility; to speed up the electricity system reform and reasonably reduce the enterprises' electric cost; to accelerate the implementation of the pricing reform in power transmission and distribution pilot plan; and actively carry out direct power supply transactions to relax participation scopes and orderly reduce the scale of power generation and utilization plan to increase the proportion of market-driven power supply transactions.

Market-oriented reform will continually intensify the competition among power generation enterprises which will make them attach more attention to the cost control and may bring new challenges to the Group's operation.

6. The NEA canceled certain coal-fired power projects without approved construction conditions, which have generated 12,400,000 KW power in aggregate, among which Guodian Group accounted for 6,500,000 KW. On 13 September 2016, the NEA issued “Notice of Cancellation of Coal-fired Power Projects Without Approved Construction Conditions (GNDL[2016] No. 244)” (《關於取消一批不具備核准建設條件煤電項目的通知》(國能電力[2016]244號)) to cancel a total of 15 coal-fired power projects without approved construction conditions with 12,400,000 KW power generated locating in Jilin, Shanxi, Shandong, Shaanxi, Sichuan, Jiangxi, Guangdong, Guangxi, Yunnan and other provinces (autonomous regions), and require the department of Development and Reform Commission (Energy Administration) in each province (region/city) to further cancel other local coal-fired power projects without approved (construction) conditions. Among these canceled projects, Guodian Group in aggregate accounted for 5 projects generating 6,500,000 KW power, representing 33.3% and 52.4% of the number and capacity of the canceled projects respectively.

The domestic infrastructure market will be depressed as certain coal-fired power projects being canceled, however, the Group will actively promote the international business development and enhance the enterprise's healthy and sustainable development by leveraging on the national “**One Belt, One Road**” strategy.

5. 2016年8月8日，國務院印發《降低實體經濟企業成本工作方案》(《工作方案》)。《工作方案》提出，加快推進能源領域改革，放開競爭性環節價格。加快推進電力、石油、天然氣等領域市場化改革。完善光伏、風電等新能源發電並網機制。2017年基本放開競爭性領域和環節價格管制，形成充分競爭的機制，使能源價格充分反映市場供求變化，提高價格靈活性。加快推進電力體制改革，合理降低企業用電成本。加快實施輸配電價改革試點。積極開展電力直接交易，放寬參與範圍，有序縮減發用電計劃，擴大市場化交易電量的比例。

市場化改革將使發電企業間的競爭持續加劇，發電企業會更加注重成本控制，可能為本集團經營帶來新的挑戰。

6. 國家能源局取消一批不具備核准建設條件煤電項目，總計1,240萬千瓦，其中中國電集團650萬千瓦。國家能源局2016年9月13日發佈《關於取消一批不具備核准建設條件煤電項目的通知》(國能電力[2016]244號)，取消吉林、山西、山東、陝西、四川、江西、廣東、廣西、雲南等省(自治區)15項、1,240萬千瓦不具備核准建設條件的煤電項目，要求各省(區、市)發展改革委(能源局)要進一步取消本地區其他不具備核准(建設)條件的煤電項目。在本次取消的項目中，國電集團合計5個項目650萬千瓦，分別佔被取消項目數量和容量的33.3%和52.4%。

隨著一批煤電項目被取消，國內基建領域的市場空間將被壓縮，本集團將借助國家「一帶一路」戰略，全力推動國際業務發展，促進企業健康可持續發展。



## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

7. In September 2016, the NDRC and the Ministry of Environmental Protection of the PRC jointly issued *"The Opinion on Cultivating Environmental Governance and Ecological Protection Market Entities"* (《關於培育環境治理和生態保護市場主體的意見》) (the **"Opinions III"**).

The "Opinions III" pointed out that in 2020, the production value of environmental protection industry shall exceed RMB2.8 trillion. There will be more than 50 environmental protection enterprises with their respective production value over RMB10 billion. Great efforts will be made to establish a group of international environmental protection companies with advanced technology, refined management, competitive integrated service and strong brand influence; form a group of environmental protection industry demonstration bases and technology conversion platforms which are of high level of concentration and with clear advantages. The "Opinions III" put forward four measures to promote the establishment of a marketized environmental governance model. First, the innovation of enterprise operation model, which means to put great efforts on the promotion of PPP models like concession operation in the field of municipal public facility and accelerate the process of law making in respect of concession operation; in industrial park and priority sectors, to implement the environmental pollution third party governance model, actively promote third party governance experience of coal power plants and study and issue sample contracts in relation to third party governance. Second, to promote and implement integrated service model which comprises the implementation of supply-side reform in environmental protection field and the promotion of comprehensive solution based on environmental performance and regional integrated service model. Third, to implement "Internet Plus" ecologic movements which comprises supporting the R&D of intelligent operation management platform and promoting remote control and low-cost operation and maintenance of pollution control facilities. Fourth, to speed up the formation of relevant market trading system. A trading system of pollution rights, carbon emission rights, energy using rights, water rights and forest rights will be established and improved based on the experience from pilot projects.

The "Opinions III" will benefit the Group in the optimization of the industrial layout of its desulphurization and denitrification concession operations and create new opportunities for the sustained and stable development of the Group's environmental protection business.

7. 2016年9月，國家發改委和環境保護部聯合印發《關於培育環境治理和生態保護市場主體的意見》(《意見三》)。

《意見三》提出，到2020年，環保產業產值超過2.8萬億元。培育50家以上產值過百億的環保企業，打造一批技術領先、管理精細、綜合服務能力強、品牌影響力大的國際化的環保公司，建設一批聚集度高、優勢特徵明顯的環保產業示范基地和科技轉化平台。《意見三》提出推行市場化環境治理模式，一是創新企業運營模式。在市政公用領域，大力推行特許經營等PPP模式，加快特許經營立法。在工業園區和重點行業，推行環境污染第三方治理模式，積極推廣燃煤電廠第三方治理經驗，研究發佈第三方治理合同范本；二是推行綜合服務模式。實施環保領域供給側改革，推廣基於環境績效的整體解決方案、區域一體化服務模式；三是實施「互聯網+」綠色生態行動。支持環保智能運營管理平台系統研發，推動污染治理設施的遠程管控和低成本運營維護。四是加快建設市場交易體系。在試點示范的基礎上，建立完善排污權、碳排放權、用能權、水權、林權的交易制度。

《意見三》的頒布有利於本集團在脫硫、脫硝特許經營產業的優化佈局，為本集團環保產業持續穩定發展創造新的機遇。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

8. In October 2016, the State Council issued “*The “Thirteenth Five-Year” Work Plan for Greenhouse Gas Emission Control*” (《“十三五”控制溫室氣體排放工作方案》) (the “**Work Plan II**”). The “Work Plan II” pointed out that in 2020, ratio of per unit GDP to carbon dioxide emissions shall be reduced by 18% as compared with 2015, and the total carbon dioxide emission shall be taken under effective control. For large power groups, the carbon dioxide emissions per unit of electricity provided shall be limited under the level of 550g CO<sub>2</sub>/KWh.

The utilization of fossil energy resources shall be optimized, the total consumption of coal shall be controlled and the amount shall be limited at around 4.2 billion tonnes when it comes to 2020. Active efforts will be made to develop natural gas power generation and distributed energy resources. In coal-based industries and oil and gas production industry, large-scale carbon capture, utilization and storage industrial demonstration bases will be established and the carbon emissions of coal chemical industry will be reduced.

A national carbon emissions trading system will be established. The system will cover enterprises whose annual energy consumption exceed 10,000 tonnes of standard coal in 8 industrial sectors including petrochemical industry, chemical industry, construction material, steel, non-ferrous metal, paper, power and aviation specifying the total carbon emissions and the relevant quota allocation. A carbon emissions quota monitoring and controlling system will be also be put into place.

The “Work Plan II” is likely to bring new opportunities for the development of the Group's environmental protection business.

8. 2016年10月，國務院出台《「十三五」控制溫室氣體排放工作方案》(《**工作方案二**》)。《工作方案二》提出，到2020年，單位國內生產總值二氧化碳排放比2015年下降18%，碳排放總量得到有效控制。大型發電集團單位供電二氧化碳碳排放控制在550克二氧化碳／千瓦時以內。

優化利用化石能源。控制煤炭消費總量，2020年控制在42億噸左右。積極發展天然氣發電和分佈式能源。在煤基行業和油氣開採行業開展碳捕集、利用和封存的規模化產業示范，控制煤化工等行業碳排放。

建立全國碳排放權交易制度。制定覆蓋石化、化工、建材、鋼鐵、有色、造紙、電力和航空等8個工業行業中年能耗1萬噸標準煤以上企業的碳排放權總量設定與配額分配方案，實施碳排放配額管控制度。

《工作方案二》的出台可能為本集團環保產業帶來新的發展契機。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

9. The State's further regulation on the planning and construction of coal-fired power.

On 10 October 2016, the NEA issued the *Notice Regarding Further Regulation on Planning and Construction of Coal-Fired Power* (Guo Neng Dian Li [2016] No. 275) (《關於進一步調控煤電規劃建設的通知》(國能電力[2016]275號)) (the "**Notice**") to continue its strict control on planning and construction of coal-fired power plants. The Notice states clearly that the planning and construction of coal-fired power shall be strictly controlled. Firstly, as for the projects that have been recognized as planning projects but are not yet approved, the granting of approval shall be postponed. Secondly, as for the approved projects, if necessary supporting files related to commencement of construction are not fully obtained or if the said files are fully obtained but the commencement (marked by the first pour of concrete into the foundation bedding layer of the plant's main building) is not yet launched, the commencement of construction shall be deferred; if the construction started in 2016, relevant projects shall be suspended; and if the construction started before the end of 2015, the construction schedule shall be properly rearranged and timing of putting into operation shall be well-managed. Thirdly, as the risk alert level turns to normal, relevant development and reform commissions at the provincial level (Energy Administration) could gradually re-grant delayed approval or re-start the extended construction of coal-fired power projects under the guidance of the state.

As the state intensifies the control on planning and construction of coal-fired power plants, the market size of infrastructure project business is accordingly narrowing down. The Group will accelerate the progress of structural adjustment and promote the transformation and upgrading, thereby to provide new supports for its business development.

10. In November 2016, the NDRC and the NEA jointly issued the "Thirteenth Five-Year" Plan of the Power Development (《電力發展「十三五」規劃》) (the "**Plan I**").

According to the Plan I, the power consumption of the whole society in 2020 is estimated to be 6.8–7.2 trillion KWh, representing an average annual growth rate of 3.6% to 4.8%, and the nation's total installed capacity will reach 2 billion KW with an average annual growth rate of 5.5%.

As the proportion of non-fossil energy consumption is required to reach 15%, the installed capacity for non-fossil energy in 2020 will be almost 0.77 billion KW, increasing by around 0.25 billion KW as compared with 2015; the installed capacity for gas power will increase by 50 million KW to above 0.11 billion KW. The installed capacity for coal-fired power is targeted to be limited within 1.1 billion KW, with the proportion decreasing to about 55%.

9. 國家進一步調控煤電規劃建設。

2016年10月10日，國家能源局下發《關於進一步調控煤電規劃建設的通知》(國能電力[2016]275號)(《通知》)，進一步嚴控煤電規劃建設。《通知》要求嚴控自用煤電規劃建設。一是納入規劃項目尚未核准的，暫緩核准；二是已核准項目，尚未取齊開工必要支持性文件或取齊開工必要支持性文件尚未開工的(開工標誌為主廠房基礎墊層澆築第一方混凝土)，暫緩開工建設；2016年開工建設的，停止建設；2015年底以前開工建設的，也要適當調整建設工期，把握好投產節奏；三是待風險預警等級轉為綠色後，在國家的指導下，由相應省級發展改革委(能源局)逐步恢復緩核、緩建煤電項目核准、建設。

隨著國家進一步嚴控煤電規劃建設，面向基建項目業務市場容量逐步萎縮，本集團將加快推進結構調整，促進轉型升級，構建發展新支撐。

10. 2016年11月，國家發改委、國家能源局發佈《電力發展「十三五」規劃》(《規劃一》)。

根據《規劃一》，預計2020年全社會用電量6.8–7.2萬億千瓦時，年均增長3.6%到4.8%，全國發電裝機容量20億千瓦，年均增長5.5%。

按照非化石能源消費比重達到15%的要求，到2020年，非化石能源發電裝機達到7.7億千瓦左右，比2015年增加2.5億千瓦左右，氣電裝機增加5,000萬千瓦，達到1.1億千瓦以上，煤電裝機力爭控制在11億千瓦以內，佔比降至約55%。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

During the “**Thirteenth Five-Year**” Plan, the ultra-low emissions reform implemented nationwide will achieve a coverage of approximately 0.42 billion KW, and the energy-saving reform will achieve a coverage of approximately 0.34 billion KW. By 2020, the country's average coal consumption rate for coal-fired power will be reduced to 310 grams standard coal for each one kilowatt hour; and the qualified power generation units of or above 300MW-class will all fulfill the ultra-low requirement.

We will strengthen our ability of peak regulation and improve our system's flexibility. During the “**Thirteenth Five-Year**” Plan, the thermal power generation units and the condensing units reform in the “Three-North (三北)” area are estimated to realize flexibility reform result of approximately 0.133 billion KW and 82 million KW respectively, while the condensing units reform result in other areas will be around 4.5 million KW.

Under the circumstances that industries featured with new-type energy saving, low-carbon emission and green environmental protection are priorities of national development. The ultra-low emission and nearly-no-emission technologies, the water-saving and zero-water-discharge technologies and other technologies applied on the technical transformation of obsolete power plants will bring enormous development benefit to the existing market, and thus form favourable environment to the Group's environmental protection and energy conservation business.

11. On 16 November 2016, NEA issued the “*Thirteenth Five-Year*” Plan for Wind Power Development (《風電發展“十三五”規劃》) (the “**Plan II**”).

The Plan II indicated that the aggregate grid connection installed capacity of wind power shall be more than 210 million KW by the end of 2020, among which, the grid connection installed capacity of offshore wind power shall be more than 5 million KW, and the annual output of wind power shall reach 420 billion KWH, representing approximately 6% of the aggregate national power production. The issue of abandoning wind power shall be effectively solved with the “three north” regions reaching the minimum requirement of national protective buyouts utilization hours, while the manufacturing and research and development capacity of wind power equipments shall be gradually improved, 3 to 5 manufacturers shall attain overall leading positions and therefore resulting to the increase of market shares. During the “**Thirteenth Five-Year**” period, the installed capacity of wind power shall increase by more than 80 million KW, among which, the installed capacity of offshore wind power shall increase by more than 4 million KW. During the “**Thirteenth Five-Year**” Period, total investment in the construction of wind power shall be more than RMB700 billion based on the onshore wind power investment of RMB7,800/KW and the offshore wind power investment of RMB16,000/KW.

「十三五」期間，全國實施煤電超低排放改造約4.2億千瓦，實施節能改造約3.4億千瓦。到2020年，全國現役煤電平均供電煤耗降至310克標煤每千瓦時；具備條件的30萬千瓦級以上機組全部實現超低。

加強調峰能力建設，提升系統靈活性。「十三五」期間，三北地區熱電機組靈活性改造約1.33億千瓦，純凝機組改造約8,200萬千瓦；其它地方純凝改造約450萬千瓦。

新型節能和綠色低碳環保產業成為國家重點發展方向，依託老電廠技術改造的超低及超超低排放技術、節水及廢水零排放技術等存量市場釋放巨大發展紅利，預計將對本集團環保節能產業形成利好。

11. 2016年11月16日，國家能源局印發《風電發展「十三五」規劃》(《規劃二》)。

《規劃二》指出，到2020年底，風電累計並網裝機容量確保達到2.1億千瓦以上，其中海上風電並網裝機容量達到500萬千瓦以上；風電年發電量確保達到4,200億千瓦時，約佔全國總發電量的6%。有效解決棄風問題，「三北」地區全國達到最低保障性收購利用小時數的要求；風電設備製造水平和研發能力不斷提高，3-5家設備製造企業全面達到國際先進水平，市場份額明顯提升。「十三五」期間，風電新增裝機容量8,000萬千瓦以上，其中海上風電新增容量400萬千瓦以上。按照陸上風電投資7,800元/千瓦、海上風電投資16,000元/千瓦測算，「十三五」期間風電建設總投資將達到7,000億元以上。



## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

The issuance of the Plan II is beneficial for the sustainable development of the renewable energy equipment manufacturing business.

《規劃二》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。

12. NDRC adjusted the benchmark on-grid price of the onshore wind power and Photovoltaic Power.

12. 國家發改委調整光伏發電陸上風電上網標桿電價。

On 26 December 2016, NDRC issued the *Notice on Adjusting the Benchmark On-grid Price of Onshore Wind Power and Photovoltaic Power* (NDRC Prices [2016] No. 2729) (《關於調整光伏發電陸上風電標桿上網電價的通知》發改價格[2016]2729號) (the "Notice"), indicating that the policy of the benchmark on-grid price of new energy shall be adjusted. After 1 January 2017, the benchmark on-grid price for the newly built photovoltaic power stations in category I to III resource region shall be adjusted to RMB0.65, RMB0.75 and RMB0.85 per KWH, representing a decrease of RMB0.15, RMB0.13 and RMB0.13 per KWH as compared to 2016. After 1 January 2018, the benchmark on-grid price for the newly approved onshore wind power stations in category I to IV resource region shall be adjusted to RMB0.40, RMB0.45, RMB0.49 and RMB0.57 per KWH, representing a decrease of RMB0.07, RMB0.05, RMB0.05 and RMB0.03 per KWH as compared to 2016 to 2017. In the respect of non-tender offshore wind power projects, the on-grid price of offshore wind power and intertidal wind power shall be determined separately. The benchmark on-grid price of the onshore wind power projects shall be RMB0.85 per KWH, and the benchmark on-grid price of the intertidal wind power projects shall be RMB0.75 per KWH. The operation of new energy enterprises will, to some extent, be affected, but according to the Thirteenth Five-Year Plan for Wind Power Development (《風電發展「十三五」規劃》), areas with lower wind speed shall be the development focus of the PRC's wind power, and the Group has obtained its competitive strength in the low wind speed wind turbine market, which will provide the Group with a broader market space.

2016年12月26日，國家發改委發佈《關於調整光伏發電陸上風電標桿上網電價的通知》(發改價格[2016]2729號)(「通知」)，決定調整新能源標桿上網電價政策。2017年1月1日之後，一類至三類資源區新建光伏電站的標桿上網電價分別調整為每千瓦時0.65元、0.75元、0.85元，比2016年電價每千瓦時下調0.15元、0.13元、0.13元。2018年1月1日之後，一類至四類資源區新核准建設陸上風電標桿上網電價分別調整為每千瓦時0.40元、0.45元、0.49元、0.57元，比2016-2017年電價每千瓦時降低7分、5分、5分、3分。對非招標的海上風電項目，區分近海風電和潮間帶風電兩種類型確定上網電價。近海風電項目標桿上網電價為每千瓦時0.85元，潮間帶風電項目標桿上網電價為每千瓦時0.75元。這將為新能源發電企業生產經營帶來一定影響，但據《風電發展「十三五」規劃》，未來低風速地區是中國風電開發的重點，而本集團在低風速風機市場具有競爭優勢，這將為本集團提供更廣闊的市場空間。

13. The National Energy Work Conference was held in December 2016, during which 9 for 2017 tasks were assigned, including attaching great importance to prevent and consume the overcapacity of coal power, promoting the scale development of non-fossil energy and the efficient and clean use of fossil energy. Certain targets were set on the conference, such as the consumption proportion of non-fossil energy shall increase to around 14.3%, the average coal consumption of the coal power station shall be 314g standard coal per KWH and the scale of improvement for energy saving shall be 60 million KW.

13. 全國能源工作會議於2016年12月舉行，會上提出2017年的九項任務，包括高度重視防範化解煤電產能過剩問題、推進非化石能源規模化發展和化石能源清潔高效利用。會議設定多個目標，其中包括非化石能源消費比重提高到14.3%左右，燃煤電廠平均供電煤耗314克標準煤／千瓦時，完成煤電節能改造規模6,000萬千瓦。

The National Energy Work Conference has deployed the major tasks for 2017, indicating a direction for the Group's optimizing assets and accelerating transition.

全國能源工作會議部署了2017年能源工作主要任務，為本集團優化資產，加速轉型指明了工作方向。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### Key Business Developments

The Group faced multiple challenges in 2016. As the world's economy entered into a stage of profound transformation and adjustment, China's economic growth continued to slow down, the problem of power overcapacity became increasingly prominent, power rationing issues in the clean and renewable energy industry continued to deteriorate, and the power market embarked on a course of **"Double Reductions and Double Lows"** ("雙降雙低"), (i.e. reduction of tariffs and reduction of utilization hours, and low power growth rate and low power load), the market competition has grown fiercely, which imposes great pressure on power generation companies. In 2016, the Group accelerated the optimization and adjustment of its corporate structure. In an effort to improve the overall performance of the Group, by optimizing team structure and intensifying business transformation and upgrading, the Group achieved steady growth in its business development, with main business performance indicators at their optimum in the past three years.

#### Environmental Protection Business

As at 31 December 2016, there were 35 desulfurization projects under construction, with an installed capacity of 30,205MW, including 19 desulfurization transformation projects with an installed capacity of 16,750MW, among which, there were 3 desulfurization concession transformation projects, with an installed capacity of 2,200MW; 16 newly built desulfurization EPC projects, with an installed capacity of 13,455MW, including 1 newly built desulfurization concession project, with an installed capacity of 1,320MW. There are 27 denitrification projects under construction, with an installed capacity of 21,010MW, including 17 denitrification transformation projects with an installed capacity of 11,095MW; 10 newly built denitrification EPC projects, with an installed capacity of 9,915MW, including 1 newly built denitrification concession project, with an installed capacity of 1,320MW.

Due to the integration of concession business and optimization of concession operation assets, the operation models of concession operations changed into three types: concession models, the operation and maintenance model of general contracting for tariff (only for the desulfurization generating units at present. This model generated income from tariff for desulfurization and assumed 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 (only for the desulfurization generating units at present. This model generated income from general operations and maintenance). As at 31 December 2016, the desulfurization concession operation of the Group had an aggregate installed capacity of 14,570MW, the operating units of the denitrification concession operation had an aggregate installed capacity of 11,000MW; the desulfurization generating units under the model of general contracting for tariff were of 3,340MW; the desulfurization generating units under the operation and maintenance model had an installed capacity of 16,690MW.

#### 主要業務發展

2016年本集團面對多項挑戰，如世界經濟進入深度轉型調整期，中國經濟增速持續放緩，電力產能過剩問題日益凸顯，清潔可再生能源限電仍在惡化，電力市場進入降電價、降利用小時、低電量增長率、低負荷率的「雙降雙低」通道，市場競爭加劇，發電企業面臨的壓力空前巨大。本集團2016年加快結構優化調整，以努力提高集團整體業績為目標，優化團隊建設，深化轉型升級，實現了企業平穩向好的發展，主要經營指標創近三年來最好水平。

#### 環保業務

截至2016年12月31日，本集團在建脫硫項目35個，裝機容量30,205兆瓦，其中脫硫改造項目19個，裝機容量16,750兆瓦（其中脫硫特許改造項目3個，裝機容量2,200兆瓦）；脫硫新建EPC項目16個，裝機容量13,455兆瓦（其中特許經營新建項目1個，裝機容量1,320兆瓦）。在建脫硝項目27個，裝機容量21,010兆瓦，脫硝改造項目17個，裝機容量11,095兆瓦；脫硝新建EPC項目10個，裝機容量9,915兆瓦（其中特許經營新建項目1個，裝機容量1,320兆瓦）。

因特許業務整合，優化特許經營資產，特許經營運營模式改變為三種：特許模式、電價總包運維模式（目前僅有脫硫機組。該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）及運維模式（目前僅有脫硫機組。該模式僅獲得一般性運維收益）。截止2016年12月31日，本集團脫硫特許在運機組裝機總容量為14,570兆瓦，脫硝特許經營在運機組裝機總容量11,000兆瓦；電價總包模式脫硫機組3,340兆瓦；運維模式脫硫機組16,690兆瓦。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

In 2016, as the stimulatory effect of the denitrification policy subsided, the conventional low-NOx combustion equipment business experienced a rapid decline. Going forward, the research and development of the new products of low-NOx combustion equipment business of the Group will help to improve the overall profitability of the low-NOx combustion equipment business.

For the year ended 31 December 2016, the annual production capacity of the denitrification catalysts of the Group was approximately 24,000.0m<sup>3</sup>. During the year, the Group processed approximately 205.2 million tons of sewage (including reclaimed water), representing a decrease of 13.5% compared to that of 2015, and the cumulative chemical oxygen demand (COD) emissions was approximately 76,000 tons.

#### Energy Conservation Solutions Business

For the Group's energy conservation solutions business, the plasma ignition business of the Group was influenced by industry policies and experienced a decrease in market demand and an increase in operating pressure. The expansion of overseas business markets including India, Korea and Turkey, etc. as well as the demonstration and application of new technology will be conducive to the development of the energy conservation business segment of the Group. In 2016, the Group entered into new energy management contracts ("EMC") with a cumulative value of approximately RMB107.4 million. The Group's two general contracting projects for power stations in Hami, Xinjiang and Ledong, Hainan have passed the quality examinations for project construction, attaining a high standard. Construction work for the project in Lanzhou, Gansu has also commenced, with high standards applied. On the one hand, the Group facilitated the projects in Shanghai, Inner Mongolia and Zhundong, Xinjiang, and on the other hand, it further expanded into the general contracting business of power stations in the clean energy industry.

#### Wind Power Products and Services Business

The Group's WTG sales volumes by product type for the years ended 31 December 2016 and 2015 are set forth below:

2016年，隨著脫硝政策刺激作用消退，常規低氮燃燒設備業務快速下滑，未來，本集團低氮燃燒設備業務新產品的研發將有助於提升低氮燃燒設備業務整體盈利水平。

截至2016年12月31日止年度，本集團脫硝催化劑年產能約為24,000.0立方米。本集團本年度污水處理(含城市循環用水)量約為205.2百萬噸，與2015年相比降低13.5%，COD(化學需氧量)累計減排量約為7.6萬噸。

#### 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受行業政策影響，市場需求下滑，經營壓力增大。拓展印度、韓國、土耳其等海外業務市場及新技術的示范應用將有利於本集團節能業務板塊的發展。2016年，本集團新簽訂合同能源管理(「EMC」)累計約為人民幣107.4百萬元。本集團新疆哈密和海南樂東兩個電站建設總承包項目已高標準通過工程達標投產驗收，甘肅蘭州項目也已高標準開工，正在持續跟進內蒙古上海廟、新疆准東項目進展，並積極向清潔能源方向拓展電站總承包業務。

#### 風電產品及服務業務

本集團於截至2016年及2015年12月31日止年度按產品類型劃分的風機銷量如下：

		Completed Sales 完成銷售 (units) (套)		Orders 訂單 (units) (套)	
				As at 31 December 2016 2016年12月31日止	
				Confirmed Orders 已確認訂單	Successful Tenders 成功競標
		2016	2015		
1.5 MW	1.5兆瓦	427	631	206	1
2.0 MW	2.0兆瓦	725	624	805	323
3.0 MW	3.0兆瓦	—	21	15	—
<b>Total</b>	<b>總數</b>	<b>1,152</b>	<b>1,276</b>	<b>1,026</b>	<b>324</b>

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

Investment in wind power in the PRC decreased for the first time in 2016, while demand for the Group's main product for the wind power products and services segment, the WTGs, began to slow down in 2016. In 2016, the Group further improved the quality control system for its wind turbine products by implementing whole-process quality control, passing a systematic qualification package covering quality, environment and occupational health and safety and obtaining qualification certificates from both an international authoritative organisation, UKAS, and the only qualified domestic organisation, CNAS. 3 QC projects won the Excellence Award granted by Beijing Quality Association. The average malfunctioning rate of the WTGs in use was 0.024 occurrence/unit/day, a troubleshooting maintenance time of 3.46 hours/occurrence, with a year-on-year decrease of 7.7% and 3.9% respectively. Meanwhile, the orders of wind turbine products from the outside system market grew amid difficult times and achieved outstanding performance. New orders for the whole year amounted to RMB2.08 billion, representing a year-on-year increase of 196.0%. The wind turbine products and services business maintained the sustained development growth trend, and Guodian Group was listed among the top 500 new energy enterprises in the world for the second consecutive year.

#### ***Steadily Expanding into the Domestic Market***

The Group has made significant progress in expanding into the domestic market. The total value of the contracts with customers outside of Guodian Group accounted for approximately 25.55% of the total value of new contracts entered into by the Group in the whole year. The local electric power enterprises and the affiliated electric power, chemical engineering and coal enterprises became new customers of the Group. In 2016, business in relation to the environmental protection sector market was stable, successfully signing the outer system large-scale million installed units denitrification and moisture removal EPC project, with orders amounting to RMB236 million. In the wind generator sector, there was a rather large increase in outer system wind power orders, of which foreign orders amounted to up to 24.98%. Meanwhile, as to institutional mechanisms, the Group has explored the establishment of a joint market development and results-sharing mechanism, so that with upstream and downstream coordination, the Group can carry out marketing efforts in an effective and synergic manner.

#### ***Actively Expanding into Overseas Market***

In 2016, the Group actively explored the overseas market and scientifically enlarged the overseas marketing network. In 2016, the total value of new contracts was approximately RMB282.04 million, which mainly includes:

- a (3+1)×135MW power station seawater desulfurization project in the Philippines
- a 2X660MW seawater desulfurization EP (design, procurement and contracting) project in the Philippines

中國的風電投資於2016年首次出現下降，對本集團風電產品及服務分部的主要產品－風機的需求於2016年內開始放緩。本集團2016年對風機產品進一步優化完善質量管控體系，推行全流程質量管控，通過質量、環境、職業健康安全三體系一體化認證，獲得國際權威機構UKAS及國內唯一的認可機構CNAS雙重認證證書；3個QC項目獲北京質量協會優秀獎；實現了在運風機平均故障率0.024次／台／天、單次故障維修時間3.46小時／次，較去年同期分別下降7.7%和3.9%。同時，風機產品系統外市場銷售在逆境中增長，取得優秀業績，全年新簽訂單額20.8億元，較去年同期提升196.0%。風機產品及服務業務保持了持續向好的發展態勢，科環集團連續第二年進入全球新能源企業500強。

#### ***穩步拓展國內市場***

目前，國內市場業務的推進已卓有成效。本集團在國電集團系統外簽訂的合同總金額佔本集團全年新簽合同總金額約25.55%，地方能源企業及其所屬的電力、化工、煤炭等產業公司成為新客戶。2016年，環保板塊市場業務穩定，成功簽訂系統外大型百萬機組脫硫及濕除EPC項目，訂單額達人民幣236百萬元；風機板塊系統外風電訂單量增長較大，外單比例達24.98%。同時本集團在體制機制方面，探索建立市場合作開發和成果共享機制，上下聯動、有效協同地開展市場和營銷工作。

#### ***積極拓展海外市場***

2016年，本集團積極拓展海外市場，科學佈局海外營銷網絡。2016年新簽合同總額約人民幣282.04百萬元，主要是：

- 菲律賓某(3+1)×135兆瓦電站海水脫硫工程
- 菲律賓某2X660兆瓦海水脫硫EP(設計、採購承包)項目



## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### **Dedication to Technological Innovation and Research and Development**

#### **致力於技術革新和研發**

The Group dedicated itself to technological innovations and research and development to enhance core competitiveness. The dedication of the Group led to a number of achievements in the following respects:

本集團為增強核心競爭力，在科技創新及研發方面努力不懈。本集團的努力體現在本集團業務多個領域的成果中：

- Setting up a complete scientific and technological R&D system. The Group now has 4 national scientific R&D platforms including the “**national key laboratory for wind power equipment and system technology**”, 12 provincial scientific R&D platforms, and 2 postdoctoral scientific research centers, with incomparable advantages in this regard domestically.
- Undertaking major scientific projects and participating in the enactment of national and industrial standards. The Group's subsidiaries, Longyuan Environmental, Longyuan Technology, Beijing Guodian Zhishen Control Technology Co., Ltd. and Guodian Longyuan Power Technology and Engineering Co., Ltd. were approved to assume the sub-project of the “Coal-fired Power Station Low Cost and Ultra Low Emission Control Technology and Equipment”, which is a national key R&D project funded by the Ministry of Science and Technology. The Group actively participated in formulating and modifying national and industrial standards. By the end of 2016, it has leaded or participated in formulating 25 international and national standards, and 15 industrial standards. In 2016, the Group gained a total of 223 patents, including 81 for invention.
- Greatly promoting new technologies and transforming advanced technologies into product advantage. The Group worked hard to push forward the integrated application and innovation of advanced mature products of the Company, such as the desulfurization and denitrification, plasma low-nitrogen combustion, water treatment and automation into demonstration projects. It promoted the construction of demonstration project in Taizhou power plant featuring “key technology for secondary reheating of 1,000MW ultra supercritical units”, a project funded by the national sci-tech support plan, in a high-standard and high-quality manner; it made positive efforts in pressing ahead with the R&D and popularization of ultra-clean treatment technology targeted at coal-fired power plant flue gas emissions; doubled efforts were also made to promote the R&D and application of PM2.5 removal technology. The Group's subsidiary, United Power completed the R&D and application of 1.5MW-97, 2MW-115 and 2MW-121 wind turbines for the low wind speed areas with the average wind speed lingering at 5.5–6.5m/s; Guodian Longyuan Electrical Co., Ltd. (“**Longyuan Electrical**”) successfully finished the R&D of the third-generation converter; the Group vigorously advanced the R&D and application of zero wastewater discharge for thermal power plants.
- 搭建完備的科技研發體系。本集團目前擁有「**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，2個博士後科研工作站，科研實力居國內行業領軍地位。
- 承擔重大科研項目，參與制訂國家、行業標準。本集團附屬公司龍源環保、龍源技術、北京國電智深控制技術有限公司、國電龍源電力技術工程有限責任公司獲批科技部國家重點研發計劃項目《**燃煤電站低成本超低排放控制技術及規模裝備**》子課題。積極參與國家及行業標準的制訂和修訂工作，截至2016年底累計主持、參與制訂國際和國家標準25項、行業標準15項。2016年度本集團共計獲得知識產權223項，其中發明專利81項。
- 大力推廣新技術，將領先技術轉化為產品優勢。本集團積極推動公司脫硫脫硝、等離子低氮燃燒、水務、自動化等先進成熟產品在示范工程上的整體應用和集成創新。本集團高標準、高質量地推進國家科技支撐計劃「**二次再熱1,000兆瓦超超臨界機組關鍵技術**」泰州電廠示范工程建設；本集團積極推進燃煤電廠煙氣排放超淨治理技術的研發和推廣工作；大力推進PM2.5脫除技術研發及應用工作；本集團附屬公司聯合動力完成針對年平均風速5.5–6.5m/s的低風速區域的1.5MW-97型、2MW-115型、2MW-121型風機的研發及應用工作；國電龍源電氣有限公司（「**龍源電氣**」）成功完成第三代變流器研制工作；本集團積極推進火電廠廢水零排放治理技術研發及應用工作。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

As a result of the remarkable achievements in technological innovation and R&D, in 2016, the Group has established a strong foothold in this field while winning numerous awards:

- United Power was awarded “**the Second Prize for National Science and Technology Progress Award**” by the State Council for its “key technology and application on new energy power generation dispatch and operation”.
- Longyuan Environmental was awarded “**the Second Prize for National Environmental Protection Science and Technology Award**” by the Ministry of Environmental Protection for its “dual-cycle limestone-gypsum wet flue gas desulfurization technology for ultra-low emissions of coal-fired power plants”.
- Longyuan Environmental and United Power were awarded “**the Third Prize for the China Power Science and Technology Progress Award**” by Chinese Society of Electrical Engineering for their “limestone-gypsum wet dual-cycle desulfurization technology for ultra-low emissions of coal-fired power plants” and “research on key technology and R&D for low wind speed MW wind turbine generators” respectively.
- United Power was awarded “**the Third Prize for Science and Technology Progress Award of Hebei Province**” for “the development and manufacture of 2MW low wind speed wind turbine generator”, “**the Third Prize for Science and Technology Progress Award of Jiangsu Province**” for its “2MW low wind speed double-fed induction wind turbine generator” and “**the First Prize for the China Power Technological Innovation Award**” by China Electricity Council for its “research on key technology and R&D for low wind speed MW wind turbine generators”.
- Longyuan Technology was awarded “**the Second Prize for the China Power Technological Innovation Award**” by China Electricity Council for its “‘W’-type boiler low-NO<sub>x</sub> coal power combustion” technology.
- 本集團在技術創新和研發方面取得的卓越成就使本集團在2016年獲得多項行業肯定及獲頒多項獎項，取得多個新亮點：
- 聯合動力《新能源發電調度運行關鍵技術及應用》獲得國務院頒發的「**國家科學技術進步二等獎**」。
- 龍源環保《適用於燃煤電廠超低排放的雙循環石灰石－石膏濕法煙氣脫硫技術》獲得環境保護部頒發的「**國家環境保護科學技術二等獎**」。
- 龍源環保《適用於燃煤電廠超低排放的石灰石－石膏濕法雙循環脫硫技術》、聯合動力《低風速兆瓦級風電機組關鍵技術研究與機組研發》獲得中國電機工程學會頒發的「**中國電力科學技術進步三等獎**」。
- 聯合動力《2MW低風速風力發電機組的研製》項目獲得「**河北省科學技術進步三等獎**」，《2MW低風速雙饋風力發電機組》獲得「**江蘇省科學技術進步三等獎**」，《低風速兆瓦級風電機組關鍵技術研究與機組研發》獲得中國電力企業聯合會頒發的「**中國電力創新一等獎**」。
- 龍源技術《「W」火焰鍋爐低氮煤粉燃燒技術》獲得中國電力企業聯合會頒發的「**中國電力創新二等獎**」。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### Analysis of 2016 Financial Results

Please read this section in conjunction with the consolidated financial statements of the Group for the year ended 31 December 2016.

#### Analysis of Consolidated Results

##### Revenue

Total revenue of the Group in 2016 was approximately RMB15,970.7 million, representing a decrease of 22.7% from approximately RMB20,654.4 million in 2015. Compared with 2015, the Group's revenues decreased, which was mainly due to the decrease in business volume of the various business sectors as a result of industry and market impact. Revenues from environmental protection, energy conservation solutions, wind power products and services, and solar power products and services businesses (discontinued operation) decreased by approximately RMB1,837.3 million, RMB1,724.1 million, RMB578.8 million and RMB488.9 million, respectively, representing decreases of 23.7%, 55.2%, 6.7% and 71.4%, respectively as compared to those for 2015. The decrease in revenues from environmental protection business was mainly due to the Group's disposal of certain desulfurization and denitrification assets and cessation of relevant desulfurization concession businesses and the significant decrease in revenue from the EPC project general contracting business. The decrease in revenue from energy conservation solutions business in 2016 was primarily due to: the bulk of the construction for the Group's two general contracting projects for power stations in Ledong, Hainan and Hami, Xinjiang had been finished in previous years and only part of the work needed to be done in 2016 in order to complete the projects; the general contracting projects of power stations in Lanzhou, Gansu and Shanghaímiao, Inner Mongolia just started the construction work in late 2016 and there has been no significant progress so far, which caused a significant decrease in revenue generated from the general contracting business of power stations; and the market demand for plasma business quickly reduced, leading to a significant decrease in revenue. The decrease in the revenue attributable to the wind power products and services business was mainly attributable to the slight decrease in number of wind turbines of the Group which completed testing in 2016. The decrease in the revenue of solar power products and services businesses (discontinued operation) was primary due to the Group's decisions to discontinue all solar power business by the end of 2015 and to dispose of the 90% equity interest in Guodian Solar Co., Ltd. ("GD Solar"), a wholly-owned subsidiary of the Company, by entering into an agreement with Tianjin Zhonghuan Semiconductor Co., Ltd. ("Zhonghuan") in 2016 (the assets to be disposed of mainly include high-efficiency production lines etc., which is not yet completed as at the date of this report).

#### 2016年財務業績分析

閱讀本節時請一併閱讀截至2016年12月31日止年度本集團的合併財務報表。

#### 合併業績分析

##### 收入

2016年，本集團的總收入約為人民幣15,970.7百萬元，與2015年約人民幣20,654.4百萬元相比，下降22.7%。與2015年相比，本集團收入減少，主要原因是受行業和市場影響，各業務板塊業務量減少所致。與2015年相比，環保、節能解決方案、風電產品及服務和太陽能產品及服務業務（已終止經營）收入分別減少約人民幣1,837.3百萬元、人民幣1,724.1百萬元、人民幣578.8百萬元和人民幣488.9百萬元，減少率分別為23.7%、55.2%、6.7%及71.4%。環保業務產生的收入降低主要由於本集團出售若干脫硫脫硝資產以及終止相關脫硫特許經營業務以及EPC工程總承包業務收入大幅減少。節能解決方案業務產生的收入降低主要由於2016年本集團電站建設總承包業務承建的海南樂東和新疆哈密兩個項目已於以前年度完成大部份工程量，本年僅執行了部份收尾工作。甘肅蘭州、內蒙古上海廟等電站總承包項目於2016年末剛剛啟動，目前尚未有實質性進展，導致本年電站建設總承包業務收入大幅下降，以及等離子業務市場需求快速萎縮，收入大幅下滑。風電產品及服務業務產生的收入略有降低主要由於2016年本集團完成調試測試的風機數量略有下降。太陽能產品及服務業務（已終止經營）產生的收入降低主要是由於本集團已於2015年底決定關停全部光伏業務，並於2016年與天津中環半導體股份有限公司（「中環股份」）簽訂協議轉讓本公司之全資附屬公司國電光伏有限公司（「國電光伏」）90%股權，處置範圍內資產主要包括高效生產線等，上述處置至本報告日期止尚未完成。

## 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 segment and as a percentage of the total revenue of the Group for the years ended 31 December 2016 and 2015, respectively:

下表分別載列截至2016年及2015年12月31日止年度按分部劃分的本集團收入及其佔本集團總收入的百分比：

		2016		2015	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(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	5,912.7	37.0	7,750.0	37.5
Energy conservation solutions	節能解決方案	1,400.5	8.8	3,124.6	15.1
<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	8,038.8	50.3	8,617.6	41.8
Solar power products and services (discontinued operation)	太陽能產品及服務 (已終止經營)	195.4	1.2	684.3	3.3
All others	所有其他	423.3	2.7	477.9	2.3
<b>Total</b>	<b>總計</b>	<b>15,970.7</b>	<b>100.0</b>	<b>20,654.4</b>	<b>100.0</b>

#### Cost of sales

#### 銷售成本

In 2016, the cost of sales for the Group amounted to approximately RMB12,397.5 million, representing a decrease of approximately RMB4,631.7 million or 27.2%, as compared to that in 2015 of approximately RMB17,029.2 million. This decrease was primarily due to the combined effect of: (1) the consistent decrease in selling costs and revenue for the Group's energy conservation solutions, wind power products and services, environmental protection and solar power products and services (discontinued operation); and (2) the decrease in the market price of large materials.

2016年本集團銷售成本約為人民幣12,397.5百萬元，與2015年的約人民幣17,029.2百萬元相比減少約人民幣4,631.7百萬元或27.2%。減少的主要原因是以下兩方面的雙重影響。(1)本集團的節能解決方案、風電產品及服務業務、環保和太陽能產品及服務業務(已終止經營)的銷售成本均隨着其收入減少而相應減少；(2)大型物資市場價格下降。



## 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 segment and as a percentage of total cost of sales of the Group for the years ended 31 December 2016 and 2015, respectively:

下表分別載列截至2016年及2015年12月31日止年度按分部劃分的本集團銷售成本及其佔本集團總銷售成本的百分比：

		2016		2015	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(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	4,769.0	38.5	6,359.8	37.3
Energy conservation solutions	節能解決方案	1,144.8	9.2	2,812.9	16.5
<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	6,044.5	48.8	6,737.4	39.6
Solar power products and services (discontinued operation)	太陽能產品及服務 (已終止經營)	190.2	1.5	865.2	5.1
All others	所有其他	249.0	2.0	253.9	1.5
<b>Total</b>	<b>總計</b>	<b>12,397.5</b>	<b>100.0</b>	<b>17,029.2</b>	<b>100.0</b>

#### Gross profit and gross profit margin

#### 毛利及毛利率

For the foregoing reasons, gross profit of the Group in 2016 amounted to approximately RMB3,573.2 million, representing a decrease of approximately RMB52.0 million, or 1.4%, as compared to that in 2015 of approximately RMB3,625.2 million. The decrease in gross profit was mainly due to the decrease in gross profit for the environmental protection business and energy conservation solutions, the decrease of which was greater than the increase in gross profit for wind power products and services. The average gross profit margin of the Group across all segments of the Group increased from 17.6% in 2015 to 22.4% in 2016. The increase in gross profit margin was primarily attributable to the significant increase in gross profit margin for energy conservation solutions and the slight increase in gross profit margin for the Group's wind power products and services business and environmental protection business. The significant increase in gross profit margin for energy conservation solutions was primarily attributable to the higher increase in gross profit margin for the general contracting business of power stations, which is a newly developed business area of the Group in recent years. Although it has been carried out for a short time, with the benefit of the execution experience and technical personnel reserve from single EPC projects such as the desulfurization and water-related projects in the previous stage, it has become an important profit growth point for the development of the Group in just two years' time.

鑑於上述原因，本集團2016年的毛利約為人民幣3,573.2百萬元，與2015年的約人民幣3,625.2百萬元相比約降低人民幣52.0百萬元或1.4%。毛利下降主要是因為環保業務、節能解決方案的毛利減少幅度高於風電產品及服務毛利增加幅度所致。本集團所有分部平均毛利率從2015年的17.6%增長至2016年的22.4%，主要由於節能解決方案毛利率大幅增加，風電產品及服務業務、環保業務毛利率略有增加。節能解決方案的毛利率大幅提高，主要是因為電站總承包業務毛利率增幅較高，電站總承包業務是本集團近年來新開拓的業務領域，雖然開展時間較短，但受益於前期脫硫、水務工程等單項EPC項目的執行經驗和人員技術儲備，短短兩年已經成為支撐本集團發展的一個重要利潤增長點。

## 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 segment for the years ended 31 December 2016 and 2015, respectively:

下表分別載列截至2016年及2015年12月31日止年度按分部劃分的本集團毛利和毛利率：

		2016		2015	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(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	1,143.7	19.3	1,390.2	17.9
Energy conservation solutions	節能解決方案	255.7	18.3	311.7	10.0
<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	1,994.3	24.8	1,880.2	21.8
Solar power products and services (discontinued operation)	太陽能產品及服務 (已終止經營)	5.2	2.7	(180.9)	(26.4)
All others	所有其他	174.3	41.2	224.0	46.9
<b>Total</b>	<b>總計</b>	<b>3,573.2</b>	<b>22.4</b>	<b>3,625.2</b>	<b>17.6</b>

#### Other revenue

#### 其他收入

Other revenue of the Group's continuing operations decreased by RMB20.0 million, or 6.1%, from approximately RMB325.5 million for 2015 to approximately RMB305.5 million for 2016, which was primarily due to the decrease of interest income; other revenue of the Group's discontinued operation increased by RMB32.5 million, or 401.2%, from approximately RMB8.1 million for 2015 to approximately RMB40.6 million, which was primarily due to the one-off tax refund of RMB17.8 million in 2016.

2016年，本集團持續經營業務的其他收入約人民幣305.5百萬元，較2015年的約人民幣325.5百萬元減少人民幣20.0百萬元或6.1%，主要原因是利息收入的減少；本集團已終止經營業務的其他收入約人民幣40.6百萬元，較2015年的約人民幣8.1百萬元增加人民幣32.5百萬元或401.2%，主要原因是2016年一次性收到稅收返還人民幣17.8百萬元。

#### Other net income/(loss)

#### 其他收益／(虧損)淨額

The other net income from continuing operations of the Group for 2016 is approximately RMB328.8 million, while other net income for 2015 was approximately RMB29.3 million. That was primarily due to the net gain from disposal of equity in an associate, Longyuan Cooling, of RMB189 million. Other net income from the Group's discontinued operation is approximately RMB87.7 million, representing an increase of RMB93.0 million as compared to other net loss of approximately RMB5.7 million in 2015, which is primarily due to the Group having negotiated with its creditors and having recorded a net gain as part of the Group's discontinuation of its operation in the solar power products and services segment.

2016年，本集團持續經營業務其他收益淨額約人民幣328.8百萬元，而2015年其他收益淨額約人民幣29.3百萬元，主要是由於處置聯營公司龍源冷卻權益產生的淨收益人民幣189百萬元；本集團已終止經營業務的其他收益淨額約人民幣87.7百萬元，較2015年其他虧損淨額約人民幣5.7百萬元增加人民幣93.0百萬元，主要是由於本集團已與其債權人磋商及因本集團終止經營太陽能產品及服務分部業務而錄得淨收益。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### **Selling and distribution expenses**

Selling and distribution expenses of the Group's continuing operations increased by RMB230.5 million, or 20.3%, from approximately RMB1,136.4 million for 2015 to approximately RMB1,366.9 million for 2016. The increase was primarily due to the increase in maintenance costs for WTG products; selling and distribution expenses of the Group's discontinued operation slightly increased by RMB0.6 million, or 6.3%, from approximately RMB9.5 million for 2015 to approximately RMB10.1 million.

#### **Administrative expenses**

Administrative expenses of the Group's continuing operations decreased by approximately RMB276.5 million, or 13.1%, from approximately RMB2,113.5 million for 2015 to approximately RMB1,837.0 million for 2016; administrative expenses of the Group's discontinued operation decreased by approximately RMB4,040.3 million, or 97.4%, from approximately RMB4,150.0 million for 2015 to approximately RMB109.7 million. The decrease in administrative expenses for the year was primarily due to the Group recording impairment losses resulting from the Group's discontinuation of operation in the solar power products and services segment during the year ended 31 December 2015.

#### **Operating profit/(loss)**

As a result of foregoing factors, operating profit of the Group's continuing operations increased by approximately RMB87.5 million, or 9.6%, from approximately RMB911.0 million for 2015 to approximately RMB998.5 million; operating profit of the Group's discontinued operation increased by approximately RMB4,351.8 million, from loss of approximately RMB4,338.1 million for 2015 to profit of approximately RMB13.7 million.

#### **Finance costs**

Finance cost of the Group's continuing operations increased by approximately RMB14.3 million, or 2.5%, from approximately RMB576.1 million for 2015 to approximately RMB590.4 million for 2016; finance cost of the Group's discontinued operation decreased by RMB177.4 million, from approximately RMB325.2 million for 2015 to approximately RMB147.8 million.

#### **Profit/(loss) before taxation**

As a result of foregoing factors, profit before taxation of the Group's continuing operations increased by approximately RMB316.1 million, or 162.8%, from approximately RMB194.2 million for 2015 to approximately RMB510.3 million; loss before taxation of the Group's discontinued operation decreased by approximately RMB4,529.2 million, or 97.1%, from approximately RMB4,663.3 million for 2015 to approximately RMB134.1 million.

#### **銷售及分銷開支**

2016年，本集團持續經營業務銷售及分銷開支約人民幣1,366.9百萬元，較2015年的約人民幣1,136.4百萬元增加人民幣230.5百萬元或20.3%，主要是由於風機產品維修支出成本的增加；本集團已終止經營業務銷售及分銷開支約人民幣10.1百萬元，較2015年的約人民幣9.5百萬元略有增加人民幣0.6百萬元或6.3%。

#### **行政開支**

2016年，本集團持續經營業務行政開支約人民幣1,837.0百萬元，較2015年的約人民幣2,113.5百萬元減少約人民幣276.5百萬元或13.1%；本集團已終止經營業務行政開支約人民幣109.7百萬元，較2015年的約人民幣4,150.0百萬元減少約人民幣4,040.3百萬元或97.4%。本年行政開支的減少主要是由於本集團於截至2015年12月31日止年度終止經營太陽能產品及服務分部業務而錄得減值虧損。

#### **經營利潤／(虧損)**

鑒於上述原因，本集團持續經營業務的經營利潤從2015年的約人民幣911.0百萬元增加至約人民幣998.5百萬元，增加約人民幣87.5百萬元或9.6%；本集團已終止經營業務的經營利潤從2015年的虧損約人民幣4,338.1百萬元增加至盈利約人民幣13.7百萬元，增加約人民幣4,351.8百萬元。

#### **財務成本**

2016年，本集團持續經營業務的財務成本約人民幣590.4百萬元，較2015年的約人民幣576.1百萬元增加約人民幣14.3百萬元或2.5%；本集團已終止經營業務的財務成本約人民幣147.8百萬元，較2015年約人民幣325.2百萬元減少177.4百萬元。

#### **稅前利潤／(虧損)**

鑒於上述原因，本集團持續經營業務的稅前利潤從2015年的約人民幣194.2百萬元增加至約人民幣510.3百萬元，增加約人民幣316.1百萬元或162.8%；本集團已終止經營業務的稅前虧損從2015年的約人民幣4,663.3百萬元減少至約人民幣134.1百萬元，減少約人民幣4,529.2百萬元或97.1%。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### **Income tax**

The Group's income tax charges for continuing operations decreased by approximately RMB17.2 million, or 12.3%, from RMB139.9 million for 2015 to RMB122.7 million for 2016.

The effective tax rate for the Group's continuing operations decreased from 72.0% for 2015 to 24.0% for 2016, which was primarily due to the Group not recognizing deferred tax assets in respect of certain unutilised tax losses and unutilised tax credits in the year ended 31 December 2015.

#### **Profit for the year**

As a result of foregoing factors, the Group recorded profit for the year of approximately RMB253.5 million in 2016, as compared with the loss of approximately RMB4,689.7 million in 2015.

#### **Loss attributable to non-controlling interests**

As a result of the foregoing factors, loss attributable to non-controlling interests of the Group decreased by approximately RMB1.2 million, or 2.4%, from approximately RMB50.1 million for 2015 to approximately RMB48.9 million for 2016.

#### **Profit attributable to equity shareholders of the Company**

As a result of the foregoing factors, profit attributable to equity shareholders of the Company was approximately RMB302.4 million for 2016, representing an increase of approximately RMB4,942.0 million, or 106.5%, from a loss attributable to equity shareholders of the Company of approximately RMB4,639.6 million for 2015.

#### **所得税**

本集團持續經營業務的所得稅費用由2015年的人民幣139.9百萬元下降至2016年的人民幣122.7百萬元，減少約人民幣17.2百萬元或12.3%。

本集團持續經營業務的實際稅率從2015年的72.0%減少至2016年的24.0%，主要是由於本集團於截至2015年12月31日止年度並無就若干未動用稅項虧損及未動用稅項抵免確認遞延稅項資產。

#### **本年利潤**

鑒於上述原因，2016年本集團錄得本年利潤為約人民幣253.5百萬元，而2015年錄得虧損約人民幣4,689.7百萬元。

#### **非控股權益應佔虧損**

鑒於上述原因，本集團非控股權益應佔虧損由2015年應佔虧損的約人民幣50.1百萬元下降至2016年的約人民幣48.9百萬元，下降約人民幣1.2百萬元或2.4%。

#### **本公司權益股東應佔利潤**

鑒於上述原因，本公司2016年的權益股東應佔利潤為約人民幣302.4百萬元，和2015年的權益股東應佔虧損為約人民幣4,639.6百萬元相比增加約人民幣4,942.0百萬元或106.5%。



## 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, segment gross profit and segment operating profit, each as a percentage of total Group revenues, Group gross profit, and Group operating profit for the years ended 31 December 2016 and 2015, respectively:

下表分別載列截至2016年及2015年12月31日止年度本集團的分部收入、分部毛利和分部經營利潤以及各自佔相關期間本集團收入、毛利和經營利潤的百分比：

		2016		2015	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(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	5,912.7	37.0	7,750.0	37.5
Gross profit	毛利	1,143.7	32.0	1,390.2	38.3
Operating profit	經營利潤	511.6	50.5	236.1	(6.9)
Energy conservation solutions:	節能解決方案：				
Revenue	收入	1,400.5	8.8	3,124.6	15.1
Gross profit	毛利	255.7	7.2	311.7	8.6
Operating profit	經營利潤	53.1	5.2	208.0	(6.1)
<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：				
Revenue	收入	8,038.8	50.3	8,617.6	41.8
Gross profit	毛利	1,944.3	55.8	1,880.2	51.9
Operating profit	經營利潤	209.5	20.7	422.9	(12.3)
Solar power products and services (discontinued operation):	太陽能產品及服務（已終止經營）：				
Revenue	收入	195.4	1.2	684.3	3.3
Gross profit	毛利	5.2	0.1	(180.9)	(5.0)
Operating profit	經營利潤	13.7	1.4	(4,338.1)	126.6

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### Environmental Protection and Energy Conservation Solutions

#### 環保及節能解決方案

##### Environmental protection

##### 環保

##### Revenue

##### 收入

Revenue from the environmental protection business decreased by approximately RMB1,837.3 million or 23.7%, from approximately RMB7,750.0 million for 2015 to approximately RMB5,912.7 million for 2016. The decrease was mainly attributable to the decrease in revenue from the desulfurization, denitrification, low NOx and ash removal businesses of the Group. Compared with the corresponding period of 2015, revenue generated from the SO<sub>2</sub> emission reduction business decreased by approximately RMB569.9 million, or a decrease of approximately 15.2%; revenue generated from the NOx emission reduction business decreased by approximately RMB904.6 million, or a decrease of approximately 47.7%; and revenue generated from the low NOx combustion equipment business decreased by approximately RMB243.2 million, or a decrease of approximately 60.7%. The decrease of environmental protection business of the Group was mainly attributable to the Group having disposed of certain desulfurization and denitrification assets and having ceased the relevant businesses during the year ended 31 December 2016.

環保業務收入從2015年的約人民幣7,750.0百萬元減少至2016年的約人民幣5,912.7百萬元，減少約人民幣1,837.3百萬元或23.7%。主要是由於本集團脫硫、脫硝、低氮、除塵業務收入減少所致。與2015年相比，脫硫業務產生的收入減少約人民幣569.9百萬元，降幅約15.2%；脫硝業務產生的收入減少約人民幣904.6百萬元，降幅約47.7%；低氮燃燒設備業務產生的收入減少約人民幣243.2百萬元，降幅約60.7%。本集團環保業務的減少主要是因為本集團於截至2016年12月31日止年度出售若干脫硫脫硝資產以及終止相關業務所致。

The following table sets out the revenues from the business lines comprising the Group's environmental protection business, each as a percentage of the revenue from this business, for the years ended 31 December 2016 and 2015, respectively:

下表分別載列截至2016年及2015年12月31日止年度包括在本集團環保業務中各業務線的收入，以及各自佔相關年度該業務收入的百分比：

		2016		2015	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(人民幣百萬元)	%
SO <sub>2</sub> emission reduction	脫硫	3,167.7	53.5	3,737.6	48.2
NOx emission reduction	脫硝	992.0	16.8	1,896.6	24.5
Low NOx combustion equipment	低氮燃燒設備	157.6	2.7	400.8	5.2
Water treatment	水處理	1,158.4	19.6	1,088.0	14.0
Ash removal	除塵	437.0	7.4	627.0	8.1
<b>Total</b>	<b>總計</b>	<b>5,912.7</b>	<b>100.0</b>	<b>7,750.0</b>	<b>100.0</b>

##### Cost of sales

##### 銷售成本

Cost of sales for the environmental protection business of the Group decreased by approximately RMB1,590.8 million, or 25.0%, from approximately RMB6,359.8 million for 2015 to approximately RMB4,769.0 million for 2016, which was consistent with the decrease in revenues from these business lines.

本集團環保業務的銷售成本從2015年的約人民幣6,359.8百萬元降低至2016年的約人民幣4,769.0百萬元，減少約人民幣1,590.8百萬元或25.0%。這與該業務線的收入下降相一致。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### Gross profit and gross profit margin

As a result of the foregoing reasons, gross profit attributable to the environmental protection business decreased by approximately RMB246.5 million, or 17.7%, from approximately RMB1,390.2 million for 2015 to approximately RMB1,143.7 million for 2016. Gross profit margin for this business increased from 17.9% to 19.3%, which was primarily attributable to the increases in gross profit margins for the SO<sub>2</sub> emission reduction, NOx emission reduction and ash removal businesses.

The following table sets out the changes in gross profit margins for the business lines comprising the Group's environmental protection business for the year ended 31 December 2016 as compared with the year ended 31 December 2015:

		2016 (%)	2015 (%)
SO <sub>2</sub> emission reduction	脫硫	20.0	15.9
NOx emission reduction	脫硝	29.5	25.1
Low NOx combustion equipment	低氮燃燒設備	11.9	12.1
Water treatment	水處理	15.7	21.8
Ash removal	除塵	18.6	16.7

#### 毛利及毛利率

鑑於上述原因，環保業務產生的毛利從2015年的約人民幣1,390.2百萬元減少至2016年的約人民幣1,143.7百萬元，減少約人民幣246.5百萬元或17.7%。此業務的毛利率從17.9%增至19.3%，主要因為脫硫、脫硝和除塵業務的毛利率上升。

下表載列截至2016年12月31日止年度構成本集團環保業務的業務線毛利率與截至2015年12月31日止年度相比的變化：

#### Energy conservation solutions

##### Revenue

Revenue attributable to the energy conservation solutions business decreased by approximately RMB1,724.1 million or 55.2%, from approximately RMB3,124.6 million for 2015 to approximately RMB1,400.5 million for 2016. The decrease was mainly due to the fact that the bulk of the construction for the two projects in Hami of Xinjiang and Ledong of Hainan undertaken by the general contracting business of power station construction of the Group had been finished in previous years and only part of the work needed to be done in 2016 in order to complete the projects, while those in Lanzhou of Gansu and Shanghaimeiao of Inner Mongolia just started the construction work in late 2016 and there has been no significant progress so far, resulting in the significant decrease in revenue generated from the general contracting business of power stations.

#### 節能解決方案

##### 收入

節能業務產生的收入從2015年的約人民幣3,124.6百萬元減少至2016年的人民幣約1,400.5百萬元，減少約人民幣1,724.1百萬元或55.2%。收入減少主要是因為本集團電站建設總承包業務承建的新疆哈密和海南樂東兩個項目均已於以前年度完成大部份工程量，本年僅執行了部份收尾工作。甘肅蘭州、內蒙古上海廟等電站總承包項目於2016年末剛剛啟動，目前尚未有實質性進展，導致電站總承包業務收入大幅下降。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

The following table sets out the revenues from the business lines comprising the Group's energy conservation solutions business, each as a percentage of revenue from this business, for the years ended 31 December 2016 and 2015 respectively.

下表分別載列截至2016年及2015年12月31日止年度包括在本集團節能解決方案業務中各業務線的收入，以及各自佔相關年度該業務收入的百分比：

		2016		2015	
		(RMB million)	%	(RMB million)	%
		(人民幣百萬元)	%	(人民幣百萬元)	%
Plasma-assisted coal ignition and combustion stabilization	等離子體點火及穩燃	238.5	17.0	360.8	11.5
Steam turbine flow passage retrofitting and maintenance	汽輪機通流改造及維修	40.1	2.9	60.1	1.9
Energy management contract ("EMC")	合同能源管理	107.4	7.7	146.4	4.7
Waste heat recovery	餘熱回收	6.0	0.4	—	—
General contracting for power stations	電站建設總承包	941.8	67.2	2,495.5	79.9
Boiler comprehensive utilization and retrofitting	鍋爐綜合利用改造	66.7	4.8	61.8	2.0
<b>Total</b>	<b>總計</b>	<b>1,400.5</b>	<b>100.0</b>	<b>3,124.6</b>	<b>100.0</b>

#### Cost of sales

#### 銷售成本

Cost of sales for the energy conservation solutions business decreased by approximately RMB1,668.1 million or 59.3%, from approximately RMB2,812.9 million for 2015 to approximately RMB1,144.8 million for 2016. Such decrease was consistent with the decrease in revenue from this business segment.

節能解決方案業務產生的銷售成本從2015年的約人民幣2,812.9百萬元減少至2016年的約人民幣1,144.8百萬元，減少約人民幣1,668.1百萬元或59.3%，與該等業務的收入減少保持一致。

#### Gross profit and gross profit margins

#### 毛利及毛利率

As a result of the foregoing reasons, gross profit attributable to the energy conservation solutions business decreased by approximately RMB56.0 million, or 18.0%, from approximately RMB311.7 million for 2015 to approximately RMB255.7 million for 2016. Gross profit margin for this business increased from 10.0% to 18.3%, mainly attributable to the increased gross profit margin of steam turbine flow passage retrofitting and maintenance, energy management contract, general contracting for power stations and boiler comprehensive utilization and retrofitting.

鑑於上述原因，節能解決方案業務產生的毛利從2015年的約人民幣311.7百萬元減少至2016年的約人民幣255.7百萬元，減少約人民幣56.0百萬元或18.0%。此業務的毛利率從10.0%增至18.3%，主要因為汽輪機通流改造及維修、合同能源管理、電站建設總承包和鍋爐綜合利用改造業務的毛利率上升。



## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

The following table sets out the changes in gross profit margins for the business lines comprising the Group's energy conservation solutions business for the year ended 31 December 2016 as compared with the year ended 31 December 2015:

下表載列截至2016年12月31日止年度構成本集團節能解決方案業務的業務線毛利率與截至2015年12月31日止年度相比的變化：

		2016 (%)	2015 (%)
Plasma-assisted coal ignition and combustion stabilization	等離子體點火及穩燃	23.6	36.2
Steam turbine flow passage retrofitting and maintenance	汽輪機通流改造及維修	74.6	57.6
EMC	合同能源管理	30.0	14.7
Waste heat recovery	餘熱回收	(35.0)	—
General contracting for power stations	電站建設總承包	15.1	5.8
Boiler comprehensive utilization and retrofitting	鍋爐綜合利用改造	16.5	(5.6)

#### 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 RMB578.8 million, or 6.7%, from approximately RMB8,617.6 million for 2015 to approximately RMB8,038.8 million for 2016. The decrease in the revenue attributable to the wind power products and services business was mainly attributable to the slight decrease in number of wind turbines of the Group which completed testing during the year.

風電產品及服務業務的收入從2015年的約人民幣8,617.6百萬元減少至2016年的約人民幣8,038.8百萬元，減少約人民幣578.8百萬元或6.7%。風電產品及服務業務收入下降，主要是由於本集團本年完成調試測試的風機數量略有減少所致。

##### Cost of sales

##### 銷售成本

Cost of sales attributable to the wind power products and services business decreased by approximately RMB692.9 million or 10.3%, from approximately RMB6,737.4 million for 2015 to approximately RMB6,044.5 million for 2016, which was mainly attributable to the decrease of purchase price of domestic bulk materials during the year.

風電產品及服務業務的銷售成本從2015年的約人民幣6,737.4百萬元減少至2016年的約人民幣6,044.5百萬元，減少約人民幣692.9百萬元或10.3%，主要由於本年國內大宗物資採購的價格下降。

##### Gross profit and gross profit margin

##### 毛利及毛利率

As a result of the foregoing reasons, gross profit attributable to the wind power products and services business increased by approximately RMB114.1 million or 6.1%, from RMB1,880.2 million for 2015 to RMB1,994.3 million for 2016. Gross profit margin for this business increased from 21.8% for 2015 to 24.8% for 2016 was primarily due to the scientifically effective decrease in costs during the course of raising quality and services for WTG products.

鑑於上述原因，風電產品及服務業務的毛利約從2015年的人民幣1,880.2百萬元增加至2016年的人民幣1,994.3百萬元，增加約人民幣114.1百萬元或6.1%。此業務的毛利率從2015年的21.8%增加至2016年的24.8%，主要原因是由於風機產品在提升質量、提升服務中對成本起到了科學有效的壓降。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### Solar power products and services (Discontinued operation)

##### Revenues

Revenue attributable to the solar power products and services business decreased by approximately RMB488.9 million or 71.4%, from approximately RMB684.3 million in 2015 to approximately RMB195.4 million in 2016. The decrease was mainly due to a significant decrease in revenue from the Group's shutdown of production lines in solar power products manufacturing business.

##### Cost of sales

Cost of sales attributable to the solar power products and services business decreased by approximately RMB675.0 million or 78.0%, from approximately RMB865.2 million in 2015 to approximately RMB190.2 million in 2016. Such a downward trend was consistent with the decrease in revenue from the above business segment.

##### Gross profit

As a result of the foregoing reasons, the solar power products and services business of the Group recorded a gross profit of approximately RMB5.2 million for the year ended 31 December 2016, as compared with the gross loss of approximately RMB180.9 million for the corresponding period of 2015.

#### Liquidity and Source of Capital

In 2016, the Group's cash is mainly used in business operations and the repayment of bank borrowings due.

The following table sets out the net cash flows of the Group for the years ended 31 December 2016 and 2015, and the cash and cash equivalents as at 31 December 2016 and 2015, respectively:

#### 太陽能產品及服務(已終止經營)

##### 收入

太陽能產品及服務業務的收入從2015年的約人民幣684.3百萬元減少至2016年的約人民幣195.4百萬元，減少約人民幣488.9百萬元或71.4%。減少的主要原因是本集團太陽能產品製造業務產線停產導致收入大幅下降。

##### 銷售成本

太陽能產品及服務業務的銷售成本從2015年的約人民幣865.2百萬元減少至2016年的約人民幣190.2百萬元，減少約人民幣675.0百萬元或78.0%，減少趨勢與上述業務的收入下降保持一致。

##### 毛利

鑑於上述原因，本集團截至2016年12月31日止錄得太陽能產品及服務業務的毛利約為人民幣5.2百萬元，而2015年同期錄得毛虧約人民幣180.9百萬元。

#### 流動資金和資本來源

2016年，本集團的現金主要供業務經營及償還到期銀行借款之用。

下表分別載列截至2016年及2015年12月31日止年度本集團的現金流量淨額及於2016年及2015年12月31日本集團的現金及現金等價物：

		2016 (RMB million) (人民幣百萬元)	2015 (RMB million) (人民幣百萬元)
Net cash generated from operating activities	經營活動產生之現金淨額	1,518.3	4,905.8
Net cash generated from/(used in) investing activities	投資活動產生/(使用)之現金淨額	2,703.3	(757.3)
Net cash used in financing activities	融資活動使用之現金淨額	(2,174.0)	(4,272.2)
Cash and cash equivalents as at 31 December	於12月31日的現金及現金等價物	4,382.7	2,325.5

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### **Net cash generated from operating activities**

Net cash generated from the Group's operating activities for 2016 was approximately RMB1,518.3 million, as compared to the net cash generated from the Group's operating activities of approximately RMB4,905.8 million for 2015, which was mainly due to the increase of the Group's receivables during the year.

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

Net cash generated from the Group's investing activities for 2016 was approximately RMB2,703.3 million, as compared to the net cash used in the Group's investing activities of approximately RMB757.3 million for 2015. The increase of the net cash generated from the Group's investing activities was mainly attributable to the proceeds from the disposal of desulfurization and denitrification assets in 2016.

#### **Net cash used in financing activities**

Net cash used in the Group's financing activities for 2016 was approximately RMB2,174.0 million, as compared to the net cash used in the Group's financing activities of approximately RMB4,272.2 million for 2015, primarily due to the Group's new private placement bonds of RMB1,387 million during the year.

#### **Working Capital**

As at 31 December 2016, the Group's cash and cash equivalents were approximately RMB4,382.7 million, representing an increase of approximately RMB2,057.2 million, as compared to RMB2,325.5 million for the same period of 2015. As at 31 December 2016, the Group had total unutilised bank facilities of approximately RMB17,534.0 million.

The Group's gearing ratio, which is calculated by dividing net debt (including interest-bearing other payables and interest-bearing borrowings, less cash and cash equivalents) by the sum of total equity plus net debt, decreased from 62.6% as at 31 December 2015 to 53.8% as at 31 December 2016.

Based on the existing cash resources and unutilised bank credit facilities, the Directors of the Company are of the opinion that the Group will have enough working capital to support current requirements and daily operations for the coming 12 months.

#### **經營活動產生之現金淨額**

本集團2016年經營活動產生的現金淨額約為人民幣1,518.3百萬元，而2015年本集團經營活動產生的現金淨額約為人民幣4,905.8百萬元，主要是因為本集團本年應收賬款的增加。

#### **投資活動產生／(使用)之現金淨額**

本集團2016年投資活動產生的現金淨額約為人民幣2,703.3百萬元，而2015年的投資活動使用的現金淨額約為人民幣757.3百萬元。投資活動產生之現金淨額增加主要是由於本集團2016年處置脫硫脫硝相關資產所錄得的所得所致。

#### **融資活動使用之現金淨額**

本集團2016年融資活動使用的現金淨額約為人民幣2,174.0百萬元，而2015年融資活動使用的現金淨額約為人民幣4,272.2百萬元，主要是因為本集團本年新增私募債人民幣1,387百萬元。

#### **運營資金**

於2016年12月31日，本集團的現金以及現金等價物總計約為人民幣4,382.7百萬元，與2015年同期的約人民幣2,325.5百萬元相比，增加約人民幣2,057.2百萬元。於2016年12月31日，本集團尚未使用的銀行信貸總計約為人民幣17,534.0百萬元。

本集團的資產負債率，由淨債務(包括有息其他應付款項和有息借款減去的現金和現金等價物)除以本集團的權益總額及淨債務總和的比例核算，該比率由2015年12月31日的62.6%減少至2016年12月31日的53.8%。

基於現有資金來源以及尚未使用的銀行信貸額度，本公司的董事認為本集團的運營資金足以支撐當前的需求以及未來12個月的日常運作。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### **Inventory Analysis**

The inventories were approximately RMB2,722.2 million as at 31 December 2016, which decreased by approximately RMB770.2 million, or 22.1%, from approximately RMB3,492.4 million as at 31 December 2015. The decrease was primarily attributed to the decrease in inventories for the WTG finished products and photovoltaic raw materials, work-in-progress and finished products.

#### **Trade and bills receivables**

Trade and bills receivables increased by approximately RMB123.9 million or 0.9% from approximately RMB13,912.7 million as at 31 December 2015 to approximately RMB14,036.6 million as at 31 December 2016.

#### **Deposits, prepayments and other receivables**

The Group's deposits, prepayments and other receivables decreased by approximately RMB26.9 million or 1%, from approximately RMB2,419.8 million as at 31 December 2015 to approximately RMB2,392.9 million as at 31 December 2016. The decrease was primarily attributable to a decrease in inventory procurement for the Group's wind power products and services business and prepayments relating to construction contracts for the Group's environmental protection business.

#### **Trade and bills payables**

Trade and bills payables decreased by RMB2,199.9 million or 17% from approximately RMB13,021.7 million as at 31 December 2015 to approximately RMB10,821.8 million as at 31 December 2016, which was primarily attributable to a decrease in sales volume for the year of the Group causing a reduction in the procurement of raw materials required for the production of WTG equipment, thus a decrease in payables.

#### **存貨分析**

存貨從2015年12月31日的約人民幣3,492.4百萬元減少約人民幣770.2百萬元或22.1%至2016年12月31日的約人民幣2,722.2百萬元。主要是由於風機產成品庫存的減少，以及光伏原材料、在產品和產成品庫存的減少。

#### **應收賬款及票據**

應收賬款及票據從2015年12月31日的約人民幣13,912.7百萬元增加約人民幣123.9百萬元或0.9%至2016年12月31日的約人民幣14,036.6百萬元。

#### **按金、預付款項及其他應收款項**

本集團的按金、預付款及其他應收款項從2015年12月31日的約人民幣2,419.8百萬元減少約人民幣26.9百萬元或1%至2016年12月31日的約人民幣2,392.9百萬元。此減少主要是本集團風電產品及服務業務的存貨採購及環保業務的建造合同相關的預付款金額減少。

#### **應付賬款及票據**

應付賬款及票據從2015年12月31日約人民幣13,021.7百萬元減少人民幣2,199.9百萬元或17%至2016年12月31日約人民幣10,821.8百萬元。主要是本集團本年銷售量下降，使得生產風機設備所需原材料採購減少，應付款項減少。



## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### Indebtedness

#### 債項

The following table sets forth the Group's borrowings as at 31 December 2016 and 2015:

下表載列於2016及2015年12月31日本集團的借款情況：

		As at 31 December 2016 於2016年12月31日 (RMB million) (人民幣百萬元)	As at 31 December 2015 於2015年12月31日 (RMB million) (人民幣百萬元)
<b>Long-term interest bearing borrowings</b>	<b>長期帶息借款</b>		
Bank loans:	銀行貸款：		
Secured	有抵押	202.3	928.3
Unsecured	無抵押	337.6	881.7
Other loans	其他貸款	605.1	54.6
Private placement notes (unsecured)	私人配售債務融資工具(無抵押)	2,441.4	996.9
Corporate bonds	公司債券	2,843.2	2,838.5
<b>Sub-total</b>	<b>小計</b>	<b>6,429.6</b>	5,700.0
Less: Current portion of long-term borrowings	減：長期借款的即期部份	<b>(1,314.0)</b>	(907.3)
<b>Total</b>	<b>合計</b>	<b>5,115.6</b>	4,792.7
<b>Short-term interest bearing borrowings</b>	<b>短期帶息借款</b>		
Bank loans:	銀行貸款：		
Secured	有抵押	520.0	553.0
Unsecured	無抵押	6,044.0	8,610.0
Other loans:	其他貸款：		
Guodian (unsecured)	國電(無抵押)	600.0	300.0
Related parties under Guodian:	國電下屬的關聯方：		
Secured	有抵押		
Unsecured	無抵押	—	379.4
Private placement notes (unsecured)	私人配售債務融資工具(無抵押)		
Current portion of long-term borrowings	長期借款的即期部份	1,314.0	907.3
<b>Total</b>	<b>合計</b>	<b>8,478.0</b>	10,749.7
<b>Total indebtedness</b>	<b>債項總額</b>	<b>13,593.6</b>	15,542.4

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

As at 31 December 2016, the Group's total indebtedness decreased by approximately 12.5% from approximately RMB15,542.4 million as at 31 December 2015 to approximately RMB13,593.6 million. The decrease was mainly due to a reduction in the scale of financing in 2016. The proportion of short-term indebtedness to overall indebtedness increased from approximately 69.2% as at 31 December 2015 to approximately 73.0% as at 31 December 2016, which was mainly due to changes in the structure of long-term borrowings and short-term borrowings as the current portion of long-term borrowings for the year increased.

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

The following table sets out the maturity status of the Group's long-term borrowings (including current portion) as at 31 December 2016 and 31 December 2015 respectively:

於2016年12月31日，本集團債項約為人民幣13,593.6百萬元，比於2015年12月31日的債項約人民幣15,542.4百萬元減少約12.5%。其減少主要是由於2016年壓降融資規模。其中短期債項佔總債項的比例從於2015年12月31日的約69.2%增加至2016年12月31日的約73.0%，主要是由於本年長期借款即期部份增加，改變了長短期借款的比例結構。

本集團期內所有的借款都以人民幣計算。

下表載列本集團分別於2016年12月31日及2015年12月31日的長期借款(包括即期部份)到期情況：

		As at 31 December 2016 於2016年12月31日 (RMB million) (人民幣百萬元)	As at 31 December 2015 於2015年12月31日 (RMB million) (人民幣百萬元)
Less than 1 year or on demand	1年內或按要求償還	1,314.0	907.3
More than 1 year but less than 2 years	1年以上但2年以內	1,365.3	380.5
More than 2 years but less than 5 years	2年以上但5年以內	2,170.7	2,728.3
More than 5 years	5年以上	1,579.6	1,683.9
<b>Total</b>	<b>合計</b>	<b>6,429.6</b>	<b>5,700.0</b>

The effective interest rate of the Group (determined by dividing total interest expenses for 2016 by the average of the sums of outstanding borrowings and other interest bearing payables as at 1 January 2016 and 31 December 2016) decreased from approximately 4.6% in 2015 to approximately 4.3% in 2016. The decrease in the Group's effective interest rate was primarily due to the central bank's three successive announcements of the lowering of interest rates this year to foster a moderately loose monetary policy.

#### Contingent Liabilities

The Group's contingent liabilities as at 31 December 2016 primarily consisted of bid and performance guarantees provided by the Group.

本集團的實際利率(以2016年總利息開支除以2016年1月1日與2016年12月31日的未償還借款及其他帶息應付款項的平均值釐定)從2015年的約4.6%下降至2016年的約4.3%，主要是本年央行連續三次宣佈下調利率，貨幣政策適度寬鬆。

#### 或有負債

本集團於2016年12月31日的或有負債主要包括本集團提供的投標和履約擔保。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### Material investments

On 25 January 2016, the Company entered into an Investment Agreement with Guodian Shandong Electric Power Co., Ltd. ("Guodian Shandong"), Shandong Ludian Energy Development Co., Ltd. ("Shandong Ludian") and Shandong Tuoneng Group Co., Ltd. ("Shandong Tuoneng"), pursuant to which, the parties will make contributions to establish a JV Company which will be in charge of the investment in and construction of 2x1,000MW power generator units of Guodian Boxing Power Plant. On 24 June 2016, the Company entered into a supplemental agreement with Guodian Shandong, Shandong Ludian, Shandong Tuoneng and Shandong Boxing Xinda Construction Investment Development Co., Ltd.\*. Pursuant to the Investment Agreement and the Supplemental Investment Agreement, the registered capital of the JV Company will be RMB1.6 billion and the Company will contribute RMB448 million, representing 28% of the registered capital.

In 2016, the Group's completed investments amounted to a total of RMB322.42 million, of which, equity investments amounted to RMB89.60 million, being the first capital contribution in establishing a joint venture company to invest and construct 2x1,000 MW power generator units of Guodian Boxing Power Plant; Infrastructure investments amounted to RMB8.26 million, which was used to pay the levy/lease and land-related taxes of wind power plant test construction by United Power in Chaganhua, Chifeng, Inner Mongolia; Technological reform investments amounted to RMB224.56 million and mainly technological upgrade and reform for SO<sub>2</sub> and NO<sub>x</sub> emission reductions concession projects were carried out.

#### Disposals or deemed disposals

On 5 February 2016, Longyuan Environment (a wholly-owned subsidiary of the Company) entered into a transfer agreement with each of the 27 subsidiaries of Guodian Group respectively to transfer certain desulfurization and denitrification assets.

On 3 May 2016, the Company entered into a cooperation framework agreement with Zhonghuan with a view to forging cooperation for the restructuring and equity transfer of GD Solar. On 1 July 2016, the Group and Zhonghuan entered into a sale and purchase agreement, pursuant to which, the Group disposed of 90% equity interest in GD Solar at a consideration of RMB658.93 million, and Zhonghuan would allot and issue 85,132,840 shares to the Group at the issue price of RMB7.74 per Consideration Share in satisfaction of its payment of consideration. Upon completion of the transaction, Zhonghuan will hold 90% equity interest in GD Solar and the Group will continue to hold 10% equity interest in GD Solar.

#### 重大投資

於2016年1月25日，本公司與國電山東電力有限公司(「國電山東」)、山東魯電能源發展有限公司(「山東魯電」)和山東拓能集團有限公司(「山東拓能」)簽訂投資協議，合資設立合營公司，由合營公司負責投資建設國電博興電廠兩台1,000兆瓦機組工程。於2016年6月24日，本公司與國電山東、山東魯電、山東拓能和山東省博興縣鑫達建設投資開發有限公司訂立補充投資協議。根據投資協議及補充投資協議，合營公司註冊資本金為人民幣16億元，本公司出資4.48億元，佔註冊資本金的28%。

本集團2016年完成投資共計人民幣322.42百萬元，其中，股權投資89.60百萬元，為投資建設國電博興電廠兩台1,000兆瓦機組工程而合資設立的合營公司之首筆資本金出資款；基建投資8.26百萬元，用於聯合動力內蒙古赤峰查干花試驗風力發電場建設徵／租地以及與土地相關的各項稅費；技改投資人民幣224.56百萬元，主要進行了脫硫脫硝特許經營項目技術升級改造。

#### 出售或視為出售

於2016年2月5日，本公司全資附屬公司龍源環保分別與國電集團二十七家附屬公司簽訂轉讓協議，以轉讓其若干脫硫脫硝資產。

於2016年5月3日，本公司與中環股份訂立合作框架協議，就國電光伏之重組及股權交易事項達成合作。於2016年7月1日，本集團與中環股份訂立買賣協議。根據買賣協議，本集團出售國電光伏90%股權之對價為人民幣658.93百萬元，中環股份將按每股代價股份人民幣7.74元之發行價向本集團配發及發行85,132,840股以支付對價。交易完成後，中環股份將持有國電光伏90%的股權，本集團將繼續持有國電光伏10%的股權。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

On 2 November 2016, Longyuan Environment disposed of 51% equity interest in its subsidiary Beijing Longyuan Environmental Engineering Co., Ltd.\* (北京龍源環保工程有限公司) ("**Beijing Longyuan**") in a public listing process through China Beijing Equity Exchange at a consideration of RMB384.97 million. On 13 January 2017, both parties entered into a sale and purchase agreement. Upon completion of the sale and purchase agreement, Beijing Longyuan was no longer a subsidiary of the Group.

On 11 November 2016, United Power (a subsidiary of the Group) and China Longyuan Power Group Corporation Limited\* (龍源電力集團股份有限公司) (a subsidiary of Guodian Group) entered into a sale and purchase agreement, pursuant to which, United Power disposed of the entire equity interest in its wholly-owned subsidiary Guodian United Power Technology (Changchun) Co., Ltd.\* (國電聯合動力技術(長春)有限公司) ("**Changchun Company**") at a consideration of RMB291.27 million. Upon completion of the sale and purchase agreement, Changchun Company will no longer be a subsidiary of the Group.

On 28 December 2016, United Power and Zhuji City Guo He Gong Ying Equity Investment Partnership (Limited Partnership)\* (諸暨市國核工盈股權投資合夥企業(有限合夥)) entered into a sale and purchase agreement, pursuant to which, United Power disposed of 85.8% equity interest in its subsidiary Guodian United Power Technology (Yixing) Co., Ltd.\* (國電聯合動力技術(宜興)有限公司) ("**Yixing Company**") at a consideration of RMB256.23 million. Upon completion of the sale and purchase agreement, Yixing Company will no longer be a subsidiary of the Group.

#### Market Risk

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

#### Credit and counterparty risk

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

A substantial part of all of the Group's cash is deposited in state-owned or state-controlled PRC banking institutions. Directors of the Company therefore consider these risks are insignificant.

於2016年11月2日，龍源環保通過北京產權交易所所以人民幣384.97百萬元的對價公開掛牌出售附屬公司北京龍源環保工程有限公司(「北京龍源」)51%股權，雙方於2017年1月13日簽署買賣協議。買賣協議完成後，北京龍源不再為本集團之附屬公司。

於2016年11月11日，本公司附屬公司聯合動力與龍源電力集團股份有限公司(國電集團之附屬公司)訂立買賣協議，據此，聯合動力出售全資附屬公司國電聯合動力技術(長春)有限公司(「長春公司」)全部股權之對價為人民幣291.27百萬元。買賣協議完成後，長春公司將不再為本集團之附屬公司。

於2016年12月28日，聯合動力與諸暨市國核工盈股權投資合夥企業(有限合夥)訂立買賣協議，據此，聯合動力出售附屬公司國電聯合動力技術(宜興)有限公司(「宜興公司」)85.8%股權，對價為人民幣256.23百萬元。買賣協議完成後，宜興公司將不再為本集團之附屬公司。

#### 市場風險

本集團面臨著與其業務經營有關的多種風險，包括信貸和交易對手風險、利率風險、流動資金風險和匯率風險。

#### 信貸和交易對手風險

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

本集團絕大部份現金都存於中國國有或國有控股的銀行業金融機構中。因此，本公司董事認為該等風險並不重大。



## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

The Group performed 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 its 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 contract terms.

#### **Interest rate risk**

The Group's interest rate risk arises primarily from long-term borrowings. Borrowings issued at variable rates expose the Group to cash flow interest rate risk. The Group regularly reviews and monitors the mix of fixed and variable rate borrowings. During the year, however, management of the Group did not consider it is necessary to use interest rate swaps to hedge their exposure to interest.

#### **Liquidity risk**

The nature of the Group's business gives rise to the irregularity in its cash flow. The Group enforced regular settlement of receivables while ensuring sound operations, thereby significantly increasing the Company's operating cash. Meanwhile, the Group proposed to improve its financing structure and increase the proportion of long-term loans by issuing mid and long-term bonds and introducing financial leasing. Since 31 December 2015, it has issued a total of RMB2.4 billion private placement bonds. The Group is committed to ensuring sufficient working capital to meet its operating needs or having access to adequate bank credit to maintain uninterrupted operations. The Group's cash flow position is essential for its continuous development and expansion.

#### **Exchange rate 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 dollars, Euros or Hong Kong dollars. In 2016, the Group recorded an exchange gain of RMB23.8 million, mainly because the Company's subsidiary, Guodian United Power Technology (Lianyungang) Co., Ltd. had amounts due from overseas projects which were priced in United States dollars and there had been an appreciation in the United States dollar. The Directors of the Company consider that the Group's exchange rate risk to be insignificant. The Group does not currently hedge against its exchange rate risk.

本集團對其所有客戶進行信用評估，並持續監控客戶的重大應收款項。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**

本集團的利率風險主要來自於長期借款。浮動利率借款使本集團暴露於現金流利率風險之下。本集團定期審查並監控固定利率及浮動利率借款的組合。然而，本集團管理層認為在本年度無需通過利率掉期，對沖本集團的利率風險。

#### **流動資金風險**

鑒於其所經營的業務性質，本集團的現金流量具有顯著的不規則性。本集團在保證經營狀況良好的前提下，通過常態化應收賬款清收，大幅改善了公司經營現金。同時，本集團擬通過發行中長期債券、開展融資租賃等業務，改善融資結構，提高長期借款比例，自2015年12月31日後，已發行人民幣24億私募債。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對於其持續發展和擴張不可或缺。

#### **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。這種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、歐元或港元計價。本集團於2016年發生匯率收益人民幣23.8百萬元，主要是由於本公司附屬公司國電聯合動力技術(連雲港)有限公司的應收海外項目款項以美元計價，美元發生升值帶來的。本公司董事認為匯率風險不重大。本集團目前未對沖其匯率風險。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

RMB currently 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.

#### Business prospects for 2017

Going forward, the Group shall face both opportunities and challenges in 2017. On the one hand, with the national regulation on the development of coal power, new energy saving and green low-carbon environmental protection industry has become the focus of national development. During the **"Thirteenth Five-Year"** plan period, the size of the heat and electricity cogeneration units and flexible transformation of conventional coal power were approximately 133 million KW and 86 million KW respectively. Stock markets such as ultra low and ultra-ultra low emission technology, water saving and wastewater zero emission technology, which rely upon old power plant technology transformation, present tremendous favourable development potential. National policies targeting physical manufacturing industries, such as "Innovation-Entrepreneurship", "Made in China 2025", "Convergence of Informatization and Industrialization" and "Internet +" present enormous business opportunities. With the steady implementation of the development strategies of **"One Belt, One Road"** and **"Go Global"**, the overseas market will become a new strategic highland of the Company.

On the other hand, as domestic economic growth continues to slow down and power overcapacity becomes increasingly prominent, thermal power enterprises are entering the winter season with shrinking market size and rising cost pressure, all of these will transfer to the relevant energy saving and environmental protection industries. At present, the Industry "4.0" age is coming. The Company's current research and development of new technologies and expansion on core businesses are yet to be sufficient, there is an urgent need to enhance the ability of technological innovation, relying on which to build the first-mover advantage and nurture a new strategic supporting point for future development, so as to improve the quality and efficiency of development.

To leverage on the favourable policies of the Chinese government, the Group intends to implement the following work in 2017 for its continuous development.

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

#### 2017年業務展望

展望2017年，本集團面臨的機遇和挑戰並存。一方面，伴隨國家對煤電發展進行調控，新型節能和綠色低碳環保產業成為國家重點發展方向，「十三五」期間熱電聯產機組和常規煤電靈活性改造規模分別達到1.33億千瓦和8,600萬千瓦左右，依託老電廠技術改造的超低及超超低排放技術、節水及廢水零排放技術等存量市場釋放巨大發展紅利；國家針對以實體製造業的產業政策，如「雙創、中國製造2025、兩化融合、互聯網+」等蘊含巨大商機；「一帶一路」和「走出去」發展戰略穩步實施，海外市場將成為本公司新的戰略高地。

另一方面，國內經濟增速持續放緩，電力產能過剩日益凸顯，市場規模萎縮，成本壓力增大，火電企業即將進入寒冬季節，這些都將傳導至節能環保等相關產業；當前，工業「4.0」時代即將到來，本公司目前的新技術研發和重點業務開拓力度還不夠，亟待提升科技創新能力，依靠科技創新打造先發優勢，培育未來發展新的戰略支撐點，提高發展質量和效益。

借助於中國政府的有力政策，為促進本集團的持續發展，本集團將於2017年重點開展以下工作。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### **Accelerating structural optimization, promoting transition and upgrade**

The Group plans to promote structural adjustment, optimizing the volume of stock and increment. It will accelerate downsizing, and with environmental protection, energy saving, general contracting for power stations, new energy products manufacturing services and operations, electronic informatization of electricity power and other sectors as the focus, to vigorously develop strategic emerging business. Through structural adjustment, the Group aims to solve the problem of unbalanced and uncoordinated business structure, and optimize the industrial layout and business mix, reducing ineffective and low-end supply and expanding effective and middle-to-high-end supply. It will promote the flow and optimization of elements, improving the efficiency of the allocation of elements, so as to promote the transformation and upgrade of the enterprise as a whole.

#### **Strengthening technological innovation and institutional innovation**

The Group intends to enhance the ability of independent innovation and self-development, through continuous technological innovation and nurturing high-tech capabilities, with a focus on the promotion of science and technology projects such as ultra low and ultra-ultra low emissions, water saving and wastewater zero emission, integration of coal-fired units reducing the coal consumption rate in power supply, nuclear power conventional island DCS applications, to form new advantages for enterprise transformation and development. It will optimize the organizational structure and management and control model, construct a "six-in-one" talent retention incentive system supported by incentives for chief engineers, internal trainers, distinguished experts and special talents, so as to stimulate the enthusiasm of key staff; and roll out pilot profit-sharing incentive schemes for professional managers and positions so as to release inherent motivation for enterprise development.

#### **Integrating strengths, striving to expand the internal and external markets**

The Group will explore the marketing system and reform of the management and control model. The Group will experiment with the construction of regional channels to establish a sharing system of marketing information and resources within the company's system, in order to put together its high-quality resources to achieve the breakthrough in core customers and quality projects outside the system. In line with the national strategy of "One Belt, One Road", the Group will strengthen overseas business investment and coordination efforts, with the company in Hong Kong as a pioneer, to promote the development of international business.

#### **加速結構優化，促進轉型升級**

本集團計劃推進結構調整，優化存量，做好增量。加快推進瘦身健體，以環保、節能、電站總承包、新能源產品製造服務與運營、電力電子信息化等板塊為重點，大力發展戰略性新興業務。通過結構調整，解決業務結構不平衡、不協調等問題，優化產業佈局及業務組合，減少無效和低端供給，擴大有效和中高端供給，促進要素的流動和優化，提高要素的配置效率，從而推動企業整體的轉型升級。

#### **加強技術創新和體制機制創新**

本集團計劃增強自主創新、自我發展能力，通過持續技術創新和培育高科技基因，重點推進超低及超超低排放、節水及廢水零排放、燃煤機組降低供電煤耗一體化、核電常規島DCS應用等科技項目，形成企業轉型發展的新優勢。優化組織架構和管控模式，構建以首席師、內訓師、特聘專家和特殊人才激勵為支撐的「六位一體」人才保留激勵發展體系，激發骨幹員工隊伍積極性；推進職業經理人和崗位分紅激勵試點工作，釋放企業發展內生動力。

#### **整合優勢力量，全力開拓內外部市場**

本集團將探索研究營銷體系工作及管控模式改革，試點區域化渠道建設，建成公司系統營銷信息及資源共享體系，集中優勢資源，突破系統外重點客戶及優質項目。緊跟國家「一帶一路」戰略，加強海外業務投入和協調力度，以香港公司為先鋒，全力推動國際業務發展。

## MANAGEMENT'S DISCUSSION AND ANALYSIS (CONTINUED)

### 管理層討論與分析(續)

#### **Strengthening centralized management and control, effectively avoiding operational risks**

#### **加強集中管控，有效規避經營風險**

The Group insists on further increasing its efficiency by improving its centralized management, so as to effectively avoid operational risks. In 2017, the Group will continue to strengthen centralized management and control of investment, procurement, finance and other aspects, and optimize business processes, with an aim to form an operating system featuring orderly convergence, efficient collaboration, upstream and downstream coordination and checks and balances. Through the improvement of the audit system, standardization of the management and control processes, strengthening of the financial base, promotion of corporate governance in accordance with the law and a series of other work, it can further strengthen its management and control capabilities, and enhance the efficiency of management and control.

本集團將堅持推進通過提升管理進一步提升效益，有效規避經營風險，2017年將繼續加強投資、採購、財務等方面的集中管控，優化業務流程，形成有序銜接、高效協同、上下聯動、監督制衡的運轉體系。通過完善審計體系、規範管控流程、夯實財務基礎、推進依法治企等一系列工作，進一步強化管控能力，提高管控效率。



# DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

## 董事、監事及高級管理人員

### Board of Directors

The Board of the Company currently consists of eleven Directors, including three executive Directors, four non-executive Directors and four independent non-executive Directors. The Board of the Company's functions and responsibility include: convening general meetings, reporting its work in general meetings, implementing resolutions approved in general meetings, ascertaining the Company's business plans and investment plans, preparing the Company's annual budget and final accounts, preparing the Company's profit distribution plans and proposals for the increase in or reduction of registered capital and exercising other powers, functions and responsibilities as set out in the Articles of Association of the Company. The Company has entered into a service contract or appointment letter with each Director.

The following table sets out certain information relating to the Directors of the Company. The members of the second session of the Board were re-elected and appointed at the annual general meeting of the Company held on 16 May 2014. The current term for all the Directors will expire on 15 May 2017.

### 董事會

本公司的董事會由11名董事組成：3名執行董事、4名非執行董事及4名獨立非執行董事。本公司董事會的職能及職責包括：召集股東大會；於股東大會上報告董事會的工作；執行股東大會通過的決議；確定本公司業務計劃及投資計劃；制訂本公司年度預算及決算；制訂本公司利潤分配方案及關於註冊資本增減的議案；以及行使本公司《公司章程》所賦予的其他權力、職能及職責。本公司與各董事訂立了服務合約或任命書。

下表載述有關本公司董事的若干資料。本公司於2014年5月16日舉行的股東週年大會上進行第二屆董事會成員的重選及委任。本屆所有董事的任期將於2017年5月15日屆滿。

Name 姓名*	Age 年齡	Position 職位	Date of Joining the Group 加入本集團日期	Date of Appointment/ Re-appointment 委任／重選日期
Mr. YANG Guang 陽光先生	52	Executive Director and Chairman of the Board 執行董事兼董事長	6 January 2005 2005年1月6日	Re-appointed on 16 May 2014 2014年5月16日獲重選
Mr. CHEN Dongqing 陳冬青先生	51	Executive Director 執行董事	29 March 2016 2016年3月29日	Appointed on 29 March 2016 2016年3月29日獲委任
Mr. TANG Chaoxiong 唐超雄先生	49	Executive Director 執行董事	29 March 2016 2016年3月29日	Appointed on 29 March 2016 2016年3月29日獲委任
Mr. WANG Zhongqu 王忠渠先生	55	Non-executive Director 非執行董事	16 May 2014 2014年5月16日	Appointed on 16 May 2014 2014年5月16日獲委任
Mr. ZHANG Wenjian 張文建先生	53	Non-executive Director 非執行董事	16 May 2014 2014年5月16日	Appointed on 16 May 2014 2014年5月16日獲委任
Mr. FENG Shuchen 馮樹臣先生	53	Non-executive Director 非執行董事	28 September 2004 2004年9月28日	Re-appointed on 16 May 2014 2014年5月16日獲重選
Mr. YAN Andrew Y. 閻焱先生	59	Non-executive Director 非執行董事	8 June 2012 2012年6月8日	Re-appointed on 16 May 2014 2014年5月16日獲重選
Mr. SHEN Xiaoliu 申曉留先生	66	Independent non-executive Director 獨立非執行董事	29 March 2016 2016年3月29日	Appointed on 29 March 2016 2016年3月29日獲委任

## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

Name 姓名*	Age 年齡	Position 職位	Date of Joining the Group 加入本集團日期	Date of Appointment/ Re-appointment 委任／重選日期
Mr. QU Jiuhui 曲久輝先生	59	Independent non-executive Director 獨立非執行董事	16 May 2014 2014年5月16日	Appointed on 16 May 2014 2014年5月16日獲委任
Mr. XIE Qiuye 謝秋野先生	57	Independent non-executive Director 獨立非執行董事	16 May 2014 2014年5月16日	Appointed on 16 May 2014 2014年5月16日獲委任
Mr. FAN Ren Da Anthony 范仁達先生	56	Independent non-executive Director 獨立非執行董事	28 November 2011 2011年11月28日	Re-appointed on 16 May 2014 2014年5月16日獲重選

\* Ms. ZHANG Xiaolu resigned as the independent non-executive Director of the Company on 11 January 2016 due to changes in personal working arrangement.

\* 張曉魯女士因個人工作安排，於2016年1月11日辭任本公司獨立非執行董事職務。

**Mr. YANG Guang**, is a Secretary of the Party Committee, executive Director and the chairman of the Board of the Company. Mr. YANG joined the Group on 6 January 2005. Mr. YANG previously served as designing chief engineer, deputy director and director of the engineering division of South West Electric Power Design Institute; deputy chief engineer and director of project division of South West Electric Power Design Institute; deputy director and director of the economic and trade division of the international department of the State Power Corporation; deputy head of engineering and construction department, head of the international cooperation department, head of the international cooperation and overseas business department, and head of the science-technology and comprehensive business department of Guodian Group. Mr. YANG obtained a bachelor's degree in power plant hydraulic power from Chongqing University. Mr. YANG is a senior engineer.

陽光先生，為本公司黨委書記、執行董事兼董事長。陽先生於2005年1月6日加入本集團。陽先生歷任西南電力設計院工程處設計總工程師、工程處副處長及處長，西南電力設計院副總工程師兼項目部主任，國家電力公司國際部經濟貿易處副處長及處長，國電集團工程建設部副主任、國際合作部主任、國際合作與海外業務部主任、科技與綜合產業部主任。陽先生於重慶大學獲得電廠熱能動力專業學士學位。陽先生是高級工程師。

**Mr. CHEN Dongqing** is a deputy Secretary of the Party Committee, executive Director and the President of the Company. Mr. CHEN joined the Group on 4 February 2016. Mr. CHEN served as deputy director of the Quality and Technology Office of the Thermal Power Construction Department and the New Energy Development Office of the Power Construction Department of State Power Corporation; director of the General Office of the Engineering & Construction Department and deputy head of the Engineering & Construction Department of China Guodian Corporation; vice general manager of the Southern Branch of Guodian; vice general manager of Guodian Guangdong Power Co., Ltd.; and the secretary of the leading Party members' group and vice general manager of Guodian Fujian Power Co. Ltd.. Mr. CHEN obtained a master's degree in Power Plant Engineering from Northeast China Institute of Electric Power Engineering. Mr. CHEN is a senior engineer.

陳冬青先生，為本公司黨委副書記、執行董事及總經理。陳先生於2016年2月4日加入本集團。陳先生歷任國家電力公司火電建設部質量技術處副處長、電源建設部新能源發展處副處長，中國國電集團公司工程建設部綜合處處長、工程建設部副主任，國電南方分公司副總經理，國電廣東電力有限公司副總經理，國電福建電力有限公司黨組書記、副總經理等職務。陳先生畢業於東北電力學院發電廠工程專業並獲得碩士學位。陳先生是高級工程師。

## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

**Mr. TANG Chaoxiong** is a member of the Party Committee, executive Director, vice general manager and chief accountant of the Company. Mr. TANG concurrently serves as the chairman of Longyuan Technology. Mr. TANG joined the Group on 12 October 2015. Mr. TANG served as the deputy director of the financial department of Sichuan Electric Power Corporation; deputy director of the financial department of State Power Corporation; director of the financing and accounting division of the financial property department of China Guodian Corporation; vice general manager and member of the Party Committee of Guodian Finance Co., Ltd.; vice general manager and member of the Party Committee of China Guodian Capital Holdings Ltd.; and vice chairman of Bank of Shizuishan Co. Ltd.. Mr. TANG obtained a bachelor's degree in finance and accounting from Changsha Normal College of Water Resources and Electric Engineering (currently known as Changsha University of Science & Technology) and a master's degree in accounting from Hunan University of Finance and Economics (currently known as Hunan University). Mr. TANG is a senior accountant.

**Mr. WANG Zhongqu** is a non-executive Director of the Company. Mr. WANG also serves as the chief supervisor of the Work Safety and the head of the Work Safety Office of Guodian Group. Mr. WANG joined the Group on 16 May 2014. Mr. WANG served successively as the boiler engineer at Electric Power Research Institute in Hebei Province; engineer and manager of production planning of Electric Power Industry Bureau of Hebei Province; assistant to the manager of Electric Power plant of Xibaipo branch of Hebei Power Grid; deputy manager of Hengshui Power Plant of Hebei Province; manager and deputy head of the Power Plant Preparatory Office of Hanfeng Power Plant of Hebei Power Plant; and deputy head of the Work Safety Office of Guodian Group. Mr. WANG obtained a bachelor's degree in thermal energy and power from Shandong Industry Institution and a master's degree in power engineering from Huabei Electric Power University. Mr. WANG is a Senior Engineer.

**Mr. ZHANG Wenjian** is a non-executive Director of the Company and also serves as the head of the Technology and General Industry Office of Guodian Group. Mr. ZHANG joined the Group on 16 May 2014. Mr. ZHANG served successively as the deputy head of the Electric Usage Office; head of the Electric Dispatch Office; manager of the Production Planning; assistant of to the director and deputy director of Hengshui Electric Power Bureau; secretary of the Party Committee of Hanfeng Power plant; director of Xingtai Power plant; deputy head and head of the marketing department of Guodian Group. Mr. ZHANG obtained a bachelor's degree in Power plant and Electric Power System from Huabei Electric Power College, and a master's degree from Huabei Electric Power University in technology economy and management. Mr. ZHANG is a senior engineer.

**唐超雄先生**，為本公司黨委委員、執行董事、副總經理及總會計師。唐先生目前還兼任龍源技術董事長。唐先生於2015年10月12日加入本集團。唐先生歷任四川省電力公司財務部副處長，國家電力公司財務部副處長，中國國電集團公司財務產權部財會處處長，國電財務有限公司副總經理、黨組成員，國電資本控股有限公司副總經理、黨組成員，石嘴山銀行股份有限公司副董事長。唐先生畢業於長沙水利電力師範學院(現為長沙理工大學)，獲得財務與會計專業學士學位，亦於湖南財經大學(現為湖南大學)獲得會計專業碩士學位。唐先生為高級會計師。

**王忠渠先生**，為本公司非執行董事。王先生同時擔任國電集團安全生產總監、安全生產部主任。王先生於2014年5月16日加入本集團。王先生歷任河北省電力研究所鍋爐室工程師，河北省電力工業局生計處工程師、科長，河北省電力公司西柏坡發電廠廠長助理，河北省電力公司衡水發電廠生產副廠長，河北省電力公司邯峰發電廠籌建處副主任、發電廠廠長，國電集團安全生產部副主任。王先生畢業於山東工業大學熱能動力專業，獲得學士學位；亦畢業於華北電力大學動力工程專業，獲得碩士學位。王先生是高級工程師。

**張文建先生**，為本公司非執行董事。張先生同時擔任國電集團科技與綜合產業部主任。張先生於2014年5月16日加入本集團。張先生歷任衡水電業局用電所副所長、調度所所長、生計科科長、局長助理、副局長，邯峰電業局黨委書記，邢台電業局局長，國電集團市場營銷部副主任、市場營銷部主任。張先生畢業於華北電力學院發電廠及電力系統專業，獲得學士學位；亦畢業於華北電力大學技術經濟與管理專業，獲得碩士學位。張先生是高級工程師。

## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

**Mr. FENG Shuchen** is a non-executive Director of the Company and serves concurrently as president and the deputy secretary of the Party Committee of GD Power and the general manager assistant of Guodian Group. Mr. FENG joined the Group on 28 September 2004. Mr. FENG served successively as chief manager of Chaoyang Power Plant; deputy chief manager and chief manager of Guodian Power Datong No. 2 Power Plant; vice president and president of the Company; and head of the human resources department of Guodian Group. Mr. FENG obtained a master's degree in control theory and control engineering from North China Electric Power University. Mr. FENG is a senior engineer.

**Mr. YAN Andrew Y.** is a non-executive Director of the Company and serves concurrently as the founding managing partner of SAIF Partners. Mr. YAN joined the Group on 8 June 2012. Mr. YAN served as lead engineer at Jianghuai Aviation Instrument Factory; economist of Washington headquarter of the World Bank; researcher of Hudson Institute in the United States; director of strategic planning and business development for the Asia Pacific region of Sprint International Corporation successively; managing director of Emerging Markets Partnership, the management company of AIG Asia Infrastructure Fund; and head of Hong Kong office of AIG Asia Infrastructure Fund. Mr. YAN majored in airplane design and obtained his bachelor's degree in engineering from Nanjing University of Aeronautics and Astronautics (formerly known as Nanjing Aeronautic Institute), studying for a master's degree in sociology from Peking University and a master's degree in international political economy from the Princeton University.

**Mr. SHEN Xiaoliu Anthony** is an independent non-executive Director of the Company. Mr. SHEN joined the Group on 29 March 2016. Mr. SHEN is a professor of the School of Control and Computer Engineering of North China Electric Power University, and an expert of the State Key Laboratory of Alternate Electric Power System with Renewable Energy Resources and the Key Laboratory of the Institution of the energy internet and power big data of North China Electric Power University. Mr. SHEN served as technician in Shanxi Linfen Electric Power Bureau; engineer at the dispatching center of the Electric Power Bureau of Shanxi Province; teacher in the thermal power engineering teaching and research section of the Graduate School of North China Electric Power University; director of the information center of the Electric Power Bureau of Shanxi Province; and deputy division director of the education division of Shanxi Electric Power Company. Mr. SHEN obtained a bachelor's degree in Industrial Automation from the Department of Electrical Engineering of Taiyuan University of Technology, and a master of engineering degree in Electric Power System and Automation from the Beijing Graduate School of North China Electric Power University.

**馮樹臣先生**，為本公司非執行董事。馮先生同時擔任國電電力總經理、黨委副書記、國電集團總經理助理。馮先生於2004年9月28日加入本集團。馮先生歷任朝陽發電廠廠長，國電電力大同第二發電廠第一副廠長、第二發電廠廠長，本公司副總經理及總經理，國電集團人力資源部主任。馮先生畢業於華北電力大學，獲得控制理論與控制工程專業碩士學位。馮先生是高級工程師。

**閻焱先生**，為本公司非執行董事，並為賽富亞洲投資基金的創始管理合夥人。閻先生於2012年6月8日加入本集團。閻先生歷任江淮航空儀表廠主管工程師，華盛頓世界銀行總部經濟學家，美國哈德遜研究所研究員，Sprint International Corporation亞太區戰略規劃及業務發展董事，AIG亞洲基礎設施投資基金的管理公司Emerging Markets Partnership之董事總經理及香港辦公室主任。閻先生畢業於南京航空學院(現南京航空航天大學)飛機設計專業，並獲得工程學士學位。閻先生曾於北京大學攻讀社會學碩士學位，並獲得普林斯頓大學國際政治經濟碩士學位。

**申曉留先生**，為本公司獨立非執行董事。申先生於2016年3月29日加入本集團。申先生現任華北電力大學控制與計算器機工程學院教授，國家新能源電力系統重點實驗室、華北電力大學能源互聯網與電力大數據研究所專家。歷任山西臨汾電業局技術員，山西省電業局調度中心工程師，華北電力大學北京研究生部動力系熱自教研室教師，山西省電業局信息中心主任，山西省電力公司教育處副處長。申先生畢業於太原理工大學電機系工業自動化專業並獲得學士學位，亦畢業於華北電力大學北京研究生部，獲得電力系統及其自動化專業工學碩士學位。



## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

**Mr. QU Jiuhui** is an independent non-executive Director of the Company. Mr. QU joined the Group on 16 May 2014. Mr. QU currently serves as a researcher and the director of academic degree evaluation committee of Research Center for Eco-environmental Sciences, Chinese Academy of Sciences. Mr. QU serves concurrently as vice chairman in All-China Environment Federation; vice chairman of Chinese Society for Environmental Sciences; vice chairman of Chinese Society for Sustainable Development; member of the National Advisory Council on Environment, and member of Expert Committee for Project 863. Mr. QU served as deputy director and director of the Research Center for Eco-environmental Sciences. Mr. QU's research field focused on the science and technology on water quality as well as water pollution control. Mr. QU has been nominated as an independent non-executive director of Dongjiang Environmental Company Limited (HK.0895; SZ.002672). Mr. QU Jiuhui obtained a PhD degree from Harbin University of Civil Engineering and Architecture. Mr. QU was elected as an academician of China Academy of Science in 2009.

**Mr. XIE Qiuye** is an independent non-executive Director of the Company. Mr. XIE joined the Group on 16 May 2014. Mr. XIE currently serves as president, executive director, general manager of Electric Power Planning & Engineering Institute. Mr. XIE served successively as deputy chief engineer and vice president of Northwestern Electric Power Design Institute, deputy president and chief engineer of China Power Construction Engineering Consulting Corporation; manager of power generation branch of China Power Engineering Consulting (Group) Corporation; president of Central Southern China Electric Power Design Institute and vice president of the Electric Power Planning and Engineering Institute. Mr. XIE obtained a bachelor's degree in thermal energy from Chongqing University. Mr. XIE is a professor-level senior engineer and a national investigation and design master.

**Mr. FAN Ren Da Anthony** is an independent non-executive Director of the Company. Mr. FAN joined the Group on 28 November 2011. Mr. FAN received his MBA degree from the University of Dallas. Mr. FAN serves concurrently as chairman and managing director of AsiaLink Capital Limited. Mr. FAN also serves as an independent non-executive director in the following companies listed on the Main Board of the Hong Kong Stock Exchange: Uni-President China Holdings Ltd. (HK.0220), Raymond Industrial Limited (HK.0229), Shanghai Industrial Urban Development Group Limited (HK.0563), China Development Bank International Investment Limited (HK.1062), Technovator International Limited (HK.1206), Renhe Commercial Holdings Company Limited (HK.1387), Hong Kong Resources Holdings Company Limited (HK.2882), CITIC Resources Holdings Limited (HK.1205), LT Holdings Limited (HK.0112), CGN New Energy Holdings Co., Ltd. (HK.1811), Neo-Neon Holdings Limited (HK.1868) and Tenfu (Cayman) Holdings Company Limited (HK.6868).

**曲久輝先生**，為本公司獨立非執行董事。曲先生於2014年5月16日加入本集團。曲先生現任中國科學院生態環境研究中心研究員及學位委員會主任。兼任中華環保聯合會副主席、中國環境科學學會副理事長、中國可持續發展研究會副理事長、國家環境諮詢委員會委員、國家863計劃專家委員會委員等職務。曲先生曾任中國科學院生態環境研究中心副主任及主任。其研究領域為水質科學與技術，水污染治理等。曲先生同時也是東江環保股份有限公司(HK.0895；SZ.002672)的獨立非執行董事。曲久輝先生獲得哈爾濱建築大學博士學位，並於2009年當選中國工程院院士。

**謝秋野先生**，為本公司獨立非執行董事。謝先生於2014年5月16日加入本集團。謝先生現任電力規劃設計總院院長，電力規劃總院有限公司執行董事、總經理。歷任西北電力設計院副總工程師、副院長，中國電力建設工程諮詢公司副總經理兼總工程師，中國電力工程顧問集團公司發電工程分公司經理，中南電力設計院院長，及電力規劃設計總院常務副院長。謝秋野先生獲得重慶大學熱能專業學士學位，是教授級高級工程師及全國勘察設計大師。

**范仁達先生**，為本公司獨立非執行董事。范先生於2011年11月28日加入本集團。范先生在美國達拉斯大學獲得工商管理碩士學位。范先生同時擔任東源資本有限公司的主席兼董事總經理。范先生亦為在香港聯交所主板上市的統一企業中國控股有限公司(HK.0220)、利民實業有限公司(HK.0229)、上海實業城市開發集團有限公司(HK.0563)、國開國際投資有限公司(HK.1062)、同方泰德國際科技有限公司(HK.1206)、人和商業控股有限公司(HK.1387)、香港資源控股有限公司(HK.2882)、中信資源股份有限公司(HK.1205)、勒泰控股有限公司(HK.0112)、中國廣核新能源控股有限公司(HK.1811)、同方友友控股有限公司(HK.1868)和天福(開曼)控股有限公司(HK.6868)的獨立非執行董事。

## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

#### Board of Supervisors

The board of Supervisors of the Company currently consists of five members. Save for the employee representative Supervisors that are elected by employees, Supervisors are elected by the Shareholders of the Company. Supervisors serve a term of three years after which they may be re-elected or re-appointed. The responsibilities of the board of Supervisors include, amongst others, reviewing and verifying the financial report, business report and profit distribution plan prepared by the Board of Directors, and (upon doubt, if any) appointing certified public accountants and certified public auditors to re-examine the financial information of the Company; supervising the financial activities of the Company; supervising the performance of Directors, president and other senior management and safeguarding against any breach of the law, administrative regulations and provisions of the Articles of Association of the Company in the course of discharging their duties; requiring Directors, president and senior management to correct actions that may harm the interests of the Company and exercising other rights granted to them by the Articles of Association of the Company.

#### Supervisors

The following table sets out certain information relating to the Supervisors of the Company. The members of the second session of the board of Supervisors were re-elected and appointed at the annual general meeting of the Company held on 16 May 2014. The current term for all the Supervisors will expire on 15 May 2017.

#### 監事會

本公司的監事會現時由5名成員組成。除職工代表監事由僱員選出外，監事均由本公司股東選出，任期三年，如獲重選或重新委任可予連任。監事會的職責包括：審閱及核實董事會編製的財務報告、業務報告及利潤分配方案；並(如有疑問)委任執業會計師及執業核數師重新審查本公司的財務資料；監察本公司的財務活動；監察董事、總經理及其他高級管理人員的表現，及監察他們於執行職務時的行為有否違反法律、行政規定及公司章程；要求董事、總經理及高級管理人員糾正有損本公司利益的行動；以及行使本公司的《公司章程》賦予他們的其他權力。

#### 監事

下表列示有關本公司監事的若干信息。本公司於2014年5月16日召開的週年股東大會上進行第二屆監事會成員的重選及委任。本公司本屆所有監事的任期將於2017年5月15日屆滿。

Name 姓名	Age 年齡	Position 職位	Date of Joining the Group 加入本集團日期	Date of Appointment/Election/ Re-appointment 委任／獲選／重選日期
Mr. LUAN Baoxing 樂寶興先生	51	Chairman of the board of Supervisors 監事會主席	9 September 2016 2016年9月9日	Appointed on 9 September 2016 2016年9月9日獲委任
Mr. XU Xingzhou 許興洲先生	55	Supervisor 監事	16 May 2011 2011年5月16日	Re-appointed on 16 May 2014 2014年5月16日獲重選
Mr. YANG Xiangbin 楊向斌先生	51	Supervisor 監事	9 September 2016 2016年9月9日	Appointed on 9 September 2016 2016年9月9日獲委任
Mr. SHAO Guoyong* 邵國勇先生*	50	Chairman of the board of Supervisors 監事會主席	16 May 2014 2014年5月16日	Appointed on 16 May 2014 2014年5月16日獲委任
Mr. CHEN Jingdong* 陳景東先生*	52	Supervisor 監事	16 May 2014 2014年5月16日	Appointed on 16 May 2014 2014年5月16日獲委任
Ms. HE Lili 何麗麗女士	41	Employee Representative Supervisor 職工代表監事	18 March 2014 2014年3月18日	Re-appointed on 16 May 2014 2014年5月16日獲重選
Mr. LI Wei 李偉先生	43	Employee Representative Supervisor 職工代表監事	10 March 2008 2008年3月10日	Re-appointed on 16 May 2014 2014年5月16日獲重選

## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

\* Mr. SHAO Guoyong resigned as the Chairman of the board of Supervisors and Supervisor of the Company on 29 June 2016 due to changes in personal working arrangement.

\* Mr. CHEN Jingdong resigned as Supervisor of the Company on 9 September 2016 due to changes in personal working arrangement.

\* 邵國勇先生因個人工作安排，於2016年6月29日辭任本公司監事會主席及監事職務。

\* 陳景東先生因個人工作安排，於2016年9月9日辭任本公司監事職務。

**Mr. LUAN Baoxing** is the Chairman of the board of Supervisors. Mr. LUAN joined the Group on 9 September 2016. Mr. LUAN serves as director of the financial management department of China Guodian Corporation, and as director of China Guodian Capital Holdings Ltd. (Guodian Finance), director of China Longyuan Power Group Corporation Limited (HK.0916), director of Guodian Fuels and supervisor of Guodian Shandong Power concurrently. Mr. LUAN successively served as deputy chief of the finance and fund department and chief of the accounting cost division of the financial department of Heilongjiang Electric Power Company; deputy chief and chief of accounting cost division of Northeast Electric Power Group; deputy director general of the financial department of State Power Corporation Northeast Branch; associate chief accountant and director of the financial department of Chongqing Electric Power; deputy director of the finance and property department, deputy director and director of the capital operation and property management department of China Guodian Corporation; general manager and deputy secretary of leading party group of Guodian Capital Holding; chairman, general manager and deputy secretary of leading party group of Guodian Finance. Mr. LUAN obtained a bachelor's degree in accounting from Heilongjiang University, a MBA degree from Harbin Institute of Technology. Mr. LUAN is a senior accountant and Certified Public Accountant.

**Mr. XU Xingzhou** is a Supervisor of the Company. Mr. XU joined the Group on 16 May 2011. Mr. XU serves concurrently as director of the human resource department of Guodian Group. Mr. XU served successively as deputy director and director of the salary and insurance division of the human resource department of State Power Corporation; deputy head of the human resources department of Guodian Group; chairman of the board of supervisors of Guodian Suqian Company and Guodian Kaiyuan Company; and head of the Social Insurance Center of Guodian Group. Mr. XU obtained a bachelor's degree in management engineering from Jilin University. Mr. XU is a senior economist.

**Mr. YANG Xiangbin** is a Supervisor of the Company. Mr. YANG joined the group on 9 September 2016. Mr. YANG serves as director of Capital and Assets Management Department of China Guodian Corporation and director of China Longyuan Power concurrently. Mr. YANG served as chief of the budget division of the financial department of Heilongjiang Electric Power Co., Ltd.; deputy chief, chief general of the budget division, chief and deputy director general of the finance and property department, and deputy director general of the financial management department; secretary of party committee, director and deputy general manager of Inner Mongolia Pingzhuang Coal Industry (Group) Co., Ltd.; deputy chairman of Pingzhuang Energy (SZ.000780). Mr. YANG graduated from Harbin Electric Power College majoring in financial accounting of electric power industry and then graduated from Northeast Electric Power College majoring in management engineering. He also obtained a master's degree in business administration from Open University of Hong Kong. Mr. YANG is a senior accountant and Certified Public Accountant.

**樂寶興先生**，為本公司監事會主席。樂先生於2016年9月9日加入本集團。樂先生同時擔任國電集團財務管理部主任，兼任國電資本控股有限公司董事、龍源電力集團股份有限公司(HK.0916)董事、國電燃料有限公司董事、國電山東電力有限公司監事。樂先生歷任黑龍江省電力公司財產資金處副處長、財務部會計成本處處長，中國東北電力集團公司財務部會計成本處副處長、處長，國家電力公司東北公司財務部副主任，重慶電力公司副總會計師兼財務部主任，中國國電集團公司財務產權部副主任、資本運營與產權管理部副主任、資本運營與產權管理部主任，國電資本控股有限公司總經理、黨組副書記，國電財務有限公司董事長、總經理、黨組副書記。樂先生畢業於黑龍江大學會計學專業，獲得學士學位；亦畢業於哈爾濱工業大學MBA專業，獲得碩士學位。樂先生是高級會計師、註冊會計師(CPA)。

**許興洲先生**，為本公司的監事。許先生於2011年5月16日加入本集團。許先生同時擔任國電集團人力資源部主任。許先生歷任國家電力公司人力資源部工資保險處副處長及處長，國電集團人力資源部副主任，國電宿遷公司及國電開遠公司監事會主席，國電集團社會保險中心主任。許先生畢業於吉林大學管理工程學專業，獲得學士學位。許先生是高級經濟師。

**楊向斌先生**，為本公司的監事。楊先生於2016年9月9日加入本集團。楊先生同時擔任國電集團資本與資產管理部主任，兼任龍源電力董事。楊先生歷任黑龍江省電力有限公司財務部預算處處長，中國國電集團公司財務產權部預算處副處長、財務產權部預算處處長、財務產權部副主任，財務管理部副主任，內蒙古平莊煤業(集團)有限責任公司黨委書記、董事、副總經理，內蒙古平莊能源股份有限公司(SZ.000780)副董事長。楊先生畢業於哈爾濱電力學院電力工業財務會計專業，後畢業於東北電力學院管理工程專業，亦於香港公開大學工商管理專業取得工商管理碩士學位。楊先生是高級會計師、註冊會計師(CPA)。

## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

**Ms. HE Lili** is an employee representative Supervisor of the Company. Ms. HE joined the Group on 18 March 2014. Ms. HE serves as member of the Party Committee and the Secretary of Discipline Inspection Commission of the Company. Ms. HE served as a technician of rubber plant production division of Sinopec Beijing Yanshan Company; deputy head of politics and work department and head of the human resources department of Guodian Group, and the chairman of the labor union of the Company. Ms. HE obtained a MBA degree from Beijing University of Aeronautics and Astronautics. Ms. HE is a senior administration engineer and a senior economist.

**Mr. LI Wei** is an employee representative Supervisor of the Company. Mr. LI joined the Group on 10 March 2008. Mr. LI serves concurrently as director of the audit department of the Company. Mr. LI served successively as deputy director of the audit department and deputy director of the financial department of China National Electronic Materials Corporation; deputy chief accountant of United Power; and deputy director of the supervision and audit department and director of supervision department (Disciplinary inspection office) of the Company. Mr. LI obtained a bachelor's degree in economics from Hangzhou Institute of Electronics Engineering and a MBA degree from Beijing University of Aeronautics and Astronautics. Mr. LI is a senior accountant.

**何麗麗女士**，為本公司的職工代表監事。何女士於2014年3月18日加入本集團。何女士同時擔任本公司黨委委員、紀委書記。何女士歷任中石化北京燕山石化公司橡膠廠生產技術處技術員，國電集團政治工作部綜合處副處長、人力資源部綜合處處長，本公司工會主席。何女士畢業於北京航空航天大學工商管理專業，獲得碩士學位。何女士是高級政工師、高級經濟師。

**李偉先生**，為本公司的職工代表監事。李先生於2008年3月10日加入本集團。他同時擔任本公司的審計部主任。李先生歷任中國電子物資總公司審計處副處長及財務部副總經理，聯合動力副總會計師，本公司審計部副經理、監察審計部副經理、監察部(紀檢辦)經理。李先生畢業於杭州電子科技大學會計專業，獲得經濟學學士學位；亦畢業於北京航空航天大學工商管理專業，獲得碩士學位。李先生是高級會計師。

### Senior Management

The following table sets out certain information relating to the senior management of the Company.

### 高級管理人員

下表載列有關本公司高級管理人員的若干資料。

Name 姓名	Age 年齡	Current Position 現任職位	Date of Joining the Group 加入本集團日期
Mr. CHEN Dongqing 陳冬青先生	51	Deputy Secretary of Party Committee, President 黨委副書記、總經理	4 February 2016 2016年2月4日
Mr. TANG Chaoxiong 唐超雄先生	49	Member of the Party Committee, Vice President and Chief Accountant 黨委委員、副總經理、總會計師	12 October 2015 2015年10月12日
Mr. ZHANG Xiaodong 張曉東先生	41	Member of the Party Committee, Vice President and Chairman of the Labour Union 黨委委員、副總經理、工會主席	1 November 2010 2010年11月1日
Mr. YANG Dong* 楊東先生*	44	Member of the Party Committee, Vice President 黨委委員、副總經理	18 January 2001 2001年1月18日
Mr. CAI Zhaowen 蔡兆文先生	48	Member of the Party Committee, Vice President, Secretary of the Board and the Joint Company Secretary 黨委委員、副總經理、董事會秘書及聯席公司秘書	18 March 2014 2014年3月18日
Ms. HE Lili 何麗麗女士	41	Member of the Party Committee and Secretary to the Disciplinary Committee 黨委委員、紀委書記	18 March 2014 2014年3月18日
Mr. TANG Jian 唐堅先生	46	Member of the Party Committee, Vice President 黨委委員、副總經理	12 October 2015 2015年10月12日



## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

Name 姓名	Age 年齡	Current Position 現任職位	Date of Joining the Group 加入本集團日期
Mr. CHU Jingchun 褚景春先生	40	Member of the Party Committee 黨委委員	13 July 2011 2011年7月13日
Mr. LI Caiyun 李彩雲先生	48	Vice President 副總經理	15 July 2014 2014年7月15日

\* Mr. YANG Dong resigned as the member of the Party Committee and vice president of the Company on 21 February 2017 due to changes in personal working arrangement.

\* 楊東先生因個人工作安排，於2017年2月21日辭任本公司黨委委員及副總經理職務。

**Mr. CHEN Dongqing** – Please see details under the section headed “Board of Directors” above.

陳冬青先生—請參閱上文「董事會」部份相關內容。

**Mr. TANG Chaoxiong** – Please see details under the section headed “Board of Directors” above.

唐超雄先生—請參閱上文「董事會」部份相關內容。

**Mr. ZHANG Xiaodong** is a Member of the Party Committee, a vice president and the chairman of the labor union of the Company. Mr. ZHANG also serves as chairman of the board of directors of Guodian Zhishen. Mr. ZHANG joined the Group on 1 November 2010. Mr. ZHANG served as project principal of Energy Conservation Information Dissemination Center and project principal of the project construction division of the Information Center of the State Economic and Trade Commission; deputy director of research and consulting division of the SASAC's Information Center and director of the application and development division of the SASAC's Information Center. Mr. ZHANG obtained a bachelor's degree in electric technology from Taiyuan Heavy Machinery Institute, and a MBA degree from Beijing University of Aeronautics and Astronautics. Mr. ZHANG is a senior engineer.

張曉東先生，為本公司黨委委員、副總經理、工會主席。張先生目前還兼任國電智深董事長。張先生於2010年11月1日加入本集團。張先生歷任國家經貿委節能信息傳播中心項目負責人以及國家經貿委信息中心項目建設處項目負責人，國資委信息中心研究諮詢處副處長、國資委信息中心應用開發處處長。張先生畢業於太原重型機械學院，獲得電氣技術學士學位；亦畢業於北京航空航天大學工商管理專業，獲得碩士學位。張先生是高級工程師。

**Mr. YANG Dong** is a Member of the Party Committee, a vice president of the Company. Mr. YANG joined the Group on 18 January 2001. Mr. YANG served as thermal mechanical engineer of North China Electric Power Design Institute; project engineer of ABB Beijing Representative Office; manager of engineering department of Longyuan Environmental; general manager of Beijing Longyuan Environmental Engineering Co., Ltd; and assistant to the general manager and manager of the department of technology management and chief engineer of the Company. Mr. YANG obtained a bachelor's degree in thermal power engineering from Shanghai Jiao Tong University and a MBA degree from Renmin University of China. Mr. YANG is a Professor-level senior engineer.

楊東先生，為本公司黨委委員、副總經理。楊先生於2001年1月18日加入本集團。楊先生歷任華北電力設計院的熱機工程師，ABB北京代表處的項目工程師，龍源環保設計部經理，北京龍源環保工程有限公司總經理，本公司總經理助理兼技術管理部經理及總工程師。楊先生畢業於上海交通大學電廠熱能動力工程專業，取得學士學位；亦畢業於中國人民大學工商管理專業，獲得碩士學位。楊先生是教授級高級工程師。

## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

**Mr. CAI Zhaowen** is a Member of the Party Committee, a deputy general manager, board secretary of the Company and joint secretary of the Company. Mr. CAI serves as Chairman of the board of Supervisors of Yantai Longyuan. Mr. CAI joined the group on 18 March 2014 and was appointed as the joint secretary of the Company on 30 March 2017. Mr. CAI successively served as deputy general manager of Yichun Xing anling Wind Power Co., Ltd., Yilan Longyuan Wind Power Co., Ltd., and Huanan Longyuan Wind Power Co., Ltd; director of the planning and development department and general manager assistant and director of planning and development department of Longyuan Power. Mr. CAI graduated from Tsinghua University, obtained a bachelor's degree with a double major in hydraulic architecture and environmental engineering, and a MBA degree. Mr. CAI is a senior engineer.

**Ms. HE Lili** – Please see details under the section headed “Board of Supervisors” above.

**Mr. TANG Jian** is a Member of the Party Committee, a vice president of the Company. Mr. TANG serves as the chairman, and secretary of the Party Committee of Longyuan Environmental. Mr. TANG joined the Group on 12 October 2015. Mr. TANG served as vice director of the power generation department of the Yangzhou No. 2 Power Plant in Jiangsu; vice director of preparation for the production department and director of the operation department and director of business planning department of Guodian Changzhou Power Generation Co. Ltd.; member of the Party Committee and vice general manager of Guodian Bengbu Power Generation Co., Ltd.; deputy head of the Coal-fired Power Office, head of the Coal-fired Power Office and head of the General Office of the Engineering & Construction Department of China Guodian Corporation; general manager and deputy secretary of the Party Committee of Beijing Guodian Longyuan Environmental Engineering Co., Ltd.. Mr. TANG obtained a bachelor's degree in power plant thermal energy and power engineering from China University of Mining and Technology. Mr. TANG is a senior engineer.

**蔡兆文先生**，為本公司黨委委員、副總經理、董事會秘書及聯席公司秘書。蔡先生目前還兼任煙台龍源監事會主席。蔡先生於2014年3月18日加入本集團，於2017年3月30日獲委任為本公司的聯席公司秘書。蔡先生歷任伊春興安嶺風力發電有限公司、依蘭龍源風力發電有限公司、樺南龍源風力發電有限公司常務副總經理，龍源電力計劃發展部主任，龍源電力總經理助理兼規劃發展部主任。蔡先生畢業於清華大學，獲得水工建築、環境工程專業雙學士學位，亦獲得工商管理專業碩士學位。蔡先生是高級工程師。

**何麗麗女士**—請參閱上文「監事會」部份相關內容。

**唐堅先生**，為本公司黨委委員、副總經理。唐先生目前還兼任龍源環保董事長、黨委書記。唐先生於2015年10月12日加入本集團。唐先生歷任江蘇揚州第二發電廠發電部副主任，國電常州發電有限公司生產準備部副主任、運行部主任、經營計劃部主任，國電蚌埠發電有限公司黨委委員、副總經理，中國國電集團公司工程建設部火電處副處長、火電處處長、綜合處處長，北京國電龍源環保工程有限公司總經理、黨委副書記。唐先生畢業於中國礦業大學電廠熱能動力工程專業，獲得學士學位。唐先生是高級工程師。

## DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT (CONTINUED)

### 董事、監事及高級管理人員(續)

**Mr. CHU Jingchun** is a member of the Party Committee of the Company. Mr. CHU concurrently serves as the chairman, president and vice secretary of the Party Committee of United Power and the chairman of Longyuan Electrical. Mr. CHU joined the Group on 13 July 2011. Mr. CHU served as the deputy head and head of the Admissions Office of Students Affairs Division, director of the Liaison Office of the Board, deputy dean of the Training College, vice director of the Party Committee and the President Office, director of the Council office, director of Alumni Association Office, vice director(in charge of relevant work) and director of the University-enterprise cooperation Office of North China Electric Power University (Beijing); manager of General Management Department of Guodian Technology & Environment Group Corporation Limited\*, secretary of the Party Committee and vice president of Guodian United Power Technology Co., Ltd., the general manager assistant and a member of the Party Committee of Guodian Technology & Environment Group Corporation Limited\*. Mr. CHU obtained a master's degree in technology economy and management from the School of Economics and Management of Beijing University of Aeronautics and Astronautics and also obtained a doctor's degree in technology economy and management from North China Electric Power University. Mr. CHU is a senior engineer.

**Mr. LI Caiyun** is a deputy general manager of the Company. Mr. LI serves as the chairman, general manager and deputy secretary of the Party Committee of an engineering company. Mr. LI joined the Group on 15 July 2014. Mr. LI successively served as deputy director of construction site of Jiangsu Electric Power Construction No. 3 Engineering Company; manager of architecture company; director and deputy chief engineer of the engineering department of Guodian Changzhou Generating Co., Ltd.; deputy chief engineer and deputy general manager of Guodian Taizhou Generation Co., Ltd.; deputy chief and chief of the engineering department of bidding center of China Guodian Corporation; general manager assistant, member of the Party Group of Guodian Technology & Environment Group Corporation Limited. Mr. LI obtained a bachelor's degree in industrial and civil construction from Wuhan Institute of Hydraulic and Electric Engineering. Mr. LI is a senior engineer.

### Joint Company Secretaries

**Mr. CAI Zhaowen** – Please see details under the section headed “Senior Management” above.

**Ms. MOK Ming Wai** is the joint company secretary of the Company. Ms. MOK was appointed as the company secretary of the Company on 29 November 2016. Ms. MOK is the director and head of Listing Services Department of TMF Hong Kong Limited. Ms. MOK has experienced as company secretary for over 20 years. Ms. MOK is the fellow member of the Hong Kong Institute of Chartered Secretaries and the Institute of Chartered Secretaries and Administrators in the United Kingdom.

**褚景春先生**，為本公司黨委委員。褚先生目前還兼任聯合動力董事長、總經理、黨委副書記，龍源電氣董事長。褚先生於2011年7月13日加入本集團。褚先生歷任華北電力大學(北京)學生處招辦副主任、招辦主任，董事會聯絡辦公室主任，培訓學院副院長，黨委辦公室副主任兼校長辦公室副主任、理事會工作辦公室主任、校友會工作辦公室主任，校企合作辦公室副主任(主持工作)、校企合作辦公室主任；國電科技環保集團股份有限公司綜合管理部經理，國電聯合動力技術有限公司黨委書記兼總經理，國電科技環保集團股份有限公司總經理助理、黨組成員。褚先生畢業於北京航空航天大學經管學院技術經濟及管理專業，獲得碩士學位，亦畢業於華北電力大學技術經濟及管理專業，獲得博士學位。褚先生是高級工程師。

**李彩雲先生**，為本公司副總經理。李先生目前還兼任工程公司董事長、總經理、黨委副書記。李彩雲於2014年7月15日加入本集團。李先生歷任江蘇電建三公司建築工地副主任、建築專業公司經理，國電常州發電有限公司工程部主任、副總經理，國電泰州發電有限公司副總工程師、副總經理，中國國電集團公司招標中心副處長、招標中心工程處處長，國電科技環保集團股份有限公司總經理助理、黨組成員。李先生畢業於武漢水利電力學院工民建專業，獲得學士學位。李先生是高級工程師。

### 聯席公司秘書

**蔡兆文先生** – 請參閱上文「高級管理人員」部份相關內容。

**莫明慧女士**，為本公司聯席公司秘書。莫女士於2016年11月29日獲委任為本公司的公司秘書。莫女士為達盟香港有限公司董事兼上市公司服務部主管。莫女士擁有逾20年的公司秘書工作經驗，並為香港特許秘書公會及英國特許秘書及行政人員工會資深會員。

\* for identification purpose only

# REPORT OF THE BOARD OF DIRECTORS

## 董事會報告

The Board of the Company hereby presents to Shareholders this Annual Report and the audited financial statements for 2016 (the “**Financial Statements**”).

### SHARE CAPITAL

As of 31 December 2016, 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. Details of movement in the share capital of the Company during the year are set out in Note 36 to the Financial Statements.

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

Neither the Company nor any of its subsidiaries purchased, sold or redeemed any of the Company's listed securities during the year ended 31 December 2016.

### PRE-EMPTIVE RIGHTS

According to the Articles of Association of the Company or the PRC law, there are no provisions for pre-emptive rights requiring the Company to offer new shares to the existing shareholders of the Company in proportion to their shareholdings.

### PRINCIPAL BUSINESS

The Company is principally engaged in (1) the environmental protection and energy conservation solutions business, and (2) the renewable energy equipment manufacturing and solutions business. The Company offers diversified products and services and uses diversified business models in its business operations. Details of subsidiaries and associates of the Company are set out in Notes 18 and 19 to the Financial Statements.

### RESULTS

The results of the Company and its subsidiaries for the year ended 31 December 2016 and the financial position of the Company and its subsidiaries as of 31 December 2016 are set out in the Financial Statements of this Annual Report.

### BUSINESS REVIEW

A discussion and analysis of the Group results performance during the year and material factors underlying its results and financial position and business prospect are set out in the Management's Discussion and Analysis section of this Annual Report.

Details of financial risk management of the Group are set out in Notes 37 to the Financial Statements.

本公司董事會現向股東提呈其於2016年度的本年度报告及經審核財務報表(「**財務報表**」)。

### 股本

於2016年12月31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，H股1,309,770,000股。本公司股本於本年度的變動詳情載於財務報表附註36。

### 購買、出售或贖回本公司上市證券

本公司或其任何附屬公司於截至2016年12月31日止年度未購買、出售或贖回本公司任何上市證券。

### 優先購股權

根據本公司的《公司章程》或中國法律並無存在要求本公司按現有股東持股比例向其發售新股的優先購股權的規定。

### 主營業務

本公司的主營業務為(1)環保及節能解決方案業務，以及(2)可再生能源設備製造及解決方案業務。本公司供應多元化的產品及服務，並於開展業務時使用多樣化的業務模式。本公司附屬公司及聯營公司的詳情分別載於財務報表附註18及19。

### 業績

本公司及其附屬公司截至2016年12月31日止年度的業績以及本公司及其附屬公司於2016年12月31日的財務狀況載於本年報的財務報表。

### 業務審視

有關本集團本年度的業績表現、影響業績、財務狀況的重要因素及業務展望的討論及分析，載於本年報的「管理層討論與分析」一節。

有關本集團財務風險管理的詳情載於財務報表附註37。



## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### RELATIONSHIP WITH THE CONNECTED PERSONS OF PRINCIPAL BUSINESS

##### Employees

As at 31 December 2016, the Group had a total of 8,155 employees. The employees' remuneration comprises of basic salary, performance payment and bonus payment. Performance payment is made with reference to the Company's financial results and the performance evaluation on the individual employee. The bonus payment is made with reference to the status of completion of the Company's annual major tasks.

In order to ensure the objectiveness and fairness of the performance evaluation and the comparability of the evaluation results, the Group introduced the departmental evaluation process where the management of the Company evaluates middle management and departments, and in turn the department managers evaluate their employees, ensuring that the missions of the Company are effectively conveyed.

Improving staff quality was considered an important aspect in the talent development strategy for the Group. The Group strived to improve the training system and curriculum planning to meet the requirements of the development of the Group, actively explored to build a "3+1" employee training system comprising of leadership, competence, execution, and professional skills.

##### Suppliers

The Group requires its subsidiaries to learn advanced experience in the industry, optimize the development process of qualified suppliers, introduce excellent suppliers of leading enterprises in the industry, speed up the verification and probation process of newly-developed suppliers, develop a reasonable development plan, and reasonably plan the procurement proposal.

#### Compliance with Laws

The Group requires its subsidiaries to strictly abide by national laws and local regulations and industry standards. The relevant departments of the Group are responsible for monitoring, supervising and inspecting the management and implementation of laws and regulations of the subsidiaries on a regular basis and from time to time and assessing their implementation and compliance in these areas. During the year in 2016, the Company was aware that there was no event that had materially violated or had not been in compliance with the laws and regulations applicable to the Group and had a significant impact on the Group's business and operations.

#### Environmental Policies

The Group has consistently performed its corporate social responsibility from the perspective of the corporate survival and development and strictly complied with the environmental protection requirements of the "Environmental Protection Law of the People's Republic of China" and other applicable laws and regulations to strictly implemented the environmental protection requirements for projects, in order to ensure that the environmental protection facilities and the main body engineering designed, constructed and put into production simultaneously, thus achieving efficient operations and standard emissions.

#### 與主要業務有關人士的關係

##### 員工

於2016年12月31日，本集團共有員工8,155人。員工薪酬由基本工資、績效工資和獎勵工資三部分組成，績效工資依據公司業績及績效考核情況確定，獎勵工資依據公司年度重點工作完成情況確定。

為保證績效考核過程客觀公正，考核結果具有可比性，本集團引入部門考核環節，由公司領導對中層管理人員和部門進行評價，由部門經理對員工進行評價，確保本公司任務的有效傳遞。

本集團將提升人員隊伍素質作為人才發展戰略的重要一環，著力完善符合本集團發展要求的培訓制度和大綱規劃，積極探索建立基於領導力、勝任力、執行力和專業技能培養的「3+1」全員培訓體系。

##### 供應商

本集團要求附屬公司學習行業內先進經驗，優化合格供應商開發流程，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。

#### 法律遵守情況

本集團要求附屬公司嚴格遵守國家法律及各地規章、各行業準則。本集團相關部門負責定期及不時監測、監督及檢查各附屬公司的法律法規管理及執行情況，且評估其於該等領域的執行及遵守情況。於2016年年內，本公司知悉，概無重大違反或不遵守本集團適用法律法規，且對本集團業務及經營造成重要影響的事件。

#### 環保政策

本集團一貫從企業生存和發展的高度，履行企業的社會責任，嚴格落實《中華人民共和國環保法》及其他適用的法律法規對於環境保護的要求，嚴格執行項目的環保要求，確保環保設施和主體工程同時設計、施工、投產，實現高效運行和達標排放。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

Since 31 December 2016 and up to the date of this annual report, there was no event that had a significant impact on the Group's operational, financial or business prospects.

The above discussion forms part of this report of the Board of Directors.

### DIVIDEND

The Board recommends not to distribute dividends for the year ended 31 December 2016.

### PROPERTY, PLANT AND EQUIPMENT

Details of the movements in property, plant and equipment of the Company and its subsidiaries during the year are set out in Note 13 to the Financial Statements.

### RESERVES

Details of the movements in reserves of the Company during the year are set out in Note 36(a) to the Financial Statements, among which, details of reserves available for distribution to the shareholders as of 31 December 2016 are set out in Note 36(e) to the Financial Statements.

### BANK LOANS AND OTHER BORROWINGS

Details of bank loans and other borrowings of the Company and its subsidiaries as of 31 December 2016 are set out in Note 29 to the Financial Statements.

### DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

Certain information of the Directors, supervisors and senior management of the Company as of the date of this Annual Report, such as name, position in the Company and date of joining/appointment/re-appointment/resignation, is set out in the Directors, Supervisors and Senior Management section of this Annual Report.

The Company has received, from each of the independent non-executive Directors, an annual confirmation of his independence pursuant to Rule 3.13 of the Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited and considers that all of the independent non-executive Directors are independent of the Company.

### BIOGRAPHIES OF DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT

Biographical details of Directors, Supervisors and senior management are set out in the Directors, Supervisors and Senior Management section of this Annual Report.

自2016年12月31日起截至本年報日期止，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。

以上討論屬本董事會報告的一部分。

### 股息

董事會建議不派發截至2016年12月31日止年度之股息。

### 物業、廠房及設備

本公司及其附屬公司物業、廠房及設備於本年度的變動詳情載於財務報表附註13。

### 儲備

本年度內本公司儲備的變動詳情載於財務報表附註36(a)，其中截至2016年12月31日止可供分配予股東的儲備詳情載於財務報表附註36(e)。

### 銀行貸款及其他借款

關於本公司及其附屬公司於2016年12月31日之銀行貸款及其他借款的詳情載於財務報表附註29。

### 董事、監事和高級管理人員

於本年報發佈日期，本公司董事、監事和高級管理人員的有關資料，如姓名、本公司職位及加入／委任／重選／辭任日期，載於本年報的「董事、監事及高級管理人員」一節。

本公司已收到每名獨立非執行董事根據香港聯合交易所有限公司證券上市規則第3.13條就其各自的獨立性出具的年度確認書，並認為每名獨立非執行董事均獨立於本公司。

### 董事、監事和高級管理人員簡歷

董事、監事和高級管理人員的簡歷詳情載於本年報的「董事、監事及高級管理人員」一節。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### SERVICE CONTRACTS OF THE DIRECTORS AND SUPERVISORS

Each of the executive Directors and Supervisors of the Company has entered into a service contract with the Company on 16 May 2014, which is preliminarily for a term of three years commencing from 16 May 2014. Each of the non-executive Directors and independent non-executive Directors has entered into a letter of appointment with the Company on 16 May 2014, for a term of three years, with a one-year automatic renewal clause.

Mr. CHEN Dongqing, Mr. TANG Chaoxiong, and Mr. SHEN Xiaoliu have each entered into a letter of appointment with the Company on 29 March 2016.

Save as disclosed above, none of the Directors or Supervisors has entered into a service contract with the Company which is not determinable by the Company within one year without payment of compensation, other than statutory compensation.

#### PERMITTED INDEMNITY PROVISIONS

Pursuant to the Articles of Association of the Company, every Director, Supervisor or senior management of the Company shall be entitled to be indemnified out of the assets of the Company against all losses or liabilities which he may sustain or incur in or about the execution of the duties of his office or otherwise in relation thereto. Besides, the Company has arranged appropriate insurance for Directors, Supervisors and senior management for possible legal action.

#### DIRECTORS' AND SUPERVISORS' REMUNERATION

Details of the remuneration of the Directors and Supervisors of the Company are set out in Note 9 to the Financial Statements.

Details of the remuneration of five Individuals with highest emoluments of the Company are set out in Note 10 to the Financial Statements.

#### INTERESTS OF DIRECTORS AND SUPERVISORS IN CONTRACTS, TRANSACTIONS OR ARRANGEMENTS

At any time during the year of 2016, there was no contract of significance, transaction or arrangement related to the Group's business in which the Company and its subsidiaries was a party, and in which a Director or Supervisor or an entity connected with a Director or a Supervisor had a material interest, either directly or indirectly, subsisted during the year or at the end of the year.

#### 董事及監事的服務合約

本公司各執行董事及監事已於2014年5月16日與本公司訂立了服務合約，各服務協議自2014年5月16日起初步為期三年。而各非執行董事及獨立非執行董事亦已於2014年5月16日與本公司訂立了委任函，為期三年，委任函包含自動延期一年的條款。

陳冬青先生、唐超雄先生、申曉留先生則已各自於2016年3月29日與本公司簽訂委任函。

除上文所披露者外，概無董事或監事與本公司訂立本公司不可於一年內不付賠償(法定賠償除外)而終止的服務合約。

#### 獲准許的彌償條文

根據本公司《公司章程》，本公司每名董事、監事及高級管理人員在其執行職責或在其他方面與此有關之情況下可能蒙受或產生之所有損失或責任，有權獲得從本公司之資產中撥付彌償。此外，本公司已就其可能面對之有關法律行動安排適當的董事、監事及高級管理人員保險。

#### 董事及監事的酬金

本公司董事及監事酬金的詳情載於財務報表附註9。

本公司的五位最高薪酬人士的薪酬詳情載於財務報表附註10。

#### 董事及監事於合約、交易或安排的權益

於2016年度內的任何時間，本公司及其附屬公司概無直接或間接參與訂立與董事或監事或其有關連的實體有重大利益關係、與本集團業務有關、且於本年度內或結束時仍然有效的重要合約、交易或安排。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED) 董事會報告(續)

### INTERESTS OF DIRECTORS IN COMPETING BUSINESS

### 董事於競爭業務的權益

During the year of 2016, save as disclosed below, none of the Directors and their associates had any competing interests in any business which competed, or was likely to compete, either directly or indirectly, with the business of the Group:

於2016年度內，除下文所披露者外，概無董事及其聯繫人於任何與本集團業務直接或間接構成競爭或可能構成競爭的業務中擁有任何競爭權益：

Name of Directors 董事姓名	Position in the Company 本公司職位	Other Interests 其他權益
Mr. WANG Zhongqu 王忠渠先生	Non-executive Director 非執行董事	Safety production supervisor and the head of Work Safety Division of Guodian Group 國電集團安全生產總監兼安全生產部主任
Mr. ZHANG Wenjian 張文建先生	Non-executive Director 非執行董事	Head of Technology and General Industry Division of Guodian Group 國電集團科技與綜合產業部主任
Mr. FENG Shuchen 馮樹臣先生	Non-executive Director 非執行董事	President of Guodian Power and general manager assistant of Guodian Group 國電電力總經理兼國電集團總經理助理

### INTERESTS AND SHORT POSITIONS OF THE DIRECTORS, SUPERVISORS AND SENIOR MANAGEMENT IN THE SHARES, UNDERLYING SHARES AND DEBENTURES

### 董事、監事及高級管理人員於股份、相關股份及債權證的權益及淡倉

As at 31 December 2016, Mr. YAN Andrew Y., a non-executive Director of the Company, was interested in 288,200,000 shares of the Company. Please refer to "Substantial Shareholders' Interests in 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 Securities and Futures Ordinance ("SFO")) which would have to be notified to the Company and The Stock Exchange of Hong Kong Limited 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 of Hong Kong Limited pursuant to the Model Code for Securities Transactions by Directors of Listed Issuers.

於2016年12月31日，本公司非執行董事閻焱先生對本公司的288,200,000股股份擁有權益。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》（「《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香港聯合交易所有限公司的權益或淡倉（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條須登記於該條所指登記冊的權益或淡倉，或根據《上市發行人董事進行證券交易的標準守則》須知會本公司及香港聯合交易所有限公司的權益或淡倉。

### EQUITY-LINKED AGREEMENTS

### 股票掛鈎協議

No equity-linked agreements that will or may result in the Company issuing shares or that require the Company to enter into any agreements that will or may result in the Company issuing shares were entered into by the Company during the year or subsisted at the end of the year.

於年內或年度結束時，本公司概無訂立或存在任何股票掛鈎協議將會或可導致本公司發行股份，或規定本公司訂立任何協議將會或可導致本公司發行股份。



## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### SUBSTANTIAL SHAREHOLDERS' INTERESTS IN SHARES

#### 主要股東於股份之權益

As of 31 December 2016, to the knowledge of the Directors, the persons below (except the Directors, Supervisors and senior management of the Company) have interests or short positions in the shares or underlying shares of the Company which are required to be disclosed 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):

於2016年12月31日，就董事所知，下列人士（本公司董事、監事及高級管理人員除外）於本公司股份或相關股份中擁有根據《證券及期貨條例》第XV部第2及3分部須向本公司披露之權益或淡倉（該表已根據中央結算系統持股紀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> %
股東姓名／名稱	股份類別	身份			
Guodian Group 國電集團	Domestic shares 內資股	Interests of beneficial owner and controlled corporation 實益擁有人及受控公司之權益	4,754,000,000 <sup>(2)</sup> (Long position) (好倉)	100.00	78.40
GD 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
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	89,505,000 (Long position) (好倉)	6.83	1.48
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

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### Notes:

- (1) This percentage is calculated based on the number of relevant shares/total shares issued by the Company as of 31 December 2016.
- (2) Guodian Group holds, directly or indirectly, 100% of the domestic shares of the Company via GD Power. As of 31 December 2016, Guodian Group has 46.00% interests in GD Power and GD Power has 49.99% interest in the domestic shares of the Company. Therefore, Guodian Group is deemed to have the interests in the domestic shares of the Company held by GD Power.
- (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. He 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% interest in the H shares. Therefore, Mr. YAN Andrew Y., SAIF IV GP Capital Ltd. and SAIF IV GP LP are deemed to have the interests in the H shares held by SAIF Partners IV L. P..

#### 附註：

- (1) 該百分比是以本公司於2016年12月31日已發行的相關股份數目／總股份數目計算。
- (2) 國電集團透過國電電力直接及間接持有100%的內資股。於2016年12月31日，國電集團於國電電力股份總額中擁有46.00%的權益，國電電力擁有本公司49.99%的內資股。因此，國電集團被視為擁有國電電力所持有的內資股的權益。
- (3) 閻焱先生透過SAIF IV GP Capital Ltd.及SAIF IV GP LP經SAIF Partners IV L.P.間接持有22.00%的H股。閻焱先生是SAIF IV GP Capital Ltd.、SAIF IV GP LP以及SAIF Partners IV L.P.的控股股東。SAIF IV GP Capital Ltd.是SAIF IV GP LP的控股股東。SAIF IV GP LP是SAIF Partners IV L.P.的控股股東。SAIF Partners IV L.P.擁有22.00%的H股。因此，閻焱先生、SAIF IV GP Capital Ltd.以及SAIF IV GP LP被視為擁有SAIF Partners IV L.P.所持有H股的權益。

## MANAGEMENT CONTRACTS

The Company did not enter into any contract in respect of the management or administration of the entire or any significant part of the business of the Company nor did such contract subsist at any time during 2016.

## 管理合約

2016年度內本公司並未於任何時間就有關本公司全部或任何重大部份業務的管理或行政工作訂立或存在任何合約。

## CONNECTED TRANSACTIONS

The Company has entered into certain contracts with its connected persons (as defined under Chapter 14A of the Listing Rules). These transactions were monitored and managed by the Company in accordance with the Listing Rules.

## 關連交易

本公司已與其關連人士(定義見上市規則第14A章)訂立若干合約。此等交易乃由本公司根據上市規則監督和管理。

Non-exempt connected transactions of the Group during 2016 are as follows (unless otherwise defined, capitalized terms used herein shall have the same meanings as those defined in the relevant announcements as mentioned below):

下列為本集團於2016年度內的未獲豁免關連交易(除非另有定義，本年報所用之詞彙與如下公告所界定者具相同含義)：

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### (1) Non-exempt One-off Connected Transaction

On 25 January 2016, the Company entered into an Investment Agreement with Guodian Shandong, Shandong Ludian and Shandong Tuoneng, pursuant to which, the parties will make contributions to establish a JV Company which will be in charge of the investment in and construction of 2x1,000 MW power generator units of Guodian Boxing Power Plant. The total investment in the Project amounts to RMB8,706 million (the ultimate amount shall be subject to the approved Project budget), of which the registered capital of the JV Company is RMB1,741 million. The parties' respective proportions in and contributions to the registered capital of the JV Company are as follows: (i) the Company will contribute RMB522 million, representing 30% of the registered capital; (ii) Guodian Shandong will contribute RMB888 million, representing 51% of the registered capital; (iii) Shandong Ludian will contribute RMB174 million, representing 10% of the registered capital; and (iv) Shandong Tuoneng will contribute RMB157 million, representing 9% of the registered capital.

As Guodian Shandong is a subsidiary of Guodian Group, the controlling shareholder of the Company, Guodian Shandong is a connected person of the Company. The transaction contemplated under the Investment Agreement constitutes a connected transaction of the Company under Chapter 14A of the Listing Rules.

The Directors (including the independent non-executive Directors but excluding Mr. Wang Zhongqu, Mr. Zhang Wenjian and Mr. Feng Shuchen) considered that the terms of the Investment Agreement are on normal commercial terms or better and although not in the ordinary and usual course of business of the Group, they are fair and reasonable and are in the interests of the Company and the shareholders as a whole. The non-executive Directors, Mr. Wang Zhongqu, Mr. Zhang Wenjian and Mr. Feng Shuchen, being Directors connected with Guodian Group, GD Power and other associates of Guodian Group, have abstained from voting in relation to this matter at the Company's board meeting. Save as disclosed above, no Directors has any material interest in the transaction contemplated under the Investment Agreement.

For details, please refer to the announcement of the Company dated 25 January 2016.

On 5 February 2016, Longyuan Environmental (a wholly-owned subsidiary of the Company) entered into the Transfer Agreements with each of the 27 subsidiaries of Guodian Group. Pursuant to the Transfer Agreements, Longyuan Environmental will transfer certain desulfurization and denitrification assets to the 27 subsidiaries of Guodian Group respectively, with a total consideration of approximately RMB3,390,886,900.

#### (1) 不獲豁免一次性關連交易

於2016年1月25日，本公司與國電山東、山東魯電和山東拓能簽訂投資協議，據此，各方合資設立合營公司，由合營公司負責投資建設國電博興電廠2x1,000兆瓦機組工程。該項目的總投資金額為人民幣87.06億元（最終金額以審查批覆的專案項目為準），其中合營公司的註冊資本金為17.41億人民幣，各方佔合營公司註冊資本金的比例和出資金額分別為：(i)本公司佔30%，出資5.22億人民幣；(ii)國電山東佔51%，出資8.88億人民幣；(iii)山東魯電佔10%，出資1.74億人民幣；和(iv)山東拓能佔9%，出資1.57億人民幣。

由於國電山東為國電集團的附屬公司，而國電集團為本公司的控股股東，因此，國電山東為本公司之關連人士。根據上市規則第14A章，投資協議項下的交易構成本公司的關連交易。

董事（包括獨立非執行董事，但不包括王忠渠先生、張文建先生及馮樹臣先生）認為，投資協議之條款乃按一般商業條款或更佳條款訂立，屬公平合理，儘管投資協議項下的交易並非於本集團的日常及一般業務過程中訂立，但符合本公司及股東之整體利益。非執行董事王忠渠先生、張文建先生及馮樹臣先生為與國電集團、國電電力及國電集團其他聯繫人士有關的董事，並已就此事項於本公司董事會會議中放棄投票。除上文所披露者外，概無董事於投資協議項下的交易中擁有任何重大權益。

有關詳情請見本公司日期為2016年1月25日之公告。

於2016年2月5日，龍源環保（本公司之全資附屬公司）分別與國電集團二十七家附屬公司簽訂轉讓協議。根據轉讓協議，龍源環保將分別轉讓其若干脫硫脫硝資產予國電集團二十七家附屬公司，轉讓的總代價約為人民幣3,390,886,900元。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

As the transferees under each of the Transfer Agreements are all subsidiaries of Guodian Group, and Guodian Group is a controlling shareholder of the Company, the transferees under each of the Transfer Agreements are connected persons of the Company, and the transactions contemplated under each of the Transfer Agreements constitute connected transactions of the Company under Chapter 14A of the Listing Rules.

The Directors (including the independent non-executive Directors but excluding Mr. Wang Zhongqu, Mr. Zhang Wenjian and Mr. Feng Shuchen) considered that the terms of the Transfer Agreements are on normal commercial terms or better, fair and reasonable and although not in the ordinary and usual course of business of the Group, they are in the interests of the Company and the shareholders as a whole. The non-executive Directors, Mr. Wang Zhongqu, Mr. Zhang Wenjian and Mr. Feng Shuchen, being Directors connected with Guodian Group, GD Power and other associates of Guodian Group, have abstained from voting in relation to this matter at the Company's board meeting. Save as disclosed above, none of the Directors has any material interest in the transactions contemplated under the Transfer Agreements.

For details, please refer to the announcement of the Company dated 5 February 2016.

On 24 June 2016, the Company entered into a supplemental agreement with Guodian Shandong, Shandong Ludian, Shandong Tuoneng and Shandong Xinda, pursuant to which, Shandong Xinda will join the JV Company as a new investor, and the registered capital of the JV Company will be decreased to RMB1.6 billion, replacing the original registered capital of RMB1.741 billion as set out in the Original Investment Agreement. Save for above, the terms and conditions of the Supplemental Investment Agreement are similar to those of the Original Investment Agreement. Details of the proportion in and contribution to the registered capital after the decrease are set out as follows: (i) the Company will contribute RMB448 million, representing 28% of the registered capital; (ii) Guodian Shandong will contribute RMB800 million, representing 50% of the registered capital; (iii) Shandong Ludian will contribute RMB144 million, representing 9% of the registered capital; (iv) Shandong Tuoneng will contribute RMB128 million, representing 8% of the registered capital; and (v) Shandong Xinda will contribute RMB80 million, representing 5% of the registered capital.

As Guodian Shandong is a subsidiary of Guodian Group, the controlling shareholder of the Company, Guodian Shandong is a connected person of the Company. The transaction contemplated under the Supplemental Investment Agreement also constitutes a connected transaction of the Company under Chapter 14A of the Listing Rules.

由於各轉讓協議下的受讓方均為國電集團的附屬公司，而國電集團為本公司的控股股東，各轉讓協議下的受讓方均為本公司之關連人士，根據上市規則第14A章，轉讓協議項下的交易構成本公司的關連交易。

董事(包括獨立非執行董事，但不包括王忠渠先生、張文建先生及馮樹臣先生)認為，轉讓協議之條款乃按正常商業條款或更佳條款訂立，屬公平合理，儘管轉讓協議項下的交易並非於本集團的日常及一般業務過程中訂立，但符合本公司及股東之整體利益。非執行董事王忠渠先生、張文建先生及馮樹臣先生為與國電集團、國電電力及國電集團其他聯繫人士有關的董事，並已就此事項於本公司董事會會議中放棄投票。除上文所披露者外，概無董事於轉讓協議項下的交易中擁有任何重大權益。

有關詳情請見本公司日期為2016年2月5日之公告。

於2016年6月24日，本公司與國電山東、山東魯電、山東拓能及山東鑫達訂立補充協議，據此，合營公司將加入山東鑫達作為新投資者，且合營公司的註冊資本將調減至16億人民幣，取代原投資協議所載的原定註冊資本17.41億人民幣。除此以外，補充投資協議與原投資協議的條款及條件相若。調減後的註冊資本金比例和出資金額的詳情如下：(i)本公司佔28%，出資人民幣44,800萬元；(ii)國電山東佔50%，出資人民幣80,000萬元；(iii)山東魯電佔9%，出資人民幣14,400萬元；(iv)山東拓能佔8%，出資人民幣12,800萬元；及(v)山東鑫達佔5%，出資人民幣8,000萬元。

由於國電山東為國電集團的附屬公司，而國電集團為本公司的控股股東，因此，國電山東為本公司之關連人士。根據上市規則第14A章，補充投資協議項下的交易構成本公司的關連交易。



## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

The Directors (including the independent non-executive Directors but excluding Mr. Wang Zhongqu, Mr. Zhang Wenjian and Mr. Feng Shuchen) considered that the terms of the Supplemental Investment Agreement are on normal commercial terms or better, fair and reasonable and although not in the ordinary and usual course of business of the Group, there are in the interests of the Company and the shareholders as a whole. The non-executive Directors, Mr. Wang Zhongqu, Mr. Zhang Wenjian and Mr. Feng Shuchen, being Directors connected with Guodian Group, GD Power and other associates of Guodian Group, have abstained from voting in relation to this matter at the Company's board meeting. Save as disclosed above, none of the Directors has any material interest in the transaction contemplated under the Supplemental Investment Agreement.

For details, please refer to the announcement of the Company dated 24 June 2016.

On 11 November 2016, United Power, a subsidiary of the Company, entered into the Sale and Purchase Agreement with Longyuan Power, pursuant to which, United Power conditionally agreed to sell and Longyuan Power conditionally agreed to purchase the shares of Guodian United Power Technology (Changchun) Co., Ltd, which is a wholly-owned subsidiary of the former, at a consideration of RMB291,266,400. The Target Company will cease to be a subsidiary of the Company following the completion of the Sale and Purchase Agreement.

As Longyuan Power is a subsidiary of Guodian Group, the controlling shareholder of the Company, so it is a connected person of the Company. The transaction contemplated under the Sale and Purchase Agreement constitutes a connected transaction of the Company under Chapter 14A of the Listing Rules.

The Directors (including the independent non-executive Directors but excluding Mr. Wang Zhongqu, Mr. Zhang Wenjian and Mr. Feng Shuchen) considered that the terms of the Sale and Purchase Agreement are on normal commercial terms or better, fair and reasonable, and although not in the ordinary and usual course of business of the Group, they are in the interests of the Company and the shareholders as a whole. The non-executive Directors, Mr. Wang Zhongqu, Mr. Zhang Wenjian and Mr. Feng Shuchen, being Directors connected with Guodian Group, GD Power and other associates of Guodian Group, have abstained from voting in relation to this matter at the Company's board meeting. Save as disclosed above, none of the Directors has any material interest in the transaction contemplated under the Sale and Purchase Agreement.

For details, please refer to the announcement of the Company dated 11 November 2016.

董事(包括獨立非執行董事,但不包括王忠渠先生、張文建先生及馮樹臣先生)認為,補充投資協議之條款乃按一般商業條款或更佳條款訂立,屬公平合理,儘管補充投資協議項下的交易並非於本集團的日常及一般業務過程中訂立,但符合本公司及股東之整體利益。非執行董事王忠渠先生、張文建先生及馮樹臣先生為與國電集團、國電電力及國電集團其他聯繫人士有關的董事,並已就此事項於本公司董事會會議中放棄投票。除上文所披露者外,概無董事於補充投資協議項下的交易中擁有任何重大權益。

有關詳情請見本公司日期為2016年6月24日之公告。

於2016年11月11日,本公司之附屬公司國電聯合動力技術有限公司與龍源電力集團股份有限公司訂立買賣協議,據此,聯合動力有條件同意出售而龍源電力有條件同意購買前者的全資附屬公司國電聯合動力技術(長春)有限公司股份,對價為人民幣291,266,400元。目標公司於買賣協議完成後不再屬於本公司之附屬公司。

由於龍源電力是本公司控股股東國電集團的附屬公司,故其為本公司的關連人士。根據上市規則第14A章,買賣協議項下擬進行之交易構成本公司之關連交易。

董事(包括獨立非執行董事,但不包括王忠渠先生、張文建先生及馮樹臣先生)認為,買賣協議之條款乃按正常商業條款或更佳條款訂立,屬公平合理,儘管買賣協議項下的交易並非於本集團的日常及一般業務過程中訂立,但符合本公司及股東之整體利益。非執行董事王忠渠先生、張文建先生及馮樹臣先生為與國電集團、國電電力及國電集團其他聯繫人士有關的董事,並已就此事項於本公司董事會會議中放棄投票。除上文所披露者外,概無董事於買賣協議項下的交易中擁有任何重大權益。

有關詳情請見本公司日期為2016年11月11日之公告。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### (2) Non-exempt Continuing Connected Transaction

The Group has entered into certain non-exempt continuing connected transactions during 2016.

For the continuing connected transactions item numbered one, two, three, and seven, the Company has obtained approval from the independent shareholders on the annual caps for the year 2016. For the continuing connected transaction items numbered four, five, six and eight, the Company has obtained approval from the Board and has published announcements on the annual caps for the year 2016.

The table below sets out the annual caps and the actual transaction amounts of such continuing connected transactions.

#### (2) 不獲豁免持續關連交易

本集團於2016年度訂立了若干不獲豁免持續關連交易。

就第一項、第二項、第三項及第七項持續關連交易而言，本公司已就2016年年度上限獲得股東大會批准通過。就第四項、第五項、第六項及第八項持續關連交易而言，本公司已就2016年年度上限向董事會取得批准，並就此刊發公告。

下表載列年度上限及該等持續關連交易的實際交易金額。

Connected Party 關連方	Transaction Type 交易類型	Annual Cap for 2016 2016年 年度上限 (RMB million) (人民幣百萬元)	Annual Actual Transaction Amount for 2016 2016年年度 實際交易金額 (RMB million) (人民幣百萬元)
1 Guodian Group 國電集團	Provision of products and services by the Group to Guodian Group and its subsidiaries 由本集團向國電集團及其附屬公司提供產品及服務	29,000.0	10,950.8
2 Guodian Group 國電集團	Provision of products and services by Guodian Group and its subsidiaries to the Group 由國電集團及其附屬公司向本集團提供產品及服務	3,500.0	364.4
3 United Power 聯合動力	Provision of products and services by the Group to United Power and its subsidiaries 由本集團向聯合動力及其附屬公司提供產品及服務	1,313.0	401.6
4 United Power 聯合動力	Lease of properties by the Group to United Power and its subsidiaries 由本集團向聯合動力及其附屬公司出租物業	30.0	22.3
5 Longyuan Technology 龍源技術	Provision of products and services by the Group to Longyuan Technology and its subsidiaries 由本集團向龍源技術及其附屬公司提供產品及服務	14.0	2.4
6 Longyuan Technology 龍源技術	Provision of products and services by Longyuan Technology and its subsidiaries to the Group 由龍源技術及其附屬公司向本集團提供產品及服務	86.0	0.1

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

Connected Party	Transaction Type	Annual	Annual Actual
		Cap for 2016	Transaction
關連方	交易類型	2016年 年度上限 (RMB million) (人民幣百萬元)	2016年年度 實際交易金額 (RMB million) (人民幣百萬元)
7 Guodian Finance 國電財務	Provision of deposit services by Guodian Finance and its subsidiaries to the Group 由國電財務及其附屬公司向本集團提供存款服務	2,000.0 <sup>(1)</sup>	1,870.5
8 Guodian New Energy Technology Research Institute 國電新能源技術研究院	Lease of properties by Guodian New Energy Technology Research Institute to the Group 由國電新能源技術研究院向本集團出租物業	38.0	22.5

Note:

附註：

- (1) These numbers represent the maximum daily balance of the deposit placed with Guodian Finance by the Group.

- (1) 這些數字表示本集團存於國電財務的每日最高存款餘額。

#### 1. Provision of products and services by the Group to Guodian Group and its subsidiaries (other than the Group)

The Company entered into a master agreement at arm's length on the mutual supply of products and services with Guodian Group on 23 November 2011, amended by a supplemental agreement, and a second, a third and a fourth supplemental agreement on 7 May 2012, 28 August 2012, 11 November 2013 and 22 August 2014, respectively (the "Guodian Master Agreement").

#### 1. 本集團向國電集團及其附屬公司(除本集團外)提供產品及服務

本公司與國電集團於2012年5月7日、2012年8月28日、2013年11月11日及2014年8月22日經公平協商後分別訂立互相供應產品及服務的框架協議的補充協議、第二次補充協議、第三次補充協議及第四次補充協議，修訂了2011年11月23日訂立的框架協議(「國電框架協議」)。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

Material terms and conditions of the Guodian Master Agreement are set out as follows:

Pursuant to the master agreement, the goods and services to be provided by the Group to Guodian Group and its subsidiaries (other than the Group) include:

- Environmental protection and energy conservation solutions services segment: (i) environmental protection products (including, among others, ash removal, water treatment and denitrification catalyst); (ii) energy conservation products (including, among others, plasma-assisted coal combustion equipment); (iii) environmental protection services (including, among others, desulfurization concession service, denitrification concession service, desulfurization EPC service, denitrification EPC service, water treatment BOT service); and (iv) energy conservation services (including, among others, steam turbine flow passage improvement service and EMC); and
- Renewable energy equipment manufacturing and integrated solutions services segment: (i) WTGs and their parts and components; (ii) solar power products (discontinued operations); (iii) wind power services including wind farm EPC services; and (iv) solar power services (discontinued operations) (including, among others, solar station EPC services).

If the terms and conditions of similar products and services offered by an independent third party are no better than those offered by one party, the other party shall give priority in sourcing the requisite products and services from the first party.

The Group and Guodian Group and its subsidiaries (other than the Group) will enter into separate agreements which shall set out the specific scope of products and services, terms and conditions of providing such products and services according to the principles laid down by the master agreement.

The term of the Guodian Master Agreement will expire on 31 December 2017. Either party may terminate the master agreement upon giving the other party at least three months' written notice.

The products to be provided under the master agreement will be based on the following pricing policy:

- (1) government-prescribed price (including any price prescribed by any relevant local government, if applicable);

國電框架協議主要條款及條件載列如下：

根據框架協議，本集團向國電集團及其附屬公司(除本集團外)提供的產品及服務包括下列各項：

- 環保及節能解決方案服務分部：(i)環保產品(包括除塵、水處理及脫硝催化劑等)；(ii)節能產品(包括等離子體點火穩燃設備等)；(iii)環保服務(包括脫硫特許經營服務、脫硝特許經營服務、脫硫EPC服務、脫硝EPC服務、水處理BOT服務等)；及(iv)節能服務(其中包括汽輪機通流改造服務及合同能源管理等)；及
- 可再生能源設備製造及集成解決方案服務分部：(i)風力發電機組及其零部件；(ii)太陽能產品(已終止經營)；(iii)風電服務(包括風電廠EPC服務)；及(iv)太陽能服務(已終止經營)(包括光伏發電站EPC服務)。

倘獨立第三方提供類似產品及服務的條款及條件並不比其中一方所提供者優惠，則另一方須優先向對方採購所需產品及服務。

本集團與國電集團及其附屬公司(除本集團外)將根據本框架協議所定的原則訂立獨立協議，當中載列產品及服務的指定範圍、提供該等產品的條款及條件。

國電框架協議有效期將於2017年12月31日屆滿。任何一方可在不少於三個月之前向另一方發出書面通知終止框架協議。

框架協議項下的產品價格將按下列定價政策確定：

- (1) 政府定價(包括任何有關地方政府定價(如適用))；



## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

- (2) where there is no government-prescribed price but there is a government-guidance price, then the government-guidance price;
- (3) where there is neither a government-prescribed price nor a government-guidance price, the market price, which is defined as the price at which the same type of products and/or services are provided by the independent third parties in the ordinary course of business; or
- (4) where none of the above is applicable or where it is not practical to apply the above pricing policies, then the price agreed between the relevant parties shall be based on arm's length negotiation and shall be the reasonable costs incurred in providing the products plus reasonable profits.

The above pricing mechanism is hereinafter referred to as the **"Applicable Standard Products Pricing Policy"**.

The services to be provided under this agreement will be based on the following pricing policy:

- (1) the bidding price where the bidding process is required; or
- (2) where no bidding process is involved, the market price.

The above pricing mechanism is hereinafter referred to as the **"Applicable Standard Services Pricing Policy"**.

The Group would be accorded priority by Guodian Group and its subsidiaries (other than the Group) in the provision of the relevant products and services, provided that the terms and conditions offered by an independent third party to Guodian Group and its subsidiaries (other than the Group) are no more favourable than those offered by the Group for the same products or services, and on the other hand, under the same terms and conditions, the Group has undertaken to Guodian Group and its subsidiaries (other than the Group) that it shall not provide products and services which are less favourable than those offered by the Group to independent third parties.

Guodian Group is the controlling shareholder of the Company and is, together with its subsidiaries, a connected person of the Company under the Listing Rules.

The annual cap of this continuing connected transaction for 2016 was RMB29,000 million and the actual transaction amount during the reporting year was RMB10,950.8 million.

- (2) 凡沒有政府定價，但有政府指導價的，執行政府指導價；
- (3) 沒有政府定價和政府指導價的，執行市場價，市場價定為獨立第三方於一般業務過程中提供的同類產品及／或服務的價格；或
- (4) 倘上述原則均不適用或倘運用上述定價政策不可行，則價格由相關訂約方經公平協商議定且為提供產品所產生的合理成本加上合理利潤。

上述定價機制於下文中稱作「**適用標準產品定價政策**」。

該協議項下的服務價格將按照下列定價政策確定：

- (1) 如需招標程序，則執行競標價；或
- (2) 如不需招標程序，則執行市場價。

上述定價機制於下文中稱作「**適用標準服務定價政策**」。

本集團獲國電集團及其附屬公司(除本集團外)授予提供相關產品及服務的優先權，惟獨立第三方向國電集團及其附屬公司(除本集團外)提供的條款及條件並不優於本集團為相同產品或服務所提供者，而根據相同條款及條件，本集團已向國電集團及其附屬公司(除本集團外)承諾，本集團提供的產品及服務不會遜色於本集團向獨立第三方所提供者。

國電集團為本公司控股股東，根據上市規則，國電集團及其附屬公司屬於本公司的關連人士。

此項持續關連交易的2016年年度上限為人民幣29,000百萬元，而本報告年度內的實際交易金額為人民幣10,950.8百萬元。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### 2. Provision of products and services by Guodian Group and its subsidiaries (other than the Group) to the Group

The Company entered into the Guodian Master Agreement at arm's length on the mutual supply of products and services with Guodian Group on 23 November 2011, amended by a supplemental agreement and a second, a third and a fourth supplemental agreement on 7 May 2012, 28 August 2012, 11 November 2013 and 22 August 2014 respectively.

Please refer to the relevant disclosure under "1. Provision of products and services by the Group to Guodian Group and its subsidiaries (other than the Group)" for material terms and conditions of the master agreement.

Goods and services provided by Guodian Group and its subsidiaries (other than the Group) to the Group include: desulfurization equipment, denitrification equipment and water supply, electricity supply, gas supply and consulting services.

The annual cap of this continuing connected transaction for 2016 was RMB3,500.0 million and the actual transaction amount during the reporting year was RMB364.4 million.

#### 3. Provision of products by the Group to United Power and its subsidiaries

The Company entered into a master agreement with United Power in good faith and at arm's length for provision of products to United Power and its subsidiaries by the Group on 23 November 2011, amended by a supplemental agreement with United Power on 11 November 2013 (the "**United Power Master Agreement**").

Pursuant to this agreement, the products to be provided to United Power and its subsidiaries by the Group are parts and components of WTGs.

Material terms and conditions of the United Power Master Agreement are set out as follows:

Subsidiaries of both parties will enter into separate agreements which shall set out the specific terms and conditions for the provision of such products according to the principles laid down by the master agreement.

#### 2. 國電集團及其附屬公司(除本集團外)向本集團提供產品及服務

本公司與國電集團於2012年5月7日、2012年8月28日、2013年11月11日及2014年8月22日經公平協商後分別訂立互相供應產品及服務的框架協議的補充協議、第二次補充協議、第三次補充協議及第四次補充協議，修訂了2011年11月23日訂立的國電框架協議。

有關該框架協議的主要條款及條件，請參閱上文「1.本集團向國電集團及其附屬公司(除本集團外)提供產品及服務」項下的有關披露。

國電集團及其附屬公司(除本集團外)向本集團提供的產品及服務包括：脫硫設備、脫硝設備及供水、供電、供煤氣及諮詢服務等。

此項持續關連交易的2016年年度上限為人民幣3,500.0百萬元，而本報告年度內的實際交易金額為人民幣364.4百萬元。

#### 3. 本集團向聯合動力及其附屬公司提供產品

本公司與聯合動力於2011年11月23日經公平協商後真誠訂立由本集團向聯合動力及其附屬公司供應產品的框架協議，經2013年11月11日訂立的聯合動力補充協議修訂(「**聯合動力框架協議**」)。

根據該協議，本集團向聯合動力及其附屬公司供應的產品為風力發電機組的零件及組件。

聯合動力框架協議的主要條款及條件載列如下：

雙方的附屬公司將根據該框架協議所定的原則訂立獨立協議，當中將載有提供產品的條款及條件。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

The products to be provided under the agreement will be based on the Applicable Standard Products Pricing Policy.

The agreement is for a term of three years ending on 31 December 2016. Either party may terminate the agreement upon giving the other party at least three months' written notice.

The Company owns 70%, while Longyuan Power owns 30%, of equity interest in United Power. As Guodian Group, the Company's controlling shareholder, directly and indirectly owns 58.44% of equity interest in Longyuan Power, United Power is therefore an associate of Guodian Group. Therefore, United Power is the connected person of the Company under Rule 14A.11(4) and Rule 14A.11(5) of the Listing Rules. The subsidiaries of United Power are the Company's connected persons under Rule 14A.11(4) and Rule 14A.11(6) of the Listing Rules. The result of the transactions between United Power and its subsidiaries and the Company will be eliminated in consolidation since United Power is the Company's connected person as well as its subsidiary.

The annual cap of this continuing connected transaction for 2016 was RMB1,313.0 million and the actual transaction amount during the reporting year was RMB401.6 million.

On 4 February 2016, the Company and United Power entered into the United Power Second Supplemental Agreement, in order to extend the current term of the United Power Master Agreement to 31 December 2019. Also, a new category of continuing connected transaction, i.e., provision of goods and services by United Power and its subsidiaries to the Group, was added (no amount incurred in 2016). For details, please refer to the announcement of the Company dated 4 February 2016.

#### 4. Lease of properties by the Group to United Power and its subsidiaries

The Company entered into a supplement agreement with United Power in good faith and at arm's length on 11 November 2013 which amended the framework leasing agreement (the "**Leasing Agreement**") with United Power dated 23 November 2011.

Material terms and conditions of the Leasing Agreement are set out as follows:

The Company agreed to lease land and buildings to United Power and its subsidiaries as offices, production facilities, workshops and staff quarters;

該協議項下將提供的產品價格將根據適用標準產品定價政策確定。

該協議為期三年，於2016年12月31日屆滿。任何一方可在不少於三個月之前向另一方發出書面通知終止該協議。

本公司擁有聯合動力70%的股權，而龍源電力擁有聯合動力30%的股權。由於龍源電力是本公司的控股股東國電集團附屬公司，國電集團直接及間接持有其58.44%的股權，因此聯合動力為國電集團的聯繫人。根據上市規則第14A.11(4)和14A.11(5)條，聯合動力為本公司的關連人士。根據上市規則第14A.11(4)和14A.11(6)條，聯合動力的附屬公司為本公司的關連人士。由於聯合動力為本公司的關連人士及附屬公司，故本公司與聯合動力及其附屬公司的交易結果將在合併財務報表層面抵銷。

此項持續關連交易的2016年年度上限為人民幣1,313.0百萬元，而本報告年度內的實際交易金額為人民幣401.6百萬元。

於2016年2月4日，本公司與聯合動力訂立第二份補充協議，以延長該框架協議有效期至2019年12月31日，同時增加了由聯合動力及其附屬公司向本集團提供產品及服務的持續關連交易的新類別(2016年暫無發生額)。有關詳情請見本公司日期為2016年2月4日之公告。

#### 4. 由本集團向聯合動力及其附屬公司出租物業

本公司與聯合動力於2013年11月11日經公平磋商後真誠訂立補充協議，修訂與聯合動力訂立的日期為2011年11月23日的框架租賃協議(「**物業租賃協議**」)。

物業租賃協議的主要條款及條件載列如下：

本公司同意將土地及樓宇租給聯合動力及其附屬公司用作辦公室、生產設施、車間及員工宿舍之用；

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

United Power and its subsidiaries are not allowed to sub-lease or transfer any of the properties to another party without prior written consent from the Company;

The Leasing Agreement shall expire on 31 December 2016, as extended by the supplemental agreement, and subject to the compliance with the requirements of the Listing Rules by us, renewable upon mutual agreement of the parties;

During the term of the leases for the properties, the parties to each lease will bear their own taxes in accordance with the applicable laws and regulations;

United Power has warranted that it and its subsidiaries will pay the rents specified for each of the properties in a timely manner and that United Power and its subsidiaries shall use the properties in accordance with the leases terms and will not do or allow any person damaging the properties;

The rights and obligations of the parties under the leasing agreement are not transferable; and

The rent for each of the leases has been determined for the three year period with reference to similar properties in locations as specified in each of the leases and (where applicable) will be adjusted in accordance with the terms of the lease by mutual agreement or by the appointment of an independent valuer acceptable to both parties. However, any such increment in rent has to be reasonable and no higher than the rent that would otherwise be payable by an independent third party paying market rent for similar properties.

The annual cap of this continuing connected transaction for 2016 was RMB30.0 million and the actual transaction amount during the reporting year was RMB22.3 million.

On 4 February 2016, the Company and United Power entered into the Second Supplemental Agreement, in order to extend the current term of the Master Agreement to 31 December 2019. For details, please refer to the announcement of the Company dated 4 February 2016.

聯合動力及其附屬公司在未取得本公司的事先書面批准的情況下，不得分租或轉讓該物業予其他人士；

經訂立補充租賃協議，聯合動力物業租賃協議有效期延長至2016年12月31日屆滿；在本公司遵守上市規則規定的前提下，協議可通過雙方協商續期；

於物業租賃期內，各份租約的訂約雙方將根據適用法律及法規承擔各自的稅項；

聯合動力保證，聯合動力及其附屬公司將及時支付各項物業的指定租金，並根據租約使用物業，且不會亦不容許他人損害物業價值；

物業租賃協議雙方的權利及責任不得轉讓；及

每份租約的租金乃經參考各租約指定地點的同類物業按三年期限釐定，並（如適用）將通過雙方磋商或委任雙方認可的獨立估值師根據租約條款作出調整。然而，租金的任何增幅必須合理，不得高於獨立第三方就同類物業支付的市場租金。

此項持續關連交易的2016年年度上限為人民幣30.0百萬元，而本報告年度內的實際交易金額為人民幣22.3百萬元。

於2016年2月4日，本公司與聯合動力訂立第二份補充協議，以延長該框架租賃協議有效期至2019年12月31日，有關詳情請見本公司日期為2016年2月4日之公告。



## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### 5. Provision of products and services by the Group to Longyuan Technology and its subsidiaries

The Company entered into a master agreement in good faith and at arm's length on the mutual supply of products and services with Longyuan Technology on 23 November 2011, amended by the supplemental agreement, second supplemental agreement and third supplemental agreement dated 31 July 2012, 11 November 2013, and 22 August 2014, respectively (the “**Longyuan Technology Master Agreement**”).

Material terms and conditions of the Longyuan Technology Master Agreement are set out as follows:

Pursuant to the Longyuan Technology Master Agreement, the products and services to be provided to Longyuan Technology and its subsidiaries by the Group include distributed control system (DCS) and accessories, and on-site assembling and test.

If the conditions of similar products and services and the fees payable thereof offered by an independent third party are not better than those offered by one of the parties, the other party shall give priority in sourcing the requisite products and services from the first party.

The Group and Longyuan Technology and its subsidiaries will enter into separate agreements which shall set out the specific scope of products and services, and the terms and conditions for the provision of such products according to the principles laid down by the agreement.

This agreement expired on 31 December 2016. Either party may terminate the master agreement upon giving the other party not less than three months' written notice.

The products provided under this agreement will be based on the Applicable Standard Products Pricing Policy; the services to be provided under this agreement will be based on the Applicable Standard Services Pricing Policy.

#### 5. 由本集團向龍源技術及其附屬公司提供產品及服務

2011年11月23日，本公司與龍源技術秉持真誠原則經公平協商後就互相提供產品及服務訂立的框架協議，該協議經分別於2012年7月31日、2013年11月11日及2014年8月22日訂立的補充協議、第二次補充協議及第三次補充協議修訂（「**龍源技術框架協議**」）。

龍源技術框架協議主要條款及條件載列如下：

根據龍源技術框架協議，本集團向龍源技術及其附屬公司提供的產品和服務包括DCS分散控制系統及相關備件、現場組裝及調試等。

倘獨立第三方提供類似產品及服務的條件及就此收取的費用並不比其中一方所提供者優惠，則另一方須優先向對方採購所需產品及服務。

本集團與龍源技術及其附屬公司將訂立獨立協議，當中將載有服務的具體範圍、產品以及根據該協議所定的原則提供該等產品的條款及條件。

龍源技術框架協議有效期於2016年12月31日屆滿。任何一方可在不少於三個月之前向另一方發出書面通知終止該框架協議。

該協議項下的產品價格將根據適用標準產品定價政策確定；該協議項下的服務價格將根據適用標準服務定價政策確定。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

The Company directly holds 23.25% of the issued share capital of Longyuan Technology. The Company is the controlling shareholder of Longyuan Technology. As of date of this report, Hero Asia (BVI) Company Limited, a wholly owned subsidiary of Longyuan Power, owns approximately 18.75% of equity interest in Longyuan Technology. Given that Longyuan Power is a subsidiary of Guodian Group, Longyuan Technology is a connected person of the Company under Rule 14A.11(5) of the Listing Rules. The subsidiaries of Longyuan Technology are the connected persons of the Company under Rule 14A.11(6) of the Listing Rules. The result of the transactions between Longyuan Technology and its subsidiaries and the Group will be eliminated in consolidated financial statements because Longyuan Technology is the Company's connected person as well as its subsidiary.

The annual cap of this continuing connected transaction for 2016 was RMB14.0 million and the actual transaction amount was RMB2.4 million.

#### 6. Provision of products and services by Longyuan Technology and its subsidiaries to the Group

The Company entered into the Longyuan Technology Master Agreement in good faith and at arm's length on the mutual supply of products and services with Longyuan Technology on 23 November 2011, amended by the supplemental agreement, second supplemental agreement and third supplemental agreement dated 31 July 2012, 11 November 2013, and 22 August 2014, respectively.

Disclosures regarding the material terms and conditions of the Longyuan Technology Master Agreement are set out above under "5. Provision of products and services by the Group to Longyuan Technology and its subsidiaries".

The products and services provided to the Group by Longyuan Technology and its subsidiaries include plasma ignition and stable combustion equipment, and other products and services for environmental protection and energy conservation, including low NOx combustion products and solutions and waste heat recovery products and services.

During the reporting year, the annual cap of this continuing connected transaction for 2016 was RMB86.0 million and the actual transaction amount was RMB0.1 million.

On 4 February 2016, the Company and Longyuan Technology entered into the Fourth Supplemental Agreement, in order to extend the current term of the Master Agreement to 31 December 2019. For details, please refer to the announcement of the Company dated 4 February 2016.

本公司直接持有龍源技術已發行股份的23.25%，本公司為龍源技術的控股股東。於本報告日，雄亞（維爾京）有限公司是龍源電力的一間全資附屬公司，擁有龍源技術約18.75%股權。鑒於龍源電力是國電集團的附屬公司，根據上市規則第14A.11(5)條，龍源技術為本公司的關連人士。根據上市規則14A.11(6)條，龍源技術的附屬公司為本公司的關連人士。由於龍源技術為本公司的關連人士以及附屬公司，故本集團與龍源技術及其附屬公司的交易結果將在合併財務報表層面抵銷。

此項持續關連交易的2016年年度上限為人民幣14.0百萬元，而實際交易金額為人民幣2.4百萬元。

#### 6. 由龍源技術及其附屬公司向本集團提供產品及服務

2012年7月31日、2013年11月11日及2014年8月22日，本公司與龍源技術經公平協商後分別真誠訂立了框架協議的補充協議、第二次補充協議及第三次補充協議，修訂了2011年11月23日雙方就互相提供產品及服務事宜訂立的龍源技術框架協議。

有關該框架協議的主要條款及條件，請參閱上文「5. 由本集團向龍源技術及其附屬公司提供產品及服務」項下的有關披露。

龍源技術及其附屬公司提供的產品及服務包括等離子體點火穩燃設備及其他環保及節能產品和服務，包括低氮燃燒產品及解決方案、餘熱回收產品及服務。

本報告年度內，此項持續關連交易的2016年年度上限為人民幣86.0百萬元，而實際交易金額為人民幣0.1百萬元。

於2016年2月4日，本公司與龍源技術訂立第四份補充協議，以延長該框架協議有效期至2019年12月31日，有關詳情請見本公司日期為2016年2月4日之公告。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### 7. Provision of deposit services by Guodian Finance to the Group

The Company entered into a finance services framework agreement with Guodian Finance in good faith and at arm's length on the provision of financial services by Guodian Finance to the Group on 31 July 2012, amended by a supplemental agreement on 10 December 2013 and a second financial services supplemental agreement on 22 August 2014 (the **"Financial Services Framework Agreement"**).

Material terms and conditions of the Financial Services Framework Agreement are set out as follows:

Pursuant to the Financial Services Framework Agreement, the services provided by Guodian Finance and its subsidiaries to the Group include (i) deposit services; (ii) loan services; and (iii) other financial services.

Under the agreement, Guodian Finance has promised that the standard of financial services provided to the Company will not be less favourable than those offered to other members of the Guodian Group, or the standard of financial services or other similar services provided by commercial banks to the Company.

The Company and its subsidiaries shall utilize the financial services of Guodian Finance on a voluntary and non-compulsory basis and are not obliged to engage Guodian Finance for any particular service.

Guodian Finance and its subsidiaries may, from time to time, enter into separate individual financial service agreements with the Company and its subsidiaries for the provision of specific financial services by it to the Company and its subsidiaries, subject to the terms of the agreement.

The services to be provided by Guodian Finance and its subsidiaries under the agreement will be based on the following pricing policy:

- (1) Deposit services: interest rates for deposit services shall not be lower than any of the following: (i) the benchmark deposit interest rates published by the People's Bank of China (**"PBOC"**) from time to time for the same category of deposits; (ii) the interest rates offered to other members of its network by Guodian Finance for the same category of deposits; and (iii) the interest rates offered to the Company and its subsidiaries by any commercial bank for the same category of deposits.

#### 7. 由國電財務向本集團提供存款服務

2012年7月31日，本公司本著誠信、公平的原則就國電財務向本集團提供金融服務事宜與國電財務簽訂一份金融服務框架協議，該協議經日期為2013年12月10日的經修訂的補充協議及日期為2014年8月22日的金融服務第二次補充協議修訂（「**金融服務框架協議**」）。

該金融服務框架協議的主要條款及條件如下：

根據該金融服務框架協議，國電財務及其附屬公司向本集團提供的服務包括(i)存款服務；(ii)貸款服務；以及(iii)其他金融服務。

本協議下，國電財務承諾，國電財務向本公司提供金融服務的標準不低於國電財務向國電集團網絡內部其他成員提供金融服務的標準、或商業銀行向本公司提供金融服務的標準、或其他同類服務的標準。

本公司及其附屬公司應在自願和非強制的基礎上使用國電財務提供的服務，無義務就任何特殊服務而僱用國電財務為其提供服務。

根據該協議載明的條款，國電財務及其附屬公司可不時就其向本公司及其附屬公司提供具體金融服務的事宜與本公司及其附屬公司簽訂單獨的金融服務協議。

國電財務及其附屬公司根據該協議提供的服務應建立在下述定價政策基礎之上：

- (1) 存款服務：存款服務的利率不得低於下述利率：(i)中國人民銀行（「**人民銀行**」）就同類存款不時公佈的利率上限；(ii)國電財務就同類存款向其網絡內的其他成員提供的利率；以及(iii)任何商業銀行就同類存款向本公司及其附屬公司提供的利率。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

- (2) Loan services: interest rates shall be no higher than any of the following: (i) interest rates 10% lower than the interest rates published by the PBOC from time to time for the same category of loans; (ii) the interest rates offered to other members of its network by Guodian Finance for the same category of loans; and (iii) the interest rates offered to the Company and its subsidiaries by commercial banks for the same category of loans.
- (3) Other financial services: the interest rates or service fees charged for other financial services (i) shall comply with the standard rates as promulgated by the PBOC or China Banking Regulatory Commission ("CBRC") from time to time (if applicable); (ii) shall be no higher than or equal to the interest rates or service fees charged by commercial banks or other financial institution for comparable services; and (iii) shall not be higher than the interest rates or service fees charged by Guodian Finance for comparable services to other members of its network.

The term of the Finance Service Framework Agreement will expire on 31 December 2017.

Guodian Group is controlling shareholder of the Company as defined under the Listing Rules and thus a connected person of the Company. Guodian Finance is a subsidiary of Guodian Group, and is therefore a connected person of the Company.

The maximum daily deposit balance placed by the Group with Guodian Finance and its subsidiaries (including any interest accrued thereon) for 2016 was RMB2,000.0 million and the actual maximum daily balance during the reporting year was RMB1,870.5 million.

- (2) 貸款服務：貸款服務的利率不得高於下述利率：(i)較中國人民銀行就同類貸款不時公佈利率低10%的利率；(ii)國電財務就同類貸款向其網絡內的其他成員提供的利率；以及(iii)任何商業銀行就同類貸款向本公司及其附屬公司提供的利率。

- (3) 其他金融服務：其他金融服務的利率或就其他金融服務收取的服務費(i)應遵從中國人民銀行或中國銀行業監督管理委員會(「銀監會」)(如適用)不時公佈的標準收費率；(ii)不得高於或等同於商業銀行或其他金融機構就同類服務提供的利率或收取的服務費用；以及(iii)不得高於國電財務就同類服務向其網絡內的其他成員提供的利率或收取的服務費用。

金融服務框架協議的有效期至2017年12月31日屆滿。

根據上市規則給出的定義，國電集團為本公司控股股東，因此也是本公司的關連人士。國電財務為國電集團附屬公司，因此國電財務也是本公司的關連人士。

2016年度本集團存置於國電財務及其附屬公司的每日存款餘額上限(包括存款中任何應付利息)為人民幣2,000.0百萬元，而報告年度內的實際最高每日存款餘額為人民幣1,870.5百萬元。



## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### 8. Property Lease from Guodian New Energy Technology Research Institute to the Group

On 15 September 2015, each of the following subsidiaries of the Company (being (i) Longyuan Environmental, (ii) Longyuan Technology, (iii) United Power, (iv) Guodian Zhishen, (v) Huadian Tianren, (vi) Lucency and (vii) Guodian Solar (each of them, a "Tenant", and collectively, the "Tenants") enters into a property lease agreement ("**Property Lease Agreement**") with Guodian New Energy Technology Research Institute ("**New Energy**") respectively in order to lease certain premises from New Energy as offices and research sites. The premises of the Leases are situated at North Two Street, Beijing Future Science Park, Changping District, Beijing, with an accumulative gross floor area of 46,293.72 square meters. The property lease agreement should have been expired on 31 December 2015, considering that the Group will continue to rent certain properties from New Energy, on 28 December 2015, the Company entered into a property lease framework agreement ("**Property Lease Framework Agreement**") with New Energy. According to the Property Lease Framework Agreement, New Energy agreed to lease certain properties to the Company and its subsidiaries for a term of one year, which is from 1 January 2016 to 31 December 2016.

The rent will be calculated according to the construction area of the premises and shall not exceed RMB7.2 per square meter per day (exclusive of the property management fee and the water and electricity fees). The rent may be adjusted by mutual agreement or by the appointment of an independent valuer acceptable to both parties. However, such adjustment shall be reasonable and not higher than the rent that would otherwise be market rent payable by an independent third party for similar properties.

The rent will be determined based on the condition of each premise with reference to the fair and reasonable market price and rents of comparable properties in similar locations. The annual cap is calculated after taking into account the demand of the Group for leasing the property from New Energy and the historical figure.

During the reporting year, the 2016 annual cap of the connected transaction amounted to RMB38.0 million, and the actual amount was RMB22.5 million.

#### 8. 由國電新能源技術研究院向本集團出租物業

2015年9月15日，本公司下列各附屬公司，即(i)龍源環保、(ii)龍源技術、(iii)聯合動力、(iv)國電智深、(v)華電天仁、(vi)朗新明及(vii)國電光伏，各自為一名「租戶」，分別與國電新能源技術研究院(「**新能源**」)訂立物業租賃協議(「**物業租賃協議**」)，以自新能源租賃若干物業以作辦公室物業及研發場地。該等租賃的物業位於北京市昌平區北京未來科技城北二街，累計建築面積為46,293.72平方米。物業租賃協議應於2015年12月31日屆滿，考慮到本集團將繼續自新能源租賃若干物業，於2015年12月28日，本公司與新能源訂立物業租賃框架協議(「**物業租賃框架協議**」)。根據物業租賃框架協議，新能源同意向本公司及其附屬公司出租若干物業，自2016年1月1日起計至2016年12月31日止，為期一年。

租金將按物業建築面積計算，不得超過每天每平方米人民幣7.2元(不包括物業管理費及水電費)。租金可在雙方同意下或委聘獲雙方接納的獨立估值師予以調整。然而，有關調整須屬合理，且不得高於獨立第三方以其他方式就類似物業應付的市場租金。

租金將按各物業的狀況經參考公平合理的市價以及於類似地點的可資比較物業的租金後釐定。年度上限乃經考慮本集團對自新能源租賃物業之需求及過往數據後計算得出。

本報告年度內，此項持續關連交易的2016年年度上限為人民幣38.0百萬元，而實際交易金額為人民幣22.5百萬元。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

On 29 December 2016, the Company entered into a property lease framework agreement for 2017 with New Energy. Pursuant to which, New Energy agrees to lease certain premises to the Company and its subsidiaries for a term of one year commencing from 1 January 2017 and ending on 31 December 2017. For details, please refer to the announcement of the Company dated 29 December 2016.

The independent non-executive Directors of the Company have reviewed each of the abovementioned continuing connected transactions and confirmed that the transactions have been conducted:

- (1) in the usual ordinary and course of business of the Group;
- (2) on normal commercial terms or better, or, if there are no comparable transactions to determine whether they are on normal commercial terms or better, from the perspective of the Group, on terms no less favourable than the terms available to or from independent third parties; and
- (3) in accordance with relevant agreement governing the relevant transactions on terms that are fair and reasonable and in the interests of the shareholders of the Company as a whole.

Pursuant to Chapter 14A.56 of the Listing Rules, the Company's auditor was engaged by the Board of the Directors of the Company to report on the Group's continuing connected transactions in accordance with Hong Kong Standard on Assurance Engagements 3000 (Revised) "Assurance Engagements Other Than Audits or Reviews of Historical Financial Information" and with reference to Practice Note 740 "Auditor's Letter on Continuing Connected Transactions under the Hong Kong Listing Rules" issued by the Hong Kong Institute of Certified Public Accountants. Based on the work performed, the auditor of the Company confirmed to the Board of Directors of the Company that the aforesaid continuing connected transactions:

- (1) have been approved by the Board of Directors of the Company;
- (2) involving the provision of goods and services by the Group were priced in accordance with the pricing policies of the Group stipulated under the relevant agreements governing such transactions;
- (3) have been entered into in accordance with the relevant agreements governing such transactions; and

於2016年12月29日，本公司與新能源訂立2017年物業租賃框架協議。根據該協議，新能源同意向本公司及其附屬公司出租若干物業，自2017年1月1日起計至2017年12月31日止，為期一年。有關詳情請見本公司日期為2016年12月29日之公告。

本公司獨立非執行董事已審閱上述各項持續關連交易，並確認該等交易：

- (1) 在本集團日常業務過程中進行；
- (2) 按照一般商業條款或更佳條款進行，或如並無可供比較的交易釐定該等交易是否按一般商業條款或更佳條款進行，則對本集團而言，該等交易的條款不遜於獨立第三方可取得或提供的條款；及
- (3) 根據規管有關交易的相關協議進行，而條款公平合理，並符合本公司股東整體利益。

根據上市規則第14A.56條，本公司核數師已獲本公司董事會聘用，根據香港會計師公會頒佈之香港鑒證業務準則第3000號(經修訂)「非審核或審閱歷史財務資料之鑒證工作」及參照實務說明第740號「關於香港上市規則所述持續關連交易的核數師函件」就本集團的持續關連交易作出匯報。根據所執行的工作，本公司核數師向本公司董事會確認上述持續關連交易：

- (1) 已獲本公司董事會批准；
- (2) 涉及由本集團提供產品及服務的，乃按照規管有關交易的協議規定的本集團的定價政策而進行；
- (3) 已根據規管有關交易的協議條款進行；及

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

- (4) have not exceeded the relevant annual caps as disclosed in the relevant announcements of the Company.

The auditor has issued a letter containing its findings and conclusions in respect of the continuing connected transactions disclosed by the Group on pages 76 to 88 of this Annual Report in accordance with rule 14A.56 of the Listing Rules. A copy of the auditor's letter has been provided by the Company to The Stock Exchange of Hong Kong Limited.

Save as disclosed above, no related party transaction set out in the Notes to the Financial Statements falls into the category of connected transactions or continuing connected transactions under the Listing Rules.

- (4) 並無超逾本公司的相關公告中披露的有關年度上限。

根據上市規則第14A.56條，核數師已就本年報第76頁至第88頁本集團所披露的持續關連交易出具列載其發現及結論的函件。本公司已向香港聯合交易所有限公司提供核數師函件之副本。

除上述披露外，沒有載列於財務報表附註的任何關聯方交易屬於上市規則下的關連交易或持續關連交易。

## RELATED PARTY TRANSACTIONS

The related party transactions in 2016 disclosed in Note 40(a) to the Financial Statements in accordance with International Accounting Standard 24 "Related Party Disclosures" that also fall under the definitions of "connected transaction" or "continuing connected transaction" (as the case may be) in Chapter 14A of the Listing Rules have been disclosed in the section headed "Connected Transactions". Note 40(a) to the Financial Statements also includes related party transactions that do not fall under the definition of "connected transaction" or "continuing connected transaction" or are otherwise fully exempt from all disclosure requirements in accordance with Chapter 14A of the Listing Rules.

## TRUST DEPOSIT

On 31 December 2016, the Company and its subsidiaries have not placed any trust deposit at domestic or overseas financial institutions, and had no unrecovered time deposit which had passed their maturity dates.

## DONATION

During the year, the Company and its subsidiaries donated RMB125,000 (2015: RMB11,000).

## 關聯方交易

於財務報表附註40(a)中根據國際會計準則第24號「關聯方披露」所披露的2016年度關聯方交易中，同時也歸入上市規則第14A章有關「關連交易」或「持續關連交易」的定義（視屬何情況而定）的，已遵守上市規則第14A章的披露規定於「關連交易」章節中對該等交易進行了披露。財務報表附註40(a)也包括不歸入上市規則第14A章所定義的「關連交易」或「持續關連交易」或獲全面豁免所有披露規定的關聯方交易。

## 委託存款

於2016年12月31日，本公司及其附屬公司未有存放於中國境內外金融機構的任何委託存款，亦未出現定期存款到期而不能償付的情況。

## 捐款

年內，本公司及其附屬公司作出的捐款為人民幣125,000元（2015年：人民幣11,000元）。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### COMPLIANCE WITH NON-COMPETITION AGREEMENT

The Company entered into the non-competition agreement ("**Non-Competition Agreement**") with Guodian Group and GD Power respectively on 23 November 2011.

Pursuant to the agreement, Guodian Group and GD Power provided certain non-competition undertakings to the Company and granted the options and pre-emptive rights to acquire the retained business and any new business opportunities of Guodian Group or GD Power (as the case may be) to the Company. Pursuant to the agreement, the independent non-executive Directors of the Company are responsible for reviewing and considering whether or not to exercise such options and pre-emptive rights and are entitled, on behalf of the Company, to review the implementation of the undertakings under the agreement on an annual basis.

During the year, the independent non-executive Directors of the Company have reviewed the implementation of the Non-Competition Agreement and confirm Guodian Group and GD Power have been in full compliance with the agreement and there was no breach by Guodian Group and GD Power.

#### MAJOR CUSTOMERS AND SUPPLIERS

For the year ended 31 December 2016, the purchase from the Group's five largest suppliers in aggregate contributed 8.6% of the Group's total purchase for the year, among which, the total purchase from the largest supplier contributed 3.0% of the Group's total purchase for the year.

For the year ended 31 December 2016, the sales to the Group's five largest customers in aggregate contributed 32.8% of the Group's total sales for the year, among which, the sales to the largest customer contributed 10.4% of the Group's total sales for the year.

Guodian Group's subsidiaries as the Group's customers mainly include GD Power and Longyuan Power which are all the Group's connected persons. Save as disclosed above, during the year, so far as the Directors are aware, none of the Directors, associates of Directors or any shareholders of the Company (who to the knowledge of the Directors owns more than 5% of the Company's issued share capital) had any interest in the Company's five largest suppliers or customers during the year.

#### SIGNIFICANT CONTRACTS

Save as disclosed in the section headed "Connected Transactions" on page 72 of this annual report, neither the Company nor any of its subsidiaries has entered into any significant contract with the controlling shareholder or any of its subsidiaries other than the Group, and the Group did not enter into significant contracts with the controlling shareholder or any of its subsidiaries other than the Group in relation to the provision of services.

#### 《避免同業競爭協議》的遵守

於2011年11月23日，本公司已分別與國電集團及國電電力訂立《避免同業競爭協議》(「**避免同業競爭協議**」)。

根據該協議，國電集團及國電電力對本公司作出了若干不競爭承諾，並授予本公司收購國電集團及國電電力保留業務及任何新業務機會的選擇權及優先受讓權。根據該協議，本公司的獨立非執行董事負責審閱並考慮是否行使該等選擇權及優先受讓權，並有權代表本公司對該協議下承諾的執行情況進行年度審查。

本年度內，本公司獨立非執行董事已就《避免同業競爭協議》的執行情況進行了審閱，並確認國電集團及國電電力已充分遵守該協議，並無任何違約情形。

#### 主要客戶及供貨商

截至2016年12月31日止年度，本集團五大供貨商的購買額共佔本集團本年度購買總額的8.6%，其中最大供貨商的購買總額佔本集團本年度購買總額的3.0%。

截至2016年12月31日止年度，本集團向五大客戶作出的銷售共佔本集團本年度銷售總額的32.8%，其中向最大客戶作出的銷售佔本集團本年度銷售總額的10.4%。

作為本集團客戶的國電集團附屬公司主要包括國電電力及龍源電力，均為本集團的關連人士。除上文披露外，於本年度內，就董事所知，概無董事、董事的聯繫人或本公司任何股東(據董事所知擁有本公司已發行股本5%以上的權益)於本年度內在本公司五大供貨商或客戶中擁有任何權益。

#### 重大合約

除於本年報第72頁的「關連交易」一節中披露之外，本公司或其任何一家附屬公司概無和控股股東或其任何一家除本集團之外的附屬公司簽訂重大合約，且本集團並不存在與控股股東或其任何一家除本集團之外的附屬公司之間提供服務的重大合約。



## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### INTERESTS OF THE CONTROLLING SHAREHOLDER IN SIGNIFICANT CONTRACTS

Details of significant contracts entered into between the Company and the controlling shareholder or its subsidiaries are disclosed in the section headed "Connected Transactions" on page 72 of this annual report.

#### ISSUED DEBENTURES

The Company did not issue new debentures in 2016.

#### RETIREMENT AND EMPLOYEES BENEFIT SCHEME

Details of the Group's retirement and employees benefit scheme are set out in Note 7(a) to the Financial Statements.

#### COMPLIANCE WITH THE CODE ON CORPORATE GOVERNANCE PRACTICES

In 2016, the Company has complied with relevant code provisions as set out in the Code on Corporate Governance Practices in Appendix 14 to the Listing Rules. Please refer to the Corporate Governance Report of this annual report for details.

#### PUBLIC FLOAT

Based on information publicly available to the Company and so far as the Directors are aware, not less than 21.6% of the issued share capital of the Company was held by the public as at the date of this report, which was in compliance with the requirements under the Listing Rules.

#### MATERIAL LITIGATION AND ARBITRATION

For the year ended 31 December 2016, the Company was not involved in any material litigation or arbitration.

#### AUDIT COMMITTEE

According to the Listing Rules, the Group has established the audit committee ("Audit Committee"), the responsibilities of which including providing suggestions to the appointment, re-appointment and dismissal of external independent auditors, and monitor their works. The Audit Committee should comprise Mr. FAN Renda Anthony (independent non-executive Director), Mr. SHEN Xiaoliu (independent non-executive Director) and Mr. ZHANG Wenjian (non-executive Director). The 2016 annual results of the Group and the Financial Statements as of and for the year ended 31 December 2016, prepared in accordance with the International Financial Reporting Standards, have been reviewed by the Audit Committee of the Company.

#### 控股股東於重要合約的權益

本公司與控股股東或其附屬公司之間所訂的重要合約詳情已披露於本年報第72頁的「關連交易」一節。

#### 已發行的債權證

本公司於2016年度並無新發行的債權證。

#### 退休及僱員福利計劃

本集團退休及僱員福利計劃詳情載於財務報表附註7(a)。

#### 遵守企業管治常規守則

2016年，本公司已遵守上市規則附錄14所載企業管治常規守則內的相關守則條文。詳情請參閱本年報的企業管治報告。

#### 公眾持股量

根據本公司可公開獲得的資料，就董事所知，於本報告日期，公眾人士持有本公司已發行股本不少於21.6%，符合上市規則的規定。

#### 重大訴訟及仲裁

截至2016年12月31日止年度，本公司並無涉及任何重大訴訟或仲裁。

#### 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。審計委員會成員為范仁達先生（獨立非執行董事）、申曉留先生（獨立非執行董事）及張文建先生（非執行董事）。本公司的審計委員會已審閱本集團2016年之年度業績，及按《國際財務報告準則》編製的於2016年12月31日及截至該日止年度的財務報表。

## REPORT OF THE BOARD OF DIRECTORS (CONTINUED)

### 董事會報告(續)

#### AUDITORS

KPMG and Union Power Certified Public Accountants (Special General Partnership) were appointed as the Company's international and PRC auditors, respectively, for the year ended 31 December 2016. The financial statements for the year ended 31 December 2016 of the Company prepared in accordance with the International Financial Reporting Standards have been audited by KPMG. KPMG has been appointed by the Company since the date of its listing.



By order of the Board  
**Guodian Technology & Environment Group Corporation Limited**  
*Chairman of the Board*  
**Mr. YANG Guang**

Beijing, China, 30 March 2017

#### 核數師

本公司已分別委任畢馬威會計師事務所和中審眾環會計師事務所(特殊普通合夥)為截至2016年12月31日止年度的國際和國內核數師。畢馬威會計師事務所已審核本公司按《國際財務報告準則》編製的截至2016年12月31日止年度的財務報表。畢馬威會計師事務所自本公司上市之日起獲本公司委任。



承董事會命  
**國電科技環保集團股份有限公司**  
*董事長*  
**陽 光先生**

中國·北京·2017年3月30日

# REPORT OF THE BOARD OF SUPERVISORS

## 監事會報告

In 2016, to protect the interests of the Shareholders and the Company, and in compliance with the relevant laws and regulations and the Articles of Association of the Company, the board of supervisors of the Company (the “**Board of Supervisors**”) had effectively exercised its supervision authority over the meeting-convening and decision-making procedures of the Board of Directors for compliance with the relevant laws, regulations and the Articles of Association of the Company. During this reporting year, the main responsibilities of the Board of Supervisors are as follows:

### 1. Meetings the Board of Supervisors Convened

A total of three meetings of the Board of Supervisors were held in 2016:

- (1) The 2016 first meeting of the second Board of Supervisors was held on 29 March 2016. The meeting considered and approved the proposals on the 2015 annual report (draft), the 2015 profits distribution plan and the supervisor's report.
- (2) The 2016 second meeting of the second Board of Supervisors was held on 30 August 2016. The meeting considered and approved the 2016 mid-term report (draft), the interim performance announcement (draft), the 2016 interim financial statement and the 2016 interim profit distribution plan.
- (3) The 2016 third meeting of the second Board of Supervisors was held on 9 September 2016. The meeting considered and approved proposal on the election of the chairman of the Board of Supervisors.

### 2. Work Undertaken by the Board of Supervisors

In 2016, the Board of Supervisors mainly undertook the following work:

During the reporting year, the Board of Supervisors duly reviewed the Company's operation and development plan and proposed reasonable suggestions and advice to the Board of Directors. To safeguard the interests of the Shareholders, the Board of Supervisors actively and effectively performed its supervision duties over significant decisions and detailed implementations by the Company's senior management to ensure compliance with the relevant laws and regulations, and the Articles of Association of the Company.

2016年，本公司監事會為維護股東權益和公司利益，依照有關法律法規和本公司《公司章程》的規定，本公司監事會（「**監事會**」）對董事會的召開和決策過程有效行使其監管權，以使其符合相關法律法規和本公司《公司章程》的規定。於本年度內，監事會的主要工作情況如下：

### 1. 監事會會議召開情況

2016年監事會共召開三次會議：

- (1) 2016年3月29日，召開第二屆監事會2016年度第一次會議，審議通過了關於2015年報（審議稿）、2015年度利潤分配方案及監事會報告的議案。
- (2) 2016年8月30日，召開第二屆監事會2016年度第二次會議，審議通過了關於2016年度中期報告（審議稿）及中期業績公告（審議稿）、2016年度中期財務報表及2016年中期利潤分配方案的議案。
- (3) 2016年9月9日，召開第二屆監事會2016年度第三次會議，審議通過了關於選舉監事會主席的議案。

### 2. 監事會工作開展情況

2016年度，監事會主要開展以下工作：

在本報告年度內，監事會對本公司的經營及發展計劃進行充分審查，並向董事會提出合理的建議和意見。監事會積極且有效地履行監管職責，對本公司高級管理人員的重大決策及決策的具體實施情況實施監督，確保其符合國家法律法規以及本公司《公司章程》的規定，維護股東利益。

## REPORT OF THE BOARD OF SUPERVISORS (CONTINUED)

### 監事會報告(續)

The Board of Supervisors duly reviewed and approved the Directors' Report, the audited financial report and the dividend distribution plan which were to be presented at the 2016 annual general meeting, and is of the opinion that the members of the Board of Directors, President and other senior management of the Company strictly complied with the principles of integrity, performed their duties diligently, exercised their powers in the best interests of the Company and discharged their responsibilities in accordance with the Articles of Association of the Company. Meanwhile, the Company's operations have been further standardized and its internal control system has been improved. The Company's connected transactions were in the interests of the Shareholders as a whole and were on fair and reasonable terms. The Board of Supervisors has not discovered any Directors or senior management that had abused their power or any of their actions were prejudicial to the interests of the Company or Shareholders, or violated the relevant laws and regulations or the Articles of the Association of the Company.

The Board of Supervisors is satisfied with the financial position and operational results of the Company in 2016. The Board of Supervisors is confident in the prospects of the Group.

監事會認真審閱並批准董事會報告，並審閱擬提呈予2016年度股東週年大會的經審核的財務報告以及股利派發方案，認為本公司董事會成員、總經理及其他高級管理人員，嚴格遵守誠信原則，工作克勤盡職，以本公司最佳利益為出發點行使職權，能夠按照本公司《公司章程》履行其各項職責。同時，公司的運作更為規範化，內部控制系統也相應改善。本公司關連交易均本著公平、合理的原則，是從本公司股東整體利益出發。監事會並無發現公司任何董事或者高級管理人員有濫用職權、損害本公司及公司股東合法利益以及違反有關法律、法規及本公司《公司章程》規定的行為。

監事會對2016年度公司的財務狀況以及業績狀況表示認可，對本集團未來的發展前景充滿信心。



By Order of the Board of Supervisors  
**Guodian Technology & Environment Group Company Limited\***  
*Chairman of the Board of Supervisors*  
**Mr. LUAN Baoxing**

Beijing, China, 30 March 2017



承監事會命  
**國電科技環保集團股份有限公司**  
*監事會主席*  
**樂寶興先生**

中國·北京，2017年3月30日



# CORPORATE GOVERNANCE REPORT

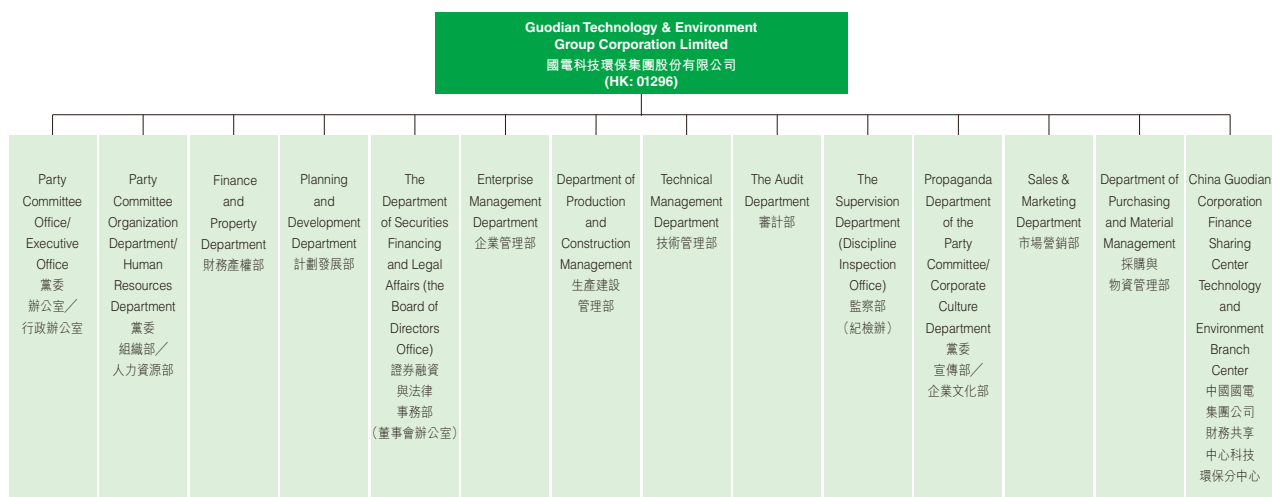
## 企業管治報告

The Board of the Company hereby presents to the Shareholders the corporate governance report for the year ended 31 December 2016 (the “reporting period”).

本公司董事會現向股東提呈截至2016年12月31日止年度(「報告期間」)的企業管治報告。

The corporate governance framework of the Company is set out as follows:

本公司的企業管治框架如下：



### Corporate Governance Practices

Since its establishment, the Company has been committed to improving its corporate governance, which is considered essential to the creation of value for the Shareholders. The Company has established a modern corporate governance structure, which comprises a number of independently-operated and effectively-balanced bodies, including Shareholders meeting, the Board of Directors, the Board of Supervisors and the senior management, by referring to the Code on Corporate Governance Practices (the “Code”) in Appendix 14 to the Listing Rules. The Company has also adopted the Code as its own corporate governance practice. In 2016, the Company had strictly complied with the principles and provisions of the Code, and in some circumstances adopted the best practices recommended by the Code.

The Company is dedicated to maintaining a high level of corporate governance. The board of directors of the Company (the “Board”) has adopted various corporate policies and standards for application of proper governance principles in our usual business operations. In the course of our usual business operations, we comply with the applicable laws, rules and regulations of different countries and regions as part of our vigorous efforts to ensure a healthy and safe working environment for our employees, devote our utmost endeavour to safeguarding the interests of shareholders as a whole and place key focus on the sustainable development of the Company. For the year ended 31 December 2016, the Company has adopted the principles under the Code and complied with all the code provisions thereunder.

### 企業管治常規

自成立以來，本公司始終致力於提升企業管治水平，視企業管治為實現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14所載《企業管治守則》(「《守則》」)，建立了由股東大會、董事會、監事會及高級管理層等獨立運作、有效制衡的現代公司治理架構。本公司亦採納《守則》作為本公司的企業管治常規。2016年度，本公司嚴格遵守《守則》所載的原則及條文，並在特定情形下採取《守則》建議的最佳常規。

本公司致力維持高水平之企業管治。本公司董事會(「董事會」)已採納多項企業政策及準則，以於我們日常活動中應用良好之管治原則。在我們的日常營運中，我們遵守適用各個國家及地區之法律、規則及規例，致力確保員工擁有健康及安全之工作環境，並竭力保障股東之整體利益，把重點放在本公司的可持續發展上。於截至2016年12月31日止年度，本公司已採用守則之原則並遵守所有守則條文。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

Corporate governance practices adopted by the Company are summarized below:

#### 1. The Board

The Board exercises its powers and functions in accordance with the provisions as set out in the Articles of Association of the Company. In the best interests of the Company and the Shareholders, the Board reports to the general meetings, implements the resolutions passed thereon and are accountable to the general meetings.

##### 1.1 Composition of the Board

As at the date of the Annual Report, the Board consisted of eleven Directors, including three executive Directors, four non-executive Directors and four independent non-executive Directors.

The biographical details of the Directors as at the date of the Annual Report are set out in the section headed “Directors, Supervisors and Senior Management” of the Annual Report. There are no relationships (including financial, business, family or other material or relevant relationships) among members of the Board. The structure of the Board is well balanced with each Director having sound knowledge, experience and expertise on the business operations and development of the Group. All Directors are well aware of their joint and several responsibilities to the Shareholders.

Since the listing of the Company, the Board has been in compliance with the requirements of the Listing Rules regarding the appointment of at least three independent non-executive Directors. The Board has also been in compliance with Rule 3.10A of the Listing Rules to appoint independent non-executive Directors representing at least one-third of the Board. Furthermore, the qualifications of all four independent non-executive Directors of the Company are in full compliance with the requirements under Rules 3.10(1) and (2) of the Listing Rules. In addition, the Company has received annual confirmations from all independent non-executive Directors as to their respective independence in accordance with Rule 3.13 of the Listing Rules. The Company therefore considers all independent non-executive Directors to be in compliance with the independence requirements as set out in the Listing Rules.

### 企業管治常規(續)

本公司所採用的企業管治常規概述如下：

#### 1. 董事會

董事會按照本公司《公司章程》的規定行使其權力及職責，以本公司及其股東的最大利益為原則，向股東大會報告工作，執行股東大會的決議，對股東大會負責。

##### 1.1 董事會的組成

截至本年報發佈日期止，董事會由11名董事組成，其中包括3名執行董事，4名非執行董事及4名獨立非執行董事。

董事於本年度報告日期的簡歷詳情載於本年報的董事、監事及高級管理人員一節。董事會各成員之間不存在任何關係(包括財務、業務、家族或其他重大或相關關係)。董事會結構平衡，每名董事均具備與本集團業務運營及發展有關的豐富知識、經驗及才能。所有董事深知其共同及個別對股東所負之責任。

自本公司上市以來，董事會一直符合上市規則有關委任至少三名獨立非執行董事的要求，且符合上市規則第3.10A條的規定，即所委任的獨立非執行董事必須佔董事會成員人數至少三分之一。本公司目前四名獨立非執行董事的資格完全符合上市規則第3.10(1)及(2)條的規定。此外，本公司已收到每名獨立非執行董事根據上市規則第3.13條就其各自的獨立性出具的年度確認書。因此，本公司認為所有獨立非執行董事均具備上市規則要求的獨立性。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 1. The Board (continued)

##### 1.1 Composition of the Board (continued)

The Board's functions and responsibilities include: convening general meetings; reporting its work to the general meeting; implementing resolutions approved at general meetings; deciding on the Company's business plans and investment plans; formulating the Company's annual financial budget and final accounts; formulating the Company's profit distribution plans and proposals for the increase in or reduction of the registered capital; and exercising other powers, functions and responsibilities as set out in the Articles of Association of the Company. The Company has entered into a service contract or letter of appointment with each Director.

The Company firmly believes that the increasing diversity at the Board level is one of the essential elements in attaining the Company's strategic objectives and maintaining sustainable development, therefore, the Company has formulated the Board Diversity Policy. While determining the composition of the Board, the Company shall consider the diversity of the Board from various perspectives, including but not limited to gender, age, cultural and educational background, professional experiences, skills, knowledge and service tenure. The final decisions are made based on the value of candidates and contributions they can bring to the Board. The appointment of the members of the Board shall be orientated by the need of skills and experiences of the Board for its good operation overall, and based on the principle of selecting talented people, while fully considering the abovementioned diversity goal and requirements of the diversity. The Nomination Committee will report the composition of the Board with respect to its diversity level in the annual report, and supervise the implementation of the Board Diversity Policy. The Nomination Committee will discuss any amendments to the Board Diversity Policy when necessary and propose such amendments to the Board pending its approval.

Certain information concerning the incumbent Directors of the Company is set out in the section headed "Directors, Supervisors and Senior Management" of this annual report. The current term of all the Directors of the Company will expire on 15 May 2017.

### 企業管治常規(續)

#### 1. 董事會(續)

##### 1.1 董事會的組成(續)

本公司董事會的職能及職責包括：召集股東大會；於股東大會上報告董事會的工作；執行股東大會通過的決議；確定本公司業務計劃及投資計劃；制定本公司年度預算及決算；制定本公司利潤分配方案及關於註冊資本增減的議案；以及行使本公司《公司章程》所賦予的其他權力、職能及職責。本公司與每一位董事訂立了服務合約或委任函。

本公司堅信董事會層面日益多元化是支持其達到戰略目標及維持可持續發展的關鍵因素之一，因此本公司制定了《董事會成員多元化政策》，確定本公司在設定董事會成員構成時，應從多個方面考慮董事會成員多元化情況，包括但不限於性別、年齡、文化及教育背景、專業經驗、技能、知識及服務任期。最終將按人選的價值及可為董事會作出的貢獻而作決定。董事會成員的委任以董事會整體良好運作所需的技能和經驗為本，以選用有才能的人士為原則，同時充分考慮上述董事會成員多元化的目標和要求。提名委員會將每年在年度報告內匯報董事會在多元化層面的組成，並監察《董事會成員多元化政策》的執行。提名委員會也將於有必要時討論任何修訂，再將有關修訂提呈董事會供其批准。

有關本公司現任董事的若干資料載於本年報的「董事、監事及高級管理人員」一節。本公司所有董事的本屆任期將於2017年5月15日屆滿。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 1. The Board (continued)

##### 1.2 Director's Continuous Training and Development

In compliance with Rule A.6.5 of the Code and to ensure that the Directors' contribution to the Board remains informed and relevant, during the reporting year, the Company arranged and funded suitable training for all the Directors such as holding special training sessions covering topics including notifiable transactions under Chapter 14 of the Listing Rules, connected transactions under Chapter 14A of the Listing Rules and the issuer's continuing obligations under Chapter 13 of the Listing Rules.

Besides the trainings provided by the Company, the Directors have also developed their professional skills through various ways including attending forums, seminars and public lectures.

As of 31 December 2016, all the Directors of the Company, namely, Mr. YANG Guang, Mr. CHEN Dongqing, Mr. TANG Chaoxiong, Mr. WANG Zhongqu, Mr. ZHANG Wenjian, Mr. FENG Shuchen, Mr. YAN Andrew Y., Mr. SHEN Xiaoliu, Mr. QU Jiahui, Mr. XIE Qiuye, and Mr. FAN Ren Da Anthony, have participated in continuous professional development to develop and refresh their knowledge and skills as required by Rule A.6.5 of the Code, in order to ensure that the Directors' contribution to the Board remains informed and relevant. According to the record provided by the Board and the board of Supervisors, the summary of the trainings received by the Directors and the Supervisors for the year ended 31 December 2016 is as follows:

### 企業管治常規(續)

#### 1. 董事會(續)

##### 1.2 董事的持續培訓及發展

遵照《守則》第A.6.5條的規定，並為確保董事在具備全面信息及切合所需的情況下對董事會作出貢獻，在報告年度裡，本公司為所有董事安排了合適的培訓並提供有關經費，例如舉辦特別的培訓會議，就上市規則第14章規定的須予公佈的交易、上市規則第14A章規定的關連交易以及發行人在上市規則第13章下持續責任進行探討。

除接受本公司提供的培訓外，董事還通過各種途徑積極提高其專業技能，包括參加各類論壇、研討會以及公開講座。

截至2016年12月31日止，本公司的所有董事，即陽光先生、陳冬青先生、唐超雄先生、王忠渠先生、張文建先生、馮樹臣先生、閻焱先生、申曉留先生、曲久輝先生、謝秋野先生以及范仁達先生均已按照《守則》第A.6.5條的要求參與持續專業發展，發展並更新其知識及技能，以確保其繼續在具備全面諮詢及切合所需的情況下對董事會作出貢獻。按董監事提供的記錄，董監事截至2016年12月31日止年度接受培訓的概要如下：

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

### 企業管治常規(續)

#### 1. The Board (continued)

#### 1. 董事會(續)

#### 1.2 Director's Continuous Training and Development (continued)

#### 1.2 董事的持續培訓及發展(續)

Name 姓名	Types of continuous professional development programmes 持續專業發展計劃類別
<b>Executive Directors</b> <b>執行董事</b>	
Mr. YANG Guang (Chairman) 陽光先生 (主席)	A、B
Mr. CHEN Dongqing (President) (Appointed on 29 March 2016) 陳冬青先生 (總經理)(於2016年3月29日就任)	A、B
Mr. TANG Chaoxiong (Appointed on 29 March 2016) 唐超雄先生 (於2016年3月29日就任)	A、B
<b>Non-executive Directors</b> <b>非執行董事</b>	
Mr. WANG Zhongqu 王忠渠先生	A、B
Mr. ZHANG Wenjian 張文建先生	A、B
Mr. FENG Shuchen 馮樹臣先生	A
Mr. YAN Andrew Y. 閻焱先生	A
<b>Independent non-executive Directors</b> <b>獨立非執行董事</b>	
Mr. SHEN Xiaoliu (Appointed on 29 March 2016) 申曉留先生 (於2016年3月29日就任)	A、B
Mr. QU Jiuhui 曲久輝先生	A、B
Mr. XIE Qiuye 謝秋野先生	A、B
Mr. FAN Ren Da Anthony 范仁達先生	A
<b>Supervisors</b> <b>監事</b>	
Mr. LUAN Baoxing (Chairman) (Appointed on 9 September 2016) 樂寶興先生 (主席)(於2016年9月9日就任)	A
Mr. XU Xingzhou 許興洲先生	A



# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 1. The Board (continued)

##### 1.2 Director's Continuous Training and Development (continued)

Name 姓名	Types of continuous professional development programmes 持續專業發展計劃類別
Mr. YANG Xiangbin 楊向斌先生	(Appointed on 9 September 2016) (於2016年9月9日就任) A
Ms. HE Lili 何麗麗女士	A、B
Mr. LI Wei 李偉先生	A、B
Mr. SHAO Guoyong 邵國勇先生	(Resigned on 29 June 2016) (於2016年6月29日辭任) A
Mr. CHEN Jingdong 陳景東先生	(Resigned on 9 September 2016) (於2016年9月9日辭任) A

A: Perusing latest materials for seminars and updates in relation to the Listing Rules and other regulatory requirements

B: Attending the briefing and/or seminars

##### 1.3 Board Meetings

Pursuant to the Articles of Association of the Company, the Board is required to hold at least four Board meetings each year, which shall be convened by the chairman of the Board. A notice of at least 14 days shall be given for the regular Board meeting. The notice shall state the time, venue and means by which the Board meeting will be convened.

Except for the Board's consideration of matters in relation to connected transactions as set forth in the Articles of Association of the Company, the quorum for a Board meeting is the majority of all the Directors. A Director may attend the Board meeting in person, or appoint another Director in writing as his proxy to attend the Board meeting. The secretary to the Board of the Company is responsible for preparing and keeping the minutes of the Board meetings and ensuring that such minutes are available for inspection by any Director.

### 企業管治常規(續)

#### 1. 董事會(續)

##### 1.2 董事的持續培訓及發展(續)

A: 閱讀有關上市規則及其他適用監管規定最新修訂的研討會材料與更新資料

B: 出席簡介會及／或研討會

##### 1.3 董事會會議

根據本公司《公司章程》的規定，董事會每年至少召開四次會議，董事會會議由董事長召集。定期董事會會議應於召開前至少14天發出通知，通知須列明會議召開的時間、地點以及方式。

除本公司《公司章程》所規定董事會審議關連交易事項的情況外，董事會會議應由大多數董事出席方可舉行。董事可以親自參加董事會會議，亦可以書面委託其他董事作為其受委代表代為出席董事會會議。本公司董事會秘書負責編製和保管董事會會議記錄，並確保董事能夠查閱該等記錄。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

### 企業管治常規(續)

#### 1. The Board (continued)

#### 1. 董事會(續)

##### 1.3 Board Meetings (continued)

##### 1.3 董事會會議(續)

In 2016, the Board held 14 Board meetings and 4 general meetings. The attendance of the directors at the Board meetings and the general meetings is as follows:

於2016年度，董事會共舉行了十四次董事會會議，召集了四次股東大會。董事出席董事會會議及股東大會情況如下：

**The Second Session of the Board**  
**第二屆董事會**

Name	Position in the Company	Number of Board Meetings Attended/Held 出席／舉行董事會會議次數	Attendance Rate%	Number of General Meetings Attended/Held*	Attendance Rate%
姓名	本公司職位		出席率%	出席／舉行股東大會次數*	出席率%
Mr. YANG Guang	Executive Director and Chairman of the Board	14/14	100	3	75%
陽 光先生	執行董事兼董事長				
Mr. CHEN Dongqing	Executive Director	13/14	92.9	2	50%
陳冬青先生	執行董事				
Mr. TANG Chaoxiong	Executive Director	13/14	92.9	3	75%
唐超雄先生	執行董事				
Mr. WANG Zhongqu	Non-executive Director	14/14	100	0	0
王忠渠先生	非執行董事				
Mr. ZHANG Wenjian	Non-executive Director	14/14	100	0	0
張文建先生	非執行董事				
Mr. FENG Shuchen	Non-executive Director	14/14	100	0	0
馮樹臣先生	非執行董事				
Mr. YAN Andrew Y.	Non-executive Director	14/14	100	0	0
閻 焱先生	非執行董事				
Mr. SHEN Xiaoliu	Independent non-executive Director	13/14	92.9	0	0
申曉留先生	獨立非執行董事				
Mr. QU Jiuhui	Independent non-executive Director	14/14	100	0	0
曲久輝先生	獨立非執行董事				
Mr. XIE Qiuye	Independent non-executive Director	14/14	100	0	0
謝秋野先生	獨立非執行董事				
Mr. FAN Ren Da Anthony	Independent non-executive Director	14/14	100	0	0
范仁達先生	獨立非執行董事				

\* As the non-executive directors and independent non-executive directors of the Company did not work in the corporate domicile, only the executive directors were required in principle to attend the general meetings in order to communicate with the Shareholders' representatives. Both the non-executive directors and independent non-executive directors were informed of the contents of the general meetings through electronic communication or teleconference.

\* 由於公司非執行董事及獨立非執行董事不在公司住所辦公，因此股東大會原則上僅要求執行董事出席會議，以便與股東代表進行溝通。而非執行董事及獨立非執行董事均通過電子通訊或電話會議方式知悉股東大會內容。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 1. The Board (continued)

##### 1.4 Powers Exercised by the Board and the Management

The powers and duties of the Board and the management have been clearly defined in the Articles of Association of the Company so as to ensure that adequate check-and-balance is in place for the purpose of maintaining effective corporate governance and internal control.

The Board is responsible for deciding on the Company's business and investment plans, determining the establishment of the Company's internal management structure, issuing the Company's essential administration regulations, resolving and approving other material business and administrative matters of the Company and supervising the performance of the management.

Led by the President (and also an executive Director), the management of the Company is responsible for implementing the resolutions passed by the Board and managing the Company's day-to-day operations.

##### 1.5 Chairman and President

The posts of the chairman of the Board and the president of the Company (i.e. chief executive officer pursuant to the relevant Listing Rules) are separated and held by different persons in order to ensure the independence of their respective responsibilities, and the balance of power and authority between them. Mr. YANG Guang acts as the chairman of the Board and Mr. CHEN Dongqing acts as the president. The Rules of Procedures of the Board Meeting and the Duty Specification of the Senior Management of the Company, as considered and approved by the Board, clearly define the division of duties between the chairman of the Board and the president.

Mr. YANG Guang, the Chairman of the Board, is responsible for leading the Board in determining the overall development strategies of the Company and ensuring that the Board effectively performs its duties and discusses significant and appropriate matters in a timely manner to ensure that the Company establishes effective corporate governance practices and procedures so that the Board acts in the best interest of the Company and the Shareholders. Mr. CHEN Dongqing, the President of the Company, is mainly responsible for the Company's day-to-day operations, including implementing Board resolutions and making day-to-day decisions.

### 企業管治常規(續)

#### 1. 董事會(續)

##### 1.4 由董事會和管理層行使的權力

董事會和管理層的權力和職責已在本公司《公司章程》中進行了明確規定，以確保為保持有效的公司管治和內部控制提供充分的平衡和制約機制。

董事會負責決定本公司的經營計劃和投資方案，決定本公司內部管理機構的設置，頒佈本公司必要的管理制度，對本公司的其他重大業務和行政事項做出決議並對管理層的履職進行監督。

本公司管理層，在總經理(同時亦為執行董事)的領導下，負責執行董事會批准的各項決議，並管理本公司的日常經營。

##### 1.5 董事長及總經理

本公司董事長和總經理(即相關上市規則條文下之行政總裁)職務分別由不同人士擔任，以確保各自職責的獨立性以及權力和授權的分佈平衡。董事長由陽光先生擔任，總經理由陳冬青先生擔任。董事會審議通過的《董事會議事規則》和《公司高管職責說明書》，分別對董事長和總經理的職責分工進行了明確清楚的界定。

董事長陽光先生負責領導董事會確定本公司的整體發展戰略，確保董事會有效履行其職責，並及時就所有重要的適事項進行討論，確保本公司得以制定有效的企業管治常規及程序，並確保董事會行事符合本公司及全體股東的最佳利益。本公司總經理陳冬青先生主要負責本公司的日常運營，包括實施董事會決議、進行日常決策等。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 1. The Board (continued)

##### 1.6 Appointment and Re-election of Directors

Pursuant to the Articles of Association of the Company, the Directors, including the non-executive Directors, shall be elected at the general meetings with a term of office for no more than three years and may be re-appointed. The Company has established a set of procedures for appointing new Directors. Nomination of new Directors shall first be considered by the Nomination Committee, whose recommendations will then be presented to the Board for consideration. All newly nominated Directors are subject to election and approval at general meetings.

Each of the executive Directors of the Company has entered into a service contract with the Company on 16 May 2014, which is preliminarily for a term of three years commencing from 16 May 2014. And each of the non-executive Directors and independent non-executive Directors has entered into a letter of appointment with the Company on 16 May 2014, for a term of three years, with a one-year automatic renewal clause, in compliance with the relevant laws and regulations, and the Articles of Association of the Company.

Mr. CHEN Dongqing, Mr. TANG Chaoxiong and Mr. SHEN Xiaoliu have entered into a letter of appointment on 29 March 2016.

##### 1.7 Directors' Remuneration

The Remuneration and Appraisal Committee makes recommendations in relation to the Directors' remuneration by taking into consideration factors such as educational background and work experience. The Board determines the Directors' remuneration by considering the Directors' experiences, work performances, positions and market conditions and subject to approval of the general meeting.

### 企業管治常規(續)

#### 1. 董事會(續)

##### 1.6 委任及重選董事

根據本公司《公司章程》的規定，董事（包括非執行董事）由股東大會選舉產生，每屆任期不得超過三年，可連選連任。本公司已就新董事的委任建立了一套有效的程序。新董事的提名事宜先由提名委員會商議，然後再向董事會提交以供審議，並由股東大會選舉通過。

根據相關法律法規及本公司《公司章程》的規定，本公司各執行董事已於2014年5月16日與本公司訂立了服務合約，各服務協議自2014年5月16日起初步為期三年。而各非執行董事及獨立非執行董事亦已於2014年5月16日與本公司訂立了委任函，為期三年，委任函包含自動延期一年的條款。

陳冬青先生、唐超雄先生、申曉留先生則已於2016年3月29日簽訂委任函。

##### 1.7 董事薪酬

董事薪酬根據學歷、工作經驗等因素，由薪酬與考核委員會提出建議，經股東大會批准由董事會根據董事經驗、工作表現、職務及市場確定。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 2. Board Committees

There are four Board committees, namely the Audit Committee, the Remuneration and Appraisal Committee, the Nomination Committee and the Strategic Committee.

On 16 May 2014, the chairman and members of the second session of Board committees were appointed on the first Board meeting of the second session of the Board. On 29 March 2016, members of the Board committees were supplemented and replaced.

##### 2.1 Audit Committee

The Audit Committee consists of three Directors: Mr. FAN Ren Da Anthony (independent non-executive Director), Mr. SHEN Xiaoliu (independent non-executive Director) and Mr. ZHANG Wenjian (independent non-executive Director). Mr. FAN Ren Da Anthony served as the chairman of the Audit Committee. The primary responsibilities of the Audit Committee are to review and supervise the Company's financial reporting procedures, including:

- Making proposals in respect of the appointment, re-appointment or change of the external auditors to the Board, approving the remuneration and terms of engagement of external auditors, and handling any issues related to the resignation or dismissal of external auditors;
- Evaluating and examining the independence and objectivity of the external auditors and the effectiveness of the auditing procedures in accordance with applicable standards;
- Monitoring completeness, accuracy and impartiality of the financial statements of the Company and the Company's accounts, annual reports and interim reports and reviewing significant financial reporting opinions contained in them;
- Reviewing the Company's financial control, internal control and risk management systems; and
- Taking necessary measures to ensure that employees have a channel to raise concerns in an anonymous manner any possible improprieties in financial reporting, internal control or other matters.

### 企業管治常規(續)

#### 2. 董事會轄下委員會

董事會下設四個委員會，包括審計委員會、薪酬與考核委員會、提名委員會和戰略委員會。

2014年5月16日，第二屆董事會第一次會議決議委任第二屆董事會專門委員會主席及成員。2016年3月29日，增補及更換了部份專門委員會成員。

##### 2.1 審計委員會

審計委員會由三名董事組成，他們分別是：范仁達先生(獨立非執行董事)、申曉留先生(獨立非執行董事)及張文建先生(獨立非執行董事)。范仁達先生為審計委員會主席。審計委員會的主要職責為審計及監督公司的財務申報程序，包括：

- 就董事會外聘核數師的任命、重新任命或變更提出議案，審批外聘核數師的薪酬與僱傭條款，並處理與外聘核數師辭職或解僱相關的任何問題；
- 根據相關標準評估及審查外聘核數師的獨立性及客觀性和審計程序的有效性；
- 監察本公司財務報表、本公司賬目、年度報告和中期報告的完整性、準確性和公正性，並審查其中重要的財務報告意見；
- 審查公司的財務控制、內部控制和風險管理系統；及
- 採取必要措施，確保員工能夠以匿名的方式對財務報告、內部控制或其他事項中的任何不當行為提出質疑。



# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 2. Board Committees (continued)

##### 2.1 Audit Committee (continued)

During the reporting period, the Audit Committee held two meetings, details of which are as follows:

- On 21 March 2016, the first meeting of the Audit Committee of the second session of the Board in 2016 was held, whereby (1) the resolution regarding the Company's 2015 announcement of the annual results (draft) and the annual report (draft) was considered and approved; and (2) the resolution regarding the appointment of domestic and overseas auditors for 2016 was considered and approved.
- On 19 August 2016, the second meeting of the Audit Committee of the second session of the Board in 2016 was held, whereby the resolution regarding the Company's 2016 interim report (draft) and the announcement of interim results (draft) was considered and approved.

All the members of the Audit Committee attended the above meetings, except for the absence of Mr. Qu Jiuhui at the first meeting of the Audit Committee of the second session of the Board in 2016, and Mr. Shen Xiaoliu at the second meeting of the Audit Committee of the second session of the Board in 2016.

##### 2.2 Remuneration and Appraisal Committee

The Remuneration and Appraisal Committee consists of three Directors: Mr. QU Jiuhui, Mr. XIE Qiuye and Mr. WANG Zhongqu. Mr. QU Jiuhui serves as the chairman of the Remuneration and Appraisal Committee. The primary responsibilities of the Remuneration and Appraisal Committee are to formulate the standards concerning the assessment of the directors and the senior management, assess the performance of the directors and the senior management, and decide on and review remuneration policies and plans concerning the directors and the senior management, including:

- Discussing the assessment standards, performance evaluation procedures and remuneration and rewards and punishments of Directors and senior management and submitting the same to the Board of Directors for approval;

### 企業管治常規(續)

#### 2. 董事會轄下委員會(續)

##### 2.1 審計委員會(續)

在報告期間，審計委員會共召開了兩次會議，每次會議的詳細情況如下：

- 於2016年3月21日召開第二屆董事會審計委員會2016年第一次會議，審議並通過(1)關於公司2015年年度業績報告(審議稿)及年報(審議稿)的議案；及(2)聘任2016年度境內及境外審計機構的議案。
- 於2016年8月19日召開了第二屆董事會審計委員會2016年第二次會議，審議並通過關於公司2016年度中期報告(審議稿)及中期業績公告(審議稿)的議案。

除曲久輝先生缺席第二屆董事會審計委員會2016年第一次會議、申曉留先生缺席第二屆董事會審計委員會2016年第二次會議外，其他審計委員會委員均出席了上述會議。

##### 2.2 薪酬與考核委員會

薪酬與考核委員會由三名董事組成，他們分別是：曲久輝先生、謝秋野先生及王忠渠先生。曲久輝先生為本公司薪酬與考核委員會主席。薪酬與考核委員會的主要職責為制定評估董事及高級管理人員的標準及對彼等的表現進行評估；釐定、審閱董事及高級管理層相關的薪酬政策及計劃，其中包括：

- 研究董事與高級管理人員考核的標準、績效評價程序和薪酬及獎懲辦法，提交董事會批准；

## CORPORATE GOVERNANCE REPORT (CONTINUED)

### 企業管治報告(續)

#### Corporate Governance Practices (continued)

##### 2. Board Committees (continued)

###### 2.2 Remuneration and Appraisal Committee (continued)

- Assessing the duty performance of Directors and senior management of the Company and conducting performance evaluation for them;
- Supervising the implementation of the Company's remuneration system;
- Obtaining the authorization granted by the Board of Directors to consider and determine the specific remuneration package of all the executive Directors and senior management, including non-pecuniary benefits, pension rights and amounts of compensation (including compensation arising from loss or termination of office or appointment) and make recommendations to the Board of Directors on the remuneration of non-executive Directors. The factors to be considered by the Remuneration and Appraisal Committee include the remuneration paid by companies of same kinds, the time paid by the Directors and the duties of the Directors, the terms of employment of other posts in the Company and whether the remuneration should be determined by performance.

During the reporting period, the Remuneration and Appraisal Committee held one meeting on 21 March 2016, at which the resolution regarding the remuneration of Directors, Supervisors and senior management of the Company for 2016 was considered and approved.

All the members of the Remuneration and Appraisal Committee attended the above meeting.

#### 企業管治常規(續)

##### 2. 董事會轄下委員會(續)

###### 2.2 薪酬與考核委員會(續)

- 評審公司董事和高級管理人員的履職情況並對其進行績效考核評價；
- 對公司薪酬制度執行情況進行監督；
- 獲得董事會授權，考量確定全體執行董事及高級管理人員的特定薪酬待遇，包括非金錢利益、退休金權利及賠償金額(包括喪失或終止職務或委任的賠償)，並就非執行董事的薪酬向董事會提出建議。薪酬與考核委員會應考慮的因素包括同類公司支付的薪酬、董事須付出的時間及董事職責、公司內其他職位的雇用條件及是否應該按表現釐定薪酬等。

在報告期間，薪酬與考核委員會於2016年3月21日召開會議，會上審議並通過了公司董事、監事及高級管理人員2016年度薪酬的議案。

薪酬與考核委員會全體委員均出席了上述會議。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 2. Board Committees (continued)

##### 2.3 Nomination Committee

The Company's Nomination Committee consists of three Directors: Mr. XIE Qiuye, Mr. QU Jiuhui and Mr. TANG Chaoxiong. Mr. XIE Qiuye is the chairman of the Nomination Committee. The primary responsibilities of the Company's Nomination Committee are to formulate the procedures and standards for nominating candidates for Directors and senior management, and conduct preliminary review of the qualifications and other credentials of the candidates for Directors and senior management. In addition, according to the Members of the Board Diversity Policy (the "Policy"), the Nomination Committee is in charge of supervising execution of the Policy. The Nomination Committee will also discuss any possible amendments to the Policy and propose the amendments to the Board for its review and approval, so as to ensure the effectiveness of the Policy. The Nomination Committee is of the opinion that the constitution of the Board during the reporting period satisfied the requirements of the Policy.

During the reporting period, the Nomination Committee held three meetings, details of which are as follows:

On 29 January 2016, the first meeting of the Nomination Committee of the second session of Board in 2016 was held, whereby the following proposals were considered and approved: (1) proposal on nominating the general manager of the Company; (2) proposal on nominating the executive director of the Company; and (3) proposal on nominating the independent non-executive director of the Company.

On 21 March 2016, the second meeting of the Nomination Committee of the second session of Board in 2016 was held, whereby the proposals on employment of the secretary to the Board and appointment of the joint company secretary were considered and approved.

On 29 November 2016, the third meeting of the Nomination Committee of the second session of Board in 2016 was held, whereby the proposal on the employment of the deputy general manager of the Company was considered and approved.

All the members of the Nomination Committee attended the above meetings.

### 企業管治常規(續)

#### 2. 董事會轄下委員會(續)

##### 2.3 提名委員會

本公司的提名委員會由三名董事組成，他們分別是：謝秋野先生、曲久輝先生及唐超雄先生。謝秋野先生為提名委員會主席。本公司提名委員會的主要職責為制定董事及高級管理人員人選的提名程序及標準、對董事及高級管理人員人選的資格及其他資歷進行初步審閱。此外，根據《董事會成員多元化政策》(「《政策》」)，提名委員會負責監察《政策》的執行。提名委員會亦會討論任何或需就《政策》做出的修訂並提呈予董事會供其審批，以確保《政策》行之有效。提名委員會認為報告期內的董事會成員組成符合《政策》的要求。

在報告期間，提名委員會共召開了三次會議，每次會議的詳細情況如下：

於2016年1月29日召開第二屆董事會提名委員會2016年第一次會議，會上審議並通過關於以下各項的議案：(1)關於提名公司總經理的議案；(2)關於提名公司執行董事的議案；以及(3)關於提名公司獨立非執行董事的議案。

於2016年3月21日召開第二屆董事會提名委員會2016年第二次會議，會上審議並通過關於委任公司董事會秘書及聯席公司秘書的議案。

於2016年11月29日召開第二屆董事會提名委員會2016年第三次會議，會上審議並通過關於聘任公司副總經理的議案。

提名委員會全體委員均出席了上述會議。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 2. Board Committees (continued)

##### 2.4 Strategic Committee

The Company's Strategic Committee consists of five Directors: Mr. YANG Guang (executive Director and chairman), Mr. SHEN Xiaoliu (independent non-executive Director), Mr. FENG Shuchen (non-executive Director), Mr. YAN Andrew Y. (non-executive Director) and Mr. CHEN Dongqing (executive Director and general manager). Mr. YANG Guang serves as the chairman of the Strategic Committee. The primary responsibilities of the Strategic Committee are to formulate the Company's overall development plans and investment decision-making procedures, including:

- Reviewing the Company's long-term development strategies;
- Reviewing the Company's strategic plans and implementation reports;
- Reviewing significant capital expenditure, investment and financing projects that require approval of the Board; and
- Authorizing the management meeting of the Company to formulate specific plans, negotiate and implement relevant review and approval procedures, execute contracts and relevant documents, and handle relevant procedures for the above matters.

During the reporting period, the Strategic Committee held six meetings, details of which are as follows:

On 29 January 2016, the first meeting of the Strategy Committee of the second session of the Board in 2016 was held, whereby the proposal on Longyuan Environmental's transferring desulfurization and de-NOx project assets was considered and approved.

On 21 March 2016, the second meeting of the Strategy Committee of the second session of the Board in 2016 was held, whereby the following proposals were considered and approved: (1) establishing the purchase and material management department; and (2) establishing the China Guodian Corporation Finance Sharing Center Technology and Environment Branch Center.

### 企業管治常規(續)

#### 2. 董事會轄下委員會(續)

##### 2.4 戰略委員會

本公司的戰略委員會由五名董事組成，他們分別是：陽光先生(執行董事兼董事長)、申曉留先生(獨立非執行董事)、馮樹臣先生(非執行董事)、閻焱先生(非執行董事)和陳冬青先生(執行董事兼總經理)。陽光先生為戰略委員會主席。戰略委員會的主要職責為制定本公司的整體發展計劃及投資決策程序，包括：

- 審閱本公司的長遠發展戰略；
- 審閱本公司的戰略規劃及實施報告；
- 審閱須董事會批准的重大資本支出、投資及融資項目；及
- 授權本公司辦公會對上述各項制定具體方案、協商並實施相關審批程序、簽署合約及相關文件、辦理相關手續等。

在報告期間，戰略委員會共召開了六次會議，每次會議的詳細情況如下：

於2016年1月29日召開第二屆董事會戰略委員會2016年第一次會議，會議審議並通過關於龍源環保轉讓相關脫硫脫硝項目資產的議案。

於2016年3月21日召開第二屆董事會戰略委員會2016年第二次會議，會議審議並通過(1)關於成立採購與物資管理部的議案；及(2)關於成立中國國電集團公司財務共享中心科技環保分中心的議案。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 2. Board Committees (continued)

##### 2.4 Strategic Committee (continued)

On 20 April 2016, the third meeting of the Strategy Committee of the second session of the Board in 2016 was held, whereby the proposal on GD Solar's transferring 51% equity of Zhaojing was considered and approved.

On 26 April 2016, the fourth meeting of the Strategy Committee of the second session of the Board in 2016 was held, whereby the proposal on GD Solar Equity Cooperation Framework Agreement signed between Guodian Tech and Tianjin Zhonghuan was considered and approved.

On 30 June 2016, the fifth meeting of the Strategy Committee of the second session of the Board in 2016 was held, whereby the proposal on restructuring GD Solar was considered and approved.

On 22 September 2016, the sixth meeting of the Strategy Committee of the second session of the Board in 2016 was held, whereby the following proposals were considered and approved: (1) United Power's transferring 85.8% equity of United Power (Yixing); and (2) Beijing Guodian Longyuan Environmental Engineering Co., Ltd.'s transferring 51% equity of Beijing Longyuan Environmental.

All the members of the Strategic Committee attended the above meetings.

#### 3. Director's Responsibility for the Financial Statements

The Board acknowledges its responsibility for preparing the Financial Statements of the Group for the year ended 31 December 2016.

The Board is responsible for presenting a clear and understandable assessment report in respect of the financial statements for 2016 and other issues required to be disclosed pursuant to the Listing Rules and other supervisory provisions. The management has provided such explanations and information to the Board as necessary to enable the Board to make an informed assessment of the financial information and position of the Group which is to be reviewed and approved by the Board.

There are no material uncertainties relating to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern.

In addition, appropriate insurance coverage for Directors' liabilities has been arranged against potential legal proceedings to be taken against the Directors.

### 企業管治常規(續)

#### 2. 董事會轄下委員會(續)

##### 2.4 戰略委員會(續)

於2016年4月20日召開第二屆董事會戰略委員會2016年第三次會議，會議審議並通過關於國電光伏轉讓兆晶公司51%股權的議案。

於2016年4月26日召開第二屆董事會戰略委員會2016年第四次會議，會議審議並通過關於國電科環與中環股份簽署國電光伏公司股權合作框架協議的議案。

於2016年6月30日召開第二屆董事會戰略委員會2016年第五次會議，會議審議並通過關於重組國電光伏有限公司的議案。

於2016年9月22日召開第二屆董事會戰略委員會2016年第六次會議，會議審議並通過(1)關於國電聯合動力技術有限公司轉讓國電聯合動力技術(宜興)有限公司85.8%股權的議案；及(2)關於北京國電龍源環保工程有限公司轉讓北京龍源環保工程有限公司51%股權的議案。

戰略委員會全體委員均出席了上述會議。

#### 3. 董事對財務報表承擔的責任

董事會已確認其承擔編製本集團截至2016年12月31日止年度財務報表的責任。

董事會負責就2016年度的財務報表以及根據上市規則和其他監管條文規定需要進行披露的其他事宜制定一份清晰易懂的評估報告。管理層已經向董事會提交了必要的解釋和數據，確保董事會能夠就財務信息和集團(有待董事會進行審核)的地位作出有根據的評估。

本公司並無面臨可能對本公司持續經營業務之能力產生重大疑慮的事件或情況。

另外，董事可能面對的法律訴訟方面，本公司已為其可能招致的責任作出適當的投保安排。



## CORPORATE GOVERNANCE REPORT (CONTINUED)

### 企業管治報告(續)

#### Corporate Governance Practices (continued)

##### 4. Compliance with the Model Code for Securities Transactions

The Company has adopted 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 and rules governing dealings by all Directors and Supervisors in the securities of the Company. After specific enquiries were made by the Company to them, all Directors and Supervisors have confirmed that they have strictly complied with the required standard set out in the Model Code for the year ended 31 December 2016.

To ensure the compliance with the relevant requirements under the Listing Rules and to protect the Shareholders' interests, the Board will examine the corporate governance practices and the operations of the Company from time to time.

##### 5. Risk Management and Internal Control

The Company places prime importance to 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”, and “Internal Control Principle Policy.”

#### 企業管治常規(續)

##### 4. 遵守證券交易標準守則

本公司已採納上市規則附錄10所載上市公司董事進行證券交易的標準守則(「**標準守則**」)，作為所有董事及監事進行本公司證券交易的行為守則。根據對本公司董事及監事的專門查詢後，所有董事及監事均確認：截至2016年12月31日止年度，各董事及監事均已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企業管治、常規及運作，以確保符合上市規則有關規定並保障股東的利益。

##### 5. 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程，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》、及《內部控制基本制度》。

## CORPORATE GOVERNANCE REPORT (CONTINUED)

### 企業管治報告(續)

#### Corporate Governance Practices (continued)

##### 5. Risk Management and Internal Control (continued)

###### *Internal Control (continued)*

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

The Group communicated in time on the identified flaws of significant internal control and carefully assessed the potential risks. As a supervisor, the department 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**

The overall risk management of the Group is gradually on track, the management mechanism is becoming more and more sound, and the risk management concept is becoming more and more popular. Through the annual score and assessment of Leaders, middle-level cadres and grassroots employees of the Company collectively, the Group comprehensively considered the internal and external business environment and the influences of policy changes it may face next year, and having been approved by the office meeting, identified the major risks of that year and developed the relevant risks management strategies. At the same time, the Group submitted risk monitoring indicators monthly and released risk analysis reports quarterly to comprehensively analyze major risks and put forward countermeasures recommendations. The Group aims to establish a risk management system with comprehensive coverage, key control and pre-developed measures through risk control pilot.

#### 企業管治常規(續)

##### 5. 風險管理及內部控制(續)

###### *內部控制(續)*

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

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

###### **風險管理**

本集團的全面風險管理工作逐漸步入正軌，管理機制日趨健全，風險管理理念漸入人心。每年通過公司領導、中層幹部、基層員工共同打分評估，綜合考慮下一年度本集團可能面臨的內外部經營環境和政策變化影響，並經辦公會審議通過，認定該年度重大風險並制定相關的風險管理策略。同時按月報送風險監控指標、按季度發佈風險分析報告，全面分析重大風險，提出應對措施建議。本集團目標通過風險管控試點工作，建立一套全面覆蓋、重點管控、措施前置的風險管理體系。

## CORPORATE GOVERNANCE REPORT (CONTINUED)

### 企業管治報告(續)

#### Corporate Governance Practices (continued)

##### 5. Risk Management and Internal Control (continued)

###### *Risk Management (continued)*

During the reporting period, the Board has assessed the internal control systems of the Company and its subsidiaries and is not aware of any material weaknesses nor any material defaults in respect of financial, operational and compliance controls and risk management. The Board believes that the current monitoring system of the Company is effective and adequate and considers that the resources, qualifications and experiences of the staff of the Company's accounting and financial reporting functions, its training programs and budgets thereof are adequate. The Board will continue to monitor the risk management and internal control systems in the following year.

###### *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 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", SFO, "Listing Rules" and other relevant laws and regulations and the requirements of the Articles of Association of the Company. The registration and management of the inside information is carried out by the Board of Directors and its daily offices, the Department of Securities Financing and Legal Affairs (the Board of Directors Office).

##### 6. Insider Trading Management

In order to monitor and regulate potential insider trading activities and ensure the confidentiality of inside information, the Company has established a set of "Management Rules on Inside Information of Guodian Technology & Environment Group Corporation Limited" in accordance with the Company Law of the PRC, SFO, the Listing Rules and other relevant laws and regulations and the Articles of Association of the Company.

#### 企業管治常規(續)

##### 5. 風險管理及內部控制(續)

###### *風險管理(續)*

董事會已於報告期內對本公司及附屬公司的財務監控、運作監控、合規監控及風險管理等內控系統進行評估，期內未發現本公司內部控制存在任何重大弱項，或出現任何重大失誤。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。董事會於來年會持續監控本集團的風險管理及內部監控系統。

###### *內幕信息管理*

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

為監管和規範潛在內幕交易行為，確保內幕信息保密工作，本公司根據《中華人民共和國公司法》、《證券及期貨條例》、上市規則等有關法律法規及本公司《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》。內幕信息的登記管理工作由董事會及其日常辦事機構、證券融資與法律事務部(董事會辦公室)負責。

##### 6. 內幕交易管理

為監控規範潛在的內幕交易活動，確保內幕消息的保密性，本公司已根據中國公司法、《證券及期貨條例》、上市規則及其他相關法律法規和本公司《公司章程》，確立了一套「國電科技環境集團股份有限公司內幕信息管理辦法」。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 7. Auditors and Remuneration

KPMG and Union Power Certified Public Accountants (Special General Partnership) ("Union Power") were appointed as auditors for the financial statements prepared in accordance with the International Financial Reporting Standards and Accounting Standards for Business Enterprises of PRC for the year ended 31 December 2016, respectively.

For the year ended 31 December 2016, the fees payable to KPMG and Union Power for audit services were RMB10.16 million and RMB3.325 million, respectively.

For the year ended 31 December 2016, the fee payable to KPMG for non-auditing services related to the review of the Company's interim financial report was RMB4.56 million. Union Power did not provide any non-auditing services for the year ended 31 December 2016.

KMPG, the Company's external auditor's responsibilities for the financial statements are set out on pages 135 to 137 of this Annual Report.

#### 8. Communications with Shareholders

The Company highly appreciates Shareholders' opinions and advice, actively organizes various investor relations-related activities to maintain communication with the Shareholders and timely responds to reasonable requests of Shareholders.

##### 8.1 Convening Extraordinary General Meetings by Shareholders

According to the Articles of Association of the Company, two or more Shareholders holding more than 10% of the shares carrying the right to vote at the meeting sought to be held may sign one or more counterpart requisitions requiring the Board to convene an extraordinary general meeting and stating the objectives of the meeting. The Board shall, in accordance with the relevant laws and regulations and the Articles of Association of the Company, furnish a written reply stating its agreement or disagreement to convene the extraordinary general meeting within ten days upon receipt of such requisition. If the Board agrees to convene the extraordinary general meeting, a notice for convening the extraordinary general meeting shall be issued within five days upon adoption of the resolution by the Board.

### 企業管治常規(續)

#### 7. 核數師及其酬金

畢馬威會計師事務所和中審眾環會計師事務所有限公司(特殊普通合夥)(「中審眾環」)分別獲委任為審計截至2016年12月31日止年度按照國際財務報告準則和中國企業會計準則編製的財務報表的核數師。

截至2016年12月31日止年度，就畢馬威會計師事務所及中審眾環提供的審計服務應付的費用分別為人民幣10,160千元和人民幣3,325千元。

截至2016年12月31日止年度，應向畢馬威會計師事務所支付的與審閱本公司中期財務報告相關的非審計服務費為人民幣4,560千元。截至2016年12月31日止年度，中審眾環並未提供任何非審計服務。

畢馬威會計師事務所作為本公司外聘核數師對財務報表的責任，載於本年報第135頁至第137頁。

#### 8. 與股東的溝通

本公司高度重視股東的意見和建議，積極開展各類與投資者相關的活動與股東保持溝通，及時滿足各股東的合理需求。

##### 8.1 股東召開臨時股東大會

根據本公司章程，合計持有在該擬舉行的會議上有表決權的股份10%以上的兩個或兩個以上的股東，可以簽署一份或數份同樣格式內容的書面要求，提請董事會召集臨時股東大會，並闡明會議的議題。董事會應當根據法律法規和本公司《公司章程》的規定，在收到請求後十日內提出同意或不同意召開臨時股東大會的書面反饋意見。若董事會同意召開臨時股東大會，應當在作出董事會決議後的五日內發出召開會議的通知。



## CORPORATE GOVERNANCE REPORT (CONTINUED)

### 企業管治報告(續)

#### Corporate Governance Practices (continued)

##### 8. Communications with Shareholders (continued)

###### 8.1 Convening Extraordinary General Meetings by Shareholders (continued)

If the Board does not agree to convene the extraordinary general meeting, or if it fails to give its feedback in writing within ten days upon receipt of such requisition, the Shareholders individually or jointly holding an aggregate of more than 10% of the shares carrying the right to vote at the meeting sought to be held shall be entitled to propose to the board of Supervisors to convene an extraordinary general meeting, and shall submit its proposal in writing to the board of Supervisors. If the board of Supervisors agrees to convene the extraordinary general meeting, a notice for convening such meeting shall be issued within five days upon receipt of such requisition.

If the board of Supervisors fails to issue a notice for such meeting within the prescribed period, the board of Supervisors shall be deemed not to convene and preside at the meeting, and the Shareholders individually or jointly holding an aggregate of more than 10% of the shares of the Company for more than 90 consecutive days themselves may convene and preside at the meeting at their own discretion.

If the Board does not issue a notice of meeting within 30 days upon receipt of the aforesaid written requisition, the requisitioning Shareholders themselves may convene such a meeting according to procedures as similar as possible to that in which general meeting are to be convened by the Board within four months from the date of receipt of the requisition by the Board.

###### 8.2 Putting Forward Proposals at Shareholders' Meetings

According to the Articles of Association of the Company, when the Company convenes a general meeting, the Shareholders individually or jointly holding more than 3% of the shares of the Company shall have the right to propose motions. The Shareholders holding more than 3% of the shares of the Company shall have the right to propose ad hoc motions in writing, and the Company shall include matters in the proposed ad hoc motions within the scope of duties and responsibilities of the general meetings on the agenda, if the criteria as specified in the Articles of Association of the Company are met.

#### 企業管治常規(續)

##### 8. 與股東的溝通(續)

###### 8.1 股東召開臨時股東大會(續)

若董事會不同意召開臨時股東大會，或者在收到請求後十日內未作出書面反饋，單獨或者合計持有在該擬舉行的會議上有表決權的股份10%以上的股東有權向監事會提議召開臨時股東大會，並應當以書面形式向監事會提出請求。若監事會同意召開臨時股東大會，應在收到請求五日內發出召開會議的通知。

若監事會未在規定期限內發出會議通知，視為監事會不召集和主持股東大會，連續九十日以上單獨或者合計持有本公司10%以上股份的股東可以自行召集和主持會議。

如果董事會在收到前述書面要求後三十日內沒有發出召集會議的通告，提出該要求的股東可以在董事會收到該要求後四個月內自行召集會議，召集的程序應當盡可能與董事會召集股東會議的程序相同。

###### 8.2 在股東大會提出建議

根據本公司《公司章程》，公司召開股東大會，單獨或合計持有公司3%以上股份的股東有權向本公司提出提案。單獨或合計持有本公司3%以上股份的股東，有權以書面形式向本公司提出臨時提案，倘本公司《公司章程》所列的要求均已滿足，則本公司應將該臨時提案中屬股東大會職責範圍內的事項列入會議日程。



## CORPORATE GOVERNANCE REPORT (CONTINUED)

### 企業管治報告(續)

#### Corporate Governance Practices (continued)

#### 8. Communications with Shareholders (continued)

##### 8.3 Investor Relations Activities

The Group has received questions from visiting investors, analysts and press thoughtfully and has considered and answered their related questions efficiently and accurately; the Group has paid close attention to the developing trends in the market, and always communicated with the public in a realistic, objective and compliant way.

##### 8.3.1 Results Roadshows

In 2016, the Company did not organize results roadshow events.

##### 8.3.2 Investors' Routine Visits

During the reporting period, the Company received 39 groups of investors and analysts by way of one-to-one/group/telephone meetings, totaling 47 people.

#### 8.4 Putting Forward Enquiries to the Board

According to the Articles of Association of the Company, all the Directors shall attend general meetings. The Shareholders may present enquiries to the Board at such general meetings. If the Shareholders need to contact the Board for enquiries, they are also welcome to send enquiries directly to the Company, contact details of which are as follows:

Attention:	Board Office
Address:	Suite 1225, Building No. 1 Block No. 16 Xi Si Huan Zhong Road Haidian District Beijing, PRC
Postal code:	100039
Telephone:	010-5765 7777
Fax:	010-5765 9705
Email:	board@kh.cgdc.com.cn

For the avoidance of doubt, the Shareholder(s) must deposit and send the original duly signed written enquiry or correspondence of any type to the above address, and provide his or her full name, contact details and proof of identification in order to give effect thereto.

#### 企業管治常規(續)

#### 8. 與股東的溝通(續)

##### 8.3 投資者關係活動

本集團周密安排、認真接待投資者、分析師、新聞媒體的來訪，高效、準確地回答相關問題；密切關注市場發展趨勢，始終以真實、客觀、合規的角度與公眾進行溝通。

##### 8.3.1 業績路演

2016年，本公司沒有組織業績路演活動。

##### 8.3.2 投資者日常來訪

報告期內，本公司以一對一會議／小組會議／電話會議方式接待投資者、分析師39批次，共計47人。

#### 8.4 向董事會提出查詢

根據本公司《公司章程》，全體董事都應當出席。股東可以在股東大會上向董事會提出查詢。如果股東因查詢而需聯繫董事會，他們也可以直接將查詢函發送至本公司，具體聯繫方式如下：

收件人：	董事會辦公室
地址：	中國北京市 海澱區 西四環中路 16號院1號樓 1225室
郵編：	100039
電話：	010-5765 7777
傳真：	010-5765 9705
電子郵件：	board@kh.cgdc.com.cn

為免生疑，股東須將正式簽署的書面查詢原件或其他形式的信函送交或寄送至上述地址，並提供全名、聯繫方式詳情以及身份證明，方告生效。

## CORPORATE GOVERNANCE REPORT (CONTINUED)

### 企業管治報告(續)

#### Corporate Governance Practices (continued)

##### 8. Communications with Shareholders (continued)

###### 8.5 Disseminating Information through the Internet

In order to promote good corporate governance and increase transparency, the Group has set up a website (www.01296.hk) as a medium to disseminate information. The Group implements procedures to vet information which is to be put on its website and also monitors its website to ensure that all published information is up-to-date and accurate.

###### 8.6 Overseas Regulatory Announcement

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

##### 9. Joint Company Secretaries

Mr. CAI Zhaowen is the secretary to the Board and the joint company secretary (appointed on 30 March 2017) and also the major contact person of the Company. Please refer to the section headed "Directors, Supervisors and Senior Management – Company Secretary" for further information.

Ms. MOK Ming Wai is the joint company secretary of the Company. She is a director and head of Listing Services Department of TMF Hong Kong Limited.

In 2016, Ms. MOK took not less than 15 hours of relevant professional training in compliance with Rule 3.29 of the Listing Rules.

##### 10. Amendments to the Articles of Association

There were no material changes in the Articles of Association of the Company in 2016.

#### 企業管治常規(續)

##### 8. 與股東的溝通(續)

###### 8.5 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，本集團設立網站(www.01296.hk)並使用互聯網作為發放數據的管道，本集團執行程序審閱即將登載在其網站上的信息，同時監察其網站，以確保所有公佈的信息都是最新的並且是正確的。

###### 8.6 海外監管公告

由於本公司的附屬公司龍源技術於深圳證券交易所上市，本集團已根據上市規則第13.10(B)條遵守海外監管公告的相關規定。

此外，由於本公司的公司債券在上海證券交易所上市，本集團已根據上市規則第13.10(B)條遵守海外監管公告的相關規定。

##### 9. 聯席公司秘書

蔡兆文先生為本公司董事會秘書及聯席公司秘書(於2017年3月30日委任)，亦為本公司內部之主要聯絡人。請參閱名為「董事、監事和高級管理人員－公司秘書」的章節以獲得進一步信息。

莫明慧女士為達盟香港有限公司董事兼上市公司服務部主管，本公司之外聘聯席公司秘書。

於2016年，莫女士已遵守上市規則第3.29條之規定完成不少於15小時的相關專業培訓。

##### 10. 對《公司章程》的修改

於2016年，本公司的《公司章程》無重大變動。

# CORPORATE GOVERNANCE REPORT (CONTINUED)

## 企業管治報告(續)

### Corporate Governance Practices (continued)

#### 11. 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 Office of the Board for the management of connected transactions with the assistance from the Securities and Finance Division and Financial Property Division. In order to ensure that the Company's connected transactions are carried out in accordance with the relevant rules and regulations and that the aggregated transaction amounts do not exceed the annual caps, the Group has notified all the 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 in an effort to ensure full compliance with the relevant Listing Rules.

#### 12. Emoluments of Directors and Senior Management

Details of the emoluments of Directors for the year ended 31 December 2016 are set out in Note 9 to the Financial Statements.

The emoluments of senior management for the year ended 31 December 2016 are within the following bands:

Emoluments Band (RMB) 薪酬範圍(元)	2016 Number of individuals 人數	2015 Number of individuals 人數
400,000以下 (less than 400,000)	2	2
400,000-600,000	1	1
600,000以上 (more than 600,000)	3	3
Total 合計	6	6

### 企業管治常規(續)

#### 11. 關連交易管理

為強化本公司的關連交易管理，本公司已建立「國電科技環保集團股份有限公司關連交易管理辦法」，並指定董事會辦公室帶領證券融資部及財務產權部管理關連交易。為確保本公司關連交易乃根據適用條例和法規實施以及交易總額不超過年度上限，本集團已將適用持續關連交易上限通告所有附屬公司和部門，將監控職責具體到各個附屬公司和部門，並要求該等附屬公司和部門就關連交易報告高級管理層。本公司已向本公司內部職工就不時的關連交易開展定期培訓，並指定專人確保完全遵守相關上市規則。

#### 12. 董事及高級管理人員薪酬

各董事截至2016年12月31日止年度的薪酬詳情載於財務報表附註9。

截至2016年12月31日止年度高級管理人員的薪酬範圍如下：

# SUMMARY OF HUMAN RESOURCES

## 人力資源概況

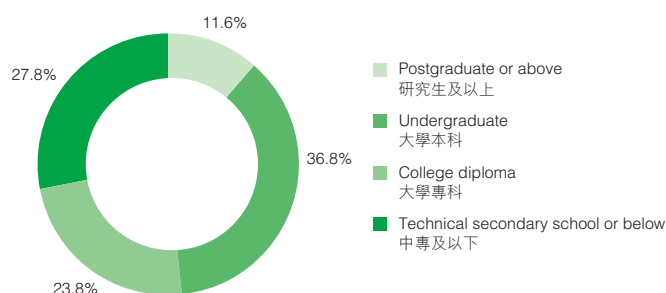
As at 31 December 2016, the Group had a total of 8,155 staff, of which 5,931 or 72.7% were male while 2,224 or 27.3% were female. The staff structure is as follows:

於2016年12月31日，本集團共有員工8,155人，其中男性僱員5,931人，佔72.7%；女性僱員2,224人，佔27.3%。人員構成情況如下：

**Table 1: Analysis of the Group's staff by academic qualification**

表一：本集團按學歷劃分的員工分析

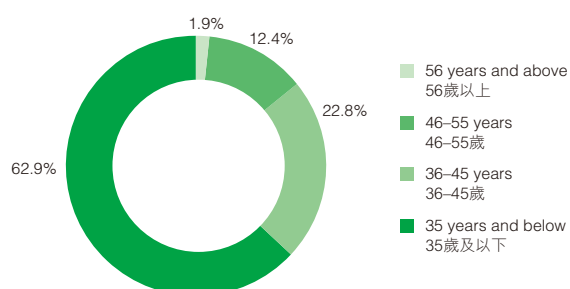
Academic Qualification	學歷	Number of Staff 人數	Percentage 比例 %
Postgraduate or above	研究生及以上	942	11.6
Undergraduate	大學本科	3,007	36.8
College diploma	大學專科	1,937	23.8
Technical secondary school or below	中專及以下	2,269	27.8
Total	合計	8,155	100.0



**Table 2: Analysis of the Group's staff by age**

表二：本集團按年齡劃分的員工分析

Age	年齡	Number of Staff 人數	Percentage 比例 %
56 years old and above	56歲以上	156	1.9
46–55 years old	46–55歲	1,017	12.4
36–45 years old	36–45歲	1,856	22.8
35 years old and below	35歲及以下	5,126	62.9
Total	合計	8,155	100.0



## SUMMARY OF HUMAN RESOURCES (CONTINUED)

### 人力資源概況(續)

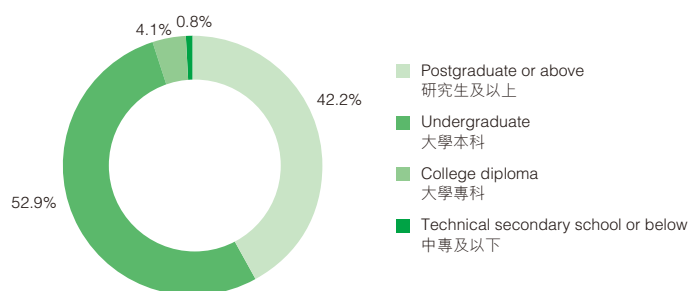
As at 31 December 2016, the Company had a total of 121 staff. The staff structure is as follows:

於2016年12月31日，本公司共有員工121名。人員構成情況如下：

**Table 3: Analysis of the Company's staff by academic qualification**

表三：本公司按學歷劃分的員工分析

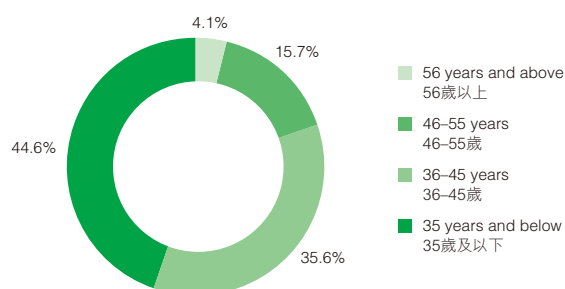
Academic Qualification	學歷	Number of Staff 人數	Percentage 比例 %
Postgraduate or above	研究生及以上	51	42.2
Undergraduate	大學本科	64	52.9
College diploma	大學專科	5	4.1
Technical secondary school or below	中專及以下	1	0.8
Total	合計	121	100.0



**Table 4: Analysis of the Company's staff by age**

表四：本公司按年齡劃分的員工分析

Age	年齡	Number of Staff 人數	Percentage 比例 %
56 years old and above	56歲以上	5	4.1
46–55 years old	46–55歲	19	15.7
36–45 years old	36–45歲	43	35.6
35 years old and below	35歲及以下	54	44.6
Total	合計	121	100.0





## SUMMARY OF HUMAN RESOURCES (CONTINUED)

### 人力資源概況(續)

#### Staff Performance Appraisal

Guodian Tech diligently implements the “155 Strategy” of Guodian Group by promoting the transition and upgrade of the Company, strengthening the development of its core capacity and the establishment of a marketization mechanism. The Company faces its challenges directly with proactive exploration and intensified management and control in order to strengthen its services. In order to ensure the objectiveness and fairness of the performance evaluation and the comparability of the evaluation results, the Company introduced the departmental evaluation process where the management of the Company evaluates middle management and departments, and in turn the department managers evaluate their employees, ensuring that the missions of the Company are effectively conveyed.

#### Staff Training

The Group has duly implemented the strategy of improving and strengthening the enterprise by attracting talent to continuously enhance the systematic education and training of the Group as well as strengthen and improve the employee training system catering to the Group's future development and the need for talent. Training tailored for the Company's personnel of different professions at different levels were carried out according to their needs.

Improving staff quality was considered an important aspect in the talent development strategy in education and training for 2016. The Group strived to improve the training system and curriculum planning to meet the requirements of the development of the Group, actively explored to build a “3+1” employee training system comprising of leadership, competence, execution, and professional skills. In 2016, the total hours of relevant training of the Group, including leaders and young cadres training courses, orientation training, professional skills training, exceeded 84,534 hours, with a coverage rate of 61%. At the same time, the Group founded the network college, established and improved the corporate internal training system, selected and trained 39 candidates as the first batch of internal trainers, which enhanced the internal sharing of knowledge, skill and experience and also provided a more flexible communication and expression platform for all types of talent.

#### Employee Remuneration Policy

In 2016, the Company continued to optimize and improve the performance-based salary system, and has conducted the role design, role analysis and role evaluation scientifically and reasonably by considering practice and real situations to establish the internal income allocation method centering on role value and performance contribution. The diverse position and performance salary payment mechanism with hierarchical classification thus been gradually formed. The employee remuneration of the Group comprises of 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 dependent on the status of completion of the Company's major tasks annually.

#### 員工績效考核

國電科環認真貫徹落實國電集團「一五五」戰略，推進公司轉型升級，加強核心能力發展，探索建立市場化機制，直面問題、積極探索、強化管控、加強服務。為保證績效考核過程客觀公正，考核結果具有可比性，本公司引入部門考核環節，由公司領導對中層管理人員和部門進行評價，由部門經理對員工進行評價，確保本公司任務的有效傳遞。

#### 員工培訓

本集團全面實施人才強企戰略，不斷提升本集團系統教育培訓工作水平，不斷健全完善適應本集團未來發展及人才需要的全員培訓體系，依據工作需要對公司各類專業人員分層分類組織實施培訓。

2016年教育培訓工作將提升人員隊伍素質作為人才發展戰略的重要一環，本集團著力完善符合本集團發展要求的培訓制度和大綱規劃，積極探索建立基於領導力、勝任力、執行力和專業技能培養的「3+1」全員培訓體系。2016年開展領導人員、青年幹部培訓班、新員工入職培訓、專業技術專項培訓等相關培訓總學時超84,534小時，培訓覆蓋率達到61%。同時開通了網絡學院，建立健全企業內訓師制度，選拔培訓首批內訓師39人，加強企業內部知識、技能及經驗共享，為各類人才提供更加靈活的溝通展示平台。

#### 員工薪酬政策

2016年公司繼續優化完善崗位績效工資制度，結合實際進行科學合理的崗位設計、崗位分析和崗位評價，建立以崗位價值和績效貢獻為主的內部收入分配方式，逐步形成分層分類多元化的崗位績效工資機制。本集團員工薪酬由基本工資、績效工資和獎勵工資三部份組成，績效工資依據公司業績及績效考核情況確定，獎勵工資依據公司年度重點工作完成情況確定。

# ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT

## 環境、社會及管治報告

Since its establishment, the Group has always paid great attention to the business operation, and the sustainable development of the society and our environment; by virtue of its status as a hi-tech and environmental protection enterprise, the Group has been actively carrying out its corporate vision of “green technology for the whole world” and also integrating such conception into its day-to-day operation business activities.

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

### I. Environmental Protection, Energy Conservation and Emission Reduction

#### 一. 環境保護、節能減排

In 2016, the Group continued to take advantage of its position in the environmental industry and has made prominent contribution to the fields of environmental protection, energy conservation and pollutants emission reduction.

2016年本集團繼續發揮環保產業優勢，為環境保護及節能減排工作做出了突出貢獻。

##### 1. Business of environmental protection

##### 1. 環保業務

As at 31 December 2016, the total installed capacity of franchised desulfurization project was 14,570MW, and the total installed capacity of franchised de-NOx project was 11,000MW. The sulfur dioxide emission reduction in the year ended 31 December 2016 reached 348,500 ton, with nitric oxide emission reduction reaching 64,500 ton. The franchised desulfurization and de-NOx projects strictly implemented the environmental protection requirements during the construction phase, and complied with the national environmental protection principle of “three simultaneous”, which are the principles of simultaneous design, simultaneous construction and simultaneous commissioning of environmental facilities with the main construction, and all reached up-to-standard emission.

截至2016年12月31日，本公司所屬脫硫特許經營項目的總裝機容量為14,570兆瓦，所屬脫硝特許經營項目的總裝機容量為11,000兆瓦。全年減排二氧化硫量達到了34.85萬噸，減排氮氧化物6.45萬噸。脫硫脫硝特許經營項目在施工過程中，嚴格執行項目的環保要求，以及國家環保設施「三同時」即環保設施與主體工程同時設計、同時施工、同時投產的規定，均實現達標排放。

The sewage treatment plant subordinated to Lucency Enviro-Tech Co., Ltd., a subsidiary of the Company, discharged the industrial wastewater after reaching the emission and reuse standards as required in relevant national laws and regulations, such as the Discharge Standards on Pollutants from Urban Sewage Treatment Plants (GB18918-2002) (《城鎮污水處理廠污染物排放標準(GB18918-2002)》) and the Water Quality Standard of Urban Recycled and Reuse Water for Urban Miscellaneous Water Consumption (GB/T19820-2002)(《城市污水再生利用城市雜用水水質(GB/T19820-2002)》), or resupplied the wastewater to industrial enterprises such as power plant after further regeneration treatment. The industrial wastewater and domestic sewage generated by the sewage treatment plant will be collected by the sewage treatment system, and will not be discharged

本公司附屬公司朗新明環保科技有限公司下屬的污水處理廠的產品水在達到國家頒佈的《城鎮污水處理廠污染物排放標準(GB18918-2002)》、《城市污水再生利用城市雜用水水質(GB/T19820-2002)》等相關法律規範中要求的排放、回用標準後排放，或進一步再生處理後回用到電廠等工業企業。污水處理廠內產生的生產廢

## ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT (CONTINUED)

### 環境、社會及管治報告(續)

outside. Thus, no discharge of environmental pollutants will occur. By means of the water affairs operation mode, the sewage treatment plant has treated 205.2 million ton of sewage water (including reclaimed water), and reduced 76,000 ton of Chemical Oxygen Demand (COD) emission for the year ended 31 December 2016. Meanwhile, the sewage treatment plant can carry out oxygenolysis for organic contaminants in gaseous pollutants, and finally reached the emissions on standard; in the aspect of solid waste, the remaining sludge will be used as compost or treated in the landfill; other wastes such as sediments and sand setting will be buried in the landfill.

#### 2. Business of energy conservation solution

In the energy saving business such as contract energy management, fuel-saving and ignition, the Group also values the key role of science and technology in energy saving and emission reduction, and actively brings industrial technology and management advantages into full play.

In contract energy management, the Group has accumulatively finished nearly 59 contract energy management and reconstruction projects, consisting of turbine flow reconstruction, vapor lock reconstruction, air pre-heater sealing reconstruction, waste heat and excess pressure utilization, motor system energy conservation and combustion optimization, with an annual energy saving of 485,000 tons of standard coal or more. In 2016, 11 projects were completed, saving over 60,000 tons of standard coal.

The Company maintains the leading position in the industry for fuel-saving and ignition products. It is the only enterprise in the industry with overseas performance of plasma ignition. The Company has been optimizing the design of small-scale plasma ignition systems, reducing the system cost and improving the product's competitiveness in the market. Meanwhile, the Company has been pushing the "Go Global" strategy, and keeps on expanding the market space of fuel-saving and ignition services in East Asia and Southeast Asia. In respect of waste-heat utilization, the project has successfully implemented the waste-heat recovery project of Guodian Langfang Power Plant. The comprehensive boiler reconstruction service has been developing steadily, and successfully implemented comprehensive boiler reconstruction projects including Huaneng Xinhua, Chizhou Jiuhe, Guodian Langfang and Guodian Zhijin, and carried out a batch of application and acceptance of some technological and scientific projects.

水和生活污水收集後進入污水處理系統，不作外排，不會產生環境污染。通過水務運營方式，截至2016年12月31日止年度，污水處理廠處理污水（含中水）20,520萬噸，COD（化學需氧量）累計減排量7.6萬噸。同時，污水處理廠還對廢氣污染物中的有機污染物進行氧化分解，最終達標排放；在固體廢棄物方面，對於剩餘污泥一般採用處理後堆肥回用農田或填埋處理，其他如柵渣、沉砂等運到垃圾填埋廠進行填埋。

#### 2. 節能解決方案業務

在合同能源管理、節油點火等節能業務中，本集團也重視科技進步在節能減排中的關鍵作用，充分發揮產業技術和管理優勢。

在合同能源管理方面，以汽輪機通流改造、汽封改造、空預器密封改造、餘熱餘壓利用、電機系統節能、燃燒優化等各項節能技術為主，累計完成合同能源管理改造項目近59項，年節約標準煤約48.5萬噸以上。其中，2016年完成11項，節約標煤6萬噸以上。

本公司節油點火產品繼續保持行業領先地位，並且是行業內唯一擁有海外等離子體點火業績的企業。本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。同時加快「走出去」戰略，持續拓展節油點火業務在東亞、東南亞等地的市場空間。餘熱利用業務方面，成功實施了國電廊坊電廠餘熱回收項目。鍋爐綜合改造業務穩步發展，成功實施了華能新華、池州九華、國電廊坊、國電織金等鍋爐綜合改造項目，並開展了一批科技項目的申報、驗收等工作。

## ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT (CONTINUED)

### 環境、社會及管治報告(續)

#### 3. Business of WTG products and services

United Power, a subsidiary of the Company, produced 954 WTG units (including 357 sets 1.5MW WTG, 597 sets 2MW WTG, totalling 1,729.5MW) in the year ended 31 December 2016, and has made contribution to the development of green energy. The production bases in Jiangsu, Inner Mongolia and Hebei discharged wastewater generated during WTG manufacturing to municipal sewage treatment plants through the pipeline network, and reached the discharge standard after the uniform treatment of wastewater; ventilation systems with activated carbon filtration will be installed to waste gas emission sources, eliminating the pollutants that will be discharged into the environment. Other wastes will be fully sold to metal recovery companies for further recycling.

Chifeng Wind Power, a subsidiary of the Company, accumulatively generated wind power and PV power of 234.464 million KWH for the year, equivalent to the reduction of 282,000 tons of greenhouse gases.

#### 3. 風機產品及服務業務

本公司附屬公司聯合動力技術有限公司全年生產風機954台(其中1.5MW風機357台, 2MW風機597台, 合計1,729.5MW), 為發展綠色能源做出了貢獻。位於江蘇、內蒙古、河北的生產基地在風機製造過程中所產生的廢水經管網排入市政污水處理廠, 統一處理達標排放; 廢氣污染源加裝採用活性炭過濾處理的通風系統, 對環境未造成污染; 其他廢棄物全部銷售給金屬回收公司回收利用。

本公司附屬公司赤峰風電公司全年累計風力和光伏發電23,446.40萬千瓦時, 相當於減排溫室氣體28.2萬噸。

## II. Working Environment and Employees

#### 1. Employees

The Group has always insisted on the philosophy that employee is the most precious wealth and the source for the sustainable development of the enterprise. The Group actively creates good conditions for the career development physically and psychologically; it has established clear and transparent human resources system and procedure in accordance with Labour Law, Labour Contract Law and relevant laws and regulations; and by establishing the employees' congress system, it allows the employees to actively participate in the operation activities of the Group. The multidirectional communication mechanism and the transparent information platform keeps our employees informed of the Group's strategy, operation target and ensures the employees understand their right to know, their right to participate and their right to supervise.

As at 31 December 2016, the Group had 8,155 employees in total, including 3,952 workers and 2,762 technicians, accounting for 65.7% of the non-worker employees. There are 5,931 male employees and 2,224 female employees.

## 二. 工作環境及員工

#### 1. 僱員情況

本集團始終堅持員工是最寶貴的財富, 是企業可持續發展的源泉, 積極為員工事業發展和身心健康創造良好條件。按照《勞動法》、《勞動合同法》及相關法律法規, 建立了清晰、透明的人力資源制度和流程, 並通過建立職工代表大會制度, 讓員工積極參與到本集團的經營活動中; 通過健全的、多向的溝通機制與透明的信息平台, 使員工能清晰地了解本集團戰略、經營目標等信息, 切實保障員工的知情權、參與權和監督權。

於2016年12月31日, 本集團共有員工8,155人, 其中工人3,952人, 技術人才2,762人, 佔非工人人員總量的65.7%。男性僱員5,931人, 女性僱員2,224人。



## ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT (CONTINUED)

### 環境、社會及管治報告(續)

#### 2. Health and Safety

The Company always strictly complies with the applicable national laws, regulations and standards, such as Law on Production Safety (《安全生產法》) and Law of Occupational Disease Prevention (《職業病預防法》), continuously establishes and improves the working environment and the occupational health and safety management system for our employees in line with the applicable national occupational safety and health standards and health requirements for our employees. By providing our employees with eligible labour health and safety protection articles, the Company prevents, controls and eliminates occupational disease hazards and protects the health and relevant interests of the employees.

In order to reinforce the occupational health supervision and workplace management of every unit of the Group, the Company has established the safety, occupational health assurance system where every grass roots unit has respectively taken the following measures:

- (1) Present tables setting out the sources of hazards and major hazards, and take specific measures and management solutions for hazard sources, in particular major hazard sources;
- (2) Regularly organize knowledge training for our employees with regard to occupational health and disease prevention, promote self-protection consciousness and regularly organize physical examination for our employees;
- (3) Keep on improving the workplace environment; and
- (4) Actively cooperate with the relevant departments in epidemic prevention.

The Group has conducted safety checks, emergency accident drills and safety education activities in multiple forms. Throughout the year, the overall safety situation was stable and no major safety and personal casualty accidents have occurred.

#### 2. 健康與安全

本公司一貫嚴格執行國家《安全生產法》、《職業病預防法》等相關法律法規、標準，不斷健全和完善工作環境管理和職業健康安全管理體系，為員工創造了符合國家職業安全衛生標準和衛生要求的工作環境和條件。通過向員工提供合格的勞動衛生保護用品，預防、控制和消除職業病的危害，保護了員工健康及相關權益。

為加強本集團各單位作業場所的職業健康監督與管理工作，本公司自上而下建立了安全、職業健康保證體系，各基層單位分別制定了以下措施：

- (1) 編製危險源列表和重大危險源列表，對於各危險源，特別是重大危險源，採取有針對性的應對措施和緊急管理方案；
- (2) 定期組織員工參加相關職業健康和預防職業病的知識培訓，提高員工的自我保護意識，並定期組織員工參加體檢；
- (3) 不斷改善作業場所的工作環境；及
- (4) 積極配合防疫部門做好傳染性疾病的預防工作。

本集團開展了多種形式的安全檢查、應急事故演練及安全教育活動，全年安全局勢總體平穩，沒有發生重大安全和人身事故。



## ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT (CONTINUED)

### 環境、社會及管治報告(續)

#### 3. Personal Development and Training

The Group fully implements the strategy of “strengthen the enterprise with talent”; and keeps promoting its systematic education and training, enhances the career development of our employees and boosts the comprehensive skill and quality of the employees. The Group has established the “3+1” employees training system in line with its future development demand and based on the cultivation of leadership, competence, implementation capacity and professional skill, and carries out the hierarchical, classified and customized talent cultivation development plan. In 2016, the total hours of relevant trainings of the Group, including leaders and young cadres training courses, orientation trainings, professional skills trainings, exceeded 84,534 hours, with the coverage rate of 61%. At the same time, the Group founded the network college, established and improved the corporate internal trainer system, selected and trained 39 candidates as the first batch internal trainers, which enhanced the internal sharing of knowledge, skill and experience and also provided talents a more flexible communication and expression platform.

#### 4. Employment Rules

The Group strictly implements *the Labour Law of the People's Republic of China* (the Rule 15 under which prohibits enterprise from using employees under 16 years old), the Regulation on Forbidden Using Child Labor and *the Law of the People's Republic of China on Employment Contracts* and enters into the employment contracts with all employees, setting forth the work content, work place, work time, remuneration, etc. The Group respects the freedom of any employee at work and firmly avoids restricting the physical freedom of any employee or forcing any employee to work during his/her employment. Since its establishment, the Group has never had any major breach against the applicable laws and regulations in respect of operation activities and employment practices (including but not limited to recruitment, working hours, health and safety, use of child workers and forcing employees).

#### 3. 個人發展及培訓

本集團全面實施人才強企戰略，不斷提升本公司系統教育培訓工作水平，強化員工的崗位成長，提升員工的綜合技能與素質。本集團建立了符合企業未來發展需要，建立基於領導力、勝任力、執行力和專業技能培養的「3+1」全員培訓體系，實施分層、分類、定制化的人才培養規劃，2016年開展領導人員、青年幹部培訓班、新員工入職培訓、專業技術專項培訓等相關培訓總學時超84,534小時，培訓覆蓋率達到61%。同時開通了網絡學院，建立健全企業內訓師制度，選拔培訓首批內訓師39人，加強企業內部知識、技能及經驗共享，為各類人才提供更加靈活的溝通展示平台。

#### 4. 勞動準則

本集團嚴格執行《勞動法》第十五條禁止用人單位招用未滿十六周歲的未成年人以及《禁止使用童工規定》等辦法，依據《勞動合同法》，與所有入職員工簽署書面的勞動合同，合同對工作內容、工作地點、工作時間、工作報酬等內容予以明確。本集團尊重員工的就業自由，僱傭期間堅決杜絕以任何形式來限制員工的人身自由或強迫員工勞動的行為。本集團自成立以來，從未發生過任何涉及經營活動、勞動慣例的相關法律法規的重大違法違規事項(包括但不限於招聘、工作時數、健康及安全、童工及強迫勞工等方面)。

## ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT (CONTINUED)

### 環境、社會及管治報告(續)

#### 5. Employee Care

The Company has established an adequate labour union assistance working mechanism, and cares for its poverty-stricken employees, carries out heart-warming projects, and creates a favourable home-culture atmosphere by setting up Basketball Association and Football Association, holding "Guodian Tech" basketball game, and enhances cohesion among employees through various activities; actively carries out Youth League Day themed as "hardworking youth is the most beautiful", "growth and development" and "talks of youth", and gradually explores the "one-youth one-brand" building of Guodian Tech Youth League and each grass-root department; advocates all employees to read and learn by setting up reading room. A total of 24 "Youth Reading" activities were held in 2016, issuing 203 books. The Company has established a "Romantic Guodian" dating platform, and concerns actual living problems of the youth. A total of 6 dating parties were held, involving 360 people.

### III. Operation Management

#### 1. Purchase and Supplier Management

Based on the strict implementation of the *Law of the People's Republic of China on Tendering and Bidding*, as well as regulations of China Guodian Corporation, the Group has drafted and released six systems and one regulation, which are the Purchase Management Methods, Materials Management Methods, Bidding Plan Management Methods, Non-bidding Purchase Implementation Methods, Bidding Purchase Implementation Methods, Supplier Management Methods, and Rules of Purchase and Bidding Management Committee Procedures. The Group has set up the Purchase Management Committee and the Purchase and Materials Management Department. Through the unified bidding and price quotation and comparison platform of China Guodian Corporation, the plan, standard, process and platform for purchase in the group are unified. During the purchasing process, the Bid Evaluation Committee, evaluation group members and staff member concerned have strictly enforced the relevant confidentiality disciplines and regulations on withdrawal by petition of China Guodian Corporation. The Company also continuously promotes the standardization construction of the purchase documents.

In respect of supplier management, the Group requires subsidiaries to learn the advanced experiences in the industry, optimize the qualified supplier development process, introduce the excellent suppliers of top enterprises in the industry, accelerate the development of supplier verification and trial, formulate the reasonable development plans and the rational purchase plans.

#### 5. 員工關愛

本公司建立健全工會幫扶工作機制，做好貧困職工的日常慰問，不斷深化送溫暖工程，營造良好的家園文化氛圍；增設籃球協會和足球協會，舉辦「科環盃」籃球比賽，通過開展多種形式的活動，增強職工凝聚力和向心力；積極開展「奮鬥青春最美麗」主題團日、「成長與發展」、「青年說」等活動，逐步探索國電科環團委及各基層單位「一團一品」建設；通過開設閱覽室等活動，在各單位倡導全員閱讀、全員學習理念，本公司全年累計開展「青春悅讀」品牌活動24次，發放書籍203冊；建立「浪漫國電」交友平台，關注青年現實生活問題，全年共舉辦6次聯誼活動，參與人數達360人次。

### 三. 運營管理

#### 1. 採購與供應商管理

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電集團相關規定的基礎上，本集團編製下發了6項制度、1項規則，分別為：採購管理辦法、物資管理辦法、招標計劃管理辦法、非招標採購實施辦法、招標採購實施辦法、供應商管理辦法和採購與招標管理委員會議事規則；並成立採購管理委員會、採購與物資管理部；利用國電集團統一的招標和詢比價平台，實現了全集團採購工作的統一計劃、統一標準、統一流程、統一平台。採購過程中，評標委員會、評審小組成員、有關工作人員嚴格執行國電集團相關保密紀律和申請迴避規定。工作中持續推進採購文件標準化建設。

在供應商管理上，要求本集團附屬公司學習行業內先進經驗，優化合格供應商開發流程，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。

## ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT (CONTINUED)

### 環境、社會及管治報告(續)

As at 31 December 2016, the Group has completed a total of 5,539 items of centralized purchase management in 2016, with an amount of approximately RMB15.5 billion.

#### 2. Product Responsibility

The Group has passed the ISO90001 quality system certification and the annual routine certification inspections, has established the quality and safety management system and has effectively organized and supervised the strict implementation of the subsidiaries. In the process of the relevant contracts execution, it has strictly performed the terms of contracts, fulfilled the contractual obligations and provided relevant after-sale services.

#### 3. Anti-corruption

In order to normalize the professional behaviors of employees, and prevent corruption, the Company has successively revised 11 systems, including *Interview Management Methods for Construction of the Party Conduct and of an Honest and Clean Government*, and *Assessment Measures for Secretary of Discipline Inspection Commission* in accordance with *Enterprise Supervision Management Methods of China Guodian Corporation*, *Rules for Discipline Inspection of China Guodian Corporation*, and *Regulations of China Guodian Corporation on Employee Punishment*, and formed a set of complete, feasible discipline inspection and supervision system with our own characteristics. The Company has formulated *Detailed Rules for Discipline Inspection and Supervision Petition Handling and Management Methods of Discipline Inspection*, and has always handled and verified petitions and reports according to the relevant regulations.

By the end of 2016, the Company has carried out the efficiency supervision on related transactions, using and disposition of company vehicles, assignment evasion, and engineering management of grass-root units. The Company has released five copies of *Proposal on Efficiency Supervision*, and proposed 30 suggestions.

截至2016年12月31日，本集團2016年集中採購管理共完成5,539項，金額約為人民幣155億元。

#### 2. 產品責任

本集團已通過了國際ISO90001的質量體系認證，並通過了歷年的年度例行認證檢查，同時建立了質量、安全管理制度，並組織、督導附屬公司嚴格執行；在相關合同執行過程中，嚴格執行合同條款，履行合同義務，並做好相關售後服務工作。

#### 3. 反貪污

為規範員工的職業行為，預防腐敗發生，依據《中國國電集團公司企業監察管理辦法》、《中共中國國電集團公司紀律檢查工作條例》、《中國國電集團公司職工懲處規定》等相關制度，本公司先後修訂了《黨風廉政建設約談管理辦法》、《紀委書記考核辦法》等11項制度，形成了一套基本完善、切實可行、具有自身特點的紀檢監察制度體系。本公司制定有《紀檢監察信訪件辦理實施細則》和《紀律檢查工作管理辦法》，並一直按照相關制度開展信訪舉報的辦理核查工作。

截至2016年底，本公司對基層單位深入開展關聯交易、公車使用、公車處置、任職迴避、工程管理效能監察，下發《效能監察建議書》5份，提出效能監察建議30條。

## ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) REPORT (CONTINUED)

### 環境、社會及管治報告(續)

#### IV. Social Welfare

With ongoing construction and development, the Company, within its capacity, has also actively participated in public welfare activities such as local-enterprise construction, spiritual civilization construction, science, education and health promotion, community construction, donations to education and poverty relief, boosting up the local economy and improving social harmony.

The Company strives to set up a voluntary service organization with its own characteristics, and spread green energy ideals and establish the company image by participating in social activities. The Green Ribbon Youth Volunteer Association of Guodian Tech has organized technical backbones to form a publicity team, and organized over 600 students from Tsinghua University, North China Electric Power University and the High School Affiliated to Beijing Normal University to visit and learn by taking advantage of the exhibition resources to serve the society. The Company has held youth volunteer activity themed as “Energy Knowledge in Campus”, and the publicity team went to classes and held lectures on scientific knowledge. The team lectured in four schools, including the Second Branch School of the High School Affiliated to Renmin University of China, and Zhongguancun High School. Over 1,000 students participated in the site activities. Over 2,200 handbooks were released to students to sow the seeds of science and technology knowledge about environmental protection. In February 2016, “Guodian Tech Science and Technology Exhibition Hall” became the “Second Batch Learning-from-Leifeng Voluntary Service Stations of Beijing” named by SASAC Civilization Office of the State Council.

As at 31 December 2016, the Company has carried out a total of 38 Learning-from-Leifeng activities, including the aged and children caring, tree plantation and blood donation, with nearly 1,200 people providing services to 1,776 people, by the practical actions to explain the social welfare spirit of China Guodian Corporation under the “155 Strategy”.

#### 四. 社會公益

本公司建設和發展的同時，在力所能及的範圍內，積極參加所在地區的地企共建、精神文明建設、科教衛生、小區建設、捐資助學、扶貧濟困等社會公益活動，促進了所在地區的經濟發展和社會和諧。

本公司努力創建富有本企業特色的志願服務組織，通過參與社會活動，傳播綠色能源理念，樹立了企業形象。國電科環綠絲帶青年志願者協會組織公司技術骨幹組成宣講團，利用展廳的優勢資源服務社會，組織清華大學、華北電力大學、北京師範大學附屬中學共約600名學生參觀學習。舉辦「能源知識進校園」青年志願服務活動，宣講團走進學生課堂開展科普知識講座，相繼在人大附中第二分校、中關村中學等四所學校進行巡迴講解，共計約1,000餘名學生參加了現場活動，發放知識手冊2,200餘份，向孩子們播撒科技環保知識的種子。2016年2月，國電科環科技展廳成為國務院國資委文明辦命名的第二批首都學雷鋒志願服務站。

截至2016年12月31日，本公司共開展敬老愛幼、植樹及獻血等學雷鋒活動38項，參與人次近1,200人，服務1,776人，用實際行動詮釋了「一五五」戰略下國電人的社會公益精神。

# REPORT OF THE INDEPENDENT AUDITOR

## 獨立核數師報告



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

### Opinion

We have audited the consolidated financial statements of Guodian Technology & Environment Group Corporation Limited (the "**Company**") and its subsidiaries (together the "**Group**") set out on pages 138 to 276, which comprise the consolidated statement of financial position as at 31 December 2016, the consolidated statement of profit or loss, the consolidated statement of profit or loss and other comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the year then ended and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the consolidated financial statements give a true and fair view of the consolidated financial position of the Group as at 31 December 2016 and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards ("**IFRSs**") issued by the International Accounting Standards Board ("**IASB**") and have been properly prepared in compliance with the disclosure requirements of the Hong Kong Companies Ordinance.

### Basis for opinion

We conducted our audit in accordance with Hong Kong Standards on Auditing ("**HKSAs**") issued by the Hong Kong Institute of Certified Public Accountants ("**HKICPA**"). Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the consolidated financial statements section of our report. We are independent of the Group in accordance with the HKICPA's Code of Ethics for Professional Accountants (the "**Code**") together with any ethical requirements that are relevant to our audit of the consolidated financial statements in the People's Republic of China, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

**獨立核數師報告**  
**致國電科技環保集團股份有限公司股東**  
(於中華人民共和國註冊成立的股份有限公司)

### 意見

本核數師(以下簡稱「我們」)已審計列載於第138至第276頁國電科技環保集團股份有限公司(「**貴公司**」)及其附屬公司(「**貴集團**」)的合併財務報表，此合併財務報表包括於2016年12月31日的合併財務狀況表與截至該日止年度的合併損益表、合併損益及其他綜合收益表、合併權益變動表和合併現金流量表，以及合併財務報表附註，包括主要會計政策概要。

我們認為，該等合併財務報表已根據國際會計準則理事會頒佈的《國際財務報告準則》真實而中肯地反映了貴集團於2016年12月31日的合併財務狀況及截至該日止年度的合併財務表現及合併現金流量，並已遵照香港《公司條例》的披露要求妥為擬備。

### 意見的基礎

我們已根據香港會計師公會頒佈的《香港審計準則》進行審計。我們在該等準則下承擔的責任已在本報告「核數師就審計合併財務報表承擔的責任」部份中作進一步闡述。根據香港會計師公會頒佈的《專業會計師道德守則》(以下簡稱「**守則**」)以及中華人民共和國任何與我們對合併財務報表的審計有關的道德要求，我們獨立於貴集團，並已履行這些道德要求以及守則中的其他專業道德責任。我們相信，我們所獲得的審計憑證能充足及適當地為我們的審計意見提供基礎。

### 關鍵審計事項

關鍵審計事項是根據我們的專業判斷，認為對本期合併財務報表的審計最為重要的事項。這些事項是在我們審計整體合併財務報表及出具意見時進行處理的。我們不會對這些事項提供單獨的意見。



# REPORT OF THE INDEPENDENT AUDITOR (CONTINUED)

## 獨立核數師報告(續)

### Key audit matters (continued)

#### Classification of assets held for sale in respect of the disposal of a 90% equity interest in Guodian Solar Co., Ltd.

Refer to note 28 to the consolidated financial statements and the accounting policies in note 2(z)(i).

##### The Key Audit Matter

During the year ended 31 December 2015, management decided to abandon all of the Group's operations under the solar power products and services segment, which constituted a major line of business of the Group.

Consequently, the Group adopted a disposal plan and on 3 May 2016 and 1 July 2016 the Company entered into a cooperation framework agreement and sale and purchase agreement (the "Agreements") with Tianjin Zhonghuan Semiconductor Co., Ltd. (the "Buyer") to dispose of a 90% equity interest in Guodian Solar Co., Ltd. ("GD Solar") in return for shares to be issued by the Buyer.

As at 31 December 2016 and up to the date of the approval of the consolidated financial statements, the disposal has not yet been completed as the Buyer is listed on the Shenzhen Stock Exchange and the completion of the disposal is subject to the approval of certain regulatory authorities.

The assets and liabilities of GD Solar, other than those that are not within the scope of disposal as set out in the Agreements, have been presented and measured as a disposal group classified as held for sale.

We identified the classification of assets held for sale in respect of the disposal of a 90% equity interest in GD Solar as a key audit matter because of the classification of the disposal group as held for sale requires specific conditions to be met and because the related presentation and measurement has a significant effect on the consolidated financial statements.

##### How the matter was addressed in our audit

Our audit procedures to assess the classification of assets held for sale in respect of the disposal of a 90% equity interest in GD Solar included the following:

- inspecting management's disposal plan, minutes of director's meeting, the Agreements, correspondence with the Buyer and public announcements of the Buyer for the purposes of understanding the nature and status of the transaction and assessing whether the related accounting treatment adopted by management reflected the substance of the transaction with reference to the requirements of the prevailing accounting standards;
- evaluating management's identification of assets and associated liabilities included in the disposal group held for sale by inspecting the management's disposal plan and terms set out in the Agreements;
- assessing management's assertion that the completion of the disposal is highly probable based on the facts in relation to management's disposal plan, the authorities progress of the disposal and the status of approvals to be obtained by the Buyer from certain regulatory; and
- considering the disclosures in the consolidated financial statements in respect of the disposal of GD Solar with reference to the requirements of the prevailing accounting standards.

### 關鍵審計事項(續)

#### 處置國電光伏有限公司90%權益相關的持有待售資產重分類

參閱合併財務報表附註28和附註2(z)(i)的會計政策。

##### 關鍵審計事項

截至2015年12月31日止年度，管理層決定放棄貴集團主要業務之一，太陽能產品及服務業務的所有業務。

此後，貴集團制定了相關處置計劃並於2016年5月3日及2016年7月1日與天津中環半導體股份有限公司(「買方」)簽訂了合作框架協議及股權轉讓協議(「相關協議」)，出售國電光伏有限公司(「國電光伏」)90%的權益以換取買方發行的股份。

於2016年12月31日以及截至合併財務報表獲批准報出日，上述交易尚未完成。因為買方為深圳證券交易所上市公司，該交易完成需獲得相關授權機構批准。

國電光伏的資產及負債，除不在相關協議中約定的擬處置範圍內的部分，均作持有待售處置組列示及計量。

我們把與處置國電光伏90%權益相關的持有待售資產重分類列為關鍵審計事項，因為分類至持有待售處置組需滿足多個特定條件，並且其相關列報和計量對合併財務報表存在重大影響。

##### 我們的審計如何處理該事項

我們就評估處置國電光伏90%權益相關的持有待售資產重分類的審計程序包括以下程序：

- 檢查管理層相關處置計劃、董事會紀要、相關協議、與買方的往來函件、買方對該交易的公告，以了解該交易的性質及進展並且根據現行會計準則要求，評估管理層對此採用的會計處理是否能反映該交易的實質；
- 通過檢查管理層處置計劃以及相關協議中所列具體條款，評估管理層對於持有待售處置組的資產及負債範圍的判斷；
- 評估管理層基於處置計劃、授權進展和買方自相關授權機構獲得批准的進展，是否足以支持該處置非常可能完成；及
- 參照現行會計準則，考慮貴集團合併財務報表中對處置國電光伏的披露。

# REPORT OF THE INDEPENDENT AUDITOR (CONTINUED)

## 獨立核數師報告(續)

### Key audit matters (continued)

#### Recoverability of trade receivables and bills receivable

Refer to note 24 to the consolidated financial statements and the accounting policies in note 2(m)(i).

##### The Key Audit Matter

As at 31 December 2016, the Group had a significant balance of trade receivables and bills receivable which amounted to RMB14,037 million and accounted for approximately 35% of the Group's total assets at that date.

Trade receivables and bills receivable, that were not impaired and aged over one year as at 31 December 2016 amounted to RMB3,961 million, representing approximately 9.9% of the Group's total assets.

The Group's allowances for doubtful debts include a specific element based on individual debtors and a collective element based on groups of debtors with similar credit risk characteristics.

The Group's allowances for doubtful debts are determined based on management's estimate of the expected credit losses to be incurred, which is estimated by taking into account the payment history of the Group's customers, customer-specific conditions, historical loss experience and relevant current factors relating to the collectively assessed debtors. All of these factors involve a significant degree of management judgement.

We identified assessing the recoverability of trade receivables and bills receivable as a key audit matter because of the significance of the balance of trade receivables and bills receivable to the consolidated financial statements and because of the inherent uncertainty in management's exercise of judgement in determining the allowances for doubtful debts.

##### How the matter was addressed in our audit

Our audit procedures to assess the recoverability of trade receivables and bills receivable included the following:

- obtaining an understanding of and assessing the design, implementation and operating effectiveness of key internal controls over the credit control, the trade receivables and bills receivable collection process and making allowances for doubtful debts;
- assessing whether items in the trade receivables and bills receivable ageing report were categorised appropriately by comparing samples of individual items with the underlying sales invoices, progress reports or goods delivery documents;
- challenging management's assessment of the recoverability of trade receivables and bills receivable by selecting samples of trade receivables and bills receivable balances and:
  - evaluating the reasons for long outstanding and overdue debts and assessing the financial condition of the customers;
  - comparing management's estimated repayment schedules with historical payment patterns of the customers and other relevant documentation including customer correspondence;
  - comparing cash received subsequent to the end of the reporting period with bank statements and other relevant documentation;
- assessing the assumptions and estimates made by management for the collective assessment of allowances for doubtful debts by performing a retrospective review of the historical accuracy of these estimates and recalculating the Group's allowances for doubtful debts with reference to the Group's policy for collective assessment; and
- assessing the disclosures in the consolidated financial statements in relation to the allowances for doubtful debts with reference to the requirements of the prevailing accounting standards.

### 關鍵審計事項(續)

#### 應收賬款及票據的可回收性

參閱合併財務報表附註24和附註2(m)(i)的會計政策。

##### 關鍵審計事項

於2016年12月31日，貴集團應收賬款及票據餘額重大，為人民幣14,037百萬元，佔貴集團該日資產總額比例約為35%。

於2016年12月31日，並無減值的應收賬款及票據且賬齡超過一年的餘額為人民幣3,961百萬元，佔應貴集團資產總額的9.9%。

貴集團壞賬準備包括基於個別債務方的個別部分以及具有類似信用風險特徵的同類債務方的組合部分。

貴集團依據管理層對於預期發生的信用損失估計確定壞賬準備，該估計涉及考慮貴集團客戶的回款歷史、客戶的特定狀況、歷史壞賬情況以及與組合方式評估的債務方相關的要素。所有上述因素均涉及重大的管理層判斷。

我們把評估應收賬款及票據的可回收性列為關鍵審計事項，因為應收賬款及票據餘額對合併財務報表的重大影響以及管理層運用判斷確定壞賬準備存在固有不确定性。

##### 我們的審計如何處理該事項

我們就評估應收賬款及票據可回收性的審計程序包括以下程序：

- 瞭解並評估包含信用政策、應收賬款及票據回收流程以及計提壞賬準備的內部控制的設計、執行及其運行有效性；
- 通過抽樣對比相關的銷售發票、進度報告或出庫單評估應收賬款及票據賬齡分析報告中的賬齡類別是否進行了正確劃分；
- 通過抽樣對管理層關於應收賬款及票據可回收性的評估提出疑問，及：
  - 評價長賬齡及逾期應收款項的原因以及評估相關客戶的財務狀況；
  - 將管理層估計的回款計劃表與相關客戶的歷史回款記錄及其他相關文件(包括與該客戶的溝通函件)進行對比；
  - 將報告期末後收到的款項記錄與銀行對賬單及其他相關文檔進行對比；
- 通過對管理層作出估計的歷史準確性執行回溯性審閱，並且根據貴集團整體計提壞賬的政策，對貴集團壞賬準備進行重新計算，以評估管理層估計整體壞賬準備時採用的假設及估計；及
- 參照現行會計準則的需求，評估合併財務報表中對壞賬準備的披露。

# REPORT OF THE INDEPENDENT AUDITOR (CONTINUED)

## 獨立核數師報告(續)

### Key audit matters (continued)

#### Assessing potential impairment of non-current assets held by certain subsidiaries of the Group

Refer to note 13 to the consolidated financial statements and the accounting policies in note 2(m)(ii).

##### The Key Audit Matter

During 31 December 2016, certain subsidiaries of the Group recorded a significant decrease in revenue or were loss making due to various market, economic and political factors, which included severe market competition, delays in operations influenced by government policies and decreases in market demand.

Management considered the above events and circumstances indicated that the non-current assets associated with these subsidiaries may be impaired and performed impairment assessments of these assets, or the cash-generating units ("CGUs") to which these assets were allocated, to determine their recoverable amounts. Management determined the recoverable amounts based on their value in use by preparing discounted cash flow forecasts. The preparation of discounted cash flow forecasts involves the exercise of significant management judgement, in particular in forecasting revenue growth rates, gross profit margins, long-term growth rates, inflation rates and in determining appropriate discount rates.

We identified assessing potential impairment of non-current assets held by certain subsidiaries of the Group as a key audit matter because the impairment assessments are based on discounted cash flow projections which include a number of assumptions and estimates which require the exercise of significant management judgement and are inherently uncertain and could be subject to management bias.

##### How the matter was addressed in our audit

Our audit procedures to assess potential impairment of non-current assets held by certain subsidiaries of the Group included the following:

- assessing and challenging the Group's impairment assessment model, which included assessing the impairment indicators identified by management, the identification of CGUs and the allocation of assets to those CGUs and, with the assistance of our internal valuation specialists, evaluating the methodology adopted by management in the preparation of the discounted cash flow forecasts with reference to the requirements of the prevailing accounting standards;
- comparing the data in the discounted cash flow forecasts used for the impairment assessments with the relevant data the Group's financial budget which was approved by the directors;
- assessing the reliability of management's cash flow forecasting process by comparing the previous year's forecasts with the current year's results, discussing significant variances with management and considering the effect of such variances on the current year's forecasts;
- comparing the key assumptions adopted by management in the discounted cash flow forecasts with externally available information as well as our own assessments in relation to key inputs, which included revenue growth rates, gross profit margins, long-term growth rates and inflation rates;
- comparing the discount rates applied in the discounted cash flow forecasts with these of comparable companies in the same industry;
- challenging the key assumptions to which the outcome of the impairment assessment was most sensitive, including those relating to forecast revenue and forecast profit margins, and considering if there was any indication of management bias in the selection of these assumptions; and
- considering the disclosures in the consolidated financial statements in respect the impairment assessment with reference to the requirements of the prevailing accounting standards.

### 關鍵審計事項(續)

#### 評估貴集團某些附屬公司持有的非流動資產的潛在減值

參閱合併財務報表附註13和附註2(m)(ii)的會計政策。

##### 關鍵審計事項

2016年貴集團某些附屬公司收入發生大幅下滑，或由於不同的市場、經濟或政治原因產生虧損，涉及市場競爭，受政府政策原因延遲開展運營，以及市場需求下降。

管理層認為上述事項及情況顯示這些附屬公司的非流動資產可能已減值，並對這些非流動資產或相關資產所屬的現金產生單元進行減值測試，以計算其可收回金額。管理層通過編製經折現現金流量預測之使用價值，以確定其可收回金額。編製經折現現金流量預測涉及重大的管理層判斷之運用，特別是預計的收入增長率、毛利率、長期增長率、通脹率以及折現率。

我們把評估貴集團某些附屬公司持有的非流動資產的潛在減值列為關鍵審計事項，因為這些減值測試基於經折現現金流量預測，其中涉及眾多需要運用重大的管理層判斷的假設和估計，這些假設和估計存在固有的不確定性和可能存在管理層的偏見。

##### 我們的審計如何處理該事項

我們就評估貴集團某些附屬公司持有的非流動資產的潛在減值的審計程序包括以下程序：

- 對貴集團減值測試模型進行評價和提出疑問，包括評估管理層識別出的減值跡象、現金產生單元的識別及其對應資產的分配，並且利用我們內部評估專家的協助和參照現行會計準則的要求，覆核管理層在編製經折現現金流量預測時採用的方法；
- 將用作減值評估的經折現現金流量預測中使用的資料與貴集團經董事批准的財務預算進行對比；
- 通過對比以前年度預測和當前年度的實際結果，評估管理層編製現金流量預測過程的可靠性，對於重大差異與管理層進行討論並考慮該差異對於當前年度預測的影響；
- 將管理層編製經折現現金流量預測時採用的關鍵假設與外部可獲得資訊以及我們對於關鍵參數的評估結果進行對比，包括收入增長率、毛利率、長期增長率以及通脹率；
- 將經折現現金流量預測表中採用的折現率與同行業可比公司採用的折現率進行對比；
- 對減值測試結果變動最敏感的關鍵假設提出疑問，包括關於收入預測和利潤率預測的假設，關注在選擇這些假設時是否存在管理層偏見的跡象；及
- 參照現行會計準則的要求，關注減值評估在合併財務報表中的披露。

# REPORT OF THE INDEPENDENT AUDITOR (CONTINUED)

## 獨立核數師報告(續)

### Key audit matters (continued)

#### Tax provisioning

Refer to note 8 and note 32 to the consolidated financial statements and the accounting policies in note 2(u).

#### The Key Audit Matter

The Group's entities operate in different tax jurisdictions across Mainland China and file income taxes with numerous local tax authorities. The Group is subject to periodic challenges by local tax authorities on a range of tax matters in the normal course of its business.

In addition, certain subsidiaries of the Group are approved High and New Technology Enterprises and are taxed at a preferential tax rate of 15%, as compared with the standard tax rate of 25%, for enterprise income tax during the approved period, subject to fulfilment of the annual qualification criteria and potential investigation by the local tax authorities.

Management determines the applicable tax rates for the calculation of current income tax and deferred income tax based on the expected tax rates that are likely to be approved by the local tax authorities according to the tax rules and regulations enacted at the end of the reporting period.

We identified tax provisioning as a key audit matter because significant management judgement can be required for in determining the provisions for taxation where the ultimate tax determinations may be uncertain.

#### How the matter was addressed in our audit

Our audit procedures to assess the provisions for taxation included the following:

- reading correspondence with the relevant local tax authorities and inspecting details of enquiries from the local tax authorities;
- challenging the appropriateness of the assumptions applied and estimates made in relation to tax provisioning by considering the range of possible outcomes that may be assessed under the applicable tax laws and regulations;
- involving our internal tax specialists to assist us in critically assessing the assumptions adopted by management in the calculation of provisions for taxation with reference to local tax rules and practices in different tax jurisdictions; and
- considering the tax disclosures in the consolidated financial statements with reference to the requirements of the prevailing accounting standards.

### 關鍵審計事項(續)

#### 稅款的計提

參閱合併財務報表附註8和附註32和附註2(u)的會計政策。

#### 關鍵審計事項

貴集團的附屬公司在中國大陸的各個地區接受不同的稅收監管，並向眾多地方稅務機關申報繳納所得稅。各地稅務機關不定期對貴集團的日常經營過程中的各項稅務事項提出質疑。

此外，某些貴集團的附屬公司被認定為高新技術企業，在25%的法定稅率基礎上，高新技術認定有效期間內以15%的優惠稅率被徵稅，前提是滿足每年的資格標準並可能需要接受當地稅務機關檢查。

根據在報告期末有效的稅收法律法規，管理層基於可能被當地稅務機關認定的預期所得稅率，決定用於計算當期所得稅和遞延所得稅的適用稅率。

我們把稅款計提列為關鍵審計事項，因為最終稅款金額的認定存在不確定性，稅款的計提涉及重大的管理層判斷。

#### 我們的審計如何處理該事項

我們就稅款的計提的審計程序包括以下程序：

- 審閱相關當地稅務機關與貴集團的往來函件，檢查當地稅務機關對貴集團的質詢之詳情；
- 通過考慮在適用的法律法規下的可能作出的不同的稅項評估結果，質問管理層在計提稅款時使用的假設及作出的估計的合適性；
- 借助我們的內部稅務專家，協助我們參考地方稅收規定及實務的基礎上，審慎評價管理層在計算稅款時使用的假設；及
- 根據現行會計準則，考慮合併財務報表中稅項的披露。



## REPORT OF THE INDEPENDENT AUDITOR (CONTINUED)

### 獨立核數師報告(續)

#### Information other than the consolidated financial statements and auditor's report thereon

The directors are responsible for the other information. The other information comprises all the information included in the annual report, other than the consolidated financial statements and our auditor's report thereon.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

#### Responsibilities of the directors for the consolidated financial statements

The directors are responsible for the preparation of the consolidated financial statements that give a true and fair view in accordance with IFRSs issued by the IASB and the disclosure requirements of the Hong Kong Companies Ordinance and for such internal control as the directors determine is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the directors are responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Group or to cease operations, or have no realistic alternative but to do so.

The directors are assisted by the Audit Committee in discharging their responsibilities for overseeing the Group's financial reporting process.

#### 合併財務報表及其核數師報告以外的其他信息

董事須對其他信息負責。其他信息包括刊載於年報內的全部信息，但不包括合併財務報表及我們的核數師報告。

我們對合併財務報表的意見並不涵蓋其他信息，我們亦不對該等其他信息發表任何形式的鑒證結論。

結合我們對合併財務報表的審計，我們的責任是閱讀其他信息，在此過程中，考慮其他信息是否與合併財務報表或我們在審計過程中所了解的情況存在重大抵觸或者似乎存在重大錯誤陳述的情況。

基於我們已執行的工作，如果我們認為其他信息存在重大錯誤陳述，我們需要報告該事實。在這方面，我們沒有任何報告。

#### 董事就審計財務報表須承擔的責任

董事須負責根據國際會計準則理事會頒佈的《國際財務報告準則》及香港《公司條例》的披露要求擬備真實而中肯的合併財務報表，並對其認為為使合併財務報表的擬備不存在由於欺詐或錯誤而導致的重大錯誤陳述所需的內部控制負責。

在擬備合併財務報表時，董事負責評估貴集團持續經營的能力，並在適用情況下披露與持續經營有關的事項，以及使用持續經營為會計基礎，除非董事有意將貴集團清盤或停止經營，或別無其他實際的替代方案。

審計委員會協助董事履行監督貴集團的財務報告過程的責任。



## REPORT OF THE INDEPENDENT AUDITOR (CONTINUED)

### 獨立核數師報告(續)

#### Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. This report is made solely to you, as a body, and for no other purpose. We do not assume responsibility towards or accept liability to any other person for the contents of this report.

Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with HKSA's will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with HKSA's, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.

#### 核數師就審計合併財務報表承擔的責任

我們的目標，是對合併財務報表整體是否不存在由於欺詐或錯誤而導致的重大錯誤陳述取得合理保證，並出具包括我們意見的核數師報告。我們僅向整體股東報告。除此以外，我們的報告不可用作其他用途。我們概不就本報告的內容，向任何其他人士負責或承擔法律責任。

合理保證是高水平的保證，但不能保證按照《香港審計準則》進行的審計，在某一重大錯誤陳述存在時總能發現。錯誤陳述可以由欺詐或錯誤引起，如果合理預期它們單獨或匯總起來可能影響合併財務報表使用者依賴合併財務報表所作出的經濟決定，則有關的錯誤陳述可被視作重大。

在根據《香港審計準則》進行審計的過程中，我們運用了專業判斷，保持了專業懷疑態度。我們亦：

- 識別和評估由於欺詐或錯誤而導致合併財務報表存在重大錯誤陳述的風險，設計及執行審計程序以應對這些風險，以及獲取充足和適當的審計憑證，作為我們意見的基礎。由於欺詐可能涉及串謀、偽造、蓄意遺漏、虛假陳述，或凌駕於內部控制之上，因此未能發現因欺詐而導致的重大錯誤陳述的風險高於未能發現因錯誤而導致的重大錯誤陳述的風險。
- 了解與審計相關的內部控制，以設計適當的審計程序，但目的並非對貴集團內部控制的有效性發表意見。
- 評價董事所採用會計政策的恰當性及作出會計估計和相關披露的合理性。

## REPORT OF THE INDEPENDENT AUDITOR (CONTINUED)

### 獨立核數師報告(續)

#### Auditor's responsibilities for the audit of the consolidated financial statements (continued)

- Conclude on the appropriateness of the directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

We communicate with the Audit Committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Audit Committee with a statement that we have complied with relevant ethical requirements regarding independence and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence and, where applicable, related safeguards.

From the matters communicated with the Audit Committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

#### 核數師就審計合併財務報表承擔的責任(續)

- 對董事採用持續經營會計基礎的恰當性作出結論。根據所獲取的審計憑證，確定是否存在與事項或情況有關的重大不確定性，從而可能導致對貴集團的持續經營能力產生重大疑慮。如果我們認為存在重大不確定性，則有必要在核數師報告中提請使用者注意合併財務報表中的相關披露。假若有關的披露不足，則我們應當發表非無保留意見。我們的結論是基於核數師報告日止所取得的審計憑證。然而，未來事項或情況可能導致貴集團不能持續經營。
- 評價合併財務報表的整體列報方式、結構和內容，包括披露，以及合併財務報表是否中肯反映交易和事項。
- 就貴集團內實體或業務活動的財務信息獲取充足、適當的審計憑證，以便對合併財務報表發表意見。我們負責貴集團審計的方向、監督和執行。我們為審計意見承擔全部責任。

除其他事項外，我們與審計委員會溝通了計劃的審計範圍、時間安排、重大審計發現等，包括我們在審計中識別出內部控制的任何重大缺陷。

我們還向審計委員會提交聲明，說明我們已符合有關獨立性的相關專業道德要求，並與他們溝通有可能合理地被認為會影響我們獨立性的所有關係和其他事項，以及在適用的情況下，相關的防範措施。

從與審計委員會溝通的事項中，我們確定哪些事項對本期合併財務報表的審計最為重要，因而構成關鍵審計事項。我們在核數師報告中描述這些事項，除非法律法規不允許公開披露這些事項，或在極端罕見的情況下，如果合理預期在我們報告中溝通某事項造成的負面後果超過產生的公眾利益，我們決定不應在報告中溝通該事項。

## REPORT OF THE INDEPENDENT AUDITOR (CONTINUED) 獨立核數師報告(續)

### Auditor's responsibilities for the audit of the consolidated financial statements (continued)

The engagement partner on the audit resulting in this independent auditor's report is Ho Ying Man, Simon.

### 核數師就審計合併財務報表承擔的責任(續)

出具本獨立核數師報告的審計項目合夥人是何應文。

#### KPMG

*Certified Public Accountants*

8th Floor, Prince's Building  
10 Chater Road  
Central, Hong Kong

30 March 2017

#### 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

2017年3月30日

# CONSOLIDATED STATEMENT OF PROFIT OR LOSS

## 合併損益表

For the year ended 31 December 2016 (Expressed in Renminbi)  
截至2016年12月31日止年度(以人民幣列示)

		Note	2016 RMB'000 人民幣千元	2015 RMB'000 人民幣千元
		附註		
<b>Continuing operations</b>	<b>持續經營業務</b>			
Revenue	收入	4	15,775,318	19,970,161
Cost of sales	銷售成本		(12,207,256)	(16,163,992)
<b>Gross profit</b>	<b>毛利</b>		<b>3,568,062</b>	3,806,169
Other revenue	其他收入	5	305,476	325,460
Other net income	其他收益淨額	5	328,798	29,307
Selling and distribution expenses	銷售及分銷開支		(1,366,864)	(1,136,449)
Administrative expenses	行政開支		(1,836,978)	(2,113,537)
<b>Profit from operations</b>	<b>經營利潤</b>		<b>998,494</b>	910,950
Finance costs	財務成本	6	(590,443)	(576,125)
Share of profits less losses of associates	應佔聯營公司利潤減虧損		102,211	(140,661)
<b>Profit before taxation from continuing operations</b>	<b>來自持續經營業務之稅前利潤</b>	7	<b>510,262</b>	194,164
Income tax	所得稅	8	(122,722)	(139,872)
<b>Profit for the year from continuing operations</b>	<b>本年來自持續經營業務之利潤</b>		<b>387,540</b>	54,292
<b>Discontinued operation</b>	<b>已終止經營業務</b>			
Loss for the year from discontinued operation	本年來自已終止經營之業務虧損	11	(134,089)	(4,744,011)
<b>Profit/(loss) for the year</b>	<b>本年利潤/(虧損)</b>		<b>253,451</b>	(4,689,719)
<b>Attributable to:</b>	<b>歸屬於：</b>			
Equity shareholders of the Company	本公司權益股東		302,372	(4,639,616)
Non-controlling interests	非控股權益		(48,921)	(50,103)
<b>Profit/(loss) for the year</b>	<b>本年利潤/(虧損)</b>		<b>253,451</b>	(4,689,719)
<b>Basic and diluted earnings/(loss) per share</b> (Expressed in RMB)	<b>每股基本及攤薄盈利/(虧損)</b> (以人民幣列示)	12		
– Continuing and discontinued operation	– 持續經營業務和已終止經營業務		0.050	(0.765)
– Continuing operations	– 持續經營業務		0.072	(0.006)
– Discontinued operation	– 已終止經營業務		(0.022)	(0.759)

The notes on pages 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。

# CONSOLIDATED STATEMENT OF PROFIT OR LOSS AND OTHER COMPREHENSIVE INCOME

## 合併損益及其他綜合收益表

For the year ended 31 December 2016 (Expressed in Renminbi)  
截至2016年12月31日止年度(以人民幣列示)

		2016 RMB'000 人民幣千元	2015 RMB'000 人民幣千元
<b>Profit/(loss) for the year</b>	本年利潤／(虧損)	<b>253,451</b>	(4,689,719)
<b>Other comprehensive income for the year (after tax and reclassification adjustments)</b>	本年其他綜合收益 (稅後及重新分類調整後)		
Items that may be reclassified subsequently to profit or loss:	其後將重分類計入損益的項目：		
– Exchange differences on translation of financial statements of operations outside the People's Republic of China (the "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>1,268</b>	2,175
<b>Other comprehensive income for the year</b>	本年其他綜合收益	<b>1,268</b>	2,175
<b>Total comprehensive income for the year</b>	本年綜合收益總額	<b>254,719</b>	(4,687,544)
<b>Attributable to:</b>	歸屬於：		
Equity shareholders of the Company	本公司權益股東	<b>303,640</b>	(4,637,441)
Non-controlling interests	非控股權益	<b>(48,921)</b>	(50,103)
<b>Total comprehensive income for the year</b>	本年綜合收益總額	<b>254,719</b>	(4,687,544)

The notes on pages 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。



# CONSOLIDATED STATEMENT OF FINANCIAL POSITION

## 合併財務狀況表

As at 31 December 2016 (Expressed in Renminbi)

於2016年12月31日(以人民幣列示)

		Note	2016	2015
		附註	RMB'000 人民幣千元	RMB'000 人民幣千元
<b>Non-current assets</b>	<b>非流動資產</b>			
Property, plant and equipment	物業、廠房及設備	13	4,855,891	9,522,930
Investment properties	投資性物業	14	246,039	246,228
Lease prepayments	預付土地租賃款	15	330,736	696,123
Intangible assets	無形資產	16	1,196,279	1,302,097
Goodwill	商譽	17	57,591	57,591
Interests in associates	對聯營公司的投資	19	412,801	315,546
Other equity investments	其他權益投資	20	162,187	162,187
Other non-current assets	其他非流動資產	21	4,004,969	4,854,414
Deferred tax assets	遞延稅項資產	32(b)	612,382	459,730
<b>Total non-current assets</b>	<b>非流動資產總額</b>		<b>11,878,875</b>	<b>17,616,846</b>
<b>Current assets</b>	<b>流動資產</b>			
Inventories	存貨	22	2,722,197	3,492,380
Gross amounts due from customers for contract work	應收建造合同客戶款項總額	23	1,443,384	2,204,619
Trade and bills receivables	應收賬款及票據	24	14,036,574	13,912,696
Deposits, prepayments and other receivables	按金、預付款項及其他應收款項	25	2,392,860	2,419,841
Tax recoverable	可收回稅項	32(a)	151,722	60,509
Restricted deposits	受限制存款	26	171,539	176,014
Cash at bank and in hand	銀行存款及庫存現金	27	4,603,662	3,069,769
Assets held for sale	持有待售資產	28	2,699,889	—
<b>Total current assets</b>	<b>流動資產總額</b>		<b>28,221,827</b>	<b>25,335,828</b>
<b>Current liabilities</b>	<b>流動負債</b>			
Borrowings	借款	29(b)	8,478,005	10,749,717
Trade and bills payables	應付賬款及票據	30	10,821,789	13,021,717
Other payables	其他應付款項	31	3,624,852	3,765,053
Gross amounts due to customers for contract work	應付建造合同客戶款項總額	23	1,022,644	975,449
Income tax payable	應付所得稅	32(a)	49,959	63,600
Provision for warranty	質保金撥備	33	255,294	111,389
Liabilities held for sale	持有待售負債	28	1,196,294	—
<b>Total current liabilities</b>	<b>流動負債總額</b>		<b>25,448,837</b>	<b>28,686,925</b>
<b>Net current assets/(liabilities)</b>	<b>流動資產/(負債)淨額</b>		<b>2,772,990</b>	<b>(3,351,097)</b>
<b>Total assets less current liabilities</b>	<b>資產總額減流動負債</b>		<b>14,651,865</b>	<b>14,265,749</b>

The notes on page 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。

# CONSOLIDATED STATEMENT OF FINANCIAL POSITION (CONTINUED)

## 合併財務狀況表(續)

As at 31 December 2016 (Expressed in Renminbi)  
於2016年12月31日(以人民幣列示)

			2016 RMB'000 人民幣千元	2015 RMB'000 人民幣千元
	Note 附註			
<b>Non-current liabilities</b>		<b>非流動負債</b>		
Borrowings	29(a)	借款	5,115,637	4,792,674
Deferred income	34	遞延收益	374,952	499,453
Deferred tax liabilities	32(b)	遞延稅項負債	205,338	174,305
Provision for warranty	33	質保金撥備	737,796	675,667
Other non-current liabilities	35	其他非流動負債	222,932	220,697
<b>Total non-current liabilities</b>		<b>非流動負債總額</b>	<b>6,656,655</b>	<b>6,362,796</b>
<b>NET ASSETS</b>		<b>資產淨額</b>	<b>7,995,210</b>	<b>7,902,953</b>
<b>CAPITAL AND RESERVES</b>		<b>資本及儲備</b>		
Share capital	36(c)	股本	6,063,770	6,063,770
Reserves		儲備	(1,144,939)	(1,457,306)
<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>4,918,831</b>	<b>4,606,464</b>
Non-controlling interests		非控股權益	3,076,379	3,296,489
<b>TOTAL EQUITY</b>		<b>權益總額</b>	<b>7,995,210</b>	<b>7,902,953</b>

Approved and authorised for issue by the board of directors on 30 March 2017.

董事會於2017年3月30日批准及授權刊發。



**Mr. YANG Guang** 陽光先生  
Executive Director 執行董事



**Mr. TANG Chaoxiong** 唐超雄先生  
Executive Director 執行董事

The notes on page 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。

# CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

## 合併權益變動表

For the year ended 31 December 2016 (Expressed in Renminbi)

截至2016年12月31日止年度（以人民幣列示）

		Attributable to equity shareholders of the Company							
		歸屬本公司權益股東							
		Share capital	Capital reserve	PRC statutory reserve	Exchange reserve	Accumulated loss	Sub-total	Non-controlling interests	Total equity
		股本	資本儲備	公積金	匯兌儲備	累積虧損	小計	非控股權益	權益總額
		RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000	RMB'000
		人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元	人民幣千元
		Note 36(c)	Note 36(d)(i)	Note 36(d)(ii)	Note 36(d)(iii)				
		附註36(c)	附註36(d)(i)	附註36(d)(ii)	附註36(d)(iii)				
Balance at 1 January 2016	2016年1月1日結餘	6,063,770	1,062,980	129,332	1,014	(2,650,632)	4,606,464	3,296,489	7,902,953
Changes in equity for 2016:	2016年權益變化：								
Profit/(loss) for the year	本年利潤／（虧損）	-	-	-	-	302,372	302,372	(48,921)	253,451
Other comprehensive income	其他綜合收益	-	-	-	1,268	-	1,268	-	1,268
Total comprehensive income	綜合收益總額	-	-	-	1,268	302,372	303,640	(48,921)	254,719
Disposal of subsidiaries	處置附屬公司	-	-	-	-	-	-	(10,513)	(10,513)
Disposal of equity interests in a subsidiary to non-controlling equity owners	處置附屬公司權益給非控股權益所有者	-	8,727	-	-	-	8,727	(8,727)	-
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	-	-	-	-	-	-	(151,949)	(151,949)
Appropriation to reserves	提取盈餘公積	-	-	24,383	-	(24,383)	-	-	-
Balance at 31 December 2016	2016年12月31日結餘	6,063,770	1,071,707	153,715	2,282	(2,372,643)	4,918,831	3,076,379	7,995,210

The notes on page 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。

# CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (CONTINUED)

## 合併權益變動表(續)

For the year ended 31 December 2016 (Expressed in Renminbi)  
截至2016年12月31日止年度(以人民幣列示)

		Attributable to equity shareholders of the Company 歸屬本公司權益股東							Total equity 權益總額
		Share capital 股本	Capital reserve 資本儲備	PRC statutory reserve 中國法定公積金	Exchange reserve 匯兌儲備	Retained profits/ (accumulated loss) 留存利潤/(累積虧損)	Sub-total 小計	Non-controlling interests 非控股權益	
		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
		Note 36(c) 附註36(c)	Note 36(d)(i) 附註36(d)(i)	Note 36(d)(ii) 附註36(d)(ii)	Note 36(d)(iii) 附註36(d)(iii)				
<b>Balance at 1 January 2015</b>	<b>2015年1月1日結餘</b>	6,063,770	1,062,980	129,332	(1,161)	1,988,984	9,243,905	3,496,479	12,740,384
<b>Changes in equity for 2015:</b>	<b>2015年權益變化</b>								
Loss for the year	本年虧損	-	-	-	-	(4,639,616)	(4,639,616)	(50,103)	(4,689,719)
Other comprehensive income	其他綜合收益	-	-	-	2,175	-	2,175	-	2,175
Total comprehensive income	綜合收益總額	-	-	-	2,175	(4,639,616)	(4,637,441)	(50,103)	(4,687,544)
Capital contributions	繳納資本	-	-	-	-	-	-	26,959	26,959
Disposal of a subsidiary	處置附屬公司	-	-	-	-	-	-	(41,746)	(41,746)
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	-	-	-	-	-	-	(135,100)	(135,100)
<b>Balance at 31 December 2015</b>	<b>2015年12月31日結餘</b>	6,063,770	1,062,980	129,332	1,014	(2,650,632)	4,606,464	3,296,489	7,902,953

The notes on page 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。

# CONSOLIDATED CASH FLOW STATEMENT

## 合併現金流量表

For the year ended 31 December 2016 (Expressed in Renminbi)  
截至2016年12月31日止年度(以人民幣列示)

			2016 RMB'000 人民幣千元	2015 RMB'000 人民幣千元
	Note 附註			
<b>Cash flows from operating activities 來自經營活動的現金流</b>				
Profit/(loss) before taxation		稅前利潤/(虧損)	<b>376,173</b>	(4,469,095)
– Continuing operations		– 持續經營業務	<b>510,262</b>	194,164
– Discontinued operation		– 已終止經營業務	<b>(134,089)</b>	(4,663,259)
Adjustments for:		調整為:		
Depreciation		折舊	<b>565,641</b>	989,682
Amortisation		攤銷	<b>99,971</b>	101,986
Net (gain)/loss on disposal of property, plant and equipment and intangible assets		出售物業、廠房及設備、無形資產(收益)/虧損淨額	<b>(81,834)</b>	33,528
Impairment loss on trade and other receivables		應收賬款及其他應收款項減值虧損	<b>17,919</b>	2,499,014
Write down of gross amounts due from customers for contract work		應收建造合同客戶款項總額撇減	–	146,545
Impairment loss on property, plant and equipment		物業、廠房及設備減值虧損	<b>229,343</b>	1,544,241
(Reversal of impairment)/Impairment loss on lease prepayments		預付土地租賃款減值(轉回)/計提	<b>(11,895)</b>	154,835
Impairment loss on Intangible assets		無形資產減值	–	17,992
(Reversal of write down)/Write down of other non-current assets		其他非流動資產撇減(轉回)/計提	<b>(53,543)</b>	221,680
Write down of inventories		存貨撇減	<b>22,022</b>	68,849
Finance costs		財務成本	<b>738,198</b>	901,304
Interest income		利息收入	<b>(85,836)</b>	(131,040)
Government grants		政府補助	<b>(45,962)</b>	(34,204)
Dividend income from unquoted equity securities		非上市權益證券的股息收入	<b>(18,982)</b>	(13,739)
Net gain on disposal of subsidiaries		出售附屬公司收益淨額	<b>(188,947)</b>	–
Share of profits less losses of associates		應佔聯營公司利潤減虧損	<b>(102,211)</b>	140,661
Impairment loss on non-current assets held for sale		劃分為持有待售非流動資產減值損失	<b>9,059</b>	–
Gain on debt restructuring		債務重組利得	<b>(78,172)</b>	–

The notes on page 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。



## CONSOLIDATED CASH FLOW STATEMENT (CONTINUED)

### 合併現金流量表(續)

For the year ended 31 December 2016 (Expressed in Renminbi)  
截至2016年12月31日止年度(以人民幣列示)

		Note	2016 RMB'000 人民幣千元	2015 RMB'000 人民幣千元
		附註		
<b>Cash flows from operating activities</b>	<b>來自經營活動的現金流(續)</b>			
<b>(continued)</b>				
Changes in working capital:	營運資金的變化：			
Decrease in inventories	存貨減少		621,787	743,109
Decrease in gross amounts due from customers for contract work	應收建造合同客戶款項總額的減少		651,747	1,169,040
(Increase)/decrease in trade and bills receivables	應收賬款及票據的(增加)/減少		(423,984)	5,705,328
Decrease in deposits, prepayments and other receivables	按金、預付款項和其他應收款項的減少		164,020	927,973
Decrease/(increase) in other non-current assets	其他非流動資產的減少/(增加)		595,806	(397,456)
Decrease in trade and bills payables	應付賬款及票據的減少		(1,298,820)	(4,763,019)
Decrease in other payables	其他應付款項的減少		(276,504)	(263,186)
Increase/(decrease) in gross amounts due to customers for contract work	應付建造合同客戶款項總額的增加/(減少)		240,099	(297,590)
Increase in provision for warranty	質保金撥備的增加		207,613	114,845
<b>Cash generated from operations</b>	<b>經營中產生的現金</b>		<b>1,872,708</b>	<b>5,111,283</b>
Income tax paid	已付所得稅	32(a)	(354,406)	(205,529)
<b>Net cash generated from operating activities</b>	<b>經營活動產生的淨現金</b>		<b>1,518,302</b>	<b>4,905,754</b>

The notes on page 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。

## CONSOLIDATED CASH FLOW STATEMENT (CONTINUED)

### 合併現金流量表(續)

For the year ended 31 December 2016 (Expressed in Renminbi)  
截至2016年12月31日止年度(以人民幣列示)

	Note	2016	2015
	附註	RMB'000 人民幣千元	RMB'000 人民幣千元
<b>Cash flows from investing activities</b>	<b>投資活動產生的現金流</b>		
Payments for purchase of property, plant and equipment, lease prepayments and intangible assets	採購物業、廠房及設備，預付土地租賃款及無形資產支出	(573,378)	(535,329)
Disposal of subsidiaries, net of cash disposed of	出售附屬公司所處置之現金淨額	(8,524)	(22,019)
Disposal of associates, net of cash disposed of	出售聯營公司所處置之現金淨額	286,289	—
Cash and cash equivalents reclassified as assets held-for-sale	劃分為持有待售的現金及現金等價物	(256,890)	—
Payments for advances to related parties	給關聯方的墊款	(118,339)	(271,797)
Increase in deposits with banks	銀行存款的增加	(29,808)	(1,346,300)
Withdrawal of deposits with banks	銀行存款的提取	553,100	1,270,700
Government grants received	收到的政府補助	3,352	30,526
Investment in an associate	投資聯營公司	(127,850)	(36,000)
Proceeds from disposal of property, plant and equipment and intangible assets	出售物業、廠房及設備及無形資產所得款項	2,697,912	66,224
Proceeds from repayment of advances by related parties	關聯方償還墊款	175,938	2,356
Dividends received	已收股息	49,120	26,283
Interest received	已收利息	49,425	58,098
Deposit received for disposal of assets held-for-sale	處置持有待售資產收到的按金	3,000	—
<b>Net cash generated from/(used in) investing activities</b>	<b>投資活動產生/(使用)的淨現金</b>	<b>2,703,347</b>	<b>(757,258)</b>

The notes on page 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。

## CONSOLIDATED CASH FLOW STATEMENT (CONTINUED)

### 合併現金流量表(續)

For the year ended 31 December 2016 (Expressed in Renminbi)  
截至2016年12月31日止年度(以人民幣列示)

	Note 附註	2016 RMB'000 人民幣千元	2015 RMB'000 人民幣千元
<b>Cash flows from financing activities</b>	<b>融資活動產生的現金流</b>		
Capital contributions from non-controlling equity owners of subsidiaries	附屬公司非控股權益所有者的資本認繳	—	26,959
Proceeds from loans	貸款所得款項	8,023,069	18,835,396
Proceeds from issuing private placement notes	發行私人配售債務融資工具所得款項	1,387,400	991,000
Proceeds from advances from related parties	關聯方墊款	—	484,105
Decrease in restricted deposits	受限制存款的減少	136,492	538,516
Repayment of advances to related parties	償還關聯方墊款	(46,156)	(1,011,468)
Repayment of loans	償還貸款	(10,733,147)	(20,248,837)
Repayment of private placement notes	償還私人配售債務融資工具	—	(1,350,000)
Repayment of corporate bonds	償還公司債券	—	(1,200,000)
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	(126,627)	(147,564)
Interest paid	已付利息	(683,027)	(980,684)
Increase in restricted deposits	受限制存款的增加	(132,017)	(209,640)
<b>Net cash used in financing activities</b>	<b>融資活動使用的淨現金</b>	<b>(2,174,013)</b>	<b>(4,272,217)</b>
<b>Net increase/(decrease) decrease in cash and cash equivalents</b>	<b>現金及現金等價物的淨增加／(減少)</b>	<b>2,047,636</b>	<b>(123,721)</b>
<b>Cash and cash equivalents at 1 January</b>	<b>於1月1日的現金及現金等價物</b>	<b>2,325,469</b>	<b>2,456,107</b>
Effect of foreign exchange rate changes	外匯匯率變化的影響	9,549	(6,917)
<b>Cash and cash equivalents at 31 December</b>	<b>於12月31日的現金及現金等價物</b>	<b>4,382,654</b>	<b>2,325,469</b>

The notes on page 148 to 276 form part of these financial statements.

148至276頁的附註為此等財務報表的一部份。

# NOTES TO THE FINANCIAL STATEMENTS

## 財務報表附註

(Expressed in Renminbi 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 to a joint stock company with limited liability in the PRC on 16 May 2011 (the “**Conversion**”). On 30 December 2011, the Company's H shares were listed on The Stock Exchange of Hong Kong Limited (“**HKSE**”).

### 2 Significant accounting policies

#### (a) Statement of compliance

These financial statements have been prepared in accordance with all applicable International Financial Reporting Standards (“**IFRSs**”), which collective term includes all applicable individual International Financial Reporting Standards, International Accounting Standards (“**IASs**”) and Interpretations issued by the International Accounting Standards Board (“**IASB**”) and the disclosure requirements of the Hong Kong Companies Ordinance. These financial statements also comply with the applicable disclosure provisions of the Rules Governing the Listing of Securities on HKSE. Significant accounting policies adopted by the Group are set out below.

The IASB has issued certain new and revised IFRSs that are first effective or available for early adoption for the current accounting period of the Group. Note 2(c) provides information on any changes in accounting policies resulting from initial application of these developments to the extent that they are relevant to the Group for the current and prior accounting periods reflected in these financial statements.

#### (b) Basis of preparation of the financial statements

The consolidated financial statements for the year ended 31 December 2016 comprise the Company and its subsidiaries (together referred to as the “**Group**”) and the Group's interest in associates.

The measurement basis used in the preparation of the financial statements is the historical cost basis.

Non-current assets and disposal groups held for sale are stated at the lower of carrying amount and fair value less cost to sell (see note 2 (z)).

### 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及成立於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(「**轉制**」)。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 主要會計政策

#### (a) 合規聲明

此等財務報表依據國際會計準則理事會頒佈的所有適用的《國際財務報告準則》(該統稱包括所有適用的單項《國際財務報告準則》、《國際會計準則》和詮釋)而編製，並符合香港《公司條例》中適用的披露規定。此等財務報表也符合《香港聯合交易所有限公司證券上市規則》中適用的披露規定。本集團所採納的重大會計政策概要如下。

國際會計準則理事會已頒佈若干新訂及經修訂的《國際財務報告準則》，並於本集團及本公司的當前會計期間首次生效或可提早採納。因首次採納此等已反映在財務報表中與本集團當期或過往會計期間相關的新準則而導致的會計政策變動的信息載於附註2(c)。

#### (b) 財務報表編製基礎

截至2016年12月31日止年度的合併財務報表包括本公司及其附屬公司(統稱為「**本集團**」)及本集團對聯營公司的權益。

財務報表編製中使用的計量基礎是歷史成本基礎。

持有待售的非流動資產和處置組按賬面價值與公允價值減去處置費用的較低者列示(見附註2(z))。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (b) Basis of preparation of the financial statements (continued)

The preparation of financial statements in conformity with IFRSs requires management to make judgements, estimates and assumptions that affect the application of policies and reported amounts of assets, liabilities, income and expenses. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis of making the judgements about carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

Judgements made by management in the application of IFRSs that have significant effect on these financial statements and major sources of estimation uncertainty are discussed in note 3.

### (c) Changes in accounting policies

The IASB has issued a number of amendments to IFRSs that are first effective for the current accounting period of the Group. None of these developments have had a material effect on how the Group's results and financial position for the current or prior periods have been prepared or presented.

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

### (d) Functional and presentation currency

These financial statements are presented in Renminbi ("RMB"), rounded to the nearest thousand, which is the functional currency of the Company and its subsidiaries established in the PRC ("PRC Subsidiaries") carrying on the principal activities of the Group. The functional currencies of the Company's subsidiaries in Hong Kong and United States are Hong Kong dollars ("HKD") and United States dollars ("USD") respectively.

## 2 主要會計政策(續)

### (b) 財務報表編製基礎(續)

編製符合《國際財務報告準則》規定的財務報表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和資產、負債、收入以及支出的報告金額。估計和相關假設系基於過往經驗和在該情況下被認為是合理的各種其他因素，並因此形成判斷目前無法從其他來源而得出的資產和負債賬面價值的依據。實際結果可能有別於這些估計。

各項估計和相關假設會被持續審閱。如果會計估計的修訂僅影響作出有關修訂的期間，則有關修訂在當期確認；但如果會計估計的修訂對當期和以後的期間均有影響，則會在作出有關修訂的期間和以後的期間內確認。

管理層在應用《國際財務報告準則》時所作出且對財務報表有重大影響之判斷，以及估算產生不確定性之主要來源，詳述於附註3。

### (c) 會計政策變更

國際會計準則理事會頒佈了下列《國際財務報告準則》之修訂，他們在本集團現行會計期間首次生效。上述變動對已編製或列示之本集團當期或前期的經營成果和財務狀況並沒有重大影響。

本集團並未採用任何本會計期間尚未生效的新的準則或詮釋。

### (d) 功能貨幣及列報貨幣

此等財務報表均以本公司及在中國設立的附屬公司(「中國附屬公司」)開展本集團經營活動所採用的功能貨幣人民幣列示，約至最接近的千位。本公司在香港和美國的各附屬公司的功能貨幣分別為港元和美元。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (e) Subsidiaries and non-controlling interests

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. When assessing whether the Group has power, only substantive rights (held by the Group and other parties) are considered.

An investment in a subsidiary is consolidated into the consolidated financial statements from the date that control commences until the date that control ceases. Intra-group balances, transactions and cash flows and any unrealised profits arising from intra-group transactions are eliminated in full in preparing the consolidated financial statements. Unrealised losses resulting from intra-group transactions are eliminated in the same way as unrealised gains but only to the extent that there is no evidence of impairment.

Non-controlling interests represent the equity in a subsidiary not attributable directly or indirectly to the Company, and in respect of which the Group has not agreed any additional terms with the holders of those interests which would result in the Group as a whole having a contractual obligation in respect of those interests that meets the definition of a financial liability. For each business combination, the Group can elect to measure any non-controlling interests either at fair value or at the non-controlling interests' proportionate share of the subsidiary's net identifiable assets.

Non-controlling interests are presented in the consolidated statement of financial position within equity, separately from equity attributable to the equity shareholders of the Company. Non-controlling interests in the results of the Group are presented on the face of the consolidated statement of profit or loss and the consolidated statement of profit or loss and other comprehensive income as an allocation of the total profit or loss and other comprehensive income for the year between non-controlling interests and the equity shareholders of the Company. Loans from holders of non-controlling interests and other contractual obligations towards these holders are presented as financial liabilities in the consolidated statement of financial position in accordance with notes 2(q) or (r) depending on the nature of the liability.

## 2 主要會計政策(續)

### (e) 附屬公司及非控股權益(續)

附屬公司是由本集團控制的實體。當本集團承擔相應風險或有權通過參與實體之業務獲得可變動回報，並能夠通過其對實體的權力對這些回報施加影響，則視為本集團對該實體有控制權。在評估本集團是否有權力，僅需考慮其實質權利(本集團及其他方所持有的)。

自控制開始之日起至控制終止之日，將對附屬公司的投資並入合併財務報表中。在編製合併財務報表時，全數抵銷集團內部交易產生的集團內部結餘、交易現金流量以及任何未實現利潤。集團內部交易產生的未實現損失以未實現利潤相同的方式作抵銷，但僅限於沒有減值證據的部份。

非控股權益是指非本公司直接或間接應佔的附屬公司權益，且本集團並無與相關權益持有人另行訂立條款而導致本集團整體須根據其所佔權益承擔符合金融負債定義的合同責任。對於各業務合併而言，本集團可以選擇按公允價值或按本集團佔附屬公司的可識別淨資產的比例而計量任何非控股權益。

非控股權益在合併財務狀況表的權益中列示，惟與本公司權益股東應佔權益分開。非控股權益持有人所佔本集團的業績，會按照該年度的損益總額及其他綜合收益總額在非控股權益持有人與本公司權益股東之間進行分配，並在合併損益表以及合併損益及其他合併綜合收益表呈列。來自非控股權益持有人的借貸及對該等持有人的其他合同責任，會視乎負債的性質，並按照附註2(q)或(r)於合併財務狀況表中呈列為金融負債。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (e) Subsidiaries and non-controlling interests (continued)

Changes in the Group's interests in a subsidiary that do not result in a loss of control are accounted for as equity transactions, whereby adjustments are made to the amounts of controlling and non-controlling interests within consolidated equity to reflect the change in relative interests, but no adjustments are made to goodwill and no gain or loss is recognised.

When the Group loses control of a subsidiary, it is accounted for as a disposal of the entire interest in that subsidiary, with a resulting gain or loss being recognised in profit or loss. Any interest retained in that former subsidiary at the date when control is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (see note 2(h)) or, when appropriate, the cost on initial recognition of an investment in an associate or joint venture.

In the Company's statement of financial position, an investment in a subsidiary is stated at cost less impairment losses (see note 2(m)).

### (f) Associates

An associate is an entity in which the Group or Company has significant influence, but not control or joint control, over its management, including participation in the financial and operating policy decisions.

An investment in an associate is accounted for in the consolidated financial statements under the equity method. Under the equity method, the investment is initially recorded at cost, adjusted for any excess of the Group's share of the acquisition-date fair values of the investee's identifiable net assets over the cost of the investment (if any). Thereafter, the investment is adjusted for the post-acquisition change in the Group's share of the investee's net assets and any impairment loss relating to the investment (see notes 2(h) and (m)). Any acquisition-date excess over cost, the Group's share of the post-acquisition, post-tax results of the investees and any impairment losses for the year are recognised in the consolidated statement of profit or loss, whereas the Group's share of the post-acquisition post-tax items of the investees' other comprehensive income is recognised in the consolidated statement of profit or loss and other comprehensive income.

## 2 主要會計政策(續)

### (e) 附屬公司及非控股權益(續)

本集團於附屬公司的權益如發生變動但不會造成喪失控制權，則該變動乃按權益交易的方式入賬，即僅調整在合併權益內的控股及非控股權益金額，以反映其相關權益的變動，但不會調整商譽及不會確認盈虧。

當本集團喪失一家附屬公司的控股權，則按出售該附屬公司的所有權益入賬，而所產生的盈虧將確認為損益。於喪失控股權當日仍保留於前附屬公司的任何權益乃按公允價值確認，而該金額將被視為一項金融資產（見附註2(h)）初始確認的公允價值或（如適用）一項對聯營公司或合營公司之投資的初始確認的成本。

在本公司的財務狀況表中，對附屬公司的投資是按成本減去減值虧損（見附註2(m)）後入賬。

### (f) 聯營公司

聯營公司是指本集團或本公司可以對其管理層發揮重大影響的實體，包括參與其財務及經營決策，但不是控制或聯合控制管理層。

對聯營公司的投資是按權益法計入合併財務報表。根據權益法，投資初始按成本計值，並調整本集團於收購日期佔被投資公司可識別淨資產公允價值超出投資成本的任何差額（如有）。其後，投資就本集團佔被投資公司淨資產及任何有關投資的減值虧損的收購後變動作出調整（見附註2(h)和(m)）。任何收購日超出成本的金額、本集團應佔本年度收購後被投資公司稅後業績及減值虧損均於合併損益表中確認，而本集團佔被投資公司於收購日後的其他稅後綜合收益的項目則確認於合併損益及其他綜合收益表。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (f) Associates (continued)

When the Group's share of losses exceeds its interest in the associate, the Group's interest is reduced to nil and recognition of further losses is discontinued except to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the investee. For this purpose, the Group's interest is the carrying amount of the investment under the equity method together with the Group's long-term interests that in substance form part of the Group's net investment in the associate.

Unrealised profits and losses resulting from transactions between the Group and its associates are eliminated to the extent of the Group's interest in the investee, except where unrealised losses provide evidence of an impairment of the asset transferred, in which case they are recognised immediately in profit or loss.

If an investment in an associate becomes an investment in a joint venture or vice versa, retained interest is not remeasured. Instead, the investment continues to be accounted for under the equity method.

In all other cases, when the Group ceases to have significant influence over an associate, it is accounted for as a disposal of the entire interest in that investee, with a resulting gain or loss being recognised in profit or loss. Any interest retained in that former investee at the date when significant influence is lost is recognised at fair value and this amount is regarded as the fair value on initial recognition of a financial asset (see note 2(h)).

In the Company's statement of financial position, investments in associates are stated at cost less impairment losses (see note 2(m)).

## 2 主要會計政策(續)

### (f) 聯營公司(續)

當本集團的虧損份額超過其在該聯營公司的權益，本集團的權益會減少至零，並且不再確認額外虧損，本集團已產生法定或推定責任或代表被投資公司付款除外。就此而言，本集團權益是以按照權益法計算投資的賬面值，以及事實上構成本集團在聯營公司投資淨額一部份的長期權益為準。

本集團與其聯營公司間交易產生的未實現損益，均按本集團於被投資公司所佔的權益比率抵銷，但假如未實現虧損提供所轉讓資產出現減值的證據，則該等未實現虧損會立即在損益內確認。

如果對聯營公司的投資變為對合營企業的投資，或者對合營企業的投資變為對聯營公司的投資，則所保留的權益不需重新計量。相反，該投資將繼續按照權益法進行核算。

在其他任何情況下，當本集團不再對聯營公司產生重大影響時，即出售被投資公司的全部權益，由此產生的收益或虧損在損益中確認。在喪失重大影響當日所保留的有關前被投資公司的權益按公允價值確認，該金額為金融資產初始確認的公允價值(見附註2(h))。

本公司財務狀況表所示對聯營公司投資，是按成本法減去減值虧損(見附註2(m))後入賬。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (g) Goodwill

Goodwill represents the excess of

- (i) the aggregate of the fair value of the consideration transferred, the amount of any non-controlling interest in the acquiree and the fair value of the Group's previously held equity interest in the acquiree; over
- (ii) the net fair value of the acquiree's identifiable assets and liabilities measured as at the acquisition date.

When (ii) is greater than (i), then this excess is recognised immediately in profit or loss as a gain on a bargain purchase.

Goodwill is stated at cost less accumulated impairment losses. Goodwill arising on a business combination is allocated to each cash-generating unit, or groups of cash generating units, that is expected to benefit from the synergies of the combination and is tested annually for impairment (see note 2(m)).

On disposal of a cash generating unit during the year, any attributable amount of purchased goodwill is included in the calculation of the profit or loss on disposal.

### (h) Other investments in debt and equity securities

The Group's and the Company's policies for investments in debt and equity securities, other than investments in subsidiaries and associates, are as follows:

Investments in debt and equity securities are initially stated at fair value, which is their transaction price unless it is determined that the fair value at initial recognition differs from the transaction price and that fair value is evidenced by a quoted price in an active market for an identical asset or liability or based on a valuation technique that uses only data from observable markets. Cost includes attributable transaction costs, except where indicated otherwise below. These investments are subsequently accounted for as follows, depending on their classification:

## 2 主要會計政策(續)

### (g) 商譽

商譽指

- (i) 已轉讓代價的公允價值、於被收購公司的任何非控制股東權益的數額，以及本集團之前於被收購公司持有的股權的總額；超過
- (ii) 於收購日期計量的被收購公司的可識別資產及負債的公允價值。

當(ii)較(i)為大時，該超越值實時在損益內確認為議價收購收益。

商譽按成本減累計減值虧損列賬。業務合併產生之商譽分配至預計將會受惠於合併之協同作用之各現金產生單元或現金產生單元組別，並於每年進行減值測試(見附註2(m))。

在當年內出售現金產生單元，任何可歸屬的購入商譽的金額均應包含在計算出售的損益內。

### (h) 其他債券和權益證券投資

本集團及本公司對附屬公司和聯營公司以外的其他權益證券投資的會計政策如下：

債券和權益證券投資初始按公允價值列賬，通常為交易價格，除非使用評估技術測出的公允價值更為可靠(該評估技術所涉及的變量僅包括從可觀察的市場上獲取的數據)。除非下文另有說明，成本包括相關的交易費用。這些投資將按分類列示：

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (h) Other investments in debt and equity securities (continued)

Investments in securities held for trading are classified as current assets. Any attributable transaction costs are recognised in profit or loss as incurred. At the end of each reporting period the fair value is remeasured, with any resultant gain or loss being recognised in profit or loss. The net gain or loss recognised in profit or loss does not include any dividends or interest earned on these investments as these are recognised in accordance with the policies set out in note 2(w)(vi).

Investments in securities which do not fall into any of the above categories are classified as available-for-sale securities. At the end of each reporting period the fair value is remeasured, with any resultant gain or loss being recognised in other comprehensive income and accumulated separately in equity in the fair value reserve. As an exception to this, investments in equity securities that do not have a quoted market price in an active market for an identical instrument and whose fair value cannot otherwise be reliably measured are recognised in the statement of financial position at cost less impairment losses (see note 2(m)). Dividend income from equity securities and interest income from debt securities calculated using the effective interest method are recognised in profit or loss in accordance with the policies set out in notes 2(w)(vi) and (vii), respectively. Foreign exchange gains and losses resulting from changes in the amortised cost of debt securities are also recognised in profit or loss.

When the investments are derecognised or impaired (see note 2(m)), the cumulative gain or loss recognised in equity is reclassified to profit or loss. Investments are recognised/derecognised on the date the Group commits to purchase/sell the investments.

### (i) Investment properties

Investment properties are land and/or buildings which are owned or held under a leasehold interest (see note 2(l)) to earn rental income and/or for capital appreciation.

Investment properties are stated at cost less accumulated depreciation and impairment losses (see note 2(m)). The depreciation policy is the same as that of property, plant and equipment (see note 2(j)). Rental income from investment properties is accounted for as described in note 2(w)(v).

## 2 主要會計政策(續)

### (h) 其他債券和權益證券投資(續)

交易性證券投資列入流動資產。任何相關交易費用發生時均列入損益內確認。公允價值於每個報告期末重新計量，由此產生的任何收益或虧損列入損益內。於損益表內確認的收益或虧損不包括此等投資所賺取的任何股息或利息，此等收益需根據載於附註2(w)(vi)的規定確認。

未列入上述任何類別之證券投資應歸類為可供出售證券。公允價值於每個報告期末重新計量，由此產生的任何收益或虧損於其他綜合收益中確認，並單獨累計於權益中的公允價值儲備。無活躍市場報價且其公允價值不能可靠計量的權益證券投資以成本減去減值虧損(見附註2(m))於財務狀況表中確認。根據附註2(w)(vi)和(vii)中規定的政策，利用實際利率法計算的權益證券股息收入和債券利息收入確認為當期損益。因債券攤餘成本變動而產生的外匯損益也確認為當期損益。

當此等投資被終止確認或減值(見附註2(m))時，累計收益或虧損從權益重分類至損益。在本集團承諾購入/出售投資當日，有關投資會被確認/終止確認。

### (i) 投資性物業

投資性物業是以賺取租金收入及/或為資本增值而持有或租用(見附註2(l))的土地及樓宇。

投資性物業按成本減累計折舊及減值虧損(見附註2(m))列賬。折舊政策與物業、廠房及設備(見附註2(j))的折舊政策相同。投資性物業租賃收入按照附註2(w)(v)中所述方法列賬。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED) 財務報表附註(續)

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

### 2 Significant accounting policies (continued)

#### (j) Property, plant and equipment

Property, plant and equipment are stated at cost less accumulated depreciation and impairment losses (see note 2(m)).

The cost of self-constructed items of property, plant and equipment includes the cost of materials, direct labour, the initial estimate, where relevant, of the costs of dismantling and removing the items and restoring the site on which they are located, and an appropriate proportion of production overheads and borrowing costs (see note 2(y)).

Gains or losses arising from the retirement or disposal of an item of property, plant and equipment are determined as the difference between the net disposal proceeds and the carrying amount of the item and are recognised in profit or loss on the date of retirement or disposal.

Depreciation is calculated to write off the cost of items of property, plant and equipment, less their estimated residual value, if any, using the straight line method over their estimated useful lives as follows:

– Land, buildings and structures	20 – 50 years
– Machinery and equipment	3 – 20 years
– Motor vehicles	3 – 10 years
– Furniture, fixtures and others	3 – 10 years

Where parts of an item of property, plant and equipment have different useful lives, the cost of the item is allocated on a reasonable basis between the parts and each part is depreciated separately. Both the useful life of an asset and its residual value, if any, are reviewed annually.

### 2 主要會計政策(續)

#### (j) 物業、廠房及設備

物業、廠房及設備按成本減累計折舊及減值虧損(見附註2(m))列賬。

自建物業、廠房及設備項目成本包括材料成本、直接勞工成本、拆卸及搬遷有關項目的成本與修復項目所在場地的還原修復費用初步估計成本(如有關)以及適當比例的間接生產開支與借貸成本(見附註2(y))。

報廢或出售物業、廠房及設備項目產生的收益或虧損為出售所得款項淨額與項目賬面值的差額，於報廢或出售日期在損益中確認。

折舊是在下列估計可使用期限內按直線法衝銷物業、廠房及設備項目的成本，扣除估計殘值(如有)計算：

– 土地、樓宇及建築物	20–50年
– 機器及設備	3–20年
– 汽車	3–10年
– 家具、裝置和其他	3–10年

如果物業、廠房及設備項目各部份的可使用期限不同，則該項目的成本會合理分配至各部份，而每部份須分開折舊。本集團會每年審閱資產的可使用期限及其殘值(如有)。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (k) Intangible assets (other than goodwill)

The Group recognises an intangible asset arising from a service concession arrangement when it has a right to charge for usage of the concession infrastructure. An intangible asset received as consideration for providing construction services in a service concession arrangement are measured at fair value upon initial recognition by reference to the fair value of the services provided. Subsequent to initial recognition the intangible asset is measured at cost less accumulated amortisation and impairment losses (see note 2(m)). If the Group is paid for the construction services partly by an intangible asset and partly by a financial asset (see note 2(p)), then each component of the consideration is accounted for separately and is initially recognised at fair value of the consideration.

Expenditure on research activities is recognised as an expense in the period in which it is incurred. Expenditure on development activities is capitalised if the product or process is technically and commercially feasible and the Group has sufficient resources and the intention to complete development. The expenditure capitalised includes the costs of materials, direct labour, and an appropriate proportion of overheads and borrowing costs, where applicable (see note 2(y)). Capitalised development costs are stated at cost less accumulated amortisation and impairment losses (see note 2(m)). Other development expenditure is recognised as an expense in the period in which it is incurred.

Other intangible assets that are acquired by the Group are stated at cost less accumulated amortisation (where the estimated useful life is finite) and impairment losses (see note 2(m)). Expenditure on internally generated goodwill and brands is recognised as an expense in the period in which it is incurred.

Amortisation of intangible assets with finite useful lives is charged to profit or loss on a straight-line basis over the assets' estimated useful lives. The following intangible assets with finite useful lives are amortised from the date they are available for use and their estimated useful lives are as follows:

–	Concession assets	20–34 years
–	Technical know-how	5–18 years
–	Capitalised development costs	5–10 years
–	Software and others	3–10 years

## 2 主要會計政策(續)

### (k) 無形資產(商譽除外)

如果本集團有權就使用特許權基礎設施收費，本集團會確認服務特許權安排產生的無形資產。作為提供服務特許權安排的代建設服務的代價所收取的無形資產，於初始確認時按公允價值計量。在初始確認後，無形資產按成本減去累計攤銷和減值虧損(見附註2(m))計量。如果就建造服務支付予本集團的對價部份為無形資產而部份為金融資產(見附註2(p))，對價的各部份則應分別入賬並初始按對價的公允價值計量。

研究活動開支於其產生期間確認為開支。如果產品或程序於技術上可行及可投入商業運作，且本集團具備充裕資源及有意完成開發，則開發活動開支進行資本化。資本化的開支包括材料成本、直接勞工成本，以及在適當比例的間接成本及借貸成本(如適用)(見附註2(y))。資本化之開發成本按照成本減累計攤銷及減值虧損(見附註2(m))列賬。其他開發支出於其產生期間確認為費用。

本集團收購的其他無形資產以成本減累計攤銷(如果既定的估計可使用期限)和減值虧損(見附註2(m))列賬。內部產生的商譽和品牌開支在其產生當期以費用形式確認。

有既定可使用期限的無形資產的攤銷是以直線法於資產的估計可使用期限內計入損益。以下有既定可使用期限的無形資產由可供使用當日起，在估計可使用期限內攤銷：

–	特許權資產	20–34年
–	專業技術	5–18年
–	資本化開發成本	5–10年
–	軟件及其他	3–10年

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (k) Intangible assets (other than goodwill) (continued)

The estimated useful life of a concession asset in a service concession arrangement is the period from when the Group is able to charge for the use of the infrastructure to the end of the concession period.

Both the period and method of amortisation are reviewed annually.

### (l) Leased assets

An arrangement, comprising a transaction or a series of transactions, is or contains a lease if the Group determines that the arrangement conveys a right to use a specific asset or assets for an agreed period of time in return for a payment or a series of payments. Such a determination is made based on an evaluation of the substance of the arrangement and is regardless of whether the arrangement takes the legal form of a lease.

#### (i) Classification of assets leased to the Group

Assets that are held by Group under leases which transfer to the Group substantially all the risks and rewards of ownership are classified as being held under finance leases. Leases which do not transfer substantially all the risks and rewards of ownership to the Group are classified as operating leases except for land held for own use under an operating lease, the fair value of which cannot be measured separately from the fair value of a building situated thereon at the inception of the lease, is accounted for as being held under a finance lease, unless the building is also clearly held under an operating lease. For these purposes, the inception of the lease is the time that the lease was first entered into by the Group, or taken over from the previous lessee.

## 2 主要會計政策(續)

### (k) 無形資產(商譽除外)(續)

服務特許經營安排中的特許權資產的預計可使用年限於本集團可收取基礎設施使用費開始至特許經營期結束時終止之期間。

攤銷期限及方法均每年進行審閱。

### (l) 租賃資產

如果本集團確定一項安排(由一宗交易或一系列交易組成)會於協議期間內賦予一項特定資產或多項資產的使用權，以換取一項或多項付款，則該安排為或包括一項租賃。該確定乃根據對該安排的實質情況所作評估，而無論該安排是否採取租賃的法律形式。

#### (i) 本集團租用的資產分類

對於本集團以租賃持有的資產，如果租賃使所有權的絕大部份風險及回報轉讓予本集團，該項資產被分類為以融資租賃持有。如租賃不會將所有權的絕大部份風險及回報轉讓予本集團，則該項資產被分類為經營租賃，惟以經營租賃持做自用，但無法在租賃開始時將其公允價值與建於其上的樓宇的公允價值分開計量的土地是按以融資租賃持有方式入賬，但清楚的以經營租賃持有的樓宇除外。就此而言，租賃的開始時間是指本集團首次訂立租賃時，或自前承租人接收時。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (I) Leased assets (continued)

#### (ii) Assets acquired under finance leases

Where the Group acquires the use of assets under finance leases, the amounts representing the fair value of the leased asset, or, if lower, the present value of the minimum lease payments, of such assets are recognised as property, plant and equipment and the corresponding liabilities, net of finance charges, are recorded as obligations under finance leases. Depreciation is provided at rates which write off the cost of the assets over the term of the relevant lease or, where it is likely the Group will obtain ownership of the asset, the life of the asset, as set out in note 2(j). Impairment losses are accounted for in accordance with the accounting policy as set out in note 2(m). Finance charges implicit in the lease payments are charged to profit or loss over the period of the leases so as to produce an approximately constant periodic rate of charge on the remaining balance of the obligations for each accounting period. Contingent rentals are charged to profit or loss in the accounting period in which they are incurred.

#### (iii) Operating lease charges

Where the Group has the use of assets held under operating leases, payments made under the leases are charged to profit or loss in equal instalments over the accounting periods covered by the lease term, except where an alternative basis is more representative of the pattern of benefits to be derived from the leased asset. Lease incentives received are recognised in profit or loss as an integral part of the aggregate net lease payments made. Contingent rentals are charged to profit or loss in the accounting period in which they are incurred.

The cost of acquiring land held under an operating lease is amortised on a straight-line basis over the period of the lease term.

## 2 主要會計政策(續)

### (I) 租賃資產

#### (ii) 根據融資租賃獲得的資產

如果本集團根據融資租賃獲得資產的使用權，便會將相當於租賃資產公允價值及最低租賃預付款的現值(兩者中的較低者)確認為物業、廠房及設備，而扣除融資費用後的相應負債則列為融資租賃承擔。折舊是在相關的租賃期或資產的可用期限(如本集團很可能取得資產的所有權)內，以衝銷其成本的比率計提；有關的資產可用期限列載於附註2(j)。減值虧損按照附註2(m)所載的會計政策入賬。租賃付款內含的融資費用會計入租賃期內的損益中，使各會計期間的融資費用佔承擔餘額的比率大致相同。或有租金於其產生的會計期間在損益中列支。

#### (iii) 經營租賃之費用

如果本集團通過經營租賃持有資產的使用權，會以租賃作出的付款於租期的會計期間內，按等額的攤付金額計入損益，但是，可以更清楚地反映租賃資產所產生的收益模式的基準則除外。所獲租賃獎勵應於損益中確認為租賃淨付款總額的一部份。或有租金將於其產生的會計期間自損益中列支。

根據經營租賃所持土地的收購成本於租賃期內按直線法攤銷。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi unless otherwise indicated)  
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## 2 Significant accounting policies (continued)

### (m) Impairment of assets

#### (i) Impairment of investments in debt and equity securities and other receivables

Investments in debt and equity securities and other current and non-current receivables that are stated at cost or amortised cost or are classified as available-for-sale securities are reviewed at the end of each reporting period to determine whether there is objective evidence of impairment. Objective evidence of impairment includes observable data that comes to the attention of the Group about one or more of the following loss events:

- significant financial difficulty of the debtor;
- a breach of contract, such as a default or delinquency in interest or principal payments;
- it becoming probable that the debtor will enter bankruptcy or other financial reorganisation;
- significant changes in the technological, market, economic or legal environment that have an adverse effect on the debtor; and
- a significant or prolonged decline in the fair value of an investment in an equity instrument below its cost.

If any such evidence exists, any impairment loss is determined and recognised as follows:

- For investments in associates accounted for under the equity method in the consolidated financial statements (see note 2(f)), the impairment loss is measured by comparing the recoverable amount of the investment with its carrying amount in accordance with note 2(m)(ii). The impairment loss is reversed if there has been a favourable change in the estimates used to determine the recoverable amount in accordance with note 2(m)(ii).

## 2 主要會計政策(續)

### (m) 資產減值

#### (i) 債券、權益證券投資及其他應收款項之減值

按成本、攤餘成本入賬之債券、權益證券投資或分類為可供出售證券及其他流動及非流動應收款項於每個報告期末審閱，以確定是否有減值的客觀證據。減值之客觀證據包括本集團注意到以下一項或多項虧損事項之顯著數據：

- 債務人有重大財務困難；
- 違反合約，例如拖欠或逾期償還利息或本金款項；
- 債務人可能面臨破產或進行其他財務重組；
- 科技、市場、經濟或法律環境發生重大變動而對債務人產生不利影響；及
- 一項權益工具投資之公允價值大幅度或長期貶值至低於其成本。

如有任何該等證據存在，便會確定減值虧損並按以下方式確認：

- 對於合併財務報表中按權益法核算的對聯營公司的投資(見附註2(f))，減值虧損是根據附註2(m)(ii)以投資可收回金額與其賬面金額之間之差額計量。倘若用以決定可收回金額之估計有利好之變動，則該減值虧損可按附註2(m)(ii)所述撥回。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (m) Impairment of assets (continued)

#### (i) Impairment of investments in debt and equity securities and other receivables (continued)

- For unquoted equity securities carried at cost, the impairment loss is measured as the difference between the carrying amount of the financial asset and the estimated future cash flows, discounted at the current market rate of return for a similar financial asset where the effect of discounting is material. Impairment losses for equity securities carried at cost are not reversed.
- For trade and other current receivables and other financial assets carried at amortised cost, the impairment loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows, discounted at the financial asset's original effective interest rate (i.e. the effective interest rate computed at initial recognition of these assets), where the effect of discounting is material. This assessment is made collectively where these financial assets share similar risk characteristics, such as similar past due status, and have not been individually assessed as impaired. Future cash flows for financial assets which are assessed for impairment collectively are based on historical loss experience for assets with credit risk characteristics similar to the collective group.

If in a subsequent period the amount of an impairment loss decreases and the decrease can be linked objectively to an event occurring after the impairment loss was recognised, the impairment loss is reversed through profit or loss. A reversal of an impairment loss shall not result in the asset's carrying amount exceeding that which would have been determined had no impairment loss been recognised in prior years.

## 2 主要會計政策(續)

### (m) 資產減值(續)

#### (i) 債券、權益證券投資及其他應收款項之減值(續)

- 就按成本列賬之非上市權益證券而言，減值虧損乃按金融資產之賬面值與類似金融資產當時市場回報率折現計算(倘若折現產生重大影響)的預計未來現金流量之間的差額計量。按成本列賬之權益證券減值虧損將不會撥回。
- 對於按攤餘成本列賬之應收賬款及其他流動應收款項及其他金融資產，減值虧損按該項資產賬面值與有關金融資產之原定的實際利率(即按最初確認該等資產計算出之實際利率)進行折現(倘折現影響屬重大)的預計未來現金流量的現值之間的差額計量。若金融資產擁有類似風險性質(如相近的過期未付情況)且沒有被個別評估為已減值，則按整體評估。金融資產的未來現金流量乃根據與被評估資產具有類似信用風險特徵資產的過往虧損經驗進行整體減值評估。

倘若減值虧損數額在其後的期間減少，而且客觀上與減值虧損確認後發生之事件有關，則應通過損益撥回減值虧損。減值虧損之撥回不應使資產之賬面金額超過其在以往年度沒有確認任何減值虧損而已應確定之數額。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi unless otherwise indicated)  
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## 2 Significant accounting policies (continued)

### (m) Impairment of assets (continued)

#### (i) Impairment of investments in debt and equity securities and other receivables (continued)

- For available-for-sale securities, the cumulative loss that has been recognised in the fair value reserve is reclassified to profit or loss. The amount of the cumulative loss that is recognised in profit or loss is the difference between the acquisition cost and current fair value, less any impairment loss on that asset previously recognised in profit or loss.

Impairment losses recognised in profit or loss in respect of available-for-sale equity securities are not reversed through profit or loss. Any subsequent increase in the fair value of such assets is recognised in other comprehensive income.

Impairment losses in respect of available-for-sale debt securities are reversed if the subsequent increase in fair value can be objectively related to an event occurring after the impairment loss was recognised. Reversals of impairment losses in such circumstances are recognised in profit loss.

Impairment losses are written off against the corresponding assets directly, except for impairment losses recognised in respect of trade and bills receivables and other receivables, whose recovery is considered doubtful but not remote. In this case, the impairment losses for doubtful debts are recorded using an allowance account. When the Group is satisfied that recovery is remote, the amount considered irrecoverable is written off against the respective receivables directly and any amounts held in the allowance account relating to that debt are reversed. Subsequent recoveries of amounts previously charged to the allowance account are reversed against the allowance account. Other changes in the allowance account and subsequent recoveries of amounts previously written off directly are recognised in profit or loss.

## 2 主要會計政策(續)

### (m) 資產減值(續)

#### (i) 債券、權益證券投資及其他應收款項之減值(續)

- 對於可供出售權益證券，已直接計入權益中的因公允價值下降形成的累計損失，應予以轉出，計入當期損益。已於損益內確認的累計虧損金額為收購成本與當前公允價值之差額，減去該資產於損益中確認之前的減值虧損。

於損益中確認的可供出售權益證券的減值虧損不得通過損益撥回。其後任何此等資產的公允價值增加於其他綜合收益中確認。

如果後續的公允價值增加客觀上與確認減值損失後發生的事項有關，則可供出售債券的減值損失予以轉回。在此條件下轉回的減值損失確認為當期損益。

減值虧損直接衝銷相關資產，惟就應收賬款及票據及其他應收款項中確認的減值虧損除外，原因是該等應收款項可收回機會是被懷疑而非可能性極低。在此情況下，呆壞賬的減值虧損則於撥備賬計提。如本集團認為收回機會渺茫，被視為不會收回的金額直接衝銷各自應收款項，而在撥備賬的有關數額則須撥回。如已計提在撥備賬中的金額已被收回，其將從撥備賬中撥回。其他在撥備賬內的變動及以往已直接撇銷而其後收回的數額則在損益中確認。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (m) Impairment of assets (continued)

#### (ii) Impairment of other assets

Internal and external sources of information are reviewed at the end of each reporting period to identify indications that the following assets may be impaired or, except in the case of goodwill, an impairment loss previously recognised no longer exists or may have decreased:

- property, plant and equipment;
- investment properties;
- lease prepayments;
- intangible assets
- goodwill; and
- investment in subsidiaries and associates in the Company's statement of financial position.

If any such indication exists, the asset's recoverable amount is estimated. In addition, for goodwill and intangible assets that are not yet available for use, the recoverable amount is estimated annually whether or not there is any indication of impairment.

- Calculation of recoverable amount

The recoverable amount of an asset is the greater of its fair value less costs of disposal and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset. Where an asset does not generate cash inflows largely independent of those from other assets, the recoverable amount is determined for the smallest group of assets that generates cash inflows independently (i.e. a cash-generating unit).

## 2 主要會計政策(續)

### (m) 資產減值(續)

#### (ii) 其他資產減值

在每個報告期末審閱內部和外來的數據，以確定下列資產有否出現減值跡象，或是以往確認的減值虧損不復存在或已經減少(商譽除外)：

- 物業、廠房及設備；
- 投資性物業；
- 預付土地租賃款；
- 無形資產；
- 商譽；及
- 於本公司財務狀況表中對附屬公司和聯營公司的投資。

倘出現任何有關跡象，則會估計該資產的可收回金額。此外，就商譽和無形資產而言，無論是否出現減值的跡象，須每年估計可收回金額。

- 計算可收回金額

資產的可收回金額是其公允價值減去出售成本後的數值與使用價值兩者中較高者。在評估使用價值時，預計未來現金流量會按照能反映當時市場對貨幣時間價值和資產特定風險的評估的稅前折現率，折現至其現值。如果資產所產生的現金流入基本上並非獨立於其他資產所產生的現金流入，則以能產生獨立現金流入的最小資產類別(即現金產生單元)來確定可收回金額。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (m) Impairment of assets (continued)

#### (ii) Impairment of other assets (continued)

##### – Recognition of impairment losses

An impairment loss is recognised in profit or loss if the carrying amount of an asset, or the cash-generating unit to which it belongs, exceeds its recoverable amount. Impairment losses recognised in respect of cash-generating units are allocated first to reduce the carrying amount of any goodwill allocated to the cash-generating unit (or group of units) and then, to reduce the carrying amount of the other assets in the unit (or group of units) on a pro rata basis, except that the carrying value of an asset will not be reduced below its individual fair value less costs of disposal (if measurable), or value in use (if determinable).

##### – Reversals of impairment losses

In respect of assets other than goodwill, an impairment loss is reversed if there has been a favourable change in the estimates used to determine the recoverable amount. An impairment loss in respect of goodwill is not reversed.

A reversal of an impairment loss is limited to the asset's carrying amount that would have been determined had no impairment loss been recognised in prior years. Reversals of impairment losses are credited to profit or loss in the year in which the reversals are recognised.

## 2 主要會計政策(續)

### (m) 資產減值(續)

#### (ii) 其他資產減值

##### – 確認減值虧損

倘資產或其所屬現金產生單元的賬面值超過其可收回金額，則減值虧損於損益確認。在分配現金產生單元確認的減值虧損時，首先減少已分配至該現金產生單元(或該組單元)的商譽之賬面金額，然後按比例減少該單元(或該組單元)內資產的賬面金額；但資產的賬面值不得減少至低於其個別公允價值減去出售成本(如何衡量)後所得的金額或其使用價值(如能確定)。

##### – 減值虧損撥回

就商譽以外之資產而言，倘用以確定可收回金額的估計出現有利轉變，則減值虧損會被撥回。商譽減值虧損概不撥回。

減值虧損的撥回僅限於資產在以往年度內並無確認任何減值虧損的情況下的原應確定的賬面值。減值虧損的撥回在確認撥回的年度內計入損益。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (m) Impairment of assets (continued)

#### (iii) Interim financial reporting and impairment

Under the Rules Governing the Listing of Securities on HKSE, the Group is required to prepare an interim financial report in compliance with IAS 34, Interim financial reporting, in respect of the first six months of the financial year. At the end of the interim period, the Group applies the same impairment testing, recognition, and reversal criteria as it would at the end of the financial year (see notes 2(m)(i) and (ii)).

Impairment losses recognised in an interim period in respect of goodwill, available-for-sale equity securities and unquoted equity securities carried at cost are not reversed in a subsequent period. This is the case even if no loss, or a smaller loss, would have been recognised had the impairment been assessed only at the end of the financial year to which the interim period relates. Consequently, if the fair value of an available-for-sale equity security increases in the remainder of the annual period, or in any other period subsequently, the increase is recognised in other comprehensive income and not profit or loss.

### (n) Inventories

Inventories are carried at the lower of cost and net realisable value.

Cost is calculated using the weighted average cost formula and comprises all costs of purchase, costs of conversion and other costs incurred in bringing the inventories to their present location and condition.

Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

## 2 主要會計政策(續)

### (m) 資產減值(續)

#### (iii) 中期財務報告及減值

根據《香港聯合交易所有限公司證券上市規則》，本集團須根據《國際會計準則》第34號－「中期財務報告」就財政年度首六個月編製中期財務報告。於中期期末，本集團應用的減值測試、確認及撥回標準與其於財政年度末所應用者相同（見附註2(m)(i)及(ii)）。

於中期期間就商譽、可供出售權益證券及按成本入賬的非上市權益證券確認的減值虧損並不會於往後期間撥回。即使在倘若減值評估僅於與中期期間相關財政年度結束時進行則將無需確認虧損或確認較少虧損的情況下亦然。因此，倘可供出售權益證券之公允價值於年度期間之剩餘期間或於其後之任何其他期間有所增加，有關增加則將於其他綜合收益而非損益中確認。

### (n) 存貨

存貨乃以成本與可變現淨值之的較低者列賬。

成本採用加權平均成本公式計算，並包括所有採購成本、加工成本及將存貨運至目前地點及達成現狀產生之其他成本。

可變現淨值乃以日常業務過程中的估計售價減估計完工成本及估計進行銷售所需的成本後所得數額。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (n) Inventories (continued)

When inventories are sold, the carrying amount of those inventories is recognised as an expense in the period in which the related revenue is recognised. The amount of any write-down of inventories to net realisable value and all losses of inventories are recognised as an expense in the period the write-down or loss occurs. The amount of any reversal of any write-down of inventories is recognised as a reduction in the amount of inventories recognised as an expense in the period in which the reversal occurs.

### (o) Construction contracts

Construction contracts are contracts specifically negotiated with a customer for the construction of an asset or a group of assets, where the customer is able to specify the major structural elements of the design. The accounting policy for contract revenue is set out in note 2(w)(ii). When the outcome of a construction contract can be estimated reliably, contract costs are recognised as an expense by reference to the stage of completion of the contract at the end of the reporting period. When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognised as an expense immediately. When the outcome of a construction contract cannot be estimated reliably, contract costs are recognised as an expense in the period in which they are incurred.

Construction contracts in progress at the end of the reporting period are recorded at the net amount of costs incurred plus recognised profit less recognised losses and progress billings, and are presented in the statement of financial position as the "Gross amounts due from customers for contract work" (as an asset) or the "Gross amounts due to customers for contract work" (as a liability), as applicable. Progress billings not yet paid by the customer are included under "Trade and bills receivables". Amounts received before the related work is performed are presented as "Receipts in advance" under "Other payables".

## 2 主要會計政策(續)

### (n) 存貨(續)

存貨售出時，該等存貨之賬面金額於相關收入獲確認期間內確認為開支。任何由存貨撇減至可變現淨值之金額及所有存貨虧損，於撇減或虧損出現期間確認為開支。存貨撇減的任何撥回金額，於撥回期間作為存貨所確認的開支的扣減。

### (o) 建造合同

建造合同乃就建造一項或一組資產而與客戶具體商議的合約，客戶可指定設計的主要構造元素。建造合同收入之會計政策載於附註2(w)(ii)。倘能可靠估計建造合同的結果，則合同成本於報告期末按合同完工進度確認為開支。如總合同成本很可能超出總合同收入，則預期虧損立即確認為開支。倘無法可靠估計建造合同的結果，則合同成本於產生期間確認為開支。

於報告期末的建造合同按所產生成本淨額加已確認利潤再減已確認虧損及進度款項於財務狀況表，並呈列為「應收建造合同客戶款項總額」(作為資產)或「應付建造合同客戶款項總額」(作為負債)(視情況而定)。客戶尚未支付的進度款項計入「應收賬款及票據」。於進行有關工程前收取的款項於「其他應付款項」下呈列為「預收款項」。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi unless otherwise indicated)  
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## 2 Significant accounting policies (continued)

### (p) Trade and other receivables

Trade and other receivables are initially recognised at fair value and thereafter stated at amortised cost using the effective interest method, less allowance for impairment of doubtful debts (see note 2(m)), except where the receivables are interest-free loans made to related parties without any fixed repayment terms or the effect of discounting would be immaterial. In such cases, the receivables are stated at cost less allowance for impairment of doubtful debts.

The Group recognises a financial asset arising from a service concession arrangement when it has an unconditional contractual right to receive cash or another financial asset from or at the direction of the grantor for the construction services provided. Such financial assets are accounted for as trade and other receivables as described above.

### (q) Interest-bearing borrowings

Interest-bearing borrowings are recognised initially at fair value less attributable transaction costs. Subsequent to initial recognition, interest-bearing borrowings are stated at amortised cost with any difference between the amount initially recognised and redemption value being recognised in profit or loss over the period of the borrowings, together with any interest and fees payable, using the effective interest method.

### (r) Trade and other payables

Trade and other payables are initially recognised at fair value. Except for financial guarantee liabilities measured in accordance with note 2(v)(i), trade and other payables are subsequently stated at amortised cost unless the effect of discounting would be immaterial, in which case they are stated at cost.

### (s) Cash and cash equivalents

Cash and cash equivalents comprise cash at bank and on hand, demand deposits with banks and other financial institutions, and short-term, highly liquid investments that are readily convertible into known amounts of cash and which are subject to an insignificant risk of changes in value, having been within three months of maturity at acquisition.

## 2 主要會計政策(續)

### (p) 應收賬款及其他應收款項

應收賬款及其他應收款項初始按公允價值確認，其後使用實際利率法按攤餘成本減呆壞賬減值準備（見附註2(m)）列賬，惟倘應收款項乃向關聯方所提供並無固定還款期的免息貸款或貼現影響並不重大則除外。於該等情況，應收款項乃按成本減呆壞賬減值準備列賬。

本集團根據服務特許權協議因其所提供的建造服務可無條件按授權方的指示收取現金或其他金融資產的，本集團則確認一項服務特許權協議所產生的金融資產。這些金融資產按上述的應收賬款及其他應收款項入賬。

### (q) 帶息借貸

帶息借貸乃初始按公允價值減相關交易成本確認。於初始確認後，帶息借貸乃按攤餘成本列賬，而初始確認之金額與贖回價值兩者間之任何差額（連同任何應付利息及費用）使用實際利息法按借貸之期間於損益內確認。

### (r) 應付賬款及其他應付款

應付賬款及其他應付款項乃初始按公允價值確認。除根據附註2(v)(i)計量之財務擔保負債外，應付賬款及其他應付款項其後按攤餘成本列賬，惟貼現之影響輕微時則除外，於此情況乃按成本列賬。

### (s) 現金及現金等價物

現金及現金等價物包括現金及銀行存款、存放在銀行及其他金融機構活期存款，以及隨時兌換為已知金額之現金，價值變動風險較小及在購入後三個月內到期的短期和高流動性的投資。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (t) Employee benefits

#### (i) Short-term employee benefits and contributions to defined contribution retirement plans

Salaries, annual bonuses, contributions to defined contribution retirement plans and the cost of non-monetary benefits are accrued in the year in which the associated services are rendered by employees. Where payment or settlement is deferred and the effect would be material, these amounts are stated at their present values.

#### (ii) Termination benefits

Termination benefits are recognised at the earlier of when the Group can no longer withdraw the offer of those benefits and when it recognises restructuring costs involving the payment of termination benefits.

### (u) Income tax

Income tax for the year comprises current tax and movements in deferred tax assets and liabilities. Current tax and movements in deferred tax assets and liabilities are recognised in profit or loss except to the extent that they relate to items recognised in other comprehensive income or directly in equity, in which case the relevant amounts of tax are recognised in other comprehensive income or directly in equity, respectively.

Current tax is the expected tax payable on the taxable income for the year, using tax rates enacted or substantively enacted at the end of the reporting period, and any adjustment to tax payable in respect of previous years.

Deferred tax assets and liabilities arise from deductible and taxable temporary differences respectively, being the differences between the carrying amounts of assets and liabilities for financial reporting purposes and their tax bases. Deferred tax assets also arise from unused tax losses and unused tax credits.

## 2 主要會計政策(續)

### (t) 僱員福利

#### (i) 短期僱員福利及界定供款退休計劃供款

薪金、年度花紅、界定供款退休計劃作出供款及非貨幣性福利之成本乃於僱員提供有關服務年度內計提。倘延遲付款或結算而且其影響重大，則該等金額按現值列賬。

#### (ii) 辭退福利

辭退福利只會在本集團根據正式、具體，且不大可能撤回的計劃終止僱員合約或因僱員自願遣散而終止合約而做出補償時確認。

### (u) 所得稅

本年度之所得稅包括即期稅項，以及遞延稅項資產及負債之變動。即期稅項及遞延稅項資產及負債之變動於損益中確認，惟倘涉及業務合併，或於其他綜合收益或直接於權益確認之項目除外，在此情況下，相關稅項金額分別於其他綜合收益或直接於權益確認。

當期稅項是根據年內應稅所得額，按報告期末已執行或實際已執行之稅率計算之預期應付稅項，以及過往年度的應付稅項的任何調整。

遞延所得稅資產與負債分別由可抵扣和應納稅暫時性差異產生。暫時性差異是指資產和負債在財務報表上的賬面金額與該等資產和負債的計稅基礎之間的差異。遞延稅項資產也可以由未使用稅項虧損和未使用稅項抵免產生。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (u) Income tax (continued)

Apart from certain limited exceptions, all deferred tax liabilities, and all deferred tax assets to the extent that it is probable that future taxable profits will be available against which the asset can be utilised, are recognised. Future taxable profits that may support the recognition of deferred tax assets arising from deductible temporary differences include those that will arise from the reversal of existing taxable temporary differences, provided those differences relate to the same taxation authority and the same taxable entity, and are expected to reverse either in the same period as the expected reversal of the deductible temporary difference or in periods into which a tax loss arising from the deferred tax asset can be carried back or forward. The same criteria are adopted when determining whether existing taxable temporary differences support the recognition of deferred tax assets arising from unused tax losses and credits, that is, those differences are taken into account if they relate to the same taxation authority and the same taxable entity, and are expected to reverse in a period, or periods, in which the tax loss or credit can be utilised.

The limited exceptions to recognition of deferred tax assets and liabilities are those temporary differences arising from goodwill not deductible for tax purposes, the initial recognition of assets or liabilities that affect neither accounting nor taxable profit (provided they are not part of a business combination), and temporary differences relating to investments in subsidiaries to the extent that, in the case of taxable differences, the Group controls the timing of the reversal and it is probable that the differences will not reverse in the foreseeable future, or in the case of deductible differences, unless it is probable that they will reverse in the future.

The amount of deferred tax recognised is measured based on the expected manner of realisation or settlement of the carrying amount of the assets and liabilities, using tax rates enacted or substantively enacted at the end of the reporting period. Deferred tax assets and liabilities are not discounted.

The carrying amount of a deferred tax asset is reviewed at the end of each reporting period and is reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow the related tax benefit to be utilised. Any such reduction is reversed to the extent that it becomes probable that sufficient taxable profits will be available.

## 2 主要會計政策(續)

### (u) 所得稅(續)

除若干有限之例外情況外，所有遞延稅項負債及所有遞延稅項資產（惟以有可能用以抵扣未來很可能取得之應課稅利潤的部份為限）均予以確認。可支持確認可抵扣暫時性差異所產生遞延稅項資產的未來應課稅利潤包括轉回現有應納稅暫時性差異所產生的金額。為該等差異必須與同一稅務機關及同一課稅實體有關，並預期在預計轉回可抵扣暫時性差異之同一期間或遞延稅項資產所產生稅務虧損可予撥回或結轉之期間內轉回。在決定現有應納稅暫時性差異是否足以支持確認由未使用稅項虧損及稅項抵免所產生遞延稅項資產時，亦會採用同一準則，即須計及與同一稅務機關及同一應課稅實體有關，並預期在能夠運用稅項虧損或稅項抵免之間內轉回之該等差異。

確認遞延稅項資產及負債之有限例外情況包括來自不可在稅務方面獲得扣減的商譽、不影響會計或應課稅利潤（如屬業務合併的一部份則除外）的資產或負債之初始確認，以及與對附屬公司投資有關之暫時性差異，如為應納稅差異，只限於本集團可以控制轉回時間而不太可能在可預見將來轉回之差額；或如屬可抵扣差異，則只限於可在將來轉回的差異。

已確認遞延稅額是按照資產與負債賬面金額的預期實現或結算方式，根據已執行或在報告期末實質上已執行的稅率計量。遞延稅項資產與負債均不折現計算。

遞延稅項資產之賬面值會於每個報告期末予以審閱，並減少不再可能有足夠之應課稅利潤以抵扣相關可使用的稅項利益之部份。如日後有可能有足夠之應課稅利潤，該減少金額將被撥回。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (u) Income tax (continued)

Current tax balances and deferred tax balances, and movements therein, are presented separately from each other and are not offset. Current tax assets are offset against current tax liabilities, and deferred tax assets against deferred tax liabilities, if the Company or the Group has the legally enforceable right to set off current tax assets against current tax liabilities and the following additional conditions are met:

- in the case of current tax assets and liabilities, the Company or the Group intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously; or
- in the case of deferred tax assets and liabilities, if they relate to income taxes levied by the same taxation authority on either:
  - the same taxable entity; or
  - different taxable entities, which, in each future period in which significant amounts of deferred tax liabilities or assets are expected to be settled or recovered, intend to realise the current tax assets and settle the current tax liabilities on a net basis or realise and settle simultaneously.

## 2 主要會計政策(續)

### (u) 所得稅(續)

即期稅項結餘及遞延稅項結餘以及當中之變動乃各自分開呈列及不予抵銷。倘本公司或本集團擁有以即期稅項資產抵銷即期稅項負債之法律上可執行之權利，以及符合以下之額外條件時，即期稅項資產才會與即期稅項負債抵銷，而遞延稅項資產則與遞延稅項負債抵銷：

- 就即期稅項資產及負債而言，本公司或本集團計劃以淨額方式結算，或同時變現資產及償還負債；或
- 就遞延稅項資產及負債而言，如該資產及負債涉及之所得稅乃由同一個稅務機關向以下各方徵收：
  - 同一應課稅實體；或
  - 不同應課稅實體。該等實體計劃在日後每個預期有大額遞延稅項負債需要清算或大額遞延稅項資產可以收回的期間內，按淨額為基礎實現當期稅項資產和清算當期稅項負債，或同時變現該資產和清算該負債。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (v) Financial guarantees issued, provisions and contingent liabilities

#### (i) Financial guarantees issued

Financial guarantees are contracts that require the issuer (i.e. the guarantor) to make specified payments to reimburse the beneficiary of the guarantee (the “holder”) for a loss the holder incurs because a specified debtor fails to make payment when due in accordance with the terms of a debt instrument.

Where the Group issues a financial guarantee, the fair value of the guarantee is initially recognised as deferred income within trade and other payables. The fair value of financial guarantees issued at the time of issuance is determined by reference to fees charged in an arm's length transaction for similar services, when such information is obtainable, or is otherwise estimated by reference to interest rate differentials, by comparing the actual rates charged by lenders when the guarantee is made available with the estimated rates that lenders would have charged, had the guarantees not been available, where reliable estimates of such information can be made. Where consideration is received or receivable for the issuance of the guarantee, the consideration is recognised in accordance with the Group's policies applicable to that category of asset. Where no such consideration is received or receivable, an immediate expense is recognised in profit or loss on initial recognition of any deferred income.

The amount of the guarantee initially recognised as deferred income is amortised in profit or loss over the term of the guarantee as income from financial guarantees issued. In addition, provisions are recognised in accordance with note 2(v)(ii) if and when (i) it becomes probable that the holder of the guarantee will call upon the Group under the guarantee, and (ii) the amount of that claim on the Group is expected to exceed the amount currently carried in trade and other payables in respect of that guarantee i.e. the amount initially recognised, less accumulated amortisation.

## 2 主要會計政策(續)

### (v) 已作出的財務擔保、撥備及或有負債

#### (i) 已作出的財務擔保

財務擔保合同規定發行人(即擔保人)支付指定款項，以補償該擔保的受益人(「持有人」)因某一特定債務人未能根據債務工具的條款償付到期債務而產生的損失。

如當本集團作出財務擔保，該擔保的公允價值初始確認為應付賬款和其他應付款項下的遞延收益。在相同服務的公平交易信息可取得的情形下，在提供財務擔保時的財務擔保公允價值需參照公平交易條件下提供相同服務時收取的費用進行確定；或如果未曾提供擔保但可取得相同服務情形下的可信賴預估信息，則可通過將貸款人在提供擔保時收取的實際費用與貸款人應當收取的費用進行比較，參照利率差額預估財務擔保公允價值。如果在作出擔保時已收取或可收取對價，該對價會根據本集團適用於該類資產的政策而予以確認。如果並無收取或不會收取有關對價，則於初始確認任何遞延收益時，立即於損益內確認為開支。

初始確認為遞延收益的擔保款額於擔保期內在損益內攤銷為已作出財務擔保收入。此外，如果(i)擔保持有人有可能根據擔保向本集團提出申請；及(ii)向本集團索償的金額預期超過現時於有關擔保的應付賬款和其他應付款金額(即初始確認金額減累計攤銷)，則根據附註2(v)(ii)確認撥備。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (v) Financial guarantees issued, provisions and contingent liabilities (continued)

#### (ii) Other provisions and contingent liabilities

Provisions are recognised for other liabilities of uncertain timing or amount when the Group or the Company has a legal or constructive obligation arising as a result of a past event, it is probable that an outflow of economic benefits will be required to settle the obligation and a reliable estimate can be made. Where the time value of money is material, provisions are stated at the present value of the expenditure expected to settle the obligation.

Where it is not probable that an outflow of economic benefits will be required, or the amount cannot be estimated reliably, the obligation is disclosed as a contingent liability, unless the probability of outflow of economic benefits is remote. Possible obligations, whose existence will only be confirmed by the occurrence or non-occurrence of one or more future events are also disclosed as contingent liabilities unless the probability of outflow of economic benefits is remote.

### (w) Revenue recognition

Revenue is measured at the fair value of the consideration received or receivable. Revenue is presented net of value-added tax ("VAT"), returns, rebates and discounts, if any. Provided it is probable that the economic benefits will flow to the Group and the revenue and costs, if applicable, can be measured reliably, revenue is recognised in profit or loss as follows:

#### (i) Sale of goods

Revenue is recognised when goods are delivered at the customers' premises which is taken to be the point in time when the customer has accepted the goods and the related risks and rewards of ownership.

## 2 主要會計政策(續)

### (v) 已作出的財務擔保、撥備及或有負債(續)

#### (ii) 其他撥備與或有負債

如果本集團或本公司須就已發生事件承擔法律或推定責任，而履行該責任會導致經濟利益外流，並可作出可靠估計，便會就時間或數額仍不明朗之其他負債確認撥備。如果貨幣時間價值重大，則按預計履行責任所需開支之現值計提撥備。

倘若致使經濟利益外流之機會不大，或無法對有關款項作出可靠估計，便會將該責任披露為或有負債，惟經濟利益外流之機會極低則除外。如果本集團的義務僅視乎一宗或多宗未來事件是否發生才能確定存在，該義務亦會披露為或有負債，惟經濟利益外流之機會極低則除外。

### (w) 收入確認

收入按已收或應收代價之公允價值計量。收入應扣除增值稅、退稅、回扣和折扣(如有)。倘經濟利益可能會流入本集團，以及能夠可靠地計算收入及成本(如適用)時，則收入根據下列方法在損益內確認。

#### (i) 銷售商品

商品銷售收入是在商品已付運至客戶經營場所即客戶已接收商品及所有權有關的風險和回報時確認。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (w) Revenue recognition (continued)

#### (ii) Contract revenue

When the outcome of a construction contract can be estimated reliably, revenue from a fixed price contract is recognised using the percentage of completion method, measured by reference to the percentage of contract costs incurred to date to estimated total contract costs for the contract.

When the outcome of a construction contract cannot be estimated reliably, revenue is recognised only to the extent of contract costs incurred that it is probable will be recoverable.

#### (iii) Service concession revenue

Revenue related to construction services under a service concession arrangement is recognised based on the stage of completion of the work performed consistent with the Group's accounting policy on recognising revenue on construction contracts (see note 2(w)(ii)). Operation or service revenue is recognised in the period in which the services are provided by the Group. Interest income on financial assets is recognised in accordance with note 2(w)(vii). When the Group provides more than one service in a service concession arrangement, the consideration received is allocated by reference to the relative fair value of the services delivered when the amounts are separately identifiable.

#### (iv) Rendering of services

Revenue from design and consultant services rendered is recognised in the consolidated income statement in proportion to the stage of completion of the transaction at the end of the reporting period. Revenue from other services rendered is recognised upon the delivery or performance of the services.

## 2 主要會計政策(續)

### (w) 收入確認(續)

#### (ii) 建造合同收入

如果建造合同之結果可以可靠地估計，固定造價合同之收入會使用完工百分比方法確認，參考截至計算日為止已發生之合同成本佔估計合同成本總額百分比而計算。

如果建造合同之結果不能可靠的估計，則僅以已產生合同成本可收回的部份確認收入。

#### (iii) 服務特許權收入

服務特許權協議項下的與施工相關的收入，按照本集團確認建造合同收入所一致的會計政策（見附註2(w)(ii)）按工程完工進度確認。營運或服務收入在本集團提供服務的期間內確認。金融資產的利息收入按照附註2(w)(vii)的規定確認。當本集團在服務特許權協議提供的服務多於一項，且服務確認收入的公允價值能分別確定時，則參照所提供服務的相對公允價值對收取的對價進行分配。

#### (iv) 提供服務

所提供的設計和諮詢服務收入按交易於報告期末的完成進度於合併損益表內確認。所提供的其他服務的收入於服務提供後確認。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (w) Revenue recognition (continued)

#### (v) Rental income from operating leases

Rental income receivable under operating leases is recognised in profit or loss in equal instalments over the periods covered by the lease term, except where an alternative basis is more representative of the pattern of benefits to be derived from the use of the leased asset. Lease incentives granted are recognised in profit or loss as an integral part of the aggregate net lease payments receivable. Contingent rentals are recognised as income in the accounting period in which they are earned.

#### (vi) Dividends

- Dividend income from unlisted investments is recognised when the shareholder's right to receive payment is established.
- Dividend income from listed investments is recognised when the share price of the investment goes ex-dividend.

#### (vii) Interest income

Interest income is recognised as it accrues using the effective interest method.

#### (viii) Government grants

Government grants are recognised in the statement of financial position initially when there is reasonable assurance that they will be received and that the Group will comply with the conditions attaching to them. Grants that compensate the Group for expenses incurred are recognised as income in profit or loss on a systematic basis in the same periods in which the expenses are incurred. Grants that compensate the Group for the cost of an asset are initially recognised as deferred income and are subsequently recognised in profit or loss over the useful life of the asset.

## 2 主要會計政策(續)

### (w) 收入確認(續)

#### (v) 經營租賃的租金收入

除非有更能代表使用租賃資產所產生的收益模式的其他基準之外，經營租賃之租金收入按該租期所涵蓋的年期以等額分期在損益中確認。所給予的租賃獎勵作為租賃淨付款應收額的組成部份在損益中確認。或有租金在該收入產生的會計期間確認收入。

#### (vi) 股息

- 非上市權益投資的股息收入在股東收取款項的權利確立時確認。
- 上市股權投資的股息收入在投資項目的股價除息時確認。

#### (vii) 利息收入

利息收入按實際利率法於其產生時確認。

#### (viii) 政府補助

當本集團可以合理確認將會收到政府補助並符合相關附帶條件時，政府補助初始會在財務狀況表內確認。用作補償本集團開支的補助於開支產生的同一期間以有系統的基準在損益內確認為收入。用作補償本集團資產成本的補助，初始確認為遞延收益，其後按資產的可使用期限在損益內確認。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi unless otherwise indicated)  
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## 2 Significant accounting policies (continued)

### (x) Translation of foreign currencies

Foreign currency transactions during the year are translated at the foreign exchange rates ruling at the transaction dates. Monetary assets and liabilities denominated in foreign currencies are translated at the foreign exchange rates ruling at the end of the reporting period. Exchange gains and losses are recognised in profit or loss.

Non-monetary assets and liabilities that are measured in terms of historical cost in a foreign currency are translated using the foreign exchange rates ruling at the transaction dates.

The results of operations which have a functional currency other than RMB are translated into RMB at the exchange rates approximating the foreign exchange rates ruling at the dates of the transactions. Statement of financial position items are translated into RMB at the closing foreign exchange rates ruling the end of the reporting period. The resulting exchange differences are recognised in other comprehensive income and accumulated separately in equity in the exchange reserve.

### (y) Borrowing costs

Borrowing costs that are directly attributable to the acquisition, construction or production of an asset which necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of that asset. Other borrowing costs are expensed in the period in which they are incurred.

The capitalisation of borrowing costs as part of the cost of a qualifying asset commences when expenditure for the asset is being incurred, borrowing costs are being incurred and activities that are necessary to prepare the asset for its intended use or sale are in progress. Capitalisation of borrowing costs is suspended or ceases when substantially all the activities necessary to prepare the qualifying asset for its intended use or sale are interrupted or complete.

## 2 主要會計政策(續)

### (x) 外幣換算

年內的外幣交易按交易日的外幣匯率換算。以外幣計價的貨幣資產與負債則按報告期末的外幣匯率換算。匯兌損益在損益內確認。

以外幣計值並按歷史成本計量的非貨幣資產及負債以交易日期的匯率換算。

以人民幣以外貨幣為功能貨幣的業務業績乃按與於交易日適用的外幣匯率相近的匯率換算成人民幣。財務狀況表項目乃按於報告期末的收市外幣匯率換算為人民幣。所產生的匯兌差額乃於其他綜合收益內確認，並單獨累計在權益的匯兌儲備內。

### (y) 借貸成本

與購置、建造或生產需要長時間才可以達到擬定可使用或可出售狀態的資產直接相關的借款費用資本化，作為資產的部份成本。其他借款費用於產生期間列為開支。

借款費用應在資產開支和借款費用產生時，並且在資產達到擬定可使用或可出售狀態所必須的準備工作進行期間開始予以資本化，以作為合格資產的成本的一部份，在使合格資產達到擬定可使用或可出售狀態所必須的幾乎全部準備工作中斷或完成時，即暫時中止或停止將借款費用資本化。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi unless otherwise indicated)  
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## 2 Significant accounting policies (continued)

### (z) Non-current assets held for sale and discontinued operations

#### (i) Non-current assets held for sale

A non-current asset (or disposal group) is classified as held for sale if it is highly probable that its carrying amount will be recovered through a sale transaction rather than through continuing use and the asset (or disposal group) is available for sale in its present condition. A disposal group is a group of assets to be disposed of together as a group in a single transaction, and liabilities directly associated with those assets that will be transferred in the transaction.

When the Group is committed to a sale plan involving loss of control of a subsidiary, all the assets and liabilities of that subsidiary are classified as held for sale when the above criteria for classification as held for sale are met, regardless of whether the Group will retain a non-controlling interest in the subsidiary after the sale.

Immediately before classification as held for sale, the measurement of the non-current assets (and all individual assets and liabilities in a disposal group) is brought up-to-date in accordance with the accounting policies before the classification. Then, on initial classification as held for sale and until disposal, the non-current assets (except for certain assets as explained below), or disposal groups, are recognised at the lower of their carrying amount and fair value less costs to sell. The principal exceptions to this measurement policy so far as the financial statements of the Group are concerned are deferred tax assets, assets arising from employee benefits, financial assets (other than investments in subsidiaries, associates and joint ventures). These assets, even if held for sale, would continue to be measured in accordance with the policies set out elsewhere in note 2.

Impairment losses on initial classification as held for sale, and on subsequent remeasurement while held for sale, are recognised in profit or loss. As long as a non-current asset is classified as held for sale, or is included in a disposal group that is classified as held for sale, the non-current asset is not depreciated or amortised.

## 2 主要會計政策(續)

### (z) 持有待售的非流動資產及已終止經營業務

#### (i) 持有待售的非流動資產

如果非流動資產(或出售組別)的賬面金額很可能通過銷售交易而非通過持續使用而收回，而該非流動資產(或出售組別)可按現況出售，則分類為持有待售用途。出售組別是指於單一交易中一併出售的一組資產及與該等於交易中轉移的資產直接相關的負債。

當本集團承諾進行涉及喪失一家附屬公司控制權的出售計劃時，不論本集團是否將於出售後保留該附屬公司的非控股權益，該附屬公司的所有資產及負債於符合上述有關劃歸為持有待售的條件時會劃歸為持有待售用途。

在分類為持有待售用途前，非流動資產(及於一出售組別中的所有個別資產和負債)按分類前的會計政策計量。在初始分類為持有待售類別至售出時，非流動資產(除以下所述的部份資產外)或出售組別以賬面金額和公允價值減去出售成本兩者中的孰低者確認。在本集團財務報表中不使用這項計量政策的主要項目包括遞延稅項資產、僱員福利產生的資產和金融資產(除對附屬公司、聯營公司和合營企業的投資外)。該等資產即使為持有待售用途，也會繼續按附註2其他部份所載的政策計量。

於初始分類為持有待售用途及其後於列作持有待售用途的期間重新計量的減值損失在損益內確認。當非流動資產被歸類為持有待售用途，或被包括在分類為持有待售的出售組別，該非流動資產不予折舊或攤銷。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (z) Non-current assets held for sale and discontinued operations (continued)

#### (ii) Discontinued operations

A discontinued operation is a component of the Group's business, the operations and cash flows of which can be clearly distinguished from the rest of the Group and which represents a separate major line of business or geographical area of operations, or is part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations, or is a subsidiary acquired exclusively with a view to resale.

Classification as a discontinued operation occurs upon disposal or when the operation meets the criteria to be classified as held for sale (see (i) above), if earlier. It also occurs if the operation is abandoned.

Where an operation is classified as discontinued, a single amount is presented on the face of the statement of profit or loss, which comprises:

- the post-tax profit or loss of the discontinued operation; and
- the post-tax gain or loss recognised on the measurement to fair value less costs to sell, or on the disposal, of the assets or disposal group(s) constituting the discontinued operation.

#### (aa) Related parties

(a) A person, or a close member of that person's family, is related to the Group if that person:

- (i) has control or joint control over the Group;
- (ii) has significant influence over the Group; or
- (iii) is a member of the key management personnel of the Group or the Group's parent.

## 2 主要會計政策(續)

### (z) 持有待售的非流動資產及已終止經營業務(續)

#### (ii) 已終止經營業務

已終止經營業務是本集團業務組成部份，運營及現金流量可與本集團其他業務清楚區分，且代表一項按業務或地區劃分的獨立主要業務；或作為出售一項按業務或地區劃分的獨立主要業務的單一統籌計劃之其中一部份，或為一間純粹為轉售而收購的附屬公司。

倘若業務被出售或符合列為持有待售的項目(詳見上文(i)的準則(如較早發生))，則分類為已終止經營業務。撤出業務時，有關業務亦會分類為已終止經營業務。

當某項業務被分類為已終止經營時，於損益表中將僅以單一數額列示，包括：

- 已終止經營業務的稅後溢利或虧損；及
- 就已終止經營業務之資產或出售組別，計算其公允價值，並扣除有關出售之成本後之除稅後溢利或虧損。

#### (aa) 關聯方

(a) 某一個人或與該個人關係密切的家庭成員應被視為與本集團有關聯，如果該個人：

- (i) 控制或共同控制本集團；
- (ii) 對本集團具有重大影響；或
- (iii) 作為本集團或本集團母公司關鍵管理人員。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (aa) Related parties (continued)

(b) An entity is related to the Group if any of the following conditions applies:

- (i) The entity and the Group are members of the same group (which means that each parent, subsidiary and fellow subsidiary is related to the others).
- (ii) One entity is an associate or joint venture of the other entity (or an associate or joint venture of a member of a group of which the other entity is a member).
- (iii) Both entities are joint ventures of the same third party.
- (iv) One entity is a joint venture of a third entity and the other entity is an associate of the third entity.
- (v) The entity is a post-employment benefit plan for the benefit of employees of either the Group or an entity related to the Group.
- (vi) The entity is controlled or jointly controlled by a person identified in (a).
- (vii) A person identified in (a)(i) has significant influence over the entity or is a member of the key management personnel of the entity (or of a parent of the entity).
- (viii) The entity, or any member of a group of which it is a part, provides key management personnel services to the Group or the Group's parent.

Close members of the family of a person are those family members who may be expected to influence, or be influenced by, that person in their dealings with the entity.

## 2 主要會計政策(續)

### (aa) 關聯方(續)

(b) 在滿足任何以下條件的情況下，某一實體應被視為與本集團有關聯的實體：

- (i) 該實體和本集團均屬於同一集團的成員(即各母公司、附屬公司和同系附屬公司彼此相互關聯)。
- (ii) 一間實體是另間實體的聯營公司或合營企業(或另一實體為成員公司之集團旗下成員公司之聯營公司或合營企業)。
- (iii) 兩間實體均為同一第三方的合營企業。
- (iv) 一間實體為第三方實體的合營企業，另一實體為該第三方實體的聯營公司。
- (v) 該實體為本集團或與本集團有關連的實體就僱員福利而設的離職後福利計劃。
- (vi) 由(a)所述的個人控制或共同控制的實體。
- (vii) 受上述(a)(i)中定義的個人重大影響的實體或該個人為實體(或該實體的母公司)的關聯管理人員。
- (viii) 該實體或其所屬集團的任何成員公司，向本集團或本集團母公司提供關鍵管理人員服務。

與個人關係密切的家庭成員是指預期該等在與實體的交易中，可能會影響該名個人或受其影響的家屬。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

## 2 Significant accounting policies (continued)

### (bb) Segment reporting

Operating segments, and the amounts of each segment item reported in the financial statements, are identified from the financial information provided regularly to the Group's most senior executive management for the purposes of allocating resources to, and assessing the performance of, the Group's various lines of business.

Individually material operating segments are not aggregated for financial reporting purposes unless the segments have similar economic characteristics and are similar in respect of the nature of products and services, the nature of production processes, the type or class of customers, the methods used to distribute the products or provide the services, and the nature of the regulatory environment. Operating segments which are not individually material may be aggregated if they share a majority of these criteria.

## 3 Accounting judgement and estimates

The Group's financial condition and results of operations are sensitive to accounting methods, assumptions and estimates that underlie the preparation of these financial statements. The Group bases the assumptions and estimates on historical experience and on various other assumptions that the Group believes to be reasonable and which form the basis for making judgements about matters that are not readily apparent from other sources. Actual results may differ from those estimates as facts, circumstances and conditions change.

The selection of critical accounting policies, the judgements and other uncertainties affecting application of those policies and the sensitivity of reported results to changes in conditions and assumptions are factors to be considered when reviewing these financial statements. The principal accounting policies are set forth in note 2. The Group believes the following critical accounting policies involve the most significant judgements and estimates used in the preparation of these financial statements.

## 2 主要會計政策(續)

### (bb) 分部報告

本集團為了分配資源予本集團各項業務以及評估各項業務的業績，而定期向本集團最高級行政管理層提供的財務數據。從該等資料中，可找出在財務報表中報告的經營分部和每一分部項目的金額。

個別而言屬於重大的經營分部不會在財務報告中予以匯總，除非該等分部擁有相若的經濟特性，而且其產品及服務的性質、生產流程性質、客戶的類型或類別、用以分銷產品或提供服務的方法以及監管環境的性質均相若。如果個別而言並非屬於重大的經營分部擁有以上大部份特徵可予以匯總成同一分部列示。

## 3 會計判斷和估計

本集團的財務狀況和經營業績對編製財務信息時所採用的會計方法、假設及估計而言屬敏感。本集團的有關假設及估計乃基於以往經驗及本集團相信屬合理的各種其他假設而做出。本集團亦按該等假設及估計為基準，對不能明顯地從其他來源確定的事項做出判斷。實際結果可能因事實，情況及條件的改變而與估計有異。

對重大會計政策的選擇、影響該等政策的應用的判斷及其他不確定因素以及報告的結果對條件及假設發生變化的敏感度均為審閱財務信息時應予以考慮的因素。主要會計政策已載列於附註2。本集團認為，在編製財務信息時，下列重大會計政策涉及至為重要的判斷及估計。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi unless otherwise indicated)  
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### 3 Accounting judgement and estimates (continued)

### 3 會計判斷和估計(續)

#### (a) Impairment losses for non-current assets

In considering the impairment losses that may be required for certain of the Group's assets which include property, plant and equipment, investment properties, lease prepayments, intangible assets, investments in associates and unquoted equity investments, recoverable amount of the asset needs to be determined. The recoverable amount is the greater of the fair value less costs to sell and the value in use. It is difficult to precisely estimate selling price because quoted market prices for these assets may not be readily available. In determining the value in use, expected cash flows generated by the asset are discounted to their present value, which requires significant judgement relating to items such as level of sales volume, selling price and amount of operating costs. The Group uses all readily available information in determining an amount that is a reasonable approximation of recoverable amount, including estimates based on reasonable and supportable assumptions and projections of items such as sales volume, selling price and amount of operating costs.

#### (b) Impairment losses for bad and doubtful debts

The Group estimates impairment losses for bad and doubtful debts resulting from the inability of the customers and other debtors to make the required payments. The Group bases the estimates on the ageing of the receivable balance, debtors' credit-worthiness, and historical write-off experience. If the financial condition of the customers and debtors were to deteriorate, actual write-offs would be higher than estimated.

#### (c) Construction contracts

As explained in accounting policies set out in notes 2(o) and (w)(ii), revenue and profit recognition on an uncompleted project is dependent on estimating the total outcome of the construction contract, as well as the work done to date. Based on the Group's recent experience and the nature of the construction activity undertaken by the Group, the Group makes estimates of the point at which it considers the work is sufficiently advanced such that the costs to complete and revenue can be reliably estimated. As a result, until this point is reached the amounts due from customers for contract work as disclosed in note 23 will not include profit which the Group may eventually realise from the work done to date. In addition, actual outcomes in terms of total cost or revenue may be higher or lower than estimated at the end of the reporting period, which would affect the revenue and profit recognised in future years as an adjustment to the amounts recorded to date.

#### (a) 非流動資產減值虧損

當考慮對本集團若干資產(包括物業、廠房及設備、投資性物業、預付土地租賃款、無形資產、對聯營公司的投資及非上市權益投資)計提減值虧損時，則須確定該等資產之可收回金額。可收回金額為公允價值減銷售成本或使用價值之較高者。由於並未取得該等資產之市場報價，因此難以準確估計售價。於確定使用價值時，該資產產生之預期現金流量將折現至其現值，而此需對銷量水平、售價以及營運成本金額等項目作出重大判斷。本集團以所有現有數據確定可收回金額之合理近似金額，包括根據合理及有證據支持的假設及預測對銷量、售價及營運成本金額進行估計。

#### (b) 呆壞賬減值虧損

本集團對因客戶及其他債務人無法按規定付款而造成的呆壞賬減值虧損進行估計。本集團的估計乃基於應收結餘的賬齡、債務人的信用及以往的呆壞賬衝銷經驗而作出。倘客戶及債務人的財政狀況惡化，實際的衝銷金額可能高於估計數字。

#### (c) 建造合同

誠如附註2(o)和(w)(ii)所載之會計政策所釋述，確認未完成項目之收入及利潤取決於估計建造合同之總結果及迄今已完成之工程。根據本集團近期經驗及本集團所進行工程活動之性質，本集團於其認為工程已進展至足以可靠地估計完成成本及收入時做出估計。因此，直至此時點之前，附註23所披露的應收建造合同客戶款項不會計入本集團迄今已完成工程最終可能實現的利潤。此外，按總成本或收入計算的實際結果可能高於或低於報告期末之估計金額，並透過對迄今記錄金額作出調整而影響於未來年度確認之收入及利潤。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi unless otherwise indicated)  
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### 3 Accounting judgement and estimates (continued)

#### (d) Provision for warranty

The Group provides warranties for its products for 2 to 5 years for defects and/or 10 to 25 years for guaranteed performance after sales have taken place. The Group estimates warranty costs based on the Group's historical cost data, industry data and an assessment of the Group's competitors' accrual. The warranty obligation of the Group will be affected not only by the product failure rates, but also by costs incurred to repair or replace failed products. If the actual product failure rates and cost of replacement or repairing of failed products differ from the estimates, the Group will need to prospectively revise the provision for warranty costs which would affect profit or loss in future years.

#### (e) Recognition of deferred tax assets

Deferred tax assets in respect of unused tax losses and tax credit carried forward and deductible temporary differences are recognised and measured based on the expected manner of realisation or settlement of the carrying amount of the assets, using tax rates enacted or substantively enacted at the end of the reporting period. In determining the carrying amounts of deferred assets, expected taxable profits are estimated which involves a number of assumptions relating to the operating environment of the Group and requires a significant level of judgement exercised by the directors. Any change in such assumptions and judgement would affect the carrying amounts of deferred tax assets to be recognised and hence the net profit in future years.

#### (f) Depreciation

Property, plant and equipment and investment properties are depreciated on a straight-line basis over the estimated useful lives of the assets, after taking into account the estimated residual value. The Group reviews the estimated useful lives of the assets regularly. The useful lives are based on the Group's historical experience with similar assets and taking into account anticipated technological changes. The depreciation expense for future periods is adjusted if there are significant changes from previous estimates.

### 3 會計判斷和估計(續)

#### (d) 質保金撥備

產品銷售後，本集團產品提供2-5年的缺陷質保，和／或10-25年的性能質保。本集團根據其歷史成本數據、行業數據及其競爭對手的應計項目評估其保修成本。質保金撥備不僅受產品故障率的影響，同樣也受修復或替換故障產品成本之影響。倘若實際的產品故障率及修復或替換故障產品的成本與估算有異，本集團則須修訂未來的質保成本撥備，從而影響未來年度的損益。

#### (e) 確認遞延稅項資產

有關已結轉未被使用的稅項虧損和稅項減免以及可抵扣暫時性差異的遞延稅項資產，會運用於報告期末已實行或實質上已實行的稅率，按照資產賬面金額的預期實現或結算方式確認及計量。在確定遞延稅項資產的賬面值時，會對預期應課稅利潤作出估計，當中涉及多項有關本集團經營環境的假設，並要求董事作出大量判斷。當有關假設及判斷出現任何變動，將會影響將予確認的遞延稅項資產的賬面值，從而影響未來年度的淨利潤。

#### (f) 折舊

物業、廠房及設備和投資性物業在扣除估計殘值之後，在資產的預計可使用期限內按直線法計提折舊。本集團定期審閱資產的預計可使用期限。可使用期限乃按本集團類似資產的以往經驗，並考慮預期的技術發展因素而確定。如果之前的預估發生了重大改變，則對未來期間的折舊開支進行調整。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

### 3 Accounting judgement and estimates (continued)

### 3 會計判斷和估計(續)

#### (g) Income tax

The Group files income taxes with numerous tax authorities. Judgement is required in determining the provision for taxation as there are many transactions and calculations for which the ultimate tax determinations are uncertain during the ordinary course of business. For preferential tax treatments available for approved High and New Technology Enterprises, in determining the applicable tax rates for calculations of current income tax and deferred income tax, after passed the substantive approvals, the Group uses the expected tax rates that are probably be approved by tax authorities according to the tax rules and regulations enacted at the end of the reporting period. Where the final tax outcomes of these matters are different from the amounts originally recorded, the differences may impact on the current income tax and deferred income tax provisions in the periods in which the final tax outcomes became available.

#### (g) 所得稅

本集團須向多個稅務機關繳付所得稅，由於在日常業務過程中很多交易和計算的最終稅項並不確定，在確定稅項撥備時須作出判斷。就已獲取的已批准高新技術企業的稅務優惠而言，在獲得實質性的批准後，本集團於報告期末使用根據相關稅務規則及法規很可能獲稅務機關批准的稅率來確定即期稅項和遞延稅項的適用稅率。當有關事項的最終稅務結果有別於初始記錄金額時，有關差異可能影響取得最終稅務結果期間的即期所得稅和遞延所得稅撥備。

#### (h) Contingent liabilities

Management judgement is required in the area of contingent liabilities particularly in assessing the outcome of possible obligations arising from the transactions as detailed in note 39. Management reassesses the likelihood of the outcome of these possible obligations at the end of the reporting period. Where a change in the probability that an outflow of economic resources will be required to settle the obligation, a provision will be recognised in the period in which such determination is made.

#### (h) 或有負債

管理層須對或有負債作出判斷，尤其是評估附註39所詳述交易所產生的可能責任之結果。管理層會於每個報告期末重新評估該等可能責任結果之可能性。倘經濟資源流出之可能性發生變動而將需結付債務，則於作出該項決定之期間確認撥備。

#### (i) Write-down of inventories

The Group reviews the carrying amounts of inventories at the end of the reporting period to determine whether the inventories are carried at lower of cost and net realisable value in accordance with the accounting policy set out in note 2(n). Management estimates the net realisable value based on all available information, including the current market price of the finished goods and raw materials, and historical costs. Any change in the assumptions would increase or decrease the amount of inventories write-down or the related reversals of write-down and affect the Group's profit.

#### (i) 存貨撇減

本集團於每一報告期末對於存貨的賬面價值進行審閱，以確定存貨是否如附註2(n)中所述的會計政策以其成本及可變現淨值孰低者列賬。管理層根據全部能獲取信息，包括產成品及原材料的市場價格，以及歷史成本評估其可變現淨值。相關假設的任何變動會增加或減少存貨撇減或相關撇減轉回的金額，因而影響本集團的損益。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

### 3 Accounting judgement and estimates (continued)

#### (j) Classification of non-current assets and disposal groups held for sale

Management judgement is required in the area of classification of non-current assets and disposal groups held for sale particularly in assessing the possibility of the sale. The Group classifies a disposal group or non-current asset as held for sale if its carrying amount will be recovered principally through a sale transaction rather than through continuing use and the sale must be highly probable. The Group reviews the possibility of the sale at the end of each reporting period.

### 4 Revenue and segment reporting

#### (a) Revenue

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

As disclosed in note 11, the revenue generated by solar power products and services segment is presented as discontinued operation.

### 3 會計判斷和估計(續)

#### (j) 持有待售的非流動資產和處理組的分類

在區分持有待售的非流動資產和處置組時需要管理層判斷，尤其是在評估出售可能性時。當一個處置組或非流動資產賬面價值的回收主要通過出售方式而不是繼續使用，且該交易很可能發生時，本集團會將其劃分至持有待售。本集團每個報告期末覆核銷售可能性。

### 4 收入及分部報告

#### (a) 收入

本集團主要從事點火裝置、風力發電機、太陽能電池和組件及發電廠其他相關電氣設備的製造和銷售、以及脫硫、水處理、太陽能和其他環保和節能工程的建造施工、脫硫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(扣除增值稅，如有)。

如附註11所示，來自於太陽能產品和服務分部的收入已被重分類至已終止經營業務列示。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi 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)

##### (a) 收入(續)

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

本年內確認的來自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：

	Continuing operations		Discontinued operation		Total	
	持續經營業務		已終止經營業務		總計	
	2016	2015	2016	2015	2016	2015
	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
Sales of goods (note (i)) 銷售商品(附註(i))	9,072,469	10,011,501	27,539	468,260	9,100,008	10,479,761
Revenue from construction contracts 建造合同收入	5,176,860	7,630,751	121,960	210,770	5,298,820	7,841,521
Rental income from operating leases (note (ii)) 經營租賃的租賃收入(附註(ii))	854,729	1,805,977	—	—	854,729	1,805,977
Rendering of services 提供服務	387,368	179,508	45,878	5,234	433,246	184,742
Service concession arrangement revenue (note 41) 服務特許權協議收入(附註41)	283,892	342,424	—	—	283,892	342,424
	15,775,318	19,970,161	195,377	684,264	15,970,695	20,654,425

Notes:

附註：

- (i) Revenue from sale of goods amounting to RMB84,106,190 (2015: RMB78,382,000) is sale of wind turbines to contractors who are engaged to construct wind farms for China Guodian Corporation ("Guodian") and related parties under Guodian.
- (ii) 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.

- (i) 銷售商品收入中人民幣84,106,190元(2015年：人民幣78,382,000元)為向中國國電集團公司(「國電」)及國電下屬的關聯方建造風力發電廠的承包商銷售風力發電機的金額。
- (ii) 該金額主要為與本集團與電廠簽訂的負責脫硫及脫硝設施的運行工作以在發電過程中處理電廠生成的二氧化硫及氮氧化物之服務安排所相關的收入。本集團購買或建造設施，之後在電廠運行期負責運行設施以向電廠提供污染物處理服務。根據電廠售出的電量以及國家發展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。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

#### 4 Revenue and segment reporting (continued)

##### (b) Segment reporting

The Group manages its businesses by 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 presented the following four reportable segments:

- Environmental protection segment: this segment provides environmental protection products and services which mainly consists of sulphur oxide control technologies, nitrogen oxide control technologies, rental of desulphurisation and denitrification facilities, ash removal with filter bag, water treatment related technologies and products.
- Energy conservation solutions segment: this segment provides energy saving products and services which mainly consists of plasma ignition and micro-oil ignition equipment and gas turbine improvement services and construction of energy-efficient power plants.
- Wind power products and services segment: this segment produces and sells wind turbine and its components, provides related system solutions and services to wind power operators.
- Solar power products and services segment: this segment produces and sells solar cells, solar modules and other solar products, constructs solar power stations and provides related system solutions and services to solar power operators. During the year ended 31 December 2015, the Group discontinued the operation of this segment. Please refer to note 11 for further details.

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

#### 4 收入及分部報告(續)

##### (b) 分部報告

本集團以附屬公司管理其業務，該等附屬公司以經營項目(產品和服務)組織。本集團按照作分配資源、評估業績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以下四個可呈報分部：

- 環保分部：本分部提供環保產品和服務，主要包括脫硫技術、脫硝技術、脫硫脫硝設備租賃服務、濾袋式除塵、水處理相關技術和產品。
- 節能解決方案分部：本分部提供節能產品及服務，主要包括等離子點火、微油點火設備、氣輪機改造服務及節能電站之建造。
- 風電產品及服務分部：本分部生產和銷售風機及其組件，向風電運營商提供相關系統解決方案和服務。
- 太陽能產品及服務分部：本分部生產及銷售太陽能電池、太陽能組件及其他太陽能產品、建造太陽能電站及向太陽能運營商提供相關系統解決方案及服務。截至2015年12月31日止年度，本集團終止了該分部的經營活動。詳情請見附註11。

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和太陽能發電及銷售其他電力控制系統相關產品。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi 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

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

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

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

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

#### 4 收入及分部報告(續)

##### (b) 分部報告(續)

###### (i) 分部業績、資產及負債

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

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

收入和費用乃參考各可呈報分部產生的收入和發生的開支分配給各可呈報分部。

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

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi 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)

Information regarding the Group's reportable segments as provided to the Group's most senior executive management for the purposes of resource allocation and assessment of segment performance for the years ended 31 December 2016 and 2015 is set out below:

#### 4 收入及分部報告(續)

##### (b) 分部報告(續)

###### (i) 分部業績、資產及負債(續)

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2016年和2015年12月31日止年度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：

		2016					
		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
Revenue from external customers	外部客戶收入	5,912,695	1,400,543	8,038,787	423,293	195,377	15,970,695
Inter-segment revenue	分部間收入	14,751	6,495	8,478	59,218	–	88,942
<b>Reportable segment revenue</b>	<b>可呈報分部收入</b>	<b>5,927,446</b>	<b>1,407,038</b>	<b>8,047,265</b>	<b>482,511</b>	<b>195,377</b>	<b>16,059,637</b>
<b>Reportable segment profit (gross profit)</b>	<b>可呈報分部利潤(毛利)</b>	<b>1,132,496</b>	<b>246,953</b>	<b>1,986,917</b>	<b>203,556</b>	<b>5,152</b>	<b>3,575,074</b>
Depreciation and amortisation	折舊及攤銷	289,422	27,266	171,543	98,063	79,318	665,612
Impairment of property, plant and equipment	物業、廠房及設備減值	96,800	7	–	2	132,534	229,343
Reversal of impairment of lease prepayment	預付土地租賃款減值轉回	–	–	–	–	(11,895)	(11,895)
Inventory write-down	存貨撇減	17,349	1,163	3,510	–	–	22,022
Impairment/(reversal of impairment) of trade and other receivables	應收賬款及其他應收款項減值計提/(轉回)	8,268	28,563	139,214	23,707	(181,833)	17,919
Interest income	利息收入	22,235	41,949	2,296	3,348	527	70,355
Finance costs	財務成本	172,052	310	158,241	132	147,755	478,490
<b>Reportable segment assets</b>	<b>可呈報分部資產</b>	<b>15,951,078</b>	<b>4,436,178</b>	<b>14,040,541</b>	<b>2,327,934</b>	<b>2,095,126</b>	<b>38,850,857</b>
Additions to reportable segment non-current assets during the year	年內添置可呈報分部非流動資產	242,176	3,846	54,632	9,980	–	310,634
<b>Reportable segment liabilities</b>	<b>可呈報分部負債</b>	<b>11,475,428</b>	<b>2,688,695</b>	<b>11,120,004</b>	<b>627,518</b>	<b>6,420,143</b>	<b>32,331,788</b>

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi 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)

		2015					
		Continuing operations 持續經營業務				Discontinued operation 已終止經營業務	Total
		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	
		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
Revenue from external customers	外部客戶收入	7,750,030	3,124,619	8,617,609	477,903	684,264	20,654,425
Inter-segment revenue	分部間收入	40,205	10,624	19,112	57,742	400	128,083
<b>Reportable segment revenue</b>	<b>可呈報分部收入</b>	<b>7,790,235</b>	<b>3,135,243</b>	<b>8,636,721</b>	<b>535,645</b>	<b>684,664</b>	<b>20,782,508</b>
<b>Reportable segment profit/(loss) (gross profit/(loss))</b>	<b>可呈報分部利潤/(虧損) (毛利/(毛虧))</b>	<b>1,378,807</b>	<b>305,301</b>	<b>1,876,091</b>	<b>255,221</b>	<b>(181,109)</b>	<b>3,634,311</b>
Depreciation and amortisation	折舊及攤銷	518,409	20,200	204,037	77,104	249,520	1,069,270
Impairment of property, plant and equipment	物業、廠房及設備減值	-	-	9,691	-	1,534,550	1,544,241
Impairment of lease prepayments	預付土地租賃款減值	-	-	-	-	154,835	154,835
Impairment of intangible assets	無形資產減值	-	-	-	-	17,992	17,992
Inventory write-down	存貨撇減	4,426	-	3,060	-	61,363	68,849
Impairment of trade and other receivables	應收賬款及其他應收款項減值	587,356	37,613	35,669	3,038	1,835,338	2,499,014
Write down of gross amounts due from customers for contract work	應收建造合同客戶款項總額撇減	146,545	-	-	-	-	146,545
Interest income	利息收入	48,681	64,745	12,978	430	1,950	128,784
Finance costs	財務成本	297,877	5,638	239,151	51	325,179	867,896
<b>Reportable segment assets</b>	<b>可呈報分部資產</b>	<b>16,772,591</b>	<b>4,705,077</b>	<b>15,030,485</b>	<b>2,130,574</b>	<b>3,222,856</b>	<b>41,861,583</b>
Additions to reportable segment non-current assets during the year	年內添置可呈報分部非流動資產	393,072	23,536	89,577	4,860	22,172	533,217
<b>Reportable segment liabilities</b>	<b>可呈報分部負債</b>	<b>12,829,750</b>	<b>2,391,195</b>	<b>12,110,644</b>	<b>832,353</b>	<b>7,351,566</b>	<b>35,515,508</b>

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

#### 4 收入及分部報告(續)

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

##### (b) 分部報告(續)

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

##### (ii) 可呈報分部收入、利潤、資產和負債的調節

		Continuing operations		Discontinued operation		Total	
		持續經營業務		已終止經營業務		總計	
		2016	2015	2016	2015	2016	2015
		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
<b>Revenue</b>	<b>收入</b>						
Reportable segment revenue	可呈報分部收入	15,864,260	20,097,844	195,377	684,664	16,059,637	20,782,508
Elimination of inter-segment revenue	分部間收入抵銷	(88,942)	(127,683)	-	(400)	(88,942)	(128,083)
Consolidated revenue	合併收入	15,775,318	19,970,161	195,377	684,264	15,970,695	20,654,425
<b>Profit/(loss)</b>	<b>利潤/(虧損)</b>						
Reportable segment profit/(loss)	可呈報分部利潤/(虧損)	3,569,922	3,815,420	5,152	(181,109)	3,575,074	3,634,311
Elimination of inter-segment (profit)/loss	分部間(利潤)/虧損抵銷	(1,860)	(9,251)	-	161	(1,860)	(9,090)
Reportable segment profit/(loss) derived from Group's external customers	取自集團外可呈報的分部利潤/(虧損)	3,568,062	3,806,169	5,152	(180,948)	3,573,214	3,625,221
Other revenue	其他收入	305,476	325,460	40,561	8,077	346,037	333,537
Other net income/(losses)	其他收益/(虧損)淨額	328,798	29,307	87,717	(5,676)	416,515	23,631
Selling and distribution expenses	銷售及分銷開支	(1,366,864)	(1,136,449)	(10,081)	(9,542)	(1,376,945)	(1,145,991)
Administrative expenses	行政開支	(1,836,978)	(2,113,537)	(109,683)	(4,149,991)	(1,946,661)	(6,263,528)
Finance costs	財務成本	(590,443)	(576,125)	(147,755)	(325,179)	(738,198)	(901,304)
Share of profits less losses of associates	應佔聯營公司利潤減虧損	102,211	(140,661)	-	-	102,211	(140,661)
Consolidated profit/(loss) before taxation	合併稅前利潤/(虧損)	510,262	194,164	(134,089)	(4,663,259)	376,173	(4,469,095)

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi 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)

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

##### (ii) 可呈報分部收入、利潤、資產和負債的調節(續)

		2016 RMB'000 人民幣千元	2015 RMB'000 人民幣千元
<b>Assets</b>	<b>資產</b>		
Reportable segment assets	可呈報分部資產	38,850,857	41,861,583
Inter-segment elimination	分部間抵銷	(1,112,427)	(1,292,970)
		<b>37,738,430</b>	40,568,613
Interests in associates	對聯營公司的投資	412,801	315,546
Other equity investments	其他權益投資	162,187	162,187
Tax recoverable	可回收稅項	151,722	60,509
Deferred tax assets	遞延稅項資產	612,382	459,730
Unallocated head office and corporate assets	未分配總部及行政資產	1,023,180	1,386,089
Consolidated total assets	合併資產總額	<b>40,100,702</b>	42,952,674
<b>Liabilities</b>	<b>負債</b>		
Reportable segment liabilities	可呈報分部負債	32,331,788	35,515,508
Inter-segment elimination	分部間抵銷	(966,491)	(1,107,709)
		<b>31,365,297</b>	34,407,799
Income tax payable	應付所得稅	49,959	63,600
Deferred tax liabilities	遞延稅項負債	205,338	174,305
Unallocated head office and corporate liabilities	未分配總部及行政負債	484,898	404,017
Consolidated total liabilities	合併負債總額	<b>32,105,492</b>	35,049,721



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi 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)

###### (iii) Geographical information

The Group did not have significant business operations outside the PRC, therefore no geographic segment information is presented.

###### (iv) Major customers

Revenues from Guodian and related parties under Guodian amounted to RMB10,950,768,000 (2015: RMB11,989,598,000).

#### 4 收入及分部報告(續)

##### (b) 分部報告(續)

###### (iii) 地區信息

本集團並無於中國境外經營的重大業務，因此並無呈報地區分部信息。

###### (iv) 主要客戶

從國電及國電下屬的關聯方取得的收入金額為人民幣10,950,768,000元(2015年：人民幣11,989,598,000元)。

#### 5 Other revenue and other net income

#### 5 其他收入及其他收益淨額

		Continuing operations		Discontinued operation		Total	
		持續經營業務		已終止經營業務		總計	
		2016	2015	2016	2015	2016	2015
		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
<b>Other revenue</b>	<b>其他收入</b>						
Government grants	政府補助	<b>158,134</b>	131,129	<b>34,191</b>	5,712	<b>192,325</b>	136,841
Interest income	利息收入	<b>85,309</b>	129,090	<b>527</b>	1,950	<b>85,836</b>	131,040
Dividend income from unquoted equity investments	非上市權益投資股息收入	<b>18,982</b>	13,739	—	—	<b>18,982</b>	13,739
Others	其他	<b>43,051</b>	51,502	<b>5,843</b>	415	<b>48,894</b>	51,917
		<b>305,476</b>	325,460	<b>40,561</b>	8,077	<b>346,037</b>	333,537

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

#### 5 Other revenue and other net income (continued)      5 其他收入及其他收益淨額(續)

		Continuing operations		Discontinued operation		Total	
		持續經營業務		已終止經營業務		總計	
		2016	2015	2016	2015	2016	2015
		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
<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	51,911	55,319	(2,116)	305	49,795	55,624
Net gain on disposal of subsidiaries and investments in an associate	出售附屬公司和聯營公司投資收益淨額	188,947	—	—	—	188,947	—
Net gain on debt settlement (note)	債務清償收益淨額(附註)	—	—	75,591	—	75,591	—
Net gain/(losses) on disposal of property, plant and equipment and intangible assets	出售物業、廠房及設備和無形資產收益/(虧損)淨額	57,399	(33,528)	24,435	—	81,834	(33,528)
Net foreign exchange gain/(losses)	匯兌收益/(虧損)淨額	26,585	(9,945)	(2,821)	(5,543)	23,764	(15,488)
Others	其他	3,956	17,461	(7,372)	(438)	(3,416)	17,023
		328,798	29,307	87,717	(5,676)	416,515	23,631

Note:

During the year ended 31 December 2016, as part of the Group's discontinuation of its operation in the solar power products and services segment, the Group negotiated with its creditors in that segment on debt settlement and resulted in a gain of RMB75,591,000.

附註：

在二零一六年，作為本集團終止太陽能產品和服務分部的經營業務的一部份，本集團與該分部的債務人就債務清償事項進行協商，產生債務清償收益計人民幣75,591,000元。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

#### 6 Finance costs

#### 6 財務成本

	Continuing operations		Discontinued operation		Total	
	持續經營業務		已終止經營業務		總計	
	2016	2015	2016	2015	2016	2015
	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
Interest on bank and other borrowings	銀行及其他借款利息					
	600,011	621,616	147,755	325,179	747,766	946,795
Less: Interest expenses capitalised into property, plant and equipment, and construction contracts	減：資本化在物業、廠房及設備、建造合同中的利息開支					
	(9,568)	(45,491)	—	—	(9,568)	(45,491)
	590,443	576,125	147,755	325,179	738,198	901,304

The borrowing costs have been capitalised at a rate of 4.99% per annum (2015: 5.24%).

借款成本已按年利率4.99% (2015年：5.24%)作資本化。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

#### 7 Profit/(loss) before taxation

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

##### (a) Staff costs<sup>#</sup>

	Continuing operations		Discontinued operation		Total	
	2016	2015	2016	2015	2016	2015
	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
Salaries, wages and other benefits	1,060,806	994,236	40,115	81,604	1,100,921	1,075,840
Contributions to defined contribution retirement plan (note)	103,496	108,977	3,269	4,259	106,765	113,236
	1,164,302	1,103,213	43,384	85,863	1,207,686	1,189,076

Note:

Pursuant to the relevant labour rules and regulations in the PRC, the Company and its PRC Subsidiaries participated in defined contribution retirement schemes (the "PRC Schemes") organised by the relevant local government authorities for its employees. The Group is required to make contributions to the PRC Schemes at 15% to 20% of basic salaries of the employees. The local government authorities are responsible for the entire pension obligations payable to retired employees. In addition, certain subsidiaries and its staff participate in a retirement plan managed by Guodian on a voluntary basis to supplement the above-mentioned schemes and the Group is required to make contributions at 5% to 10% of total salaries of the employees. The Group has no other material obligation to make payments in respect of pension benefits associated with these schemes and supplementary retirement plan other than the annual contributions described above.

#### 7 稅前利潤／(虧損)

稅前利潤／(虧損)已扣除／(計入)：

##### (a) 員工成本<sup>#</sup>

附註：

根據中國相關勞動法律法規，本公司及其中國附屬公司為其員工參加了有關地方政府機關組織的界定供款退休計劃(「中國計劃」)。本集團須對中國計劃繳納員工基本薪金的15%到20%的供款。當地政府機關負責全部應付離退休職工的養老金。此外，若干附屬公司及其職工可自願參加國電管理的退休計劃作為對上述計劃的補充，本集團須繳納員工總薪金的5%到10%的供款。除上述年度供款以外，本集團沒有其他就退休福利須向這些計劃與補充退休計劃支付款項的重大責任。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

#### 7 Profit/(loss) before taxation (continued)

#### 7 稅前利潤／(虧損)(續)

##### (b) Other items

##### (b) 其他項目

		Continuing operations		Discontinued operation		Total	
		2016	2015	2016	2015	2016	2015
		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
Amortisation <sup>#</sup>	攤銷 <sup>#</sup>						
– lease prepayments	– 預付土地租賃款	10,896	11,429	2,592	7,732	13,488	19,161
– intangible assets	– 無形資產	84,349	78,534	2,134	4,291	86,483	82,825
Depreciation <sup>#</sup>	折舊 <sup>#</sup>						
– investment properties	– 投資性物業	8,642	8,652	–	–	8,642	8,652
– property, plant and equipment	– 物業、廠房及設備	482,407	743,533	74,592	237,497	556,999	981,030
Impairment/(reversal of impairment)	減值虧損／(減值轉回)						
– property, plant and equipment	– 物業、廠房及設備	96,809	9,691	132,534	1,534,550	229,343	1,544,241
– lease prepayments	– 預付土地租賃款	–	–	(11,895)	154,835	(11,895)	154,835
– intangible assets	– 無形資產	–	–	–	17,992	–	17,992
– trade and other receivables	– 應收賬款及其他應收款項	199,752	663,676	(181,833)	1,835,338	17,919	2,499,014
– Non-current assets held for sale	– 劃分為持有待售非流動資產	–	–	9,059	–	9,059	–
Write down of gross amounts due from customers for contract work	應收建造合同客戶款項總額 撇減	–	146,545	–	–	–	146,545
Auditors' remuneration	審計師酬金						
– annual audit services	– 年度審計服務	13,485	13,485	–	–	13,485	13,485
– interim review service	– 中期審閱服務	4,560	4,560	–	–	4,560	4,560
Operating lease charges <sup>#</sup>	經營租賃費用 <sup>#</sup>						
– hire of plant and equipment	– 廠房及設備租賃	35,252	30,375	115	101	35,367	30,476
– hire of properties	– 物業租賃	41,108	56,366	213	6,356	41,321	62,722
Research and development costs	研發成本	283,457	213,948	–	10,287	283,457	224,235
Provision for warranty (note 33)	質保金撥備(附註33)	405,557	270,440	–	–	405,557	270,440
Rental receivable from investment properties	投資性物業的應收租金	(40,798)	(38,642)	–	–	(40,798)	(38,642)
Direct outgoings of investment properties	投資性物業的直接開支	11,375	8,979	–	–	11,375	8,979
Cost of inventories <sup>#</sup> (note 22(b))	存貨成本 <sup>#</sup> (附註22(b))	6,767,940	7,677,657	29,184	698,809	6,797,124	8,376,466

<sup>#</sup> Cost of inventories includes staff costs, depreciation and amortisation expenses and operating lease charges, which amount is also included in the respective total amounts disclosed separately above or in note 7(a) for each of these types of expenses.

<sup>#</sup> 存貨成本包括員工成本、折舊及攤銷費用以及經營租賃費用，這些費用的金額亦已計入在上文單獨披露或附註7(a)的各項總金額中。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

#### 8 Income tax in the consolidated statement of profit or loss

#### 8 合併損益表內的所得稅

(a) Taxation in the consolidated statement of profit or loss represents:

(a) 合併損益表的稅項指：

		Continuing operations		Discontinued operation		Total	
		持續經營業務		已終止經營業務		合計	
		2016	2015	2016	2015	2016	2015
		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
<b>Current tax</b>	<b>本期稅額</b>						
Provision for the year	本年度撥備	158,900	194,332	—	—	158,900	194,332
Under/(over)-provision in respect of prior years (note(iii))	以往年度撥備不足／(過剩)(附註(iii))	88,464	(3,056)	—	(387)	88,464	(3,443)
		247,364	191,276	—	(387)	247,364	190,889
<b>Deferred tax</b>	<b>遞延稅項(附註32(b))</b>						
(note 32(b))							
Origination and reversal of temporary differences	暫時性差異的產生及轉回	(124,642)	(51,404)	—	81,139	(124,642)	29,735
		122,722	139,872	—	80,752	122,722	220,624

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

#### 8 Income tax in the consolidated statement of profit or loss (continued)

##### (a) Taxation in the consolidated statement of profit or loss represents: (continued)

Notes:

- (i) The charge for PRC enterprise income tax for the Group's subsidiaries established in the PRC is calculated at the statutory rate of 25% (2015: 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 a preferential rate of 12.5% or 15% (2015: 12.5% or 15%) and a subsidiary of the Group which is a small-scale enterprise and is subject to enterprise income tax at 20% (2015: 20%).
- (ii) A subsidiary of the Group is subject to Hong Kong Profits Tax at 16.5% (2015: 16.5%). Taxation for other overseas subsidiaries is charged at the appropriate rate of taxation ruling in the relevant jurisdiction.
- (iii) In October 2016, the State Administration of Taxation of the PRC ("SAT") carried out a tax inspection on Beijing Guodian Longyuan Environmental Engineering Co., Ltd. (Longyuan Environmental) and assessed Longyuan Environmental did not maintain proper tax records of research and development expenditures in accordance with the requirements set out in "Administrative Measures on Accreditation of High and New Technology Enterprises (2016 Revision)" (高新技術企業認定管理辦法) and the relevant work guidance jointly promulgated by the Ministry of Science and Technology of the PRC, the Ministry of Finance of the PRC and SAT in 2016.

According to the assessment of SAT, Longyuan Environment paid additional tax of RMB79,438,000 in respect of prior years and the relevant overdue payment surcharges of RMB45,951,000. The overdue payment surcharges were recognised in "Administrative expenses" in the consolidated statement of profit or loss.

#### 8 合併損益表內的所得稅(續)

##### (a) 合併損益表的稅項指：(續)

附註：

- (i) 本集團於中國成立的附屬公司之企業所得稅支出是以根據相關企業所得稅法規規定的期間估計應繳稅利潤按法定稅率25%(2015年：25%)計算，本集團若干免稅或按12.5%或15%(2015年：12.5%或15%)優惠稅率徵稅的附屬公司，以及一家屬於小型企業並按20%(2015年：20%)徵收企業所得稅的附屬公司除外。
- (ii) 本集團有一家附屬公司按16.5%(2015年：16.5%)徵香港利得稅。其他海外附屬公司根據相關地域的適用稅率繳納稅款。
- (iii) 2016年10月，國家稅務總局對本公司全資子公司北京國電龍源環保工程有限公司(「龍源環保」)進行稅務審查並評定龍源環保未按照《高新技術企業認定管理辦法(2016修訂)》以及由科學技術部，財政部及國家稅務總局發佈的《高新技術企業認定管理工作指引(2016修訂)》及相關工作指引的要求對研究開發費用適當保存稅務記錄。

依據國家稅務總局的評定結果，龍源環保根據以前年度支付額外稅金人民幣79,438,000元以及相關滯納金人民幣45,951,000元。滯納金已確認在合併損益表中的「管理費用」中。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

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

#### 8 Income tax in the consolidated statement of profit or loss (continued)

#### 8 合併損益表內的所得稅(續)

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

##### (b) 稅項開支與會計利潤按照適用稅率計算的調節：

		2016 <i>RMB'000</i> 人民幣千元	2015 <i>RMB'000</i> 人民幣千元
Profit/(loss) before taxation	稅前利潤／(虧損)		
– continuing operations	– 持續經營業務	510,262	194,164
– discontinued operation	– 已終止經營業務	(134,089)	(4,663,259)
		376,173	(4,469,095)
Notional tax on profit before taxation at PRC statutory tax rate	稅前利潤按照中國法定稅率計算的名義稅項	94,043	(1,117,274)
Effect on non-deductible expenses	不可扣減開支的影響	15,294	14,532
Effect of non-taxable income	非應稅收入的影響	(7,664)	(14,051)
Effect of research and development bonus deductions	研發開支加計扣除的影響	(15,760)	(10,921)
Effect of share of profits less losses of associates	應佔聯營公司利潤減虧損的影響	(25,553)	35,165
Effect of PRC tax concessions	中國稅務優惠的影響	(264,289)	(163,342)
Tax effect of unused tax losses and temporary differences not recognised	未確認的未使用稅務虧損及暫時性差異的稅項影響	645,587	1,342,590
Tax effect of unused tax losses and temporary differences not recognised in previous year but utilised or recognised in current year	本年使用或確認以往年度未確認的未使用稅務虧損及暫時性差異的稅項影響	(491,688)	(28,139)
Tax effect of unused tax losses and temporary differences recognised in previous year but derecognised in current year	本年終止確認以往年度確認的未使用稅務虧損及暫時性差異的稅項影響	87,725	167,025
Under/(over)-provision in respect of prior years	以往年度撥備不足／(過剩)	88,464	(3,443)
Others	其他	(3,437)	(1,518)
Actual tax expense	實際稅項開支	122,722	220,624

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 9 Directors' and supervisors' emoluments

Directors' and supervisors' emoluments disclosed pursuant to section 383(1) of Hong Kong Companies Ordinance and Part 2 of the Companies (Disclosure of Information about Benefits of Directors) Regulation are as follow:

#### 9 董事及監事的薪酬

根據《香港公司條例》第383(1)節以及《公司(披露董事利益數據)規例》第2部份規定披露的董事和監事薪金如下：

		Directors' and supervisors' fees	Salaries, allowances and benefits in kind	Discretionary bonuses	Retirement scheme contributions	2016 Total
		董事費及監事費	工資、補貼及實物福利	酌情花紅	退休金供款	2016合計
		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
<b>Directors</b>	<b>董事</b>					
Mr. Yang, Guang (Chairman)	陽光先生(董事長)	-	480	189	81	750
Mr. Wang, Zhongqu	王忠渠先生	-	-	-	-	-
Mr. Zhang, Wenjian	張文建先生	-	-	-	-	-
Mr. Feng, Shuchen	馮樹臣先生	-	-	-	-	-
Mr. Yan, Andrew Y.	閻焱先生	-	-	-	-	-
Mr. Chen, Dongqing (Appointed in March 2016)	陳冬青先生(2016年3月任職)	-	441	173	77	691
Mr. Tang, Chaoxiong (Appointed in March 2016)	唐超雄先生(2016年3月任職)	-	386	150	74	610
<b>Independent non-executive directors</b>	<b>獨立非執行董事</b>					
Mr. Shen, Xiaolu (Appointed in March 2016)	申曉留先生(2016年3月任職)	138	-	-	-	138
Mr. Qu, Jiuhui	曲久輝先生	150	-	-	-	150
Mr. Xie, Qiuye	謝秋野先生	150	-	-	-	150
Mr. Fan, Renda Anthony	范仁達先生	150	-	-	-	150
Ms. Zhang, Xiaolu (Resigned in January 2016)	張曉魯女士(2016年1月辭職)	-	-	-	-	-
<b>Supervisors</b>	<b>監事</b>					
Mr. Shao, Guoyong (Resigned in June 2016)	邵國勇先生(2016年6月辭職)	-	-	-	-	-
Mr. Xu, Xingzhou	許興洲先生	-	-	-	-	-
Mr. Chen, Jingdong (Resigned in September 2016)	陳景東先生(2016年9月辭職)	-	-	-	-	-
Ms. He, Lili	何麗麗女士	-	411	150	75	636
Mr. Li, Wei	李偉先生	-	310	123	69	502
Mr. Luan, Baoxing (Appointed in September 2016)	樂寶興先生(2016年9月任職)	-	-	-	-	-
Mr. Yang, Xiangbin (Appointed in September 2016)	楊向斌先生(2016年9月任職)	-	-	-	-	-
		588	2,028	785	376	3,777

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 9 Directors' and supervisors' emoluments 9 董事及監事的薪酬(續)

		Directors' and supervisors' fees	Salaries, allowances and benefits in kind	Discretionary bonuses	Retirement scheme contributions	2015 Total
		董事費及監事費	工資、補貼及實物福利	酌情花紅	退休金供款	2015合計
		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
<b>Directors</b>	<b>董事</b>					
Mr. Yang, Guang (Chairman)	陽光先生(董事長)	–	437	195	78	710
Mr. Fei, Zhi (Resigned in November 2015)	費智先生(2015年11月辭職)	–	397	–	71	468
Mr. Wang, Zhongqu	王忠渠先生	–	–	–	–	–
Mr. Zhang, Wenjian	張文建先生	–	–	–	–	–
Mr. Feng, Shuchen	馮樹臣先生	–	–	–	–	–
Ms. Wang, Hongyan (Resigned in October 2015)	王鴻艷女士(2015年10月辭職)	–	349	119	59	527
Mr. Yan, Andrew Y.	閻焱先生	–	–	–	–	–
<b>Independent non-executive directors</b>	<b>獨立非執行董事</b>					
Ms. Zhang, Xiaolu	張曉魯女士	138	–	–	–	138
Mr. Qu, Jiuhui	曲久輝先生	150	–	–	–	150
Mr. Xie, Qiuye	謝秋野先生	150	–	–	–	150
Mr. Fan, Renda Anthony	范仁達先生	150	–	–	–	150
<b>Supervisors</b>	<b>監事</b>					
Mr. Shao, Guoyong	邵國勇先生	–	–	–	–	–
Mr. Xu, Xingzhou	許興洲先生	–	–	–	–	–
Mr. Chen, Jingdong	陳景東先生	–	–	–	–	–
Ms. He, Lili	何麗麗女士	–	391	156	71	618
Mr. Li, Wei	李偉先生	–	332	117	70	519
		588	1,906	587	349	3,430



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 10 Individuals with highest emoluments

Of the five individuals with the highest emoluments, three (2015: two) are directors whose emoluments are disclosed in note 9. The aggregate of the emoluments in respect of the other two (2015: three) individuals are as follows:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Salaries and other emoluments	工資及其他薪酬	1,189	1,342
Discretionary bonuses	酌情花紅	451	437
Retirement scheme contributions	退休金供款	225	217
		<b>1,865</b>	<b>1,996</b>

The emoluments of the two (2015: three) individuals with the highest emoluments are within the following band:

		2016 二零一六年 Number of individuals 人數	2015 二零一五年 Number of individuals 人數
Nil to HKD1,000,000	零至港幣1,000,000元	2	3

#### 11 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 consolidated financial statements.

As a result of the discontinuation of solar power products and services segment, the Group shut down the related production lines during the year ended 31 December 2015, which indicated the related property, plant and equipment, lease prepayments and intangible assets may be impaired. It is also considered that the carrying amounts of certain other assets belong to the solar power products and services segment may not be recovered or realised as previously expected. Accordingly, management conducted a review on the carrying amounts of these assets and based on the results of the assessment recognised impairment losses or assets write-downs according to the Group's applicable accounting policies at the end of each reporting period.

#### 10 薪酬最高的個人

薪酬最高的五位個人中，其中三位(2015年：兩位)為董事，其薪酬在附註9中進行了披露。其他兩位(2015年：三位)個人的總薪酬如下：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Salaries and other emoluments	工資及其他薪酬	1,189	1,342
Discretionary bonuses	酌情花紅	451	437
Retirement scheme contributions	退休金供款	225	217
		<b>1,865</b>	<b>1,996</b>

這兩位(2015年：三位)具有最高薪酬的個人的薪酬範圍如下：

		2016 二零一六年 Number of individuals 人數	2015 二零一五年 Number of individuals 人數
Nil to HKD1,000,000	零至港幣1,000,000元	2	3

#### 11 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。

由於太陽能產品和服務分部的業務終止，本集團於2015年12月31日關停相關生產線，相關物業、廠房和設備、預付土地租賃款和無形資產可能已出現減值。此外，管理層也考慮到，太陽能產品和服務分部的某些其他資產的賬面價值可能無法如此前預期一樣得以收回或變現。因此，管理層對該等資產的賬面價值進行覆核，並基於評估結果，在每個報告期末根據集團適用的會計政策確認減值損失或資產撇減。

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 11 Discontinued operation (continued)

The Company entered into several sale and purchase agreements with certain counter-parties 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 financial statements as at the end of the reporting period.

### 11 已終止經營業務(續)

截至2016年12月31日止本公司與部分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和處置組列示。

		Note 附註	2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
<b>Revenue</b>	收入	4	<b>195,377</b>	684,264
Cost of sales	銷售成本		<b>(190,225)</b>	(865,212)
<b>Gross profit/(loss)</b>	毛利／(毛虧)		<b>5,152</b>	(180,948)
Other revenue	其他收入	5	<b>40,561</b>	8,077
Other net income/(losses)	其他收益／(虧損)淨額	5	<b>87,717</b>	(5,676)
Selling and distribution expenses	銷售及分銷開支		<b>(10,081)</b>	(9,542)
Administrative expenses	行政開支		<b>(109,683)</b>	(4,149,991)
<b>Profit/(loss) from operation</b>	經營收益／(虧損)		<b>13,666</b>	(4,338,080)
Finance costs	財務成本	6	<b>(147,755)</b>	(325,179)
<b>Loss before taxation from a discontinued operation</b>	已終止經營業務的稅前虧損	7	<b>(134,089)</b>	(4,663,259)
Income tax	所得稅	8	—	(80,752)
<b>Loss for the year from a discontinued operation</b>	已終止經營業務的本年度虧損		<b>(134,089)</b>	(4,744,011)
<b>Attributable to:</b>	歸屬於：			
Equity shareholders of the Company	本公司權益股東		<b>(133,011)</b>	(4,604,649)
Non-controlling interests	非控股權益		<b>(1,078)</b>	(139,362)
<b>Loss for the year from a discontinued operation</b>	已終止經營業務的本年度虧損		<b>(134,089)</b>	(4,744,011)

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 11 Discontinued operation (continued)

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

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Net cash generated from operating activities	經營活動中產生的淨現金	81,972	627,420
Net cash used in investing activities	投資活動中使用的淨現金	—	(20,380)
Net cash used in financing activities	融資活動中使用的淨現金	(106,072)	(648,081)
Net cash outflow	淨現金流出	(24,100)	(41,041)

#### 12 Earnings/(loss) per share

The calculation of basic earnings/(loss) per share is based on the profit attributable to ordinary equity shareholders of the Company of RMB302,372,000 (2015: loss of RMB4,639,616,000) and the weighted average of 6,063,770,000 ordinary shares (2015: 6,063,770,000 ordinary shares) in issue during the year.

There were no dilutive potential ordinary shares in existence during the years ended 31 December 2016 and 2015.

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

#### 11 已終止經營業務(續)

已終止經營業務產生的淨現金流如下：

#### 12 每股收益／(虧損)

每股基本收益／(虧損)的計算依據為歸屬於本公司普通股股東的收益人民幣302,372,000元(2015年：虧損人民幣4,639,616,000元)以及本年度發行在外普通股的加權平均數6,063,770,000股(2015年：6,063,770,000股普通股)。

於截至2016年及2015年12月31日止年度內，本公司不存在稀釋性潛在普通股。

在計算基本和攤薄每股收益／(虧損)時使用的歸屬於本公司的普通股股東的盈利／(虧損)為：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
– From continuing operations	— 持續經營業務	435,383	(34,967)
– From a discontinued operation (note 11)	— 已終止經營業務(附註11)	(133,011)	(4,604,649)
		302,372	(4,639,616)

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 13 Property, plant and equipment

### 13 物業、廠房及設備

		Land, buildings and structures 土地、樓宇及 建築物 RMB'000 人民幣千元	Machinery and equipment 機器及設備 RMB'000 人民幣千元	Motor vehicles 汽車 RMB'000 人民幣千元	Furniture, fixtures and others 家具裝置及其他 RMB'000 人民幣千元	Construction in progress 在建工程 RMB'000 人民幣千元	Total 合計 RMB'000 人民幣千元
<b>Cost:</b>	<b>成本：</b>						
At 1 January 2015	於2015年1月1日	5,102,633	8,633,853	207,540	482,766	1,069,616	15,496,408
Additions	增加	18,474	124,702	5,604	26,521	256,255	431,556
Transfer from construction in progress	在建工程轉入	94,604	686,103	–	324	(781,031)	–
Transfer from investment properties (note 14)	轉作投資性物業 (附註14)	106,926	–	–	–	–	106,926
Disposals	出售	–	(89,062)	(1,099)	(2,325)	–	(92,486)
Disposal of a subsidiary	處置子公司	(116,244)	(209,151)	(3,499)	(7,408)	(15,051)	(351,353)
At 31 December 2015 and 1 January 2016	於2015年12月31日及 2016年1月1日	5,206,393	9,146,445	208,546	499,878	529,789	15,591,051
Additions	增加	3,091	22,015	1,293	14,516	230,978	271,893
Transfer from construction in progress	在建工程轉入	9,974	313,294	–	779	(324,047)	–
Transfer to investment properties (note 14)	轉作投資性物業 (附註14)	(15,783)	–	–	–	–	(15,783)
Disposals (note (iii))	出售(附註(iii))	(396,095)	(3,084,188)	(9,057)	(5,568)	(193,588)	(3,688,496)
Disposal of subsidiaries	處置子公司	–	–	(348)	(37)	(9,691)	(10,076)
Reclassified as assets held for sale (note 28)	重分類至持有待售資產 (附註28)	(1,943,646)	(1,509,575)	(24,816)	(122,803)	(86,083)	(3,686,923)
At 31 December 2016	於2016年12月31日	2,863,934	4,887,991	175,618	386,765	147,358	8,461,666

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 13 Property, plant and equipment (continued)

### 13 物業、廠房及設備(續)

		Land, buildings and structures 土地、樓宇及 建築物 RMB'000 人民幣千元	Machinery and equipment 機器及設備 RMB'000 人民幣千元	Motor vehicles 汽車 RMB'000 人民幣千元	Furniture, fixtures and others 家具裝置及其他 RMB'000 人民幣千元	Construction in progress 在建工程 RMB'000 人民幣千元	Total 合計 RMB'000 人民幣千元
<b>Accumulated depreciation and impairment losses:</b>	<b>計折舊及減值損失：</b>						
At 1 January 2015	於2015年1月1日	675,072	2,685,361	125,217	201,906	—	3,687,556
Depreciation charge for the year	本年度折舊費	231,160	663,488	23,029	63,353	—	981,030
Impairment loss (note (iv))	減值損失(附註(iv))	723,997	765,102	1,028	10,562	43,552	1,544,241
Transfer from investment properties (note 14)	轉自投資性物業(附註14)	4,697	—	—	—	—	4,697
Written back on disposals	因出售而撥回	—	(42,285)	(879)	(2,246)	—	(45,410)
Disposal of a subsidiary	處置子公司	(20,782)	(75,947)	(2,554)	(4,710)	—	(103,993)
At 31 December 2015 and 1 January 2016	於2015年12月31日及2016年1月1日	1,614,144	3,995,719	145,841	268,865	43,552	6,068,121
Depreciation charge for the year	本年度折舊費	177,063	315,224	14,555	50,157	—	556,999
Impairment loss (note (iv))	減值損失(附註(iv))	94,341	120,914	2,057	8,053	3,978	229,343
Transfer to investment properties (note 14)	轉作投資性物業(附註14)	(9,112)	—	—	—	—	(9,112)
Written back on disposals (note (iii))	因出售而撥回(附註(iii))	(128,649)	(943,619)	(4,604)	(745)	—	(1,077,617)
Disposal of subsidiaries	處置子公司	—	—	(272)	(33)	(9,691)	(9,996)
Reclassified as assets held for sale (note 28)	重分類至持有待售資產(附註28)	(1,029,280)	(994,682)	(17,767)	(76,373)	(33,861)	(2,151,963)
At 31 December 2016	於2016年12月31日	718,507	2,493,556	139,810	249,924	3,978	3,605,775
<b>Net book value:</b>	<b>賬面淨值：</b>						
At 31 December 2016	於2016年12月31日	2,145,427	2,394,435	35,808	136,841	143,380	4,855,891
At 31 December 2015	於2015年12月31日	3,592,249	5,150,726	62,705	231,013	486,237	9,522,930



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 13 Property, plant and equipment (continued)

Notes:

- (i) The Group's plants and buildings are located in the PRC.
- (ii) As at 31 December 2016, the Group is in the process of applying for the ownership certificates for certain of its properties. The aggregate carrying value of such properties of the Group as at 31 December 2016 is approximately RMB88,167,000 (2015: RMB306,227,000). The directors are of the opinion that the Group is entitled to lawfully occupy or use these properties.
- (iii) The Group leases out a number of items of machinery and equipment to power plants under operating leases, details of the lease arrangements are set out in note 4(a)(ii). As at 31 December 2016, the aggregate net book value of these assets amounted to RMB1,357,855,000 (2015: RMB3,925,333,000). On 5 February 2016, Longyuan Environmental entered into transfer agreements with related parties under Guodian. Pursuant to these agreements, Longyuan Environmental transferred certain desulphurisation and denitrification assets to the related parties under Guodian during the year ended 31 December 2016.

The total consideration of these desulphurisation and denitrification assets is approximately RMB2,670,656,000 with a net book value of RMB2,603,334,000, resulting in a profit on disposal of RMB67,322,000, which is included in "other net income" in the consolidated statement of profit or loss.

- (iv) During the year ended 31 December 2015, the Group shut down certain solar production lines in the solar power products and service segment, which was reclassified as a discontinued operation in the consolidated financial statements (see note 11). The Group assessed the recoverable amount of the related property, plant and equipment of the solar production lines as at 31 December 2015 and as a result the carrying amount of the property, plant and equipment was written down to their recoverable amount of RMB1,413,992,000. An impairment loss of RMB1,534,550,000 was recognised in "administrative expenses". The estimates of recoverable amount were based on fair value less costs of disposal, using cost approach as the method of the appraisal of the certain assets or the disposal groups, for which was evaluated by independent third party valuers. Both of the fair value on which the recoverable amounts is based on is categorised as a Level 3 measurement.

During the year ended 31 December 2016, certain subsidiaries of the Group recorded a significant decrease in revenue or were loss making due to various market, economic and political factors, which included severe market competition, delays in operations influenced by government policies and decreases in market demand. The Group assessed the recoverables amounts of the value-in-use of the relevant cash-generating units as at 31 December 2016 and recognised impairment losses on property, plant and equipment with an aggregate amount of RMB73,901,000 during the year ended 31 December 2016. The Group also recognised impairment losses of RMB126,014,000 during the year ended 31 December 2016 in respect of property, plant and equipment reclassified as non-current assets and disposal groups held for sale (note 28).

### 13 物業、廠房及設備(續)

附註：

- (i) 本集團的廠房及樓宇均位於中國。
- (ii) 於2016年12月31日，本集團正在為若干物業辦理產權證。於2016年12月31日，本集團的此類物業總值約為人民幣88,167,000元（2015年：人民幣306,227,000元）。董事們認為，本集團有權合法佔有或使用此等物業。
- (iii) 本集團以經營租賃向電廠出租了若干機器及設備，關於租賃安排的詳情參見附註4(a)(ii)。於2016年12月31日，此等資產的賬面淨值總額為人民幣1,357,855,000元（2015年：人民幣3,925,333,000元）。於2016年2月5日，龍源環保和國電下屬的關聯方簽訂了一項轉讓協議。根據該協議，龍源環保在截至2016年12月31日年度內把脫硫脫硝資產轉讓給了國電下屬的關聯方。

這些脫硫脫硝資產總價值大約為人民幣2,670,656,000元，賬面淨值人民幣2,603,334,000元。處置收益人民幣RMB67,322,000元記錄在合併損益表的「其他淨收益」中。

- (iv) 於截至2015年12月31日止年度，本集團關閉了太陽能產品和服務分部的太陽能產品生產線，已合併財務報表中重新分類為已終止經營業務（附註11）。本集團於2015年12月31日對太陽能產品生產線相關的物業、廠房及設備的可收回金額進行了評估，結果對這些物業、廠房及設備的賬面金額撇減至其可收回金額人民幣1,413,992,000元。在管理費用中確認了人民幣1,534,550,000元的減值損失。可回收金額的估算是獨立的第三方估價人通過成本法作為評估某些資產或處置組的方法，用公允價值減去處置費用計算而來。可回收金額使用的公允價值均使用第三層級計量。

截至2016年12月31日止年度，本集團的某些附屬公司出現了營業收入大幅減少或由於各種市場、經濟和政治因素造成損失的現象，這些因素包括更加激烈的市場競爭、政府政策影響導致的經營延誤，以及市場需求下降。於2016年12月31日本集團評估了相關現金產生單元的使用價值的可回收金額，並於截至2016年12月31日止年度確認了總額為人民幣73,901,000元的固定資產減值損失。同時，截至2016年12月31日止年度，本集團對劃分為持有待售的非流動資產和處置組的物業、廠房及設備，確認了約人民幣126,014,000元的減值損失（附註28）。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 14 Investment properties

#### 14 投資性物業

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
<b>Cost:</b>	<b>成本：</b>		
At 1 January	於1月1日	304,256	411,182
Transfer to property, plant and equipment	轉入物業、廠房及設備	—	(106,926)
Transfer from property, plant and equipment	由物業、廠房及設備轉出	15,783	—
Transfer from lease prepayment	由預付租賃款轉出	2,938	—
At 31 December	於12月31日	322,977	304,256
<b>Accumulated depreciation:</b>	<b>累計折舊：</b>		
At 1 January	於1月1日	58,028	54,073
Depreciation charge for the year	本年度折舊費	8,642	8,652
Transfer to property, plant and equipment	轉入物業、廠房及設備	—	(4,697)
Transfer from property, plant and equipment	由物業、廠房及設備轉出	9,112	—
Transfer from lease prepayment	由預付租賃款轉出	1,156	—
At 31 December	於12月31日	76,938	58,028
<b>Net book value</b>	<b>賬面淨值</b>	<b>246,039</b>	<b>246,228</b>

All the investment properties owned by the Group are located in the PRC.

本集團所有的投資性物業均位於中國。

The fair values of the investment properties of the Group as at 31 December 2016 were RMB631,883,000 (2015: RMB408,795,000).

於2016年12月31日，本集團的投資性物業公允價值為人民幣631,883,000元(2015年：人民幣408,795,000元)。

##### (a) Investment properties leased out under operating lease

The Group lease out investment properties under operating leases. The leases typically run for an initial period of 1 to 10 years, with an option to renew the lease after that date at which time all terms are re-negotiated. Lease payments are usually adjusted upon the expiry of lease terms to reflect market rentals. None of the leases includes contingent rentals.

##### (a) 根據經營租賃出租的投資性物業

本集團以經營租賃租出投資性物業。一般初始租賃期均為1-10年，到期之後可以續租，屆時雙方將就所有租賃條款重新談判。租期到期之後一般根據市場租金進行調整。所有租賃合同均不存在或有租金。

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 14 Investment properties (continued)

#### (a) Investment properties leased out under operating lease (continued)

The Group's total future minimum lease payments under non-cancellable operating leases are receivable as follows:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Within 1 year	1年內	11,984	11,937

#### (b) Fair values of investment properties

##### (i) Fair value hierarchy

The following table presents the fair value of the Group's investment properties measured at the end of the reporting period on a recurring basis for disclosure purpose, 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.

### 14 投資性物業(續)

#### (a) 根據經營租賃出租的投資性物業(續)

在不可解除的經營租賃項下，本集團未來應收的最低租賃付款總額如下：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Within 1 year	1年內	11,984	11,937

#### (b) 投資性物業公允價值

##### (i) 公允價值等級

下表提供了本集團於報告期末為披露之目的重複計量的投資性物業的公允價值，並按《國際財務報告準則第13號》「公允價值計量」中所定義分為三個公允價值層級。公允價值計量層級是根據評估方法中使用的輸入數據的可觀察性和重要性來確定劃分的，具體如下：

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

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 14 Investment properties (continued)

#### (b) Fair values of investment properties (continued)

##### (i) Fair value hierarchy (continued)

		Fair value measurement as at 31 December 2016 categorised into 於2016年12月31日公允價值計量，並分為：			
	Fair value at 31 December 2016 於2016年 12月31日 公允價值 RMB'000 人民幣千元	Level 1 第一層級 RMB'000 人民幣千元	Level 2 第二層級 RMB'000 人民幣千元	Level 3 第三層級 RMB'000 人民幣千元	
<b>Recurring fair value measurements</b>	<b>重複的公允價值計量</b>				
Investment properties	投資性物業	631,883	—	631,883	—

		Fair value measurement as at 31 December 2015 categorised into 於2015年12月31日公允價值計量，並分為：			
	Fair value at 31 December 2015 於2015年 12月31日 公允價值 RMB'000 人民幣千元	Level 1 第一層級 RMB'000 人民幣千元	Level 2 第二層級 RMB'000 人民幣千元	Level 3 第三層級 RMB'000 人民幣千元	
<b>Recurring fair value measurements</b>	<b>重複的公允價值計量</b>				
Investment properties	投資性物業	408,795	—	408,795	—

##### (ii) Valuation techniques and inputs used in Level 2 fair value measurements

The fair value of investment properties is determined using market comparison approach by reference to recent sales price of comparable properties on a price per square meter basis using market data which is publicly available.

### 14 投資性物業(續)

#### (b) 投資性物業公允價值(續)

##### (i) 公允價值等級(續)

		Fair value measurement as at 31 December 2016 categorised into 於2016年12月31日公允價值計量，並分為：			
	Fair value at 31 December 2016 於2016年 12月31日 公允價值 RMB'000 人民幣千元	Level 1 第一層級 RMB'000 人民幣千元	Level 2 第二層級 RMB'000 人民幣千元	Level 3 第三層級 RMB'000 人民幣千元	
<b>Recurring fair value measurements</b>	<b>重複的公允價值計量</b>				
Investment properties	投資性物業	631,883	—	631,883	—

		Fair value measurement as at 31 December 2015 categorised into 於2015年12月31日公允價值計量，並分為：			
	Fair value at 31 December 2015 於2015年 12月31日 公允價值 RMB'000 人民幣千元	Level 1 第一層級 RMB'000 人民幣千元	Level 2 第二層級 RMB'000 人民幣千元	Level 3 第三層級 RMB'000 人民幣千元	
<b>Recurring fair value measurements</b>	<b>重複的公允價值計量</b>				
Investment properties	投資性物業	408,795	—	408,795	—

##### (ii) 在第2層級公允價值計量中採用的評估方法和輸入數據

投資性物業的公允價值是通過參考公開的市場數據中可比物業以每平方米價格為基礎之最近售價，按市場比較法來確定。

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 15 Lease prepayments

### 15 預付土地租賃款

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
<b>Cost:</b>	<b>成本：</b>		
At 1 January	於1月1日	946,760	979,014
Additions	增加	11,901	—
Transfer to investment properties (note 14)	轉入投資性物業(附註14)	(2,938)	—
Disposal of a subsidiary	處置子公司	—	(32,254)
Reclassified as assets held for sale (note 28)	重分類至持有待售資產(附註28)	(575,705)	—
At 31 December	於12月31日	380,018	946,760
<b>Accumulated amortisation and impairment losses:</b>	<b>累計攤銷及減值損失：</b>		
At 1 January	於1月1日	250,637	79,705
Amortisation for the year	本年度攤銷費	13,488	19,161
Transfer to investment properties (note 14)	轉入投資性物業(附註14)	(1,156)	—
Disposal of a subsidiary	處置子公司	—	(3,064)
(Reversal of impairment loss)/ impairment losses	(減值損失轉回)/ 減值損失	(11,895)	154,835
Reclassified as assets held for sale (note 28)	重分類至持有待售資產(附註28)	(201,792)	—
At 31 December	於12月31日	49,282	250,637
<b>Net book value</b>	<b>賬面淨值</b>	<b>330,736</b>	<b>696,123</b>

Notes:

附註：

- (i) Lease prepayments mainly represent prepayments for rights to use land, which is all located in the PRC, for own use properties with lease periods of 25 to 50 years. There were no unpaid lease prepayments as at 31 December 2016 and 2015.
- (ii) As at 31 December 2016, the Group was in the process of applying for registration of the ownership certificates for certain of its land use rights. The aggregate carrying value of such land use rights of the Group as at 31 December 2016 is approximately RMB14,500,000 (2015: RMB2,600,000). The directors are of the opinion that the Group is entitled to lawfully occupy or use these land.
- (iii) Two pieces of land for which the Group prepaid the land use rights have not been developed as at 31 December 2015. The land use rights belong to the Group's solar power products and services segment and the Group does not have a plan to develop the lands. An impairment loss of RMB154,835,000 in respect of such prepaid leases was recognised in 2015 based on their recoverable amounts estimated by management.

During the year ended 31 December 2016, these prepaid leases has been included in the disposal group classified as held for sale. Please refer to note 28 for details of the disposals.

- (i) 預付土地租賃款主要是土地使用權預付款，所有使用土地均位於中國，作為自用物業，租賃期為25–50年。於2016年及2015年12月31日，均不存在未支付的預付土地租賃款。
- (ii) 於2016年12月31日，本集團正在為若干土地使用權辦理產權證。於2016年12月31日，本集團的此等土地所有權總價值約為人民幣14,500,000元（2015年：人民幣2,600,000元）。董事們認為，本集團有權合法地佔有或使用此等土地。
- (iii) 於2015年12月31日，本集團兩塊土地使用權仍然閑置未開發。該等土地使用權屬於集團太陽能產品及服務分部，並且本集團沒有計劃來開發該土地。根據管理層估算的可收回金額，2015年確認此類預付租賃減值準備為人民幣154,835,000元。

於截至2016年12月31日止年度，該部份預付土地租賃款已包含在劃分為持有待售的處置組中。詳情請見註釋28。



# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 16 Intangible assets

### 16 無形資產

		Concession assets 特許權資產 RMB'000 人民幣千元	Technical know-how 專業技術 RMB'000 人民幣千元	Development costs 開發成本 RMB'000 人民幣千元	Software and others 軟件及其他 RMB'000 人民幣千元	Total 總計 RMB'000 人民幣千元
<b>Cost:</b>	<b>成本：</b>					
At 1 January 2015	於2015年1月1日	1,032,322	113,480	432,016	51,805	1,629,623
Additions	增加	1,596	–	58,950	13,477	74,023
Disposals	出售	(2,676)	–	–	–	(2,676)
Disposal of a subsidiary	處置子公司	–	(11,876)	(54,799)	(238)	(66,913)
At 31 December 2015 and 1 January 2016	於2015年12月31日及 2016年1月1日	1,031,242	101,604	436,167	65,044	1,634,057
Additions	增加	1,784	–	12,976	12,078	26,838
Disposals	出售	–	–	(40,358)	(602)	(40,960)
Reclassified as assets held for sale (note 28)	重分類至持有待售資產(附註28)	–	(9,017)	–	(3,586)	(12,603)
At 31 December 2016	於2016年12月31日	1,033,026	92,587	408,785	72,934	1,607,332
<b>Accumulated amortisation and impairment losses:</b>	<b>累計攤銷及 減值損失：</b>					
At 1 January 2015	於2015年1月1日	115,329	58,652	43,271	19,744	236,996
Amortisation	攤銷	37,516	8,656	29,573	7,080	82,825
Disposal of a subsidiary	處置子公司	–	(4,058)	(1,557)	(238)	(5,853)
Impairment losses	減值損失	–	17,992	–	–	17,992
At 31 December 2015 and 1 January 2016	於2015年12月31日及 2016年1月1日	152,845	81,242	71,287	26,586	331,960
Amortisation (note (ii))	攤銷(附註(ii))	31,670	3,875	41,863	9,075	86,483
Disposals	出售	–	–	–	(252)	(252)
Reclassified as assets held for sale (note 28)	重分類至持有待售資產(附註28)	–	(5,184)	–	(1,954)	(7,138)
At 31 December 2016	於2016年12月31日	184,515	79,933	113,150	33,455	411,053
<b>Net book value:</b>	<b>賬面淨值：</b>					
At 31 December 2016	於2016年12月31日	848,511	12,654	295,635	39,479	1,196,279
At 31 December 2015	於2015年12月31日	878,397	20,362	364,880	38,458	1,302,097

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 16 Intangible assets (continued)

Notes:

- (i) Concession assets represent the rights the Group received for the usage of the concession water treatment plants for the treatment of water. The concession assets are amortised over the operating period of the service concession projects.
- (ii) The amortisation charges of RMB35,850,000 (2015: RMB42,705,000), RMB48,499,000 (2015: RMB36,531,000) and RMB2,134,000 (2015: RMB3,589,000) are included in "cost of sales", "administrative expenses" and "loss for the year from a discontinued operation" in the consolidated statement of profit or loss respectively.
- (iii) As at 31 December 2016, certain of the Group's interest-bearing bank and other borrowings were secured by concession assets (see note 29), which had an aggregate net book value of RMB614,148,000 (2015: RMB552,404,000).

### 16 無形資產(續)

附註：

- (i) 特許權資產指本集團享有的特許經營權，即污水處理的經營權。特許權資產在特許經營項目經營期間進行攤銷。
- (ii) 合併損益表中的「銷售成本」、「行政開支」和「終止經營的年度虧損」項目下分別包括無形資產攤銷費用人民幣35,850,000元(2015年：人民幣42,705,000元)，人民幣48,499,000元(2015年：人民幣36,531,000元)及人民幣2,134,000元(2015年：人民幣3,589,000元)。
- (iii) 於2016年12月31日，本集團的若干帶息銀行及其他借款以特許權資產作抵押(見附註29)，其賬面淨值總額為人民幣614,148,000元(2015年：人民幣552,404,000元)。

### 17 Goodwill

### 17 商譽

	2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
At 1 January 2015, 31 December 2015 and 31 December 2016	於2015年1月1日、2015年12月31日及2016年12月31日	
	57,591	57,591

Goodwill is allocated to the Group's cash-generating units identified according to operation and operating segment as follows:

商譽分配到根據下列業務及經營分部劃分的本集團現金產生單元：

	2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Environmental protection	環保	
	57,591	57,591

The recoverable amounts of CGUs are determined based on value-in-use calculations. These calculations use cash flow projections based on financial budgets approved by management covering a five-year period. Cash flows beyond the five-year period are extrapolated using zero growth rate. The cash flows are discounted using discount rates ranging from 12.9% to 16.0% (2015: 12.9% to 16.0%). The discount rates used are pre-tax and reflect specific risks relating to the relevant segment.

現金產生單元的可收回數額乃按使用價值計算而確定。有關價值的計算根據本公司管理層批覆之五年期間的財務預算的現金流預測。超過五年期的現金流量採用零增長率推算。現金流量預測計算採用由12.9%至16.0%的折現率(2015年：12.9%至16.0%)。所採用的折現率為稅前折現率，並反映相關分部的特定風險。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 18 Investments in subsidiaries

The following list contains only the particulars of subsidiaries as at 31 December 2016 which principally affected the results, assets or liabilities of the Group. All of the PRC subsidiaries are limited liability companies.

#### 18 對附屬公司的投資

於2016年12月31日，對本集團業績、資產或負債具有主要影響的附屬公司的詳情列舉如下。所有中國附屬公司均為有限責任公司。

Name of the company 公司名稱	Place of establishment/ incorporation 成立/註冊地	Issued and fully paid-up capital 已發行且全部 繳足的資本	Proportion of ownership interest 所有者權益比例			Principal activities 主營業務
			Group's effective interest 本集團的 有效權益	Held by the Company 由本公司持有	Held by subsidiaries 附屬公司持有	
Beijing Guodian Longyuan Environmental Engineering Co., Ltd. 北京國電龍源環保工程有限公司	The PRC 中國	RMB1,613,000,000 人民幣1,613,000,000	100%	100%	–	Provision of desulphurisation and other environmental protection engineering services 提供脫硫及其他環保工程服務
Jiangsu Deke Environmental Equipment Co., Ltd. 江蘇德克環保設備有限公司	The PRC 中國	RMB80,000,000 人民幣80,000,000	67.46%	–	67.46%	Production and sale of environmental protection equipment 環保設備的生產與銷售
Beijing Longyuan Environmental Engineering Co., Ltd. 北京龍源環保工程有限公司	The PRC 中國	RMB33,750,000 人民幣33,750,000	51%	–	51%	Provision of desulphurisation and other environmental protection engineering services 提供脫硫和其他環境保護工程服務
Zhoushan Longxi Environment Engineering Co., Ltd. 舟山龍熹環保工程有限公司	The PRC 中國	RMB33,340,000 人民幣33,340,000	30.6%	–	60%	Design and construction of environmental protection projects 環保項目的設計及施工
Bengbu Guodian Longyuan Environmental Development Co., Ltd. 蚌埠國電龍源環保發展有限公司	The PRC 中國	RMB30,000,000 人民幣30,000,000	100%	–	100%	Operation of environmental protection facilities 環保設施的經營
Jiangsu Longyuan Catalyst Co., Ltd. 江蘇龍源催化劑有限公司	The PRC 中國	RMB50,000,000 人民幣50,000,000	100%	–	100%	Production and sale of selective catalytic reduction catalyst 選擇性催化還原催化劑的生產與銷售
Nanjing Longyuan Environmental Co., Ltd. 南京龍源環保有限公司	The PRC 中國	RMB101,000,000 人民幣101,000,000	60%	–	60%	Provision of environmental protection engineering services 提供環保工程服務
Puyang Guodian Longyuan Water Treatment Co., Ltd. 濮陽國電龍源水務有限公司	The PRC 中國	RMB10,000,000 人民幣10,000,000	70%	–	70%	Operation of water treatment projects 水處理項目的經營

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 18 Investments in subsidiaries (continued)

### 18 對附屬公司的投資(續)

Name of the company 公司名稱	Place of establishment/ incorporation 成立/註冊地	Issued and fully paid-up capital 已發行且全部 繳足的資本	Proportion of ownership interest 所有者權益比例			Principal activities 主營業務
			Group's effective interest 本集團的 有效權益	Held by the Company 由本公司持有	Held by subsidiaries 附屬公司持有	
Yixing Guodian Jinghui Environment Equipment Co., Ltd. 宜興國電精輝環保設備有限公司	The PRC 中國	RMB12,000,000 人民幣12,000,000	100%	–	100%	Production and sale of selective catalytic reduction catalyst 選擇性催化還原催化劑的生產與 銷售
Jiangsu Guodian Environment Catalyst Co., Ltd. 江蘇國電環保催化劑有限公司	The PRC 中國	RMB36,000,000 人民幣36,000,000	100%	–	100%	Production and sale of selective catalytic reduction catalyst 選擇性催化還原催化劑的生產與 銷售
Guodian Technology & Environment Group Hong Kong Corporation Limited (note (i)) (附註(i))	Hong Kong 香港	22,000,000 ordinary shares 22,000,000股	100%	100%	–	Sale of desulphurisation equipment 脫硫設備的銷售
Beijing Lucency Environment and Technology Co., Ltd. 北京朗新明環保科技有限公司	The PRC 中國	RMB500,000,000 人民幣500,000,000	100%	100%	–	Construction and operation of water treatment projects 水處理項目的施工與經營
Dalian Delang Water Treatment Co., Ltd. 大連德朗水務有限公司	The PRC 中國	RMB20,000,000 人民幣20,000,000	51%	–	51%	Operation of water treatment projects 水處理項目的經營
Shanxi Xinyuan Environment Protection Resources Development Co., Ltd. 山西新源環保資源開發有限責任公司	The PRC 中國	RMB13,000,000 人民幣13,000,000	51%	–	51%	Construction and operation of water treatment projects 水處理項目的施工與經營
Taiyuan Lucency Sewage Treatment Co., Ltd. 太原朗新明污水處理有限公司	The PRC 中國	RMB102,000,000 人民幣102,000,000	80%	–	80%	Design and installation of sewage treatment equipment 污水處理設備的設計與安裝
Dalian Economic and Technical Development Zone Drain Management Co., Ltd. 大連經濟技術開發區排水管理有限公司	The PRC 中國	RMB53,442,000 人民幣53,442,000	50%	–	50%	Construction and operation of water treatment projects 水處理項目的施工與經營
Guodian Galaxy Water Corporation Limited 國電銀河水務股份有限公司	The PRC 中國	300,000,000 shares of RMB1 each 300,000,000股 每股人民幣1元	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 18 Investments in subsidiaries (continued)

#### 18 對附屬公司的投資(續)

Name of the company 公司名稱	Place of establishment/ incorporation 成立/註冊地	Issued and fully paid-up capital 已發行且全部 繳足的資本	Proportion of ownership interest 所有者權益比例			Principal activities 主營業務
			Group's effective interest 本集團的 有效權益	Held by the Company 由本公司持有	Held by subsidiaries 附屬公司持有	
Guodian Galaxy Water (Shanxian) Co., Ltd. 國電銀河水務(單縣)有限公司	The PRC 中國	RMB15,000,000 人民幣15,000,000	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營
Guodian Galaxy Water (Shouguang) Co., Ltd. 國電銀河水務(壽光)有限公司	The PRC 中國	RMB60,000,000 人民幣60,000,000	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營
Guodian Galaxy Water (Dezhou) Co., Ltd. 國電銀河水務(德州)有限公司	The PRC 中國	RMB21,409,200 人民幣21,409,200	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營
Guodian Galaxy Water (Changle) Co., Ltd. 國電銀河水務(昌樂)有限公司	The PRC 中國	RMB32,550,000 人民幣32,550,000	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營
Guodian Galaxy Water (Caoxian) Co., Ltd. 國電銀河水務(曹縣)有限公司	The PRC 中國	RMB12,000,000 人民幣12,000,000	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營
Galaxy Water (Tengzhou Mushi) Co., Ltd. 銀河水務(滕州木石)有限公司	The PRC 中國	RMB13,250,000 人民幣13,250,000	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營
Guodian Galaxy Water (Qingdao Development Zone) Co., Ltd. 國電銀河水務(青島開發區)有限公司	The PRC 中國	RMB72,000,000 人民幣72,000,000	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營
Jining Galaxy Water Treatment Co., Ltd. 濟寧銀河水務有限公司	The PRC 中國	RMB51,710,400 人民幣51,710,400	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營
Guodian Galaxy Water (Tengzhou) Co., Ltd. 國電銀河水務(滕州)有限公司	The PRC 中國	RMB47,000,000 人民幣47,000,000	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營
Zhucheng Galaxy Water Treatment Co., Ltd. 諸城銀河污水處理有限公司	The PRC 中國	RMB50,000,000 人民幣50,000,000	70%	–	100%	Construction and operation of water treatment projects 水處理項目的施工與經營



# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 18 Investments in subsidiaries (continued)

### 18 對附屬公司的投資(續)

Name of the company 公司名稱	Place of establishment/ incorporation 成立/註冊地	Issued and fully paid-up capital 已發行且全部 繳足的資本	Proportion of ownership interest 所有者權益比例			Principal activities 主營業務
			Group's effective interest 本集團的 有效權益	Held by the Company 由本公司持有	Held by subsidiaries 附屬公司持有	
Guodian United Power Technology Co., Ltd. 國電聯合動力技術有限公司	The PRC 中國	RMB2,137,527,100 人民幣2,137,527,100	70%	70%	–	Research and development of wind turbine technology 風力機技術的研發
Guodian United Power Technology (Baoding) Co., Ltd. 國電聯合動力技術(保定)有限公司	The PRC 中國	RMB220,000,000 人民幣220,000,000	70%	–	100%	Production and sale of wind turbine 風力機的生產與銷售
Guodian United Power Technology (Lianyungang) Co., Ltd. 國電聯合動力技術(連雲港)有限公司	The PRC 中國	RMB150,000,000 人民幣150,000,000	70%	–	100%	Production and sale of wind turbine 風力機的生產與銷售
Guodian United Power Technology (Chifeng) Co., Ltd. 國電聯合動力技術(赤峰)有限公司	The PRC 中國	RMB115,000,000 人民幣115,000,000	70%	–	100%	Production and sale of wind turbine 風力機的生產與銷售
Guodian United Power Technology (Yixing) Co., Ltd. 國電聯合動力技術(宜興)有限公司	The PRC 中國	RMB73,529,411 人民幣73,529,411	60.06%	–	85.8%	Production and sale of wind turbine 風力機的生產與銷售
Guodian United Power Technology (Changchun) Co., Ltd. 國電聯合動力技術(長春)有限公司	The PRC 中國	RMB442,772,300 人民幣442,772,300	70%	–	100%	Production and sale of wind turbine 風力機的生產與銷售
Guodian United Power American LLC. (note (i)) (附註(i))	United States 美國	USD1,000,000 美元1,000,000	70%	–	100%	Sale of solar cells 太陽能電池的銷售
Guodian Solar Co., Ltd. 國電光伏有限公司	The PRC 中國	RMB2,157,136,900 人民幣2,157,136,900	100%	100%	–	Production and sale of solar cells 太陽能電池的生產與銷售
Guodian Zhaojing Optoelectronics Technology Jiangsu Co., Ltd. 國電兆晶光電科技江蘇有限公司	The PRC 中國	RMB300,000,000 人民幣300,000,000	51%	–	51%	Production and sale of solar cells 太陽能電池的生產與銷售
Guodian Solar System Technology (Shanghai) Co., Ltd. (note (ii)) 國電太陽能系統科技(上海)有限公司(附註(ii))	The PRC 中國	RMB20,000,000 人民幣20,000,000	50%	–	50%	Construction of solar power generation system 太陽能發電系統的施工建設

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 18 Investments in subsidiaries (continued)

#### 18 對附屬公司的投資(續)

Name of the company 公司名稱	Place of establishment/ incorporation 成立/註冊地	Issued and fully paid-up capital 已發行且全部 繳足的資本	Proportion of ownership interest 所有者權益比例			Principal activities 主營業務
			Group's effective interest 本集團的 有效權益	Held by the Company 由本公司持有	Held by subsidiaries 附屬公司持有	
Guodian Longyuan Power Technology and Engineering Co., Ltd. 國電龍源電力技術工程有限責任公司	The PRC 中國	RMB244,727,000 人民幣244,727,000	100%	100%	–	Provision of energy conservation engineering services 提供節能工程服務
Guodian Longyuan Energy Saving Technology Co., Ltd. 國電龍源節能技術有限公司	The PRC 中國	RMB100,000,000 人民幣100,000,000	100%	–	100%	Provision of energy conservation engineering services 提供節能工程服務
Beijing Long Wei Power Generation Technology Co., Ltd. 北京龍威發電技術有限公司	The PRC 中國	RMB40,000,000 人民幣40,000,000	60%	–	60%	Production and sale of steam turbine 汽輪機的生產與銷售
Yantai Longyuan Power Technology Co., Ltd. (note (iii)) 煙台龍源電力技術股份有限公司(附註(iii))	The PRC 中國	513,216,000 shares of RMB1 each 513,216,000股 每股人民幣1元	23.25%	23.25%	–	Production and sale of thermal energy equipment 熱能設備的生產與銷售
Guodian Longyuan Technologies USA Corporation (note (i)) (附註(i))	United States 美國	USD2,000,000 美元2,000,000	23.25%	–	100%	Production and sale of igniters and other electric equipment 點火器及其他電氣設備的生產與銷售
Beijing Huadian Tianren Power Controlling Technology Co., Ltd. 北京華電天仁電力控制技術有限公司	The PRC 中國	RMB143,823,113 人民幣143,823,113	90%	90%	–	Production and sale of variable-pitch control system for wind turbine 風力發電機組變漿控制系統
Guodian Longyuan Electrical Co., Ltd. 國電龍源電氣有限公司	The PRC 中國	RMB14,932,900 人民幣14,932,900	51%	51%	–	Production and sale of wind turbine components 風力機部件的生產與銷售
Beijing Guodian Zhishen Control Technology Co., Ltd. 北京國電智深控制技術有限公司(「Guodian Zhishen」)	The PRC 中國	RMB53,900,000 人民幣53,900,000	53.15%	53.15%	–	Production and sale of electric power related products 電力及相關產品的生產與銷售
Beijing Guodian Technology New Energy and Technology Co., Ltd. 北京國電科環新能源科技有限公司	The PRC 中國	RMB1,000,000 人民幣1,000,000	100%	100%	–	Production and sale of solar cells 太陽能電池的生產與銷售

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 18 Investments in subsidiaries (continued)

Notes:

- (i) Except for Guodian Technology & Environment Group Hong Kong Corporation Limited, Guodian Longyuan Technologies USA Corporation and Guodian United Power American LLC, the English translation of the names of other entities is for identification only. The official names of these entities are in Chinese.
- (ii) The Group appointed and has the power to appoint the directors of this company to govern the financial and operating policies of this company so as to obtain benefits from its activities since the establishment of this company.
- (iii) The Company is the biggest equity owner of this company and no other equity owners individually or in the aggregate had the power to control this company according to the articles of association. Historically, the Company controlled the operation of this company by appointing senior management, approving annual budget and determining the remuneration of employees, etc. The Company has agreements with certain shareholders of this company, whereby such equity owners have agreed to vote in concert with the Company since the establishment of this company. The PRC lawyer of the Company confirmed that these agreements are valid under relevant PRC laws. Considering the above mentioned factors, the directors are of the opinion that the Company controlled this company during the years presented.

#### 18 對附屬公司的投資(續)

附註：

- (i) 除 Guodian Technology & Environment Group Hong Kong Corporation Limited, Guodian Longyuan Technologies USA Corporation 以及 Guodian United Power American LLC 的英文名稱之外，其餘英文名稱僅用於識別之用，該等公司的正式名稱為中文名稱。
- (ii) 該公司成立以來，本集團即已任命了、並有權任命該公司的董事以支配該公司的財務與經營政策並從而自該公司的經營活動中取得收益。
- (iii) 本公司是該公司最大的權益所有者，根據該公司的公司章程，不存在個別地或集體地有能力控制該公司的其他權益所有者。在該公司歷史上，本公司通過任命高級管理人員、年度預算審批及確定僱員薪酬等，一直對該公司的經營享有控制權。自該公司成立以來，本公司與該公司的若干股東簽訂了協議，根據協議規定，此等股東同意與本公司投出一致的投票。本公司的中國律師確認，此等協議在中國法律項下具有效力。鑒於上述因素，董事們認為，在報告年內，本公司對該公司具有控制權。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 18 Investments in subsidiaries (continued)

Notes: (continued)

- (iv) The following table lists out the information relating to subsidiaries of the Group which have material non-controlling interests ("NCI"). The summarised financial information presented below presents the amounts before any inter-company elimination.

		Guodian United Power Technology Co., Ltd. 國電聯合動力技術有限公司		Yantai Longyuan Power Technology Co., Ltd. 煙台龍源電力技術股份有限公司	
		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元	2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
NCI percentage	非控股權益比例	30.00%	30.00%	76.75%	76.75%
Current assets	流動資產	8,724,221	9,741,694	2,290,348	2,430,703
Non-current assets	非流動資產	1,642,011	1,186,010	274,131	373,181
Current liabilities	流動負債	(7,161,898)	(7,758,555)	(629,140)	(674,880)
Non-current liabilities	非流動負債	(615,813)	(667,772)	(13,983)	(13,983)
Net assets	資產淨額	2,588,521	2,501,377	1,921,356	2,115,021
Carrying amount of NCI	非控股權益賬面金額	776,556	750,413	1,474,641	1,623,279
Revenue	收入	6,435,755	7,282,590	469,390	809,891
Profit/(loss) and total comprehensive income for the year	本年度利潤/(虧損)與綜合收益總額	144,610	(2,826)	(200,815)	(36,330)
Profit/(loss) allocated to NCI	分配予非控股權益的利潤/(虧損)	43,383	(848)	(154,126)	(27,883)
Dividend paid to NCI	支付予非控股權益的股息	10,500	10,500	—	15,756
Cash (out)/in flows from operating activities	經營活動的現金流(出)/入	(62,916)	972,619	227,375	43,931
Cash in/(out) flows from investing activities	投資活動的現金流入/(出)	79,836	(104,236)	532,757	(100,289)
Cash in/(out) flows from financing activities	融資活動的現金流入/(出)	64,182	(1,068,969)	—	(20,558)

#### 18 對附屬公司的投資(續)

附註：(續)

- (iv) 下表對本集團重大非控股權益的附屬公司相關信息進行了列明。下表列明的概要財務信息為公司間賬項抵銷前的金額。

#### 19 Interests in associates

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Share of net assets	應佔資產淨值	411,601	314,346
Amounts due from associates	聯營公司之欠款	1,200	1,200
		412,801	315,546

#### 19 對聯營公司的投資

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 19 Interests in associates (continued)

The following list contains only the particulars of material associates, all of which are unlisted corporate entities whose quoted market price is not available and established in the PRC, which principally affected the results or assets of the Group as at 31 December 2016.

### 19 對聯營公司的投資(續)

下表僅列出了對本集團2016年12月31日的業績或資產具有主要影響的重大聯營公司的詳情，所有這些公司均為沒有市場報價的未掛牌上市公司，並成立於中國。

Name of the company 公司名稱	Place of establishment/ incorporation 成立/註冊地	Issued and fully paid-up capital 已發行且全部 繳足的資本	Group's effective interest 本集團的 有效權益	Proportion of ownership interest 所有者權益比例		
				Held by the Company 由本公司持有	Held by subsidiaries 由附屬公司持有	Principal activities 主營業務
Guizhou Longyuan Wongfu Environment Technology Co., Ltd. ("Guizhou Longyuan") (note (ii)) 貴州龍源食福環保科技有限公司(「貴州龍源」)(附註(ii))	The PRC 中國	RMB250,000,000 人民幣250,000,000	55%	–	55%	Operation of environmental protection facilities 環保設施運行
Guodian Longyuan Environmental Taizhou Co, Ltd ("Longyuan Taizhou") 國電龍源環保泰州有限公司(「龍源泰州」)	The PRC 中國	RMB180,000,000 人民幣180,000,000	45%	–	45%	Operation of environmental protection facilities 環保設施運行
Guodian United Power Technology (Baotou) Co., Ltd ("Baotou Company") 國電聯合動力技術(包頭)有限公司(「包頭公司」)(附註(iii))	The PRC 中國	RMB260,000,000 人民幣260,000,000	38.77%	–	55%	Production and sale of wind turbine 風力發電機的生產和銷售

Notes:

- (i) The English translation of the names is for identification only. The official names of these entities are in Chinese.
- (ii) According to the articles of association of Guizhou Longyuan, the resolutions in relation to material financial and operating decisions have to be passed by three-fourth of directors. As the Company only has rights to appoint less than three-fourth of directors of Guizhou Longyuan, the Company does not have power to control the financial and operating policies of Guizhou Longyuan although the Company owns more than half of equity interests and voting power in Guizhou Longyuan.
- (iii) According to the articles of association of Baotou Company, the resolutions in relation to material financial and operating decisions have to be passed by two-third of voting power of shareholders. As the Company has less than two-third of voting power of Baotou Company, the Company does not have power to control the financial and operating policies of Baotou Company although the Company owns more than half of equity interests and voting power in Baotou Company.

附註：

- (i) 公司的英文名稱僅為識別之用，這些公司的正式名稱均為中文名稱。
- (ii) 根據貴州龍源的公司章程，有關重大財務和經營決策的決議必須由四分之三的董事通過。雖然本公司擁有貴州龍源一半以上股權和表決權，但由於本公司僅有權委任貴州龍源不足四分之三的董事，故本公司對貴州龍源重大財務和經營政策無控制權。
- (iii) 根據包頭公司的公司章程，有關重大財務和經營決策的決議必須由三分之二有表決權的股東通過。雖然本公司有用包頭公司一半以上股權和表決權，但由於本公司擁有少於三分之二表決權，因此本公司對包頭公司重大財務和經營政策無控制權。



# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 19 Interests in associates (continued)

Summarised financial information of the material associates, adjusted for any differences in accounting policies, and reconciled to the carrying amounts in the consolidated financial statements, are disclosed below:

### 19 對聯營公司的投資(續)

重大聯營公司的概要財務信息(已因應會計政策的差異進行了調整,並調節至合併財務報表的賬面金額)披露如下:

		Guizhou Longyuan Wongfu Environment Technology Co., Ltd. 貴州龍源金福環保科技有限公司		Guodian Longyuan Environmental Taizhou Co., Ltd. 國電龍源環保泰州有限公司		Guodian United Power Technology (Baotou) Co., Ltd. 國電聯合動力技術(包頭)有限公司	
		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元	2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元	2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Gross amounts of the associates:	聯營公司總額:						
Current assets	流動資產	207,877	107,429	211,822	141,196	326,791	288,308
Non-current assets	非流動資產	1,037,703	1,230,347	650,533	391,162	315,411	338,332
Current liabilities	流動負債	(1,471,866)	(1,373,634)	(153,661)	(96,295)	(927,360)	(575,494)
Non-current liabilities	非流動負債	-	-	(238,444)	(171,500)	-	(69,754)
Equity	權益	(226,286)	(35,858)	470,250	264,563	(285,158)	(18,608)
Revenue	收入	74,173	104,358	503,571	221,529	14,904	39,229
(Loss)/profit and total comprehensive income for the year	本年度(虧損)/利潤與綜合收益總額	(190,427)	(285,858)	198,492	82,534	(266,549)	(208,622)
Dividend received from the associates	已收聯營公司之股息	-	-	33,426	8,204	-	-
Reconciled to the Group's interests in the associates:	調節至本集團對聯營公司的投資:						
Gross amounts of net assets of the associates	聯營公司淨資產總額	(226,286)	(35,858)	470,250	264,563	(285,158)	(18,608)
Group's effective interest	本集團實際權益	55%	55%	45%	45%	38.77%	38.77%
Group's share of net (liabilities)/assets of the associates (note)	本集團應佔聯營公司淨(負債)/資產(附註)	(124,457)	(19,722)	213,198	119,053	(110,556)	(7,214)
Unrecognised share of losses	未確認的虧損	124,457	19,722	-	-	110,556	7,214
Elimination of unrealised profits on downstream sales	順流交易未實現利潤的抵銷	-	-	(10,366)	(9,429)	-	-
Carrying amount in the consolidated financial statements	於合併財務報表的賬面金額	-	-	202,832	109,624	-	-

Note:

The Group paid up the first tranche of paid-in capital of Guodian Taizhou in December 2016 while the other equity owners paid up in January 2017. The Group's share of net assets presented has been adjusted for the difference in capital paid-up.

附註:

本集團於2016年12月支付了國電泰州第一期實收資本,其他權益所有者已於2017年1月支付。本集團應佔聯營公司淨資產已對實收資本差異進行了調整。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 19 Interests in associates (continued)

Aggregate information of associates that are not individually material:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Aggregate carrying amount of individually immaterial associates in the consolidated financial statements	在合併財務報表中個別非重大聯營公司的合計賬面金額	208,769	120,241
Aggregate amounts of the Group's share of those associates profit/(loss)	本集團應佔此等聯營公司的合計金額利潤／(虧損)	12,890	(49,683)
Total comprehensive income	綜合收益總額	12,890	(49,683)

Three associates of the Group are loss making and the Group's share of the accumulated losses of those associates has exceeded its interest in the associates. In accordance with the accounting policy set out in note 2(f), the Group discontinued to recognise its share of losses of the associates. The current year unrecognised share of losses of associates equals or exceeds its interest in the associates is RMB226,703,000 (2015: RMB44,311,000). The accumulated unrecognised share of losses of associates as at the end of the reporting period is RMB328,307,000 (2015: RMB101,604,000).

本集團三家聯營公司目前處於虧損狀態，本集團應佔該聯營公司的累積虧損已超過本集團對該聯營公司的投資。根據附註2(f)中列明的會計政策，本集團已不再確認其在該聯營公司中的虧損份額。本年度對該聯營公司的未確認虧損份額超過或等於對該聯營公司的投資的金額為人民幣226,703,000元（2015年：人民幣44,311,000元）。於報告期末累計對該聯營公司的未確認虧損份額為人民幣328,307,000元（2015年：人民幣101,604,000元）。

#### 20 Other equity investments

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Unlisted equity securities, at cost	非上市權益證券，按成本計算	162,187	162,187

#### 20 其他權益投資

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 21 Other non-current assets

#### 21 其他非流動資產

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Long-term trade receivables due from: (note (i))	長期應收賬款(附註(i))		
– related parties under Guodian	– 國電下屬的關聯方	685,607	699,834
– third parties	– 第三方	122,169	176,098
Less: current portion of long-term trade receivables	減：長期應收款的即期部份	(250,587)	(183,940)
		557,189	691,992
Long-term service concession receivables due from third parties (note (ii))	應收第三方服務特許權長期應收款項 (附註(ii))	1,149,811	1,163,374
Less: current portion of long-term service concession receivables	減：服務特許權長期應收款項的 即期部份	(45,059)	(41,699)
		1,104,752	1,121,675
Long-term retention receivables due from: (note (iii))	長期應收質保金款項(附註(iii))		
– related parties under Guodian	– 國電下屬的關聯方	541,272	295,169
– third parties	– 第三方	1,733,621	2,373,701
		2,274,893	2,668,870
Long-term loans to third parties (note (iv))	提供給第三方的長期貸款(附註(iv))	14,926	14,407
Non-current financial assets	非流動金融資產	3,951,760	4,496,944
Long-term prepayments	長期預付款	6,915	9,123
Deductible VAT (note (v))	可抵扣增值稅(附註(v))	46,294	348,347
		4,004,969	4,854,414

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 21 Other non-current assets (continued)

Notes:

- (i) Long-term trade receivables represent trade receivables of certain construction contracts which are repayable by instalments over a 3 to 8-year period.
- (ii) Long-term service concession receivables due from third parties represent the amounts contractually and unconditionally receivable in connection with construction services under concession arrangements (note 41).
- (iii) Long-term retention receivables represent retentions of sales of wind turbines which will be received when the retention period elapses.
- (iv) A loan to third party represents an unsecured interest-free loan which is repayable by instalments from 2016 to 2034.
- (v) Deductible VAT represents the input VAT in excess of output VAT. Input VAT is recognised for the purchase of manufacturing raw materials and components and acquisitions of machinery and equipment used for operation. Input VAT will be deductible from output VAT payable for goods to be sold in subsequent years.
- (vi) All non-current financial assets of the Group and the Company are neither past due nor impaired.
- (vii) As at 31 December 2016, long-term service concession receivables of the Group amounting to RMB516,728,000 (2015: RMB781,915,000) was pledged as collateral for bank loans (see note 29).

#### 21 其他非流動資產(續)

附註：

- (i) 長期應收賬款指在3-8年期內分期償付的若干建造合同項下的應收賬款。
- (ii) 應收第三方服務特許權長期應收款項指與特許經營安排下的建造服務相關之約定及無條件應收款項(附註41)。
- (iii) 長期應收質保金款項指質保期滿之後將收回的風力機銷售質保金款項。
- (iv) 提供給第三方的貸款為無抵押的不帶息貸款，該筆貸款將於2016年至2034年分期償還。
- (v) 可抵扣增值稅指進項增值稅超過銷項增值稅的部份。進項增值稅於購買生產用原材料和部件以及購買經營用機器及設備時確認。進項增值稅可從後續年度出售貨物應支付的銷項增值稅中抵扣。
- (vi) 本集團及本公司的所有非流動金融資產既未逾期，亦未發生減值。
- (vii) 截至2016年12月31日，為取得銀行借款作為抵押物進行擔保的服務特許權長期應收款人民幣516,728,000元(2015年：人民幣781,915,000元)(見附註29)。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 22 Inventories

#### 22 存貨

(a) Inventories in the consolidated statement of financial position comprises:

(a) 合併財務狀況表中的存貨包括：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Raw materials	原材料	749,549	607,748
Work in progress	在產品	514,401	384,072
Finished goods	產成品	1,453,155	2,499,037
Spare parts	備件	5,092	1,523
		<b>2,722,197</b>	<b>3,492,380</b>

(b) The analysis of the amount of inventories recognised as an expense and included in the consolidated statement of profit or loss is as follows:

(b) 在合併損益表中確認為費用的存貨金額如下：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Carrying amount of inventories sold	售出存貨的賬面金額	6,775,102	8,307,617
Write down of inventories	存貨撇減	22,022	68,849
		<b>6,797,124</b>	<b>8,376,466</b>



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 23 Gross amounts due from/to customers for contract work

#### 23 應收／應付建造合同客戶款項總額

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Contract costs incurred plus recognised profits less recognised losses in connection with construction contracts in progress	在建中建造合同已發生合同成本加已確認利潤減已確認的損失	<b>28,740,537</b>	27,231,340
Less: progress billings	減：工程進度款	<b>(28,319,797)</b>	(26,002,170)
		<b>420,740</b>	1,229,170
Gross amounts due from customers for contract work (notes (ii) and (iii))	應收建造合同客戶款項總額(附註(ii)與(iii))	<b>1,443,384</b>	2,204,619
Gross amounts due to customers for contract work (note (iv))	應付建造合同客戶款項總額(附註(iv))	<b>(1,022,644)</b>	(975,449)
		<b>420,740</b>	1,229,170

Notes:

附註：

- |   |  |
|---|--|
| <p>(i) Gross amounts due from customers for contract work represent unbilled revenue for contract work and are presented as assets in the consolidated statement of financial position. Gross amounts due to customers for contract work represent the amounts billed in advance of the contract work delivered and are presented as liabilities in the consolidated statement of financial position.</p> | <p>(i) 應收建造合同客戶款項總額指合同工程項下未發賬單的收入，在合併財務狀況表列為資產。應付建造合同客戶款項總額指已發賬單金額多於已完成工程的金額，在合併財務狀況表內列為負債。</p>                          |
| <p>(ii) The gross amounts due from customers for contract work of the Group include amounts of RMB696,133,000 (2015: RMB1,549,516,000) due from related parties under Guodian and an associate.</p>   | <p>(ii) 本集團應收建造合同客戶款項總額包括應從國電下屬的關聯方及聯營公司收取的款項人民幣696,133,000元(2015年：人民幣1,549,516,000元)。</p>                               |
| <p>(iii) As at 31 December 2016, except for amounts of RMB74,861,000 (2015: RMB92,939,000) which are payable to the Group after the retention period of construction contracts, all of the remaining gross amounts due from customers for contract work of the Group are expected to be recovered within one year.</p>  | <p>(iii) 於2016年12月31日，除建造合同項下的質保期滿之後應付給本集團的人民幣74,861,000元(2015年：人民幣92,939,000元)之外，本集團應收建造合同客戶款項總額的所有剩餘賬款，預計將在一年之內收回。</p> |
| <p>(iv) Included in the gross amounts due to customers for contract work are amounts of RMB676,195,000 (2015: RMB533,401,000) due to related parties under Guodian and an associate.</p>  | <p>(iv) 包括在應付建造合同客戶款項總額之內的應支付給國電下屬的關聯方及聯營公司的款項為人民幣676,195,000元(2015年：人民幣533,401,000元)。</p>                               |

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 24 Trade and bills receivables

#### 24 應收賬款及票據

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Trade receivables for contract work due from:	合同工程的應收賬款：		
– Guodian	– 國電	–	12,783
– related parties under Guodian	– 國電下屬的關聯方	1,813,687	1,808,442
– associates	– 聯營公司	43,418	16,856
– third parties	– 第三方	3,236,559	3,693,833
		5,093,664	5,531,914
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	1,664,723	1,122,609
– associates	– 聯營公司	–	500
– third parties	– 第三方	228,836	512,383
		1,893,559	1,635,492
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	110,933	237,388
– third parties	– 第三方	33,511	44,989
		144,444	282,377
Trade receivables for sale of goods and rendering of services due from: (note (ii))	銷售商品及提供服務的應收賬款：(附註(ii))		
– Guodian	– 國電	740	1,426
– related parties under Guodian	– 國電下屬的關聯方	3,130,531	1,490,780
– associates	– 聯營公司	27,789	26,807
– third parties	– 第三方	4,906,013	5,580,538
		8,065,073	7,099,551
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	263,058	483,263
– third parties	– 第三方	634,971	1,186,763
		898,029	1,670,026
		16,094,769	16,219,360
Less: allowance for doubtful debts	減：壞賬撥備	(2,058,195)	(2,306,664)
		14,036,574	13,912,696

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 24 Trade and bills receivables (continued)

Notes:

- (i) Trade and bills receivables of the Group include bills discounted to banks or endorsed to suppliers and factored trade receivables with recourse totalling RMB328,252,000 (2015: RMB273,891,000). These receivables were not derecognised as the Group remains exposed to the credit risk of these receivables. The carrying amount of the associated bank loans and trade payables amounted to RMB328,252,000 (2015: RMB273,891,000). As at 31 December 2016, the fair value of the transferred assets and the associated liabilities is the same as their carrying amount, with the net position of RMB Nil (2015: RMB Nil).
- (ii) As at 31 December 2016, trade receivables of the Group amounting to RMB2,989,000 (2015: RMB342,300,000) were pledged as collateral for interest-bearing bank and other borrowings (see note 29).

All trade and bills receivables (net of impairment losses for doubtful debts) of the Group and the Company are expected to be recovered within one year.

#### (a) Ageing analysis

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

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Within 1 year	1年內	9,637,710	10,392,683
Between 1 to 2 years	1至2年內	3,575,045	3,091,777
Between 2 to 3 years	2至3年內	629,585	357,024
Over 3 years	3年以上	194,234	71,212
		<b>14,036,574</b>	<b>13,912,696</b>

Trade receivables are required to be settled in accordance with contracted terms and are generally due immediately without credit upon the issuance of invoice. Further details on the Group's credit policy are set out in note 37(a).

### 24 應收賬款及票據(續)

附註：

- (i) 本集團的應收賬款及票據包括貼現給銀行或背書轉讓給供貨商的票據，以及帶追索權的應收賬款保理，總額為人民幣328,252,000元（2015年：人民幣273,891,000元）。這些應收賬款和票據未被中止確認，因為本集團仍對這些應收賬款和票據具有信用風險。相關銀行貸款及應付賬款的賬面金額為人民幣328,252,000元（2015年：人民幣273,891,000元）。於2016年12月31日，轉讓資產的公允價值及關聯負債與其賬面金額相同，淨差額為人民幣零元（2015年：人民幣零元）。
- (ii) 於2016年12月31日，本集團作為帶息銀行及其他借款押物而質押的應收賬款為人民幣2,989,000元（2015年：人民幣342,300,000元）（見附註29）。

本集團所有應收賬款與票據（扣除呆壞賬的減值虧損）預計將於一年之內收回。

#### (a) 賬齡分析

於報告期末，本集團基於開立發票日期或收入確認日，兩者孰早的應收賬款及票據（扣除呆壞賬撥備）的賬齡分析如下：

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。關於本集團信用政策的詳細說明，參見附註37(a)。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 24 Trade and bills receivables (continued)

##### (b) Impairment of trade and bills receivables

Impairment losses in respect of trade and bills receivables are recorded using an allowance account unless the Group is satisfied that recovery of the amount is remote, in which case the impairment loss is written off against trade and bills receivables directly (see note 2(m)(i)).

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

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
At 1 January	於1月1日	2,306,664	268,386
Impairment losses recognised	確認的減值虧損	472,067	2,048,837
Reversal of impairment losses	減值虧損轉回	(520,554)	(6,371)
Uncollectible amounts written-off	不可收回款項核銷	(196,957)	(2,775)
Disposal of subsidiaries	出售附屬公司	(3,025)	(1,413)
At 31 December	於12月31日	2,058,195	2,306,664

The Group's trade and bills receivables of RMB2,696,040,000 (2015: RMB3,068,865,000) were individually determined to be impaired. The individually impaired receivables primarily related to customers from the discontinued solar power products and services segment who have unsatisfactory track records of repayment. Management decided to discontinue the business relationships with these customers and expected the receivables from these customers cannot be fully recovered. The remaining individually impaired received related to customers that were in financial difficulties and management assessed that the receivables are expected to be unrecoverable. Consequently, specific allowances for doubtful debts of RMB1,490,657,000 (2015: RMB1,835,174,000) from the discontinued solar power products and services segment and RMB567,538,000 (2015: RMB471,490,000) from other segments were recognised by the Group as at 31 December 2016 and RMB213,377,000 (2015: RMB1,775,126,000) from the discontinued solar power products and services segment and RMB242,780,000 (2015: RMB232,137,000) from other segments were recognised by the Group during the year ended 31 December 2016.

#### 24 應收賬款及票據(續)

##### (b) 應收賬款及票據的減值

應收賬款及票據的減值虧損將被記入撥備賬，除非本集團認為幾乎不可能收回該款項，在此情形之下，則直接將此等應收賬款及票據與減值虧損衝銷(見附註2(m)(i))。

本年度個別和整體的呆壞賬撥備的變動如下：

本集團已個別評定為已減值的應收賬款及票據為人民幣2,696,040,000元(2015年：人民幣3,068,865,000元)。已減值應收賬款主要與已終止經營的太陽能產品和服務分部中具有不良償債記錄的客戶有關。管理層決定終止與這些客戶的業務關係，且預計無法從這些客戶手中全額收響應收賬款。其餘的個別減值應收賬款與有財務困難之客戶有關，管理層估計這些減值應收賬款預期將無法收回。因此，於2016年12月31日，本集團確認已終止經營的太陽能產品和服務分部的特定呆賬撥備為1,490,657,000(2015年：人民幣1,835,174,000元)以及其他分部為人民幣567,538,000元(2015年：人民幣471,490,000元)。本集團於截至2016年12月31日止年度確認已終止經營的太陽能產品和服務分部的人民幣213,377,000元(2015年：人民幣1,775,126,000元)以及其他分部的人民幣242,780,000元(2015年：人民幣232,137,000元)的特定呆賬撥備。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 24 Trade and bills receivables (continued)

##### (c) Trade and bills receivables that are not impaired

The ageing analysis of trade and bills receivables that are neither individually nor collectively considered to be impaired are as follows:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Neither past due nor impaired	既未逾期亦無減值	3,042,176	3,531,157
Within 1 year	1年內	6,356,249	6,618,217
Between 1 to 2 years	1至2年	3,260,584	2,415,545
Between 2 to 3 years	2至3年	512,766	325,495
Over 3 years	3年以上	187,932	50,970
		10,317,531	9,410,227
		13,359,707	12,941,384

Aged receivables that were not impaired relate to a wide range of customers for whom there were no recent history of default and have a good track record with the Group. Based on past experience, management believes that no impairment allowance is necessary in respect of these balances as there has not been a significant change in credit quality and the balances are still considered fully recoverable. The Group does not hold any collateral over these balances.

#### 24 應收賬款及票據(續)

##### (c) 並無減值的應收賬款及票據

個別或整體而言均被認為並無減值的應收賬款和票據賬齡分析如下：

未產生減值的長賬齡應收賬款與眾多客戶相關，該等客戶最近沒有違約歷史，與本集團一直保持良好的事務歷史記錄。根據過往經驗，管理層相信，該等餘額無須計提減值撥備，因信用質量未發生重大變動，並且這些結餘仍被視為可以全數收回。本集團並未對上述餘額持有押物。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 25 Deposits, prepayments and other receivables

#### 25 按金、預付款項及其他應收款項

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Prepayments to sub-contractors (note (i))	支付給分包商的預付款(附註(i))		
– related parties under Guodian	– 國電下屬的關聯方	7,017	16,324
– third parties	– 第三方	488,575	551,446
Prepayments for purchase of inventories	採購存貨的預付款		
– related parties under Guodian	– 國電下屬的關聯方	410	317
– third parties	– 第三方	244,908	468,909
Deposits for construction contracts' bidding or performance (note (ii))	建造合同的投標或履約保證金(附註(ii))		
– related parties under Guodian	– 國電下屬的關聯方	70,915	61,681
– third parties	– 第三方	116,845	119,104
Other deposits	其他按金	3,959	8,466
Advances to staff	給員工的墊款	19,559	25,917
Advances to	墊款		
– associates (note (iii))	– 聯營公司(附註(iii))	736,081	852,363
– third parties	– 第三方	60,299	30,070
Interest receivables	應收利息自		
– associates	– 聯營公司	115,841	115,841
– related parties under Guodian	– 國電下屬的關聯方	9,752	–
– third parties	– 第三方	1,343	9,860
Dividends receivables	應收股息自		
– related parties under Guodian	– 國電下屬的關聯方	4,400	–
Consideration receivables from a related party under Guodian for the disposal of an associate	應收國電下屬的關聯方的出售聯營公司的對價	100,000	100,000
Consideration receivables for the disposal of property, plant and equipment	應收出售物業、廠房及設備的款項		
– an associate	– 聯營公司	332,423	273,747
– third parties	– 第三方	716	53,742
Compensation receivables	應收賠償款	127,536	131,998
Consideration receivables related to the disposal of desulfurisation and denitrification asset	應收出售脫硫、脫硝資產的對價		
– related parties under Guodian	– 國電下屬的關聯方	384,908	–
Others	其他	102,655	73,758
		2,928,142	2,893,543
Less: allowance for doubtful debts	減：呆壞賬撥備	(535,282)	(473,702)
		2,392,860	2,419,841

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 25 Deposits, prepayments and other receivables (continued)

Notes:

- (i) The balances represent prepayments to the sub-contractors in connection with the Group's construction contracts. The prepayments will be settled upon the delivery of goods and services by the sub-contractors.
- (ii) The balances represent deposits placed with customers for contracts bidding or performance of contracts in progress. The deposits will be released to the Group upon the completion of the related bidding or contract work, where applicable.
- (iii) Advances to associates of RMB577,039,000 (2015: RMB591,854,000) as at 31 December 2016 are unsecured, bear interest from 4.35% to 6.60% (2015: from 4.35% to 6.60%) per annum, and are repayable with one year.

All other advances to associates are unsecured, interest-free and repayable on demand.

##### (a) Impairment of deposits, prepayments and other receivables

Impairment of deposits, prepayments and other receivables are recorded using an allowance account unless the Group is satisfied that recovery of the amount is remote, in which case the impairment loss is written off against deposits, prepayments and other receivables directly (note 2(m)(i)).

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

#### 25 按金、預付款項及其他應收款項 (續)

附註：

- (i) 該款項指關於本集團的建造合同而向分包商支付的預付款。分包商交付貨物及服務之後，則將對預付款結算。
- (ii) 該款項是關於合同投標或合同履約而支付給客戶的保證金。相關投標或合同工程完工之後，該保證金則將返還給本集團。
- (iii) 於2016年12月31日，給聯營公司的墊款人民幣577,039,000元(2015年：人民幣591,854,000元)，年息率為4.35%至6.60%(2015年：4.35%至6.60%)，無抵押，要求在一年內償還；

除此之外，所有其他給聯營公司的墊款均無抵押、不帶息且提出要求之後即應立即還款。

##### (a) 按金、預付款項及其他應收款項的減值

按金、預付款項以及其他應收款項的減值記入撥備賬，除非本集團認為幾乎不可能收回該款項，在此情形之下，則直接將此等按金、預付款項及其他應收款項與減值虧損衝銷(見附註2(m)(i))。

本年度個別和整體呆壞賬撥備的變動如下：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
At 1 January	於1月1日	473,702	19,332
Impairment losses recognised	確認的減值虧損	113,497	456,787
Reversal of impairment losses	減值虧損轉回	(47,091)	(239)
Uncollectible amounts written off	無法回收金額的核銷	—	(127)
Disposal of a subsidiary	出售附屬公司	—	(2,051)
Reclassification as assets held for sale	重分類為持有待售	(4,826)	—
At 31 December	於12月31日	535,282	473,702

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 25 Deposits, prepayments and other receivables (continued)

The Group's deposits, prepayments and other receivables of RMB1,311,966,000 (2015: RMB1,155,354,000) were individually determined to be impaired. The individually impaired receivables included a receivable from a few debtors whose operation and financial condition continued to deteriorate and management assessed that the recoverability of the receivables is doubtful. Consequently, specific allowances for doubtful debts of RMB534,901,000 (2015: RMB473,588,000) were recognised by the Group as at 31 December 2016 and RMB113,215,000 (2015: RMB456,745,000) were recognised during the year ended 31 December 2016.

For other balances of deposits, prepayments and other receivables, management is of the opinion that the counterparties are with good credit quality and the balances are considered fully recoverable.

#### 25 按金、預付款項及其他應收款項 (續)

本集團已個別評定為已減值的按金、預付款項及應收款項為人民幣1,311,966,000元(2015年: 1,155,354,000元)。被評定為已減值的應收款項包括應收一些業務和財務狀況持續惡化的債務方, 管理層評定認為該應收款項的回收性具有不確定性。因此, 於2016年12月31日, 本集團確認的特定呆賬撥備為人民幣534,901,000元(2015年: 473,588,000元)。本集團於截至2016年12月31日止年度確認的特定呆賬撥備為人民幣113,215,000元(2015年: 456,745,000元)。

關於其他按金、預付款項及其他應收款項, 管理層認為, 對方具有良好的信用質量, 此類按金、預付款項及其他應收款項可以完全收回。

#### 26 Restricted deposits

Restricted deposits mainly represent guarantee deposits, cash pledged as collateral for bills payable and loans and blocked deposits. Majority of these restricted deposits are expected to be released within one year except for RMB3,030,000 (2015: RMB25,403,000), which was reclassified as blocked deposits for certain litigations from discontinued solar power products and services segment.

#### 26 受限制存款

受限制存款主要為保證金存款、應付票據和貸款的抵押現金以及凍結存款。除由於已終止經營的太陽能產品和服務分部的某些訴訟而被重分類為凍結存款的人民幣3,030,000元(2015年: 25,403,000元)以外, 多數受限制存款預計會在一年內解除限制。

#### 27 Cash at bank and in hand

#### 27 銀行存款及庫存現金

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Cash in hand	庫存現金	61	308
Cash at bank	銀行存款	2,855,495	2,028,918
Cash at Guodian Finance Corporation Limited ("Guodian Finance") and its subsidiary	國電財務有限公司(「國電財務」)及其附屬公司中的存款	1,748,106	1,040,543
		<b>4,603,662</b>	3,069,769
Representing:	包括:		
– cash and cash equivalents	– 現金及現金等價物	4,382,654	2,325,469
– deposits with banks over three months of original maturity	– 初始到期日三個月以上的銀行存款	221,008	744,300
		<b>4,603,662</b>	3,069,769

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 28 Non-current assets and disposal groups held for sale

##### (a) Assets and liabilities of non-current assets and disposal groups held for sale

At 31 December 2016, the non-current assets and disposal groups held for sale were stated at the lower of carrying amount and fair value less costs to sell, comprising the following assets and liabilities:

#### 28 分類為持有待售的非流動資產和處置組

##### (a) 持有待售的非流動資產及處置組的資產及負債

於2016年12月31日，持有待售的非流動資產和處置組以賬面金額和公允價值減去出售成本兩者中的孰低者確認，由以下資產及負債組成：

		2016 二零一六年 RMB'000 人民幣千元
Property, plant and equipment	物業、廠房及設備	1,464,815
Lease prepayments	預付租賃款項	373,913
Other non-current assets	其他非流動資產	137,079
Trade and other receivables	應收及其他應收款項	360,298
Other current assets	其他流動資產	612,260
Less: Inter-company receivables eliminated in the consolidated financial statements	減：於合併財務報表中對銷的公司間 應收款項	(248,476)
<b>Assets held for sale</b>	<b>持有待售資產</b>	<b>2,699,889</b>
Trade and other payables	應付及其他應付款項	1,310,789
Other current liabilities	其他流動負債	192,904
Other non-current liabilities	其他非流動負債	117,371
Less: Inter-company payables eliminated in the consolidated financial statements	減：於合併財務報表中對銷的公司間應付 款項	(424,770)
<b>Liabilities held for sale</b>	<b>持有待售負債</b>	<b>1,196,294</b>

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 28 Non-current assets and disposal groups held for sale (continued)

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

		2016 二零一六年 RMB'000 人民幣千元
<b>Assets</b>	<b>資產</b>	
At 1 January	於1月1日	—
Transfer to assets held for sale	轉入持有待售資產	2,820,658
Net decrease after reclassified as held for sale	重分類至持有待售後的淨減少	(2,756)
Impairment loss	減值損失	(9,059)
Decrease through disposal of non-current assets	處置非流動資產減少	(13,722)
Decrease through disposal of investment in an associate	處置聯營公司投資減少	(95,232)
At 31 December	於12月31日	2,699,889
<b>Liabilities</b>	<b>負債</b>	
At 1 January	於1月1日	—
Transfer to liabilities held for sale	轉入持有待售負債	1,210,712
Net decrease after reclassified as held for sale	重分類至持有待售後的淨減少	(14,418)
At 31 December	於12月31日	1,196,294

Notes:

- (i) 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") on 3 May 2016 and 1 July 2016 respectively to dispose 90% of equity interest in GD Solar to Zhonghuan. GD Solar will cease to be a subsidiary of the Company upon completion of the disposal. As at the date of the consolidated financial statements, the disposal has not yet been completed as Zhonghuan is listed on the Shenzhen Stock Exchange and the completion of the disposal is subject to the approval of certain regulatory authorities relevant to Zhonghuan. Based on all facts and circumstance, management of the Group is of the view that the completion of the sale is highly probable and expects the disposal will be completed in 2017.

Accordingly, all of the assets and liabilities of GD Solar, other than those that are not within the scope of disposal as set out in the agreements, have been classified as a disposal group held-for-sale in the consolidated financial statements. Upon the classification, an impairment loss has been recognised as "Administrative expenses" in the consolidated statement of profit or loss as a result of the remeasurement of the disposal group at the lower of its carrying value and fair value less costs to sell. The fair value less costs to sell was determined with reference to the appraised value evaluated by an independent valuer.

#### 28 分類為持有待售的非流動資產和處置組(續)

(b) 本年持有待售的非流動資產和處置組的資產及負債的變動如下顯示：

附註：

- (i) 根據2016年5月3日及2016年7月4日發佈的公告，本公司分別於5月3日及7月1日與天津中環半導體股份有限公司(「中環」)訂立合作框架協定和買賣協議，處置本公司對國電光伏之90%股權。國電光伏將於該處置完成之時不再是本公司的附屬公司。截止到合併財務報表日，該處置組尚未完成，因為中環在深圳證券交易所掛牌上市，處置完成情況需要跟中環相關的監管機構批准。根據所有事實和情況，本集團管理層認為銷售的完成的幾率是極高的並且預期將在2017年內完成處置。

因此，國電光伏除不在協議中出售範圍的全部資產和負債已在合併財務報表中作為一項持有待售的處置組列示。於分類之時，由於處置組按賬面價值或公允價值減去出售成本孰低者重新計量，在合併損益表「管理費用」中確認了減值損失。公允價值減去出售成本參照獨立估值師評估的評估價值確定。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 28 Non-current assets and disposal groups held for sale (continued)

##### (b) The movements of assets and liabilities of non-current assets and disposal groups held for sale during the year are as follows: (continued)

Notes: (continued)

- (ii) In addition to above, the Group has committed plans to sell certain assets and equity interests in other subsidiaries within the environment protection, energy conservation solutions and wind power products and services segment of the Group during the year ended 31 December 2016. These sales are expected to be completed within one year, among which the Group entered into the sale and purchase agreement for the sale of the 85.8% equity interest in Guodian United Power Technology (Yixing) Co., Ltd. ("**Yixing Company**"), the 51% equity interests in Beijing Longyuan Environmental Engineering Co., Ltd. ("**Beijing Longyuan**") and the 51% equity interests in Guodian Zhaojing Optoelectronics Technology Jiangsu Co., Ltd. ("**Zhaojing Company**") on 28 December 2016, 13 January 2017 and 22 January 2017, respectively. All of the assets and liabilities have been presented as non-current assets or disposal groups classified as held for sale in the consolidated financial statements at the end of the reporting period.

The Group remeasured the non-current assets and disposal groups at the lower of their carrying value and fair value less costs to sell upon the classification which resulted in an impairment loss of RMB6,519,000. The impairment loss has been charged to "administrative expenses" in the consolidated statement of profit or loss. The fair value less costs to sell was determined with reference to the appraisal value evaluated by independent valuers.

- (iii) The above non-recurring fair value measurement for the non-current assets and disposal groups classified as held for sale as at 31 December 2016 has been categorised as level 3 fair values.

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

There are no cumulative income or expenses included in other comprehensive income relating to the above non-current assets and disposal groups held for sale.

#### 28 分類為持有待售的非流動資產和處置組(續)

##### (b) 本年持有待售的非流動資產和處置組的資產及負債的變動如下顯示： (續)

附註：(續)

- (ii) 除上述以外，於截至2016年12月31日止年度，本集團已承諾執行出售環保分部、節能解決方案分部及風電產品及服務分部的某些資產及附屬公司的權益的計劃。這些出售預期在一年內完成，其中在2016年12月28日，2017年1月13日以及2017年1月22日，本集團分別訂立關於國電聯合動力技術(宜興)有限公司(宜興公司)85.8%的股權，北京龍源環保工程有限公司(北京龍源)51%的股權和國電兆晶光電科技江蘇有限公司(兆晶公司)51%的股權的買賣協議。在報告期末，所有資產和負債已列入合併財務報表中分類為持有待售的非流動資產和處置組。

於分類之時，本集團以非流動資產和處置組的賬面價值和公允價值減去出售成本孰低進行重新評估，結果產生了約人民幣6,519,000元的減值損失。減值損失計入合併損益表中的「管理費用」。公允價值減去出售成本參照獨立估值師評估的評估價值確定。

- (iii) 上述提及的在2016年12月31日被劃分為持有待售的非流動資產和處置組的非經常性公允價值的計量被歸類為第三層級的公允價值。

##### (c) 計入其他綜合收益的累計收入或費用

本公司並無此持有待售的非流動資產和處置組相關的計入其他綜合收益的累計收入或費用。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 29 Borrowings

#### 29 借款

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

##### (a) 長期帶息借款包括：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Bank loans	銀行貸款		
– secured (notes (i) and (iv))	– 抵押(附註(i)及(iv))	202,270	928,339
– unsecured	– 無抵押	337,631	881,671
Other loans from financial institution (secured)	來自其他金融機構的其他貸款(抵押)	508,129	54,536
Other loans from a related party under Guodian (secured)	來自國電下屬的關聯方的其他貸款(抵押)	97,000	–
Private placement notes (unsecured) (Note (iii))	私人配售債務融資工具(無抵押)(附註(iii))	2,441,370	996,908
Corporate bonds (note (ii))	公司債券(附註(ii))	2,843,245	2,838,529
		6,429,645	5,699,983
Less: current portion of long-term borrowings	減：長期借款的即期部份	(1,314,008)	(907,309)
		5,115,637	4,792,674

Notes:

附註：

- (i) Secured long-term interest-bearing borrowings as at 31 December 2016 and 2015 were guaranteed and/or secured by concession assets (note 16), trade and bills receivables (note 24), long-term service concession receivables (note 21) and/or income stream of certain subsidiaries of the Group
- (ii) In August 2012, the Company issued corporate bonds of RMB4,000,000,000, which comprise 3-year corporate bonds of RMB1,200,000,000 issued at par and with a coupon rate of 4.30% per annum, 5-year corporate bonds of RMB800,000,000 issued at par and with a coupon rate of 4.65% per annum and 10-year corporate bonds of RMB2,000,000,000 issued at par and with a coupon rate of 5.15% per annum. All corporate bonds are guaranteed by Guodian. The effective interest rates of the bonds are 4.52%, 4.85% and 5.24% per annum respectively. The Company repaid the 3-year corporate bonds of RMB1,200,000,000 in August 2015.

- (i) 於2016年12月31日及2015年12月31日，抵押的長期帶息借款為受擔保及／或以特許經營權資產(附註16)、應收賬款及票據(附註24)、應收服務特許權長期應收款項(附註21)抵押和某些附屬公司之收費權抵押。
- (ii) 於2012年8月，本公司發行公司債券人民幣4,000,000,000元，包括按面值發行的三年期公司債券人民幣1,200,000,000元，票面年利率為4.30%；按面值發行的五年期公司債券人民幣800,000,000元，票面年利率為4.65%；按面值發行的十年期公司債券人民幣2,000,000,000元，票面年利率為5.15%。所有公司債券由國電擔保。此等債券的實際年利率分別為4.52%、4.85%及5.24%。公司已於2015年8月償還了三年期公司債券人民幣1,200,000,000元。

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 29 Borrowings (continued)

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

Notes: (continued)

(iii) In January 2016, the Company issued first and second tranches of 3-year private placement notes with face values of RMB1,000,000,000 and RMB400,000,000, respectively. The private placement are unsecured and issued at par and with coupon rates of 4.35% and 4.30% per annum, respectively. The effective interest rates of the placement notes are 4.67% and 4.63% per annum, respectively.

(iv) As at 31 December 2016, no bank loan of the Group was guaranteed by Guodian.

As at 31 December 2015, two bank loan of the Group totalling RMB600,000,000 are guaranteed by Guodian.

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

### 29 借款(續)

#### (a) 長期帶息借款包括：(續)

附註：(續)

(iii) 於2016年1月，本公司分別發行了第一期和第二期面值總額分別為為人民幣1,000,000,000和400,000,000的私人配售債券融資工具。期限為三年，無擔保，並按面值發行。票面利率分別為4.35%和4.30%。此等債券的實際年利率分別為4.67%和4.63%。

(iv) 截至2016年12月31日，本集團無由國電提供擔保的銀行借款。

截止2015年12月31日，國電為本集團兩筆銀行借款合計人民幣600,000,000元提供擔保。

#### (b) 短期帶息借款包括：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Bank loans	銀行貸款		
– secured (note)	– 抵押(附註)	520,000	553,011
– unsecured	– 無抵押	6,043,997	8,610,000
Other loans	其他貸款		
– Guodian (unsecured)	– 國電(無抵押)	600,000	300,000
– related parties under Guodian (unsecured)	– 國電下屬的關聯方(無抵押)	–	379,397
Current portion of long-term borrowings	長期借款的即期部份	1,314,008	907,309
		8,478,005	10,749,717

Note:

Secured short-term interest-bearing borrowings as at 31 December 2016 and 2015 were guaranteed and/or secured by certain assets of a subsidiary and trade and bills receivables (note 24).

附註：

於2016年12月31日及2015年12月31日，抵押的短期帶息借款為受擔保及／或以子公司某些資產及以應收賬款及票據(附註24)作抵押。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 29 Borrowings (continued)

(c) The interest rates per annum on borrowings are as follows:

		2016 二零一六年	2015 二零一五年
<b>Long-term</b>	<b>長期</b>		
Bank loans	銀行貸款	4.28%–5.88%	4.90%–7.38%
Other loans	其他貸款	4.86%–5.51%	4.75%–6.40%
Private placement notes	私人配售債務融資工具	4.30%–4.35%	4.30%
Corporate bonds	公司債券	4.65%–5.15%	4.65%–5.15%
<b>Short-term</b>	<b>短期</b>		
Bank loans	銀行貸款	3.82%–5.87%	3.92%–6.24%
Other loans	其他貸款	3.70%–8.00%	3.00%–8.00%

(d) The long-term borrowings are repayable as follows:

#### 29 借款(續)

(c) 借款年利率如下：

(d) 長期借款還款情況如下：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Within 1 year or on demand	1年內或要求時立即還款	1,314,008	907,309
After 1 year but within 2 years	1年以上但2年以內	1,365,323	380,414
After 2 years but within 5 years	2年以上但5年以內	2,170,728	2,728,347
After 5 years	5年以上	1,579,586	1,683,913
		<b>6,429,645</b>	<b>5,699,983</b>

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 30 Trade and bills payables

### 30 應付賬款及票據

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Bills payable to:	應付票據：		
– sub-contractors and equipment suppliers	– 分包商及設備供貨商	182,975	235,437
– raw material suppliers	– 原材料供貨商	1,934,785	3,091,999
		<b>2,117,760</b>	3,327,436
Trade payables to:	應付賬款：		
– sub-contractors and equipment suppliers:	– 分包商及設備供貨商：		
– related parties under Guodian	– 國電下屬的關聯方	109,129	162,924
– associates	– 聯營公司	2,926	5,485
– third parties	– 第三方	5,187,145	5,165,357
		<b>5,299,200</b>	5,333,766
– raw material suppliers:	– 原材料供貨商：		
– related parties under Guodian	– 國電下屬的關聯方	17,078	44,992
– associates	– 聯營公司	8,681	9,462
– third parties	– 第三方	3,379,070	4,306,061
		<b>3,404,829</b>	4,360,515
		<b>10,821,789</b>	13,021,717

As at 31 December 2016 and 2015, all trade and bills payables of the Group are repayable on demand except for bills payable which are repayable within 6 months. All trade and bills payables are expected to be settled within one year.

於2016年及2015年12月31日，除於6個月內應償還的應付票據之外，本集團的所有應付賬款及票據應在對方要求時立即償還。預計所有應付賬款及票據將在一年之內結清。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 31 Other payables

#### 31 其他應付款項

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Interest payables	應付利息		
– Guodian	– 國電	4,362	697
– related parties under Guodian	– 國電下屬的關聯方	4,758	139
– third parties	– 第三方	12,474	17,910
Payables for staff related costs	應付員工的相關成本	114,934	89,935
Payables for other taxes	應付其他稅項	291,259	164,945
Payables for acquisition of property, plant and equipment and land use rights	購買物業、廠房及設備以及土地使用權的應付款項		
– related parties under Guodian	– 國電下屬的關聯方	13,492	13,492
– third parties	– 第三方	314,234	544,345
Deposits from	按金		
– sub-contractors (note (i))	– 分包商(附註(i))	69,792	241,592
– a third party	– 第三方	3,000	–
Retention payables (note (ii))	應付質保金款項(附註(ii))		
– related parties under Guodian	– 國電下屬的關聯方	48,592	49,505
– third parties	– 第三方	869,788	621,474
Advances from third parties (note (iv))	第三方墊款(附註(iv))	20,000	138,000
Dividends payables	應付股息		
– third parties	– 第三方	42,491	17,169
Other accruals and payables	其他預提金額與應付款項		
– Guodian (note (iii))	– 國電(附註(iii))	602,001	2,180
– related parties under Guodian	– 國電下屬的關聯方	30,673	21,935
– associates	– 聯營公司	2,669	55,934
– third parties	– 第三方	229,782	182,996
Financial liabilities	金融負債	2,674,301	2,162,248
		–	–
Receipts in advance (note (v))	預收款項(附註(v))		
– related parties under Guodian	– 國電下屬的關聯方	623,452	832,719
– third parties	– 第三方	327,099	770,086
		950,551	1,602,805
		3,624,852	3,765,053

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 31 Other payables (continued)

Notes:

- (i) The balances represent deposits from sub-contractors for contract bidding. The deposits will be released to sub-contractors upon the completion of the related bidding.
- (ii) Retention payables represent the amounts due to equipment and construction contractors which will be settled upon the expiry of the warranty period.
- (iii) The balances mainly represented an amount of RMB600,000,000 due to Guodian Group, for repayment of a bank loan of RMB600,000,000 on behalf of GD Solar in the year ended 31 December 2016. All amounts due to Guodian are interest-free, unsecured and have no fixed terms of repayment.
- (iv) All amounts are interest-free, unsecured and have no fixed terms of repayment.
- (v) Included in the balance are amounts of RMB55,176,000 (2015: RMB10,500,000) advances received from customers for which the related production and construction works have not commenced as at the end of reporting period.

All of the other payables of the Group are expected to be settled or recognised as income within one year or are repayable on demand.

### 31 其他應付款項(續)

附註：

- (i) 該款項指收取分包商的按金。招標結束之後，按金即還給包商。
- (ii) 應付質保金款項指保期滿之後，應付給設備及施工承包商的款項。
- (iii) 該款項為應付國電集團的人民幣6億元，為2016年內代為國電光伏償還的銀行貸款。所有應付國電集團的款項均不帶息、無抵押且未規定還款期。
- (iv) 所有款項均不帶息、無抵押且未規定還款期。
- (v) 該款項為預收款項人民幣55,176,000元(2015年：人民幣10,500,000元)，截止報告期末，相關建造工程尚未開工。

預計本集團的所有其他應付款項將於一年之內結清或確認為收入，或提出要求之後立即支付。

### 32 Income tax in the consolidated statement of financial position

(a) Tax (recoverable)/payable in the consolidated statement of financial position represents:

### 32 合併財務狀況表中的所得稅

(a) 合併財務狀況表中(可收回)/應付稅項：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Net tax payable at 1 January	於1月1日應付稅項淨額	3,091	17,731
Provision for the year (note 8(a))	本年度撥備(附註8(a))	158,900	194,332
Under/(over)-provision in respect of prior year (note 8(a))	以往年度撥備不足/(過剩)(附註8(a))	88,464	(3,443)
Income tax paid	繳納的所得稅	(354,406)	(205,529)
Reclassified as liabilities held for sale (note 28)	重分類至持有待售的負債(附註28)	2,188	—
Net tax (recoverable)/payable at 31 December	於12月31日(可收回)/應付稅項淨額	(101,763)	3,091
Representing:	包括：		
Income tax payable	應付所得稅	49,959	63,600
Tax recoverable	可收回稅項	(151,722)	(60,509)
		(101,763)	3,091

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 32 Income tax in the consolidated statement of financial position (continued) 32 合併財務狀況表中的所得稅(續)

#### (b) Deferred tax assets and liabilities recognised:

The components of deferred tax assets/(liabilities) recognised in the consolidated statement of financial position and the movements during the year are as follows:

#### (b) 已確認的遞延稅項資產及負債：

合併財務狀況表中確認的遞延稅項資產／(負債)以及在本年度的變化情況如下所述：

		Provision for impairment of assets	Tax losses	Unrealised profits on intra-group transactions 集團內部 交易未實現 利潤	Deferred income	Provision for warranty	Intangible assets	Others	Total
		資產減值 撥備	稅項虧損		遞延收益	質保金撥備	無形資產	其他	合計
		RMB'000 人民幣千元	RMB'000 人民幣千元 (note (i)) (附註(i))	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 (note (ii)) (附註(ii))	RMB'000 人民幣千元	RMB'000 人民幣千元
At 1 January 2015	2015年1月1日	64,140	99,109	41,709	49,621	98,833	(118,331)	80,079	315,160
Credited/(charged) to profit or loss (note 8(a))	計入／ (扣減)損益 (附註8(a))	97,264	(70,636)	(3,645)	(2,975)	7,963	(5,193)	(52,513)	(29,735)
At 31 December 2015 and 1 January 2016	於2015年12月31日及 2016年1月1日	161,404	28,473	38,064	46,646	106,796	(123,524)	27,566	285,425
Credited/(charged) to profit or loss (note 8(a))	計入／(扣減)損益 (附註8(a))	76,475	(18,734)	440	(9,331)	113,345	(4,828)	(32,725)	124,642
Reclassified as assets held for sale	重分類至持有待售 的資產	(286)	-	-	(2,343)	(394)	-	-	(3,023)
At 31 December 2016	2016年12月31日	237,593	9,739	38,504	34,972	219,747	(128,352)	(5,159)	407,044

Notes:

- Deferred tax assets in respect of unused tax losses are related to subsidiaries that were established in recent years. They are now progressing to their normal production stage and are deriving profits. Accordingly, it is considered probable that sufficient taxable profits will be available in the future to utilise their unused tax losses before they expire.
- Deferred tax liabilities in respect of intangible assets arose from the temporary differences in development costs and concession assets.

附註：

- 關於未利用的可抵扣稅項虧損所產生的遞延稅項資產，與近年來成立的附屬公司有關，這些附屬公司目前正在步入經營正軌並開始產生利潤。相應地，認為將來可能會存在足夠的應納稅利潤，從而可以使用以前未利用的可抵扣稅項虧損。
- 關於無形資產所產生的遞延所得稅負債是由於開發成本與特許權資產的暫時性差異而產生的。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 32 Income tax in the consolidated statement of financial position (continued)      32 合併財務狀況表中的所得稅(續)

##### (b) Deferred tax assets and liabilities recognised: (continued)

##### *Reconciliation to the consolidated statement of financial position*

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Net deferred tax asset recognised in the statement of financial position	於合併財務狀況表中確認的遞延稅項資產淨額	612,382	459,730
Net deferred tax liability recognised in the statement of financial position	於合併財務狀況表中確認的遞延稅項負債淨額	(205,338)	(174,305)
		407,044	285,425

##### (b) 已確認的遞延稅項資產及負債： (續)

##### 調節至合併財務狀況表

##### (c) Deferred tax assets not recognised

In accordance with the accounting policy set out in note 2(u), the Group has not recognised deferred tax assets in respect of unused tax losses and certain deductible temporary differences of RMB8,175,535,000 (2015: RMB7,221,706,000), as it is not probable that future taxable profits against which the losses or the temporary differences can be utilised will be available in the relevant tax jurisdictions and entities. As at 31 December 2016, the expiration of tax losses of the Group, if unused, is as follows:

##### (c) 未確認的遞延稅項資產

根據附註2(u)中規定的會計政策，本集團未確認遞延稅項資產的未利用的可抵扣稅項虧損與某些可抵扣的暫時性差異為人民幣8,175,535,000元（2015年：人民幣7,221,706,000元），因為在相關稅務管轄區域及實體內，將來不很可能產生可以使用此等未利用稅項虧損或暫時性差異的應納稅利潤。於2016年12月31日，本集團未利用的稅項虧損的期限如下：

	2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
2016	—	37,518
2017	94,596	81,878
2018	140,883	412,488
2019	187,846	664,008
2020	692,517	1,303,382
2021	2,390,812	—
	3,506,654	2,499,274

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 32 Income tax in the consolidated statement of financial position (continued)

#### (d) Deferred tax liability not recognised

At 31 December 2016, taxable temporary differences relating to undistributed profits and PRC statutory reserves of subsidiaries and associates amounted to RMB3,402,949,000 (2015: RMB3,233,080,000). No deferred tax liability was recognised in respect of these taxable temporary differences as dividends from subsidiaries and associates are not subject to PRC income tax and the Group has no plan to dispose of these subsidiaries and associates in the foreseeable future.

### 32 合併財務狀況表中的所得稅(續)

#### (d) 未確認的遞延稅項負債

於2016年12月31日，關於附屬公司及聯營公司的未分配利潤及中國法定公積金的應納稅暫時性差異為人民幣3,402,949,000元(2015年：人民幣3,233,080,000元)。關於此等應納稅暫時性差異，未確認任何遞延稅項負債，因為從附屬公司及聯營公司取得的股息不需繳納中國所得稅，且在可預見的未來，本集團並無任何計劃出售此等附屬公司及聯營公司。

### 33 Provision for warranty

The movement of provisions for product warranty during the year is as follows:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
At 1 January	於1月1日	787,056	672,211
Additional provisions made	額外撥備	405,557	270,440
Reclassified as liabilities held for sale	本年度轉移至持有待售的負債	(1,579)	—
Provision utilised	已使用撥備	(197,944)	(155,595)
At 31 December	於12月31日	993,090	787,056
Less: current portion of provision for warranty	減：質保金撥備的即期部份	(255,294)	(111,389)
		737,796	675,667

Under the terms of the Group's sales agreements, the Group will rectify product defects of wind turbines, steam turbines and distributed control system products arising within one to five years of the date of sale. Provision is therefore made for the best estimate of the expected settlement under these agreements in respect of sales made within one to five years prior to the end of the reporting period.

In addition, the Group's photovoltaic modules typically sold with a two or five-year warranty for defects in materials and workmanship and a ten and twenty-five year minimum power output warranty, against declines of more than 10% and 20%, respectively, of initial power generation capacity from the date of delivery. The Group has the responsibility to repair or replace solar modules, at customers' option, under the terms of the warranty policy. The Group maintains warranty provision to cover potential liabilities that could arise under these warranties.

本年度質保金撥備的變化如下：

根據本集團銷售協議條款規定，產品售出日期之後1-5年內風機、汽輪機與分布式控制系統產生的產品缺陷，本集團將進行保修。因此，就在報告期末之前的1-5年內的銷售，根據協議項下的預期償付金額的最佳估計作出了撥備。

此外，本集團的光伏組件通常提供2年或5年的原材料及製作工藝缺陷質保期，且針對交付日期時的初始發電能力降低超過10%與20%，分別提供10年及25年的最小發電量質保。在質保條款項下，根據客戶的要求，本集團有責任維修或更換太陽能組件。本集團對此等質保項下潛在的責任計提質保撥備。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 33 Provision for warranty (continued)

The amount of the provision takes into account the Group's recent claim experience and the experiences of other companies for similar products and is only made where a warranty claim is probable.

### 33 質保金撥備(續)

根據本集團近年來的理賠經驗以及其他公司關於類似產品的處理經驗，確定此等質保撥備，並僅對很可能產生質保要求的情形提取撥備。

### 34 Deferred income

### 34 遞延收益

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
At 1 January	於1月1日	499,453	503,131
Additions	增加	3,352	30,526
Reclassified as liabilities held for sale (note 28)	本年度劃分至持有待售的負債 (附註28)	(81,891)	—
Credited to profit or loss	計入損益	(45,962)	(34,204)
At 31 December	於12月31日	374,952	499,453

Deferred income mainly represents government grants relating to the construction of property, plant and equipment, as well as technology research funding related to environmental protection related assets, which would be recognised as income on a straight-line basis over the expected useful life of the relevant assets. The deferred income recognised is included in "other revenue" in the consolidated statement of profit or loss.

遞延收益主要包括政府給予關於物業、廠房及設備的建造補貼，以及關於相關環保資產的技術研發基金，根據直線法在相關資產的預計使用壽命期內確認收入。確認為遞延收益的款項包括在合併損益表的「其他收入」中。

### 35 Other non-current liabilities

### 35 其他非流動負債

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Long-term retention payables to third parties	應付第三方長期質保金	216,562	214,327
Other non-current financial liabilities	其他非流動金融負債	6,370	6,370
		222,932	220,697

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 36 Capital, reserves and dividends

#### (a) Movements in components of equity

The reconciliation between the opening and closing balances of each component of the Group's consolidated equity is set out in the consolidated statements of changes in equity. Details of the changes in the Company's individual components of equity between the beginning and the end of the year are set out below:

		Share capital	Capital reserve	PRC statutory reserve	Accumulated losses	Total equity
		股本 RMB'000 人民幣千元	資本儲備 RMB'000 人民幣千元	中國法定 公積金 RMB'000 人民幣千元	累計虧損 RMB'000 人民幣千元	權益總額 RMB'000 人民幣千元
Balance at 1 January 2015	2015年1月1日 餘額	6,063,770	805,682	129,332	(715,032)	6,283,752
Changes in equity for 2015:	2015年權益 變化：					
Loss and total comprehensive income for the year	本年度虧損及 綜合收益 總額	-	-	-	(2,121,226)	(2,121,226)
Balance at 31 December 2015 and 1 January 2016	2015年12月31日 及2016年1月 1日餘額	6,063,770	805,682	129,332	(2,836,258)	4,162,526
Changes in equity for 2016:	2016年權益 變化：					
Loss and total comprehensive income for the year	本年度虧損及 綜合收益 總額	-	-	-	(756,380)	(756,380)
Appropriation to reserves	儲備金	-	-	24,383	(24,383)	-
Balance at 31 December 2016	2016年12月31日 餘額	6,063,770	805,682	153,715	(3,617,021)	3,406,146

### 36 資本、儲備及股息

#### (a) 權益組成部份的變動

合併權益變動表中列出了本集團合併權益中各組成部份的期初及期末餘額的調節情況。本公司權益各組成部份的年初及年末變化情況如下所述：

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 36 Capital, reserves and dividends (continued)

#### 36 資本、儲備及股息(續)

##### (b) Dividends

- (i) The board of directors of the Company did not recommend the payment of a final dividend in respect of the year ended 31 December 2016 and 2015.
- (ii) The directors of the Company did not approve or pay any dividend in respect of the previous financial year during the year ended 31 December 2016 and 2015.

##### (b) 股息

- (i) 本公司董事會不建議派發截至2016年及2015年12月31日止年度末期股息。
- (ii) 截至2016年及2015年12月31日止年度，本公司董事會未批准或派發以前年度相關的股息。

##### (c) Share capital

##### (c) 股本

Registered and issued share capital

已註冊及發行的股本

		No. of shares 股數 '000 千股	RMB'000 人民幣千元
<b>Ordinary shares, registered, issued and fully paid:</b>	已註冊、發行且全部繳足的普通股：		
<b>Domestic shares of RMB1.00 each</b>	國內股份，每股人民幣1元		
At 1 January 2015, 31 December 2015 and 31 December 2016	於2015年1月1日、2015年12月31日及2016年12月31日	4,754,000	4,754,000
<b>H shares of RMB1.00 each</b>	H股，每股人民幣1元		
At 1 January 2015, 31 December 2015 and 31 December 2016	於2015年1月1日、2015年12月31日及2016年12月31日	1,309,770	1,309,770
<b>Total</b>	合計		
At 31 December 2016 and 2015	於2016年及2015年12月31日	6,063,770	6,063,770

The holders of ordinary shares are entitled to receive dividends as declared from time to time and are entitled to one vote per share at meetings of the Company. All ordinary shares rank equally with regard to the Company's residual assets.

普通股持有人有權收取不時公佈的股息，且每股在本公司會議上享有一票投票權。所有普通股對公司的剩餘資產享有同樣權利。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 36 Capital, reserves and dividends (continued)

##### (d) Nature and purpose of reserves

###### (i) Capital reserve

Capital reserve mainly represents share premium, contributions from Guodian, and the difference between the considerations of acquisition or disposal of equity interests from/to non-controlling equity owners and the carrying amount of the proportionate net assets.

###### (ii) PRC statutory reserve

According to the Company's Article of Association, the Company is required to transfer 10% of its net profit as determined in accordance with accounting rules and regulations of the PRC to its statutory reserve until the reserve balance reaches 50% of the registered capital. The transfer to this reserve must be made before distribution of a dividend to equity shareholders. This reserve fund can be utilised in setting off accumulated losses or increasing capital of the Company and is non-distributable other than in liquidation.

###### (iii) Exchange reserve

Exchange reserve comprises all foreign exchange differences arising from the translation of the financial statements of operations that have functional currency other than the RMB which are dealt with in accordance with the accounting policies as set out in note 2(x).

##### (e) Distributability of reserves

In accordance with the Articles of Association of the Company, the net profit after tax of the Company for the purpose of dividends payment will be the lesser of (i) the net profit determined in accordance with the accounting rules and regulations of the PRC; and (ii) the net profit determined in accordance with IFRSs. As of 31 December 2016, the retained profits available for distribution are RMB Nil (2015: RMB Nil).

#### 36 資本、儲備及股息(續)

##### (d) 儲備性質及用途

###### (i) 資本儲備

資本儲備主要包括股份溢價、國電繳款、以及向非控股權益所有者購買或出售權益的對價與相應淨資產賬面金額之間的差額。

###### (ii) 中國法定公積金

根據本公司的《公司章程》規定，要求本公司將根據中國會計準則及法規確定的淨利潤的10%轉為本公司的法定公積金，直至公積金剩餘總額達到註冊資本的50%。必須在向權益股東分配股息之前，提取該公積金。該公積金可以用於彌補本公司的累計虧損或增資，並且除清算之外不得進行分配。

###### (iii) 匯兌儲備

匯兌儲備包括根據附註2(x)規定的會計政策換算非人民幣為功能貨幣的業務的財務報表時所產生的所有匯兌差額。

##### (e) 儲備的可分配性

根據本公司的《公司章程》，作為股息分配的本公司稅後淨利潤應為以下兩者之中的孰低者：(i)按照中國會計準則及法規確定的淨利潤；(ii)按照《國際會計報告準則》確定的淨利潤。於2016年12月31日，可供分配的留存利潤額為人民幣零元(2015年：人民幣零元)。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 36 Capital, reserves and dividends (continued)

#### (f) Capital management

The Group's primary objectives when managing capital are to safeguard the Group's ability to continue as a going concern, so that it can continue to provide returns for equity shareholders and benefits for other stakeholders, by pricing products and services commensurately with the level of risk and by securing access to financing at a reasonable costs.

The Group actively and regularly reviews and manages its capital structure to maintain a balance between the higher equity shareholder returns that might be possible with higher levels of borrowings and the advantages and security afforded by a sound capital position, and makes adjustments to the capital structure in light of changes in economic conditions.

The Group monitors its capital structure on the basis of liability-to-asset ratio, which is calculated as total liabilities by total assets. The liability-to-asset ratio of the Group and the Company were 80% (2015: 81%) and 49% (2015: 67%) respectively.

There were no changes in the Group's approach to capital management during the year. Neither the Company nor any of its subsidiaries are subject to externally imposed capital requirements.

### 36 資本、儲備及股息(續)

#### (f) 資本管理

本集團資本管理的主要目標是，根據風險水平對產品及服務定價及按照合理的成本取得融資，以便保障本集團持續經營的能力，從而可以持續向權益股東提供回報並向其他利益關聯方提供益處。

本集團積極地並且定期審查並管理本集團的資本結構，在較高的借款水平情況下向權益股東提供較高回報的同時，保持本集團具有較好的資本優勢及安全性，並按照經濟形勢不斷調整本集團的資本結構。

本集團根據負債對資產比率監控本集團的資本結構。本集團和本公司的負債對資產比率分別為80%(2015年：81%)和49%(2015年：67%)。

本年度本集團的資本管理方法沒有發生變更。本公司或其任何附屬公司均未有受外界施加的資本要求。

### 37 Financial risk management and fair values

Exposure to credit, liquidity, interest rate and currency risks arises in the normal course of the Group's business.

The Group's exposure to these risks and the financial risk management policies and practices used by the Group to manage these risks are described below:

#### (a) Credit risk

The Group's credit risk is primarily attributable to cash at bank and in hand, trade and bills receivables, deposits, prepayments and other receivables and other non-current assets. Management has a credit policy in place and the exposure to these credit risks are monitored on an ongoing basis.

Substantially all of the Group's cash at bank and in hand are deposited in the stated owned/controlled PRC banks which the directors assessed the credit risk to be insignificant.

### 37 財務風險管理及公允價值

本集團的正常業務過程中存在信用、流動資金、利率以及貨幣風險。

本集團面臨的此等風險以及本集團的財務風險管理政策及措施如下所述：

#### (a) 信用風險

本集團的信用風險主要與如下因素有關：銀行存款及庫存現金、應收賬款及票據、按金、預付款項及其他應收款項，以及其他非流動資產。管理層已建立了信用管理政策，不斷監控信用風險因素。

本集團近乎所有的銀行存款及庫存現金均存放於中國有／控制的銀行，董事們評估認為其信用風險不大。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 37 Financial risk management and fair values (continued) 37 財務風險管理及公允價值(續)

##### (a) Credit risk (continued)

In respect of trade and bills receivables, deposits, prepayments and other receivables and other non-current assets, individual credit evaluations are performed on all customers. These evaluations focus on the customer's past history of making payments when due and current ability to pay, and take into account information specific to the customer as well as pertaining to the economic environment in which the customer operates. The Group generally requires customers to settle trade receivables in accordance with contracted terms and other debts in accordance with agreements. Credit terms may be granted to customers, depending on the nature of business. Normally, the Group does not obtain collateral from customers.

The Group's exposure to credit risk is influenced mainly by the individual characteristics of each customer rather than the industry in which the customers operate and therefore significant concentrations of credit risk primarily arise when the Group has significant exposure to individual customers. At the end of the reporting period, 39% and 10% (2015: 32% and 7%) of trade and other receivables was due from Guodian and related parties under Guodian, the Group's largest customer, and the five largest remaining customers respectively.

Except for the financial guarantees given by the Group as set out in note 39, the Group does not provide any other guarantees which would expose the Group to credit risk. The maximum exposure to credit risk in respect of these financial guarantees at the end of the reporting period is disclosed in note 39.

Further quantitative disclosures in respect of the Group's exposure to credit risk arising from trade and bills receivables, deposits, prepayments and other receivables and other non-current assets are set out in notes 24, 25 and 21, respectively.

##### (a) 信用風險(續)

關於應收賬款及票據、按金、預付款項及其他應收款項與其他非流動資產，已對所有客戶進行了單獨信用評估。評估針對客戶過去的到期款項支付歷史及目前的支付能力，並考慮了客戶的具體情況，以及客戶營業所在地的整體經濟環境。總體上，本集團要求客戶按照合同條款結算應收賬款，並按照協議規定結清其他欠款。根據業務性質，可能會給予客戶一定的付款信用期限。通常，本集團不向客戶收取抵押物。

本集團的信用風險主要受到每個客戶的具體情況影響，而不會受到客戶所從事行業的影響，因此，當本集團頻繁地接觸個別客戶時，信用風險的集中度就會增加。於報告期末，分別有39%與10% (2015年：32%與7%) 的應收賬款及其他應收款項來自於國電及國電下屬的關聯方(本集團最大的客戶)和其餘的前五大客戶。

除附註39中本集團提供的金融擔保之外，本集團未提供任何其他會使本集團承受信用風險的其他擔保。於報告期末，這些金融擔保產生的最大信用風險度，已在附註39中進行了披露。

與應收賬款及票據、按金、預付款項以及其他應收款項，及其他非流動資產相關的本集團信用風險，分別在附註24、25以及21中進行了披露。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 37 Financial risk management and fair values (continued)

#### (b) Liquidity risk

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

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

In order to enhance the Group's liquidity and solvency position, the Group have taken a series of measures and the directors are satisfied that the Group will have necessary liquid funds to finance its working capital and capital expenditure requirements according to the Group's business plan and cash flow forecast. With regards to its future capital commitments and other financing requirements, the Group has unutilised banking facilities of RMB16,665,956,000 (2015: RMB19,837,962,000) as at 31 December 2016. The directors are of the opinion that the assumptions which are included in the cash flow forecast are reasonable. However, as with all assumptions in regard to future events, these are subject to inherent limitations and uncertainties and some or all of these assumptions may not be realised.

### 37 財務風險管理及公允價值(續)

#### (b) 流動資金風險

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

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

為了增強集團的資金流動性和償債能力，本集團已採取了多重措施。根據本集團的商業計劃和現金流量預測，董事會同意本集團採用必要的流動資金為其運營資本和資本支出需求提供資金支持。關於本集團未來的資金承擔及其他融資要求，於2016年12月31日，本集團未動用銀行授信為人民幣16,665,956,000元（2015年：人民幣19,837,962,000元）。董事們認為，現金流預計的假設條件是合理的。然而，關於未來事件的所有假設條件本身均具有限制性及不確定性，某些或者所有此類假設條件均可能不會實現。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 37 Financial risk management and fair values 37 財務風險管理及公允價值(續)

#### (b) Liquidity risk (continued)

The following tables show the remaining contractual maturities at the end of the reporting period of the Group's non-derivative financial liabilities, which are based on contractual undiscounted cash flows (including interest payments computed using contractual rates or, if floating, based on rates current at the end of the reporting period) and the earliest date the Group can be required to pay:

#### (b) 流動資金風險(續)

下表列出了於報告期末，本集團非衍生金融負債的剩餘合同期限，依據是合同未貼現現金流(包括根據合同利率計算的利息款額，如果採用浮動利率，即為根據報告期末的利率計算的利息款額)，以及可能要求本集團支付的最早日期：

	2016					Carrying amount
	二零一六年					
	Contractual undiscounted cash outflow					
	合同未貼現現金流出					
	Within 1 year or on demand 1年內或 要求即付 RMB'000 人民幣千元	More than 1 year but less than 2 years 1年以上 2年以下 RMB'000 人民幣千元	More than 2 years but less than 5 years 2年以上 5年以下 RMB'000 人民幣千元	More than 5 years 5年以上 RMB'000 人民幣千元	Total 合計 RMB'000 人民幣千元	
Long-term borrowings (note 29(a)) 長期借款(附註29(a))	41,879	1,507,658	2,415,831	2,103,000	6,068,368	5,115,637
Short-term borrowings (note 29(b)) 短期借款(附註29(b))	8,514,334	—	—	—	8,514,334	8,478,005
Trade and bills payables (note 30) 應付賬款及票據(附註30)	10,821,789	—	—	—	10,821,789	10,821,789
Other payables (note 31) 其他應付款項(附註31)	2,674,301	—	—	—	2,674,301	2,674,301
Other non-current liabilities (note 35) 其他非流動負債(附註35)	—	189,675	33,257	—	222,932	222,932
	22,052,303	1,697,333	2,449,088	2,103,000	28,301,724	27,312,664

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 37 Financial risk management and fair values 37 財務風險管理及公允價值(續)

#### (b) Liquidity risk (continued)

#### (b) 流動資金風險(續)

	2015 二零一五年					
	Contractual undiscounted cash outflow 合同未貼現現金流出					
	Within 1 year or on demand 1年內或 要求即付 RMB'000 人民幣千元	More than 1 year but less than 2 years 1年以上 2年以下 RMB'000 人民幣千元	More than 2 years but less than 5 years 2年以上 5年以下 RMB'000 人民幣千元	More than 5 years 5年以上 RMB'000 人民幣千元	Total  合計 RMB'000 人民幣千元	Carrying amount  賬面金額 RMB'000 人民幣千元
Long-term borrowings (note 29(a)) 長期借款(附註29(a))	75,179	1,647,015	3,948,244	100,825	5,771,263	4,792,674
Short-term borrowings (note 29(b)) 短期借款(附註29(b))	11,001,055	–	–	–	11,001,055	10,749,717
Trade and bills payables (note 30) 應付賬款及票據(附註30)	13,021,717	–	–	–	13,021,717	13,021,717
Other payables (note 31) 其他應付款項(附註31)	2,162,248	–	–	–	2,162,248	2,162,248
Other non-current liabilities (note 35) 其他非流動負債(附註35)	–	195,453	25,244	–	220,697	220,697
	26,260,199	1,842,468	3,973,488	100,825	32,176,980	30,947,053

#### (c) Interest rate risk

#### (c) 利率風險

The Group's interest rate risk arises primarily from long-term borrowings. Borrowings issued at variable rates expose the Group to cash flow interest rate risk.

本集團的利率風險主要來自於長期借款。浮動利率借款使本集團暴露於現金流利率風險之下。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

## 37 Financial risk management and fair values 37 財務風險管理及公允價值(續)

### (c) Interest rate risk (continued)

The Group regularly reviews and monitors the mix of fixed and variable rate borrowings in order to manage its interest rate risks. During the year, however, management of the Group did not consider it is necessary to use interest rate swaps to hedge its exposure to interest.

#### (i) Interest rate profile

The following table details the profile of the Group's net borrowings (interest-bearing financial liabilities less interest-bearing financial assets) at the end of the reporting period. The detailed interest rates and maturity information of the Group's borrowings are disclosed in note 29.

### (c) 利率風險(續)

為了管理本集團的利率風險，本集團定期審查並監控固定利率及浮動利率借款的組合。然而，本集團管理層認為在本年度無需通過利率掉期，對沖本集團的利率風險。

#### (i) 利率情況

下表詳細列出了報告期末本集團的淨借款情況(帶息金融負債減帶息金融資產)。附註29披露了本集團借款的詳細利率以及借款期限。

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
<b>Net fixed rate borrowings:</b>	<b>固定利率淨借款：</b>		
Borrowings	借款	6,573,518	7,523,381
Less: cash in bank	減：銀行存款		
(including restricted deposits)	(包括受限制存款)	(366,908)	(744,300)
loans and advances	貸款及墊款	(16,039)	(30,854)
		6,190,571	6,748,227
<b>Net floating rate borrowings:</b>	<b>浮動利率淨借款：</b>		
Borrowings	借款	6,901,124	9,699,677
Other payables	其他應付款項	118,000	118,000
Less: cash in bank	減：銀行存款		
(including restricted deposits)	(包括受限制存款)	(4,408,232)	(2,501,175)
loans and advances	貸款及墊款	(525,741)	(501,000)
		2,085,151	6,815,502
<b>Total net borrowings</b>	<b>淨借款總額</b>	<b>8,275,722</b>	<b>13,563,729</b>



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 37 Financial risk management and fair values (continued)

### 37 財務風險管理及公允價值(續)

#### (ii) Sensitivity analysis

At 31 December 2016, it is estimated that a general increase/decrease of 100 basis points in interest rates of net floating borrowings, with all other variables held constant, the Group's loss after tax would have increased/decreased and retained profits would have decreased/increased by approximately RMB18,075,000 (2015: RMB42,087,000). Other components of consolidated equity would not be affected by the general increase/decrease in interest rates.

The sensitivity analysis above has been determined assuming that the change in interest rates had occurred at the end of the reporting period and had been applied to the exposure to interest rate risk for non-derivative financial instruments in existence at the end of the reporting period. The impact on the Group's profit after tax (and retained profits) and other components of consolidated equity is estimated as an annualised impact on interest expense or income of such a change in interest rates.

The estimated 100 basis points increase or decrease represents management's assessment of a reasonable change in interest rates over the period until the next annual statement of financial position date. The analysis is performed on the same basis for 2015.

#### (d) Currency risk

The Group is exposed to currency risk primarily through sales and purchases which give rise to receivables and payables, as well as borrowings and cash at bank and in hand that are denominated in a foreign currency, i.e. a currency other than the functional currency of the operations to which the transactions relate. The currencies giving rise to this risk are primarily Euros ("EUR"), USD and HKD.

##### (i) Recognised assets and liabilities

The Group is exposed to currency risk primarily arising from cash at bank, receivables, payables and borrowings which are denominated in EUR, USD or HKD. Depreciation or appreciation of these foreign currencies against Renminbi would affect the financial position and operating results of the Group. The Group did not hedge its foreign currency exposure.

#### (ii) 敏感度分析

於2016年12月31日，預計淨浮動利率借款的利率普遍上漲／下調100個基點，其他所有變量保持不變，本集團的稅後虧損將增長／下降及留存利潤則將下降／增長約人民幣18,075,000元（2015年：人民幣42,087,000元）。合併權益的其他組成部份不會受到利率上漲／下調的影響。

做出上述敏感度分析的假設條件是利率變化發生在報告期末且套用於當日存在的非衍生金融工具的利率風險的敞口。對本集團稅後利潤（及留存利潤）及合併權益其他組成部份的影響是根據此利率變化對利息費用或收入的年度性影響而估計的。

估計的100個基點上漲／下調，是管理層對利率至下一年度財務狀況表日期間可能發生的匯率變化作出的合理評估。與2015年分析方法相同。

#### (d) 貨幣風險

本集團的貨幣風險主要為採用外幣（即與交易相關的業務自功能性幣種不同的其他貨幣）計價的來源於銷售及購買活動產生的應收款項及應付款項，以及借款及銀行存款及庫存現金。與該風險相關的幣種主要包括歐元、美元及港幣。

##### (i) 確認的資產與負債

本集團的貨幣風險主要來源於採用歐元、美元或港幣計價的銀行存款、應收款項、應付款項及借款。此等外幣相對於人民幣的貶值或升值均會影響到本集團的財務狀況及經營業績。本集團未對沖外幣風險。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

## 37 Financial risk management and fair values 37 財務風險管理及公允價值(續)

### (continued)

#### (d) Currency risk (continued)

##### (i) Recognised assets and liabilities (continued)

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 the foreign exchange control system may prevent the Group from satisfying sufficient foreign currency demands and the Group may not be able to pay dividends in foreign currencies to its equity shareholders.

##### (ii) Exposure to currency risk

The following table details the Group's and the Company's exposure at the end of the reporting period to currency risk arising from recognised assets or liabilities denominated in a currency other than the functional currency of the entity to which they relate. For presentation purposes, the amounts of the exposure are shown in RMB, translated using the spot rate at the end of the reporting period. Differences resulting from the translation of the financial statements of foreign operations into the Group's presentation currency are excluded.

#### (d) 貨幣風險(續)

##### (i) 確認的資產與負債(續)

人民幣並非自由兌換貨幣，中國政府可自行決定將來限制來往賬戶交易採用的外幣。關於外匯控制制度的變化，可能妨礙本集團滿足對外幣的需求，本集團可能無法採用外幣向股東支付股息。

##### (ii) 貨幣風險敞口

採用實體相關功能貨幣以外的其他幣種計價的確認資產或負債，使本集團及於報告期末承受的貨幣風險在下表中詳細列出。為陳述之目的，採用報告期末的現匯匯率折算為人民幣來列示貨幣風險。未包括將境外業務的財務報表轉換成本集團報告貨幣所產生的差額。

	2016 二零一六年			2015 二零一五年		
	USD 美元 RMB'000 人民幣千元	EUR 歐元 RMB'000 人民幣千元	HKD 港幣 RMB'000 人民幣千元	USD 美元 RMB'000 人民幣千元	EUR 歐元 RMB'000 人民幣千元	HKD 港幣 RMB'000 人民幣千元
Cash at bank 銀行存款及 and in hand 庫存現金	16,230	1	40,404	16,241	181	121,201
Trade 應收賬款 receivables	407,417	-	-	22,608	55,391	-
Trade 應付賬款 payables	-	-	-	(1,778)	-	(283)
Other 其他應收 receivables 賬款	-	-	134,124	62	85	9,029
Other 其他應付 payables 賬款	-	-	-	(8)	(844)	(125,935)
Net exposure 淨敞口	423,647	1	174,528	37,125	54,813	4,012

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 37 Financial risk management and fair values (continued) 37 財務風險管理及公允價值(續)

#### (d) Currency risk (continued)

##### (iii) Sensitivity analysis

The followings are the related foreign currency exchange rates to RMB during the year:

		2016 二零一六年		2015 二零一五年	
		Average rate 平均匯率	Reporting date spot rate 報告日現匯率	Average rate 平均匯率	Reporting date spot rate 報告日現匯率
USD	美元	6.7153	6.9370	6.3063	6.4936
EUR	歐元	7.2010	7.3068	7.2754	7.0952
HKD	港幣	0.8662	0.8945	0.8134	0.8378

A 5% strengthening of RMB against the following currencies would have increased/(decreased) the net profit after tax and retained profits by the amounts shown below. Other components of equity would not be affected by the strengthen of RMB against foreign currencies.

人民幣對如下貨幣5%的升值，稅後淨利潤及留存利潤的上漲／(下滑)金額如下表所列。權益的其他組成部份不會受到人民幣相對於外幣升值的影響。

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
USD	美元	(690)	(1,578)
EUR	歐元	—	(2,290)
HKD	港幣	(6,545)	(3)
		(7,235)	(3,871)

A 5% weakening of RMB against the above currencies would have had the equal but opposite effect on the above currencies to the amounts shown above, on the basis that all other variables remain constant.

人民幣相對於上述貨幣5%的貶值，如果所有其他變量保持不變，則對上述貨幣產生相同但相反的影響，影響金額如上表所列。

The sensitivity analysis has been determined assuming that the change in foreign exchange rates had occurred at the end of the reporting period and had been applied to the Group's exposure to currency risk for financial instruments in existence at that date, and that all other variables, in particular interest rates, remain constant.

作出上述敏感度分析的假設條件是，匯率變化發生在報告期末且套用於當日存在的金融工具的貨幣風險敞口，且所有其他變量保持不變，尤其是利率未發生變化。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

## 37 Financial risk management and fair values (continued) 37 財務風險管理及公允價值(續)

### (d) Currency risk (continued)

#### (iii) Sensitivity analysis (continued)

The stated changes represent management's assessment of reasonably possible changes in foreign exchange rates over the period until the next annual statement of financial position date. The analysis is performed on the same basis for 2015.

### (e) Fair values

The carrying amounts of the Group's financial instruments carried at cost or amortised cost are not materially different from their fair values as at 31 December 2016 and 2015 except the following financial instruments, for which their carrying amounts and fair value and the level of fair value hierarchy as defined in IFRS 13, Fair value measurement, are disclosed below:

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.

### (d) 貨幣風險(續)

#### (iii) 敏感度分析(續)

所陳述的匯率波動情況是管理層對至下一財務狀況表日期間可能發生的匯率變化的合理評估。分析方法同2015年的分析方法相同。

### (e) 公允價值

本集團以成本或攤餘成本計量的金融工具的賬面金額與截至2016年12月31日和2015年12月31日的公允價值沒有重大的差別，但以下金融工具除外，這些按《國際財務報告準則第13號》「公允價值衡量」中所定義金融工具的賬面金額和公允價值以及公允價值等級如下：

公允價值計量層級是根據評估方法中使用的輸入數據的可觀察性和重要性來確定劃分的，具體如下：

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

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 37 Financial risk management and fair values (continued)

### 37 財務風險管理及公允價值(續)

#### (e) Fair values (continued)

#### (e) 公允價值(續)

		Fair value measurement as at 31 December 2016 categorised into 於2016年12月31日公允價值計量，並分為：				
	Carrying amounts at 31 December 於2016年12月 31日賬面價值 RMB'000 人民幣千元	Fair value at 31 December 於2016年12月 31日公允價 RMB'000 人民幣千元	Level 1 第一層級 \$'000 \$'000	Level 2 第二層級 \$'000 \$'000	Level 3 第三層級 \$'000 \$'000	
Long-term receivables	長期應收款項	2,274,893	2,008,699	—	2,008,699	—
Fixed rate long-term bank loans	固定利率長期銀行貸款	(1,155,303)	(1,160,845)	—	(1,160,845)	—
Corporate bonds	公司債券	(5,284,615)	(5,248,821)	—	(5,248,821)	—
Other non-current liabilities	其他非流動負債	(222,932)	(212,823)	—	(212,823)	—

		Fair value measurement as at 31 December 2015 categorised into 於2015年12月31日公允價值計量，並分為：				
	Carrying amounts at 31 December 於2015年12月 31日賬面價值 RMB'000 人民幣千元	Fair value at 31 December 於2015年12月 31日公允價 RMB'000 人民幣千元	Level 1 第一層級 \$'000 \$'000	Level 2 第二層級 \$'000 \$'000	Level 3 第三層級 \$'000 \$'000	
Long-term receivables	長期應收款項	2,668,870	2,494,217	—	2,494,217	—
Fixed rate long-term bank loans	固定利率長期銀行貸款	(183,000)	(185,551)	—	(185,551)	—
Corporate bonds	公司債券	(3,835,437)	(2,863,480)	(2,863,480)	—	—
Other non-current liabilities	其他非流動負債	(220,697)	(210,689)	—	(210,689)	—



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 37 Financial risk management and fair values (continued) 37 財務風險管理及公允價值(續)

#### (e) Fair values (continued)

Valuation techniques and inputs used in Level 2 fair value measurements

The fair values of financial instruments in Level 2 are estimated as the present value of contractual future cash flows, discounted at from the relevant interest rates announced by the People's Bank of China as at the end of the reporting period.

#### (f) Master netting or similar agreements

In December 2015, the Group has entered into an agreement with a supplier in connection with the compensation receivable from the supplier in respect of substandard equipment purchased by the Group. According to the agreement, the compensation receivable from the supplier and the Group's outstanding trade payables due to the supplier are aggregate into a single net amount that is payable by the supplier. The agreement meets the criteria for offsetting in the statement of financial position as the Group has currently legally enforceable right to offset recognised amounts.

The following table sets out the carrying amounts of recognised financial assets that are subject to the above agreement.

#### (e) 公允價值(續)

在第2層級公允價值計量中採用的評估方法和輸入數據

第2層級金融工具公允價值按當前合同未來的現金流價值並根據由中國人民銀行於截止報告期末所公佈的相關貼現利率算出的貼現值進行估計。

#### (f) 淨額結算或類似協議

於2015年12月，就本集團向一供貨商所購買的存在質量問題的設備所應收的賠償，本集團與該供貨商簽訂一項協議。根據該協議，應收該供貨商的賠償將與本集團應付該供貨商的賬款餘額合計為一單項供貨商之應付淨額。由於本集團有實時法定可強制服從的權利以相抵已確認的金額，該協議符合於財務狀況表中相抵的條件。

下表列出上述協議下已確認之金融資產的賬面價值。

		Gross amounts of recognised financial assets	Gross amounts of recognised financial liabilities set off in the statement of financial position 與財務狀況表中 被抵銷的已確認的 金額負債之總額 RMB'000 人民幣千元	Allowance for doubtable debts 壞賬撥備 RMB'000 人民幣千元	Net amounts of financial assets presented in the statement of financial position 於財務狀況 表中列示的 金融資產之淨額 RMB'000 人民幣千元
31 December 2016	於2016年12月 31日				
Deposits, prepayments and other receivables	按金、預付款項 及其他應收 款項	337,615	(210,079)	(29,420)	127,536
31 December 2015	於2015年12月 31日				
Deposits, prepayments and other receivables	按金、預付款項 及其他應收 款項	324,000	(192,002)	(29,420)	131,998

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 38 Commitments

Commitments for the construction and acquisition of property, plant and equipment outstanding at 31 December 2016 not provided for in the financial statements were as follows:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Contracted for	已訂約	576	5,583
Authorised but not contracted for	已授權但未訂約	281,910	426,150
		<b>282,486</b>	431,733

At 31 December 2016, the total future minimum lease payments under non-cancellable operating leases are payable as follows:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
With 1 year	1年內	38,212	49,104
After 1 year but with 5 years	1年後但5年內	14,399	15,908
		<b>52,611</b>	65,012

The Group leases certain buildings through non-cancellable operating leases. These operating leases do not contain provisions for contingent lease rentals. None of the rental agreements contain escalation provisions that may require higher future rental payments.

#### 38 承擔

合併財務報表中未列出的於2016年12月31日關於建造及購買物業、廠房及設備的資本承擔如下所述：

於2016年12月31日，根據不可解除的經營租賃，未來應付的最低租賃付款總額如下所述：

本集團通過不可解除的經營租賃來租賃某些樓宇。該經營租賃合同不包含有關或有租金的條款。租賃合同中亦不包含將來可能需要交納更多應付租金款額的增值條款。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 39 Contingent liabilities

##### (a) Guarantees issued

At 31 December 2016, the Group and the Company issued financial guarantees to banks in respect of the bank loans granted to related parties and provided bid and performance guarantees to customers and the Company's subsidiaries for construction contracts and sale of wind turbines as follows:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 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	32,874	15,406
– third parties	– 第三方	15,880	32,437
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	1,569,812	1,586,146
– third parties	– 第三方	1,298,079	1,513,280
		2,916,645	3,147,269

##### (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.

#### 39 或有負債

##### (a) 擔保款項

於2016年12月31日，由於銀行向關聯方提供的貸款而使本集團向銀行作出的金融擔保、本集團關於建造合同及風機銷售而向客戶作出的投標及履約擔保如下所述：

##### (b) 訴訟或有事項

本集團是某些法律訴訟的被告，也是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 FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 40 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 Group has transactions with related parties as follows:

### 40 重大關聯方交易

#### (a) 與關聯方的交易

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。

本集團與關聯方的主要交易如下所述：

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
<i>Sale of goods to</i>	<i>出售商品予</i>		
Guodian	國電	5,648	6,378
Related parties under Guodian	國電下屬的關聯方	6,284,581	4,632,196
Associates	聯營公司	8,006	4,689
<i>Construction service provided to</i>	<i>提供建造服務予</i>		
Guodian	國電	—	6,943
Related parties under Guodian	國電下屬的關聯方	3,650,259	5,686,403
Associates	聯營公司	33,001	165,312
<i>Service provided to</i>	<i>提供服務予</i>		
Related parties under Guodian	國電下屬的關聯方	296,801	14,184
Associates	聯營公司	47,110	—
<i>Lease to</i>	<i>出租予</i>		
Related parties under Guodian	國電下屬的關聯方	713,479	1,643,494
<i>Rent from</i>	<i>授租自</i>		
Related parties under Guodian	國電下屬的關聯方	22,455	33,897
<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	309,104	527,884
Associates	聯營公司	39,919	10,465
<i>Purchase of equipment from</i>	<i>購買設備自</i>		
Related parties under Guodian	國電下屬的關聯方	—	604,122
<i>Service provided by</i>	<i>服務提供自</i>		
Related parties under Guodian	國電下屬的關聯方	55,324	61,406
<i>Sale of property, plant and equipment and inventories to</i>	<i>銷售物業、廠房、設備以及存貨予</i>		
Related parties under Guodian	國電下屬的關聯方	2,603,334	—
<i>Working capital obtained from</i>	<i>週轉資金取得自</i>		
Guodian	國電	600,000	—
Related parties under Guodian	國電下屬的關聯方	—	484,105

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 40 Material related party transactions (continued)

#### 40 重大關聯方交易(續)

##### (a) Transactions with related parties (continued)

##### (a) 與關聯方的交易(續)

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Working capital repaid to Related parties under Guodian Associates	償還週轉資金予 國電下屬的關聯方 聯營公司	— 46,156	1,011,468 —
Working capital provided to Associates	提供週轉資金予 聯營公司	118,339	271,797
Working capital repaid from Associates	償還週轉資金自 聯營公司	175,938	2,356
Loans received from Guodian Related parties under Guodian	貸款借取自 國電 國電下屬的關聯方	600,000 104,000	600,000 1,275,397
Loans repaid to Guodian Related parties under Guodian	償還貸款予 國電 國電下屬的關聯方	600,000 3,000	65,080 1,556,000
Interest expenses Guodian Related parties under Guodian	利息費用 國電 國電下屬的關聯方	21,902 3,527	26,657 10,489
Interest income Related parties under Guodian Associates	利息收入 國電下屬的關聯方 聯營公司	29,616 —	22,799 37,813
Net deposits (placed with)/ withdrawn from Related parties under Guodian	(存入)/支取的存款淨額 國電下屬的關聯方	(1,935,006)	62,476
Capital investment in Associates	資本投資予 聯營公司	127,850	36,000
Dividend paid to Related parties under Guodian	支付股息予 國電下屬的關聯方	10,500	14,349
Dividend received from Related parties under Guodian Associates	收取股息自 國電下屬的關聯方 聯營公司	14,260 34,539	16,920 9,044
Proceeds received from disposal of a subsidiary to A related party under Guodian	處置子公司收取的對價自 國電下屬的關聯方	8,442	—



# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 40 Material related party transactions (continued)

#### (b) Outstanding balances, including commitment, with related parties

Details of the outstanding balances with related parties are set out in notes 21, 23, 24, 25, 27, 29, 30, 31 and 32.

At 31 December 2016, the Group's commitments with related parties that have been contracted for but not yet been recognised in these financial statements were as follows:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 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	8,497,809	8,850,927
<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	4,814,671	3,358,586

#### (c) Contributions 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 31 December 2016, there was no material outstanding contribution to post-employment benefit plans. Details of the defined contribution retirement plans are set out in note 7(a).

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

The Group operates in an economic regime currently dominated by entities directly or indirectly controlled, jointly controlled or significantly influenced by the PRC government and numerous government authorities and agencies (collectively referred to as "government-related entities"). 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.

### 40 重大關聯方交易(續)

#### (b) 與關聯方的餘額、包括約定

附註21、23、24、25、27、29、30、31與32對關聯方的餘額進行了詳細說明。

於2016年12月31日，本集團已訂約但尚未在財務報表中確認的對關聯方的約定情況如下：

#### (c) 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2016年12月31日，在退休福利計劃項下，沒有重大未支付供款。附註7(a)對界定供款退休計劃進行了詳細說明。

#### (d) 與中國其他政府相關實體之間的交易

在本集團目前從業的經濟體制之下，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、聯合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之外，在正常業務過程中，本集團大部份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 FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 40 Material related party transactions (continued)

##### (d) 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 these financial statements, 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.

#### 40 重大關聯方交易(續)

##### (d) 與中國其他政府相關實體之間的交易(續)

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。此類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，以及為了解關聯關係對財務報表的潛在影響而需要的信息，董事們認為，對於具有整體重大意義的如下交易，需要披露進一步的詳細信息：

— 貨物銷售及施工服務的提供；

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。此筆交易個別而言對本集團並不重大。

— 存款及借款；

本集團的大部份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類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。

— 材料購買及獲得施工服務；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 FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 40 Material related party transactions (continued)

#### (d) 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.

#### (e) Key management personnel remuneration

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

Remuneration for key management personnel, including amounts paid to the Company's directors as disclosed in note 9, and certain of the highest paid employees as disclosed in note 10, is as follows:

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
Salaries and other emoluments	工資及其他薪金	4,679	4,772
Discretionary bonus	酌情花紅	1,389	1,359
Retirement scheme contributions	退休計劃供款	763	739
		6,831	6,870

### 40 重大關聯方交易(續)

#### (d) 與中國其他政府相關實體之間的交易(續)

- 服務特許權安排；

本集團已與當地政府簽訂了多項特許權服務協議，在特許期限之內，負責建設以及經營污水處理廠。服務特許權協議項下的所有交易均是與地方政府作出的，且在各自的特許權安排中規定了交易執行條款。

#### (e) 主要管理人員薪酬

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

關於主要管理人員的薪酬如下，包括附註9中披露的支付給本公司董事們的金額，以及附註10中披露的若干薪酬最高的僱員：

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 41 Service concession arrangement

The Group entered into a number of service concession agreements with local governments (the “Grantors”) to construct and operate water treatment plants during the concession period, which is normally for 20–30 years of operation. The Group is responsible for construction and maintenance of water treatment plants during the concession period. At the end of the concession period, the Group needs to transfer water treatment plants to the Grantors at nil consideration. With respect to these service concession arrangements, the Group has evaluated and assessed that these arrangements fall under the scope of IFRIC 12, Service Concession Arrangements (“IFRIC 12”).

In accordance with IFRIC 12, the Group accounts for the revenue and costs relating to construction services in accordance with the accounting policy set out in note 2(o). The consideration received or receivables in exchange for the construction services is recognised as a financial asset for an unconditional contractual right to receive cash or another financial asset from or at the direction of the Grantor for the construction services and/or an intangible asset for a right or a license to charge users of the water treatment service.

The Group has recognised intangible assets (note 16) and service concession receivables (note 21) related to the service concession arrangement representing the right the Group received to charge a fee for water treatment or sale of reclaimed water and the guaranteed minimum payment during the operating period of the water treatment plants respectively.

Services concession construction revenue recorded during the year amounted to RMB3,912,000 (2015: RMB13,711,000), which represents the revenue recognised during the construction stage of the service concession period. The Group has recognised profit of RMB419,000 (2015: RMB11,000) for the construction of water treatment plants.

#### 41 服務特許權安排

本集團與地方政府(「授權方」)簽訂了多項服務特許權協議，在特許權期限之內，負責建設及營運水處理廠，該期限一般為20–30年。在特許權期限之內，本集團負責水處理廠的施工建設以及維護。特許權期滿之後，本集團需要以零對價將水處理廠轉讓給授權方。關於此等服務特許權安排，經本集團評估，此等安排符合《國際財務報告準則詮釋》第12號—「服務特許權安排」(「《國際財務報告準則詮釋》第12號」)。

根據《國際財務報告準則詮釋》第12號規定，本集團根據附註2(o)中陳述的會計政策處理建造服務相關的收入及成本。建造服務的已收或應收對價，就自授權方或按授權方的指示收取現金或其他金融資產的不附帶條件契約權確認為一項金融資產，和／或就向水處理服務之用戶收取費用的權利或許可確認為一項無形資產。

關於服務特許權安排，本集團已確認無形資產(附註16)及服務特許權應收款項(附註21)，分別表示本集團收取水處理費用或銷售中水的權利，以及水處理廠運營期間的保證最低付款額。

本年度服務特許權建造收入為人民幣3,912,000元(2015年：人民幣13,711,000元)，即為在服務特許權期間的建造階段所確認的收入。本集團已確認有關建造水處理廠的利潤人民幣419,000元(2015年：人民幣11,000元)。

# NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

## 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

### 42 Company-level statement of financial position

### 42 公司層面的財務狀況表

		2016 二零一六年 RMB'000 人民幣千元	2015 二零一五年 RMB'000 人民幣千元
<b>Non-current assets</b>	<b>非流動資產</b>		
Property, plant and equipment	物業、廠房及設備	1,150,022	1,218,264
Investment properties	投資性物業	936,048	966,110
Intangible assets	無形資產	23,424	12,461
Interests in subsidiaries	對附屬公司的投資	2,687,766	4,087,325
Interests in associates	對聯營公司的投資	89,600	35,941
Other equity investments	其他權益投資	156,070	156,070
Other non-current assets	其他非流動資產	5,654	15,092
Deferred tax assets	遞延稅項資產	—	4,200
<b>Total non-current assets</b>	<b>非流動資產總額</b>	<b>5,048,584</b>	<b>6,495,463</b>
<b>Current assets</b>	<b>流動資產</b>		
Inventories	存貨	151	201
Trade and bills receivables	應收賬款及票據	242,141	228,472
Deposits, prepayments and other receivables	按金、預付款項及其他應收款項	3,262,493	5,468,019
Cash at bank and in hand	銀行存款及庫存現金	180,028	439,341
Asset held for sale	持有待售	2,161,000	—
<b>Total current assets</b>	<b>流動資產總額</b>	<b>5,845,813</b>	<b>6,136,033</b>
<b>Current liabilities</b>	<b>流動負債</b>		
Borrowings	借款	2,726,677	3,839,861
Trade and bills payables	應付賬款及票據	13,135	24,626
Other payables	其他應付款項	477,501	790,507
<b>Total current liabilities</b>	<b>流動負債總額</b>	<b>3,217,313</b>	<b>4,654,994</b>
<b>Net current assets</b>	<b>流動資產淨額</b>	<b>2,628,500</b>	<b>1,481,039</b>
<b>Total assets less current liabilities</b>	<b>資產總額減流動負債</b>	<b>7,677,084</b>	<b>7,976,502</b>
<b>Non-current liabilities</b>	<b>非流動負債</b>		
Borrowings	借款	4,270,939	3,813,976
<b>Total non-current liabilities</b>	<b>非流動負債總額</b>	<b>4,270,939</b>	<b>3,813,976</b>
<b>NET ASSETS</b>	<b>資產淨額</b>	<b>3,406,145</b>	<b>4,162,526</b>
<b>CAPITAL AND RESERVES</b>	<b>資本及儲備</b>		
Share capital	股本	6,063,770	6,063,770
Reserves	儲備	(2,657,625)	(1,901,244)
<b>TOTAL EQUITY</b>	<b>權益總額</b>	<b>3,406,145</b>	<b>4,162,526</b>



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 43 Parent and ultimate holding company

At 31 December 2016, the directors of the Company consider its parent and ultimate holding company of the Group to be Guodian, which is a state-owned enterprise established in the PRC. Guodian does not produce financial statements available for public use.

#### 44 Possible impact of amendments, new standards and interpretations issued but not yet effective for the year ended 31 December 2016

Up to the date of issue of these financial statements, the IASB has issued a number of amendments and new standards which are not yet effective for the year ended 31 December 2016 and which have not been adopted in these financial statements. These include the following which may be relevant to the Group.

#### 43 母公司及最終控股公司

於2016年12月31日，本公司的董事們認為，本集團的母公司及最終控股公司為國電，國電是在中國成立的一家國有企業。國電不編製公開使用的財務報表。

#### 44 截至二零一六年十二月三十一日止年度已頒佈惟尚未生效的修訂、新訂準則及詮釋的可能影響

截止財務報表發佈日期，國際會計準則理事會已發佈了數項修訂及新訂的準則，但尚未在截至2016年12月31日止年度內生效，且未在這些財務報表中採納。此等包括如下可能與本集團相關之詳情：

	Effective for accounting periods beginning on or after 自以下日期或 之後開始之 會計期限生效
Amendments to IAS 7, <i>Statement of cash flows: Disclosure initiative</i> 《國際會計準則》第7號，現金流量表：披露動議之修訂	1 January 2017 2017年1月1日
Amendments to IAS 12, <i>Income taxes: Recognition of deferred tax assets for unrealised losses</i> 《國際會計準則》第12號，所得稅：就未變現虧損確認遞延稅項資產之修訂	1 January 2017 2017年1月1日
IFRS 9, <i>Financial instruments</i> 《國際財務報告準則》第9號，金融工具	1 January 2018 2018年1月1日
IFRS 15, <i>Revenue from contracts from customers</i> 《國際財務報告準則》第15號，來自客戶合約收益	1 January 2018 2018年1月1日
IFRS 16, <i>Leases</i> 《國際財務報告準則》第16號，租賃	1 January 2019 2019年1月1日

The Group is in the process of making an assessment of what the impact of these amendments and new standards is expected to be in the period of initial application. So far the Group has identified some aspects of the new standards which may have a significant impact on the consolidated financial statements. Further details of the expected impacts are discussed below. As the Group has not completed its assessment, further impacts may be identified in due course and will be taken into consideration when determining whether to adopt any of these new requirements before their effective date and which transitional approach to take, where there are alternative approaches allowed under the new standards.

本集團正評估該等修訂及新訂準則於首次應用期間預期帶來的影響。迄今本集團已識別新訂準則的若干方面可能對綜合財務報表造成重大影響。有關預期影響的進一步詳情於下文論述。由於本集團尚未完成其評估，故本集團可於適當時候識別進一步影響，並將於決定於該等新規定生效日期前是否採納任何該等新規定及根據新訂準則有替代方法可用時採用何種過渡方法時考慮該等影響。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 44 Possible impact of amendments, new standards and interpretations issued but not yet effective for the year ended 31 December 2016 (continued)

##### IFRS 9, *Financial instruments*

IFRS 9 will replace the current standard on accounting for financial instruments, IAS 39, Financial instruments: Recognition and measurement. IFRS 9 introduces new requirements for classification and measurement of financial assets, calculation of impairment of financial assets and hedge accounting. On the other hand, IFRS 9 incorporates without substantive changes the requirements of IAS 39 for recognition and derecognition of financial instruments and the classification of financial liabilities. Expected impacts of the new requirements on the Group's consolidated financial statements are as follows:

##### (a) *Classification and measurement*

IFRS 9 contains three principal classification categories for financial assets: measured at (1) amortised cost, (2) fair value through profit or loss (FVTPL) and (3) fair value through other comprehensive income (FVTOCI) as follows:

- The classification for debt instruments is determined based on the entity's business model for managing the financial assets and the contractual cash flow characteristics of the asset. If a debt instrument is classified as FVTOCI then effective interest, impairments and gains/losses on disposal will be recognised in profit or loss.
- For equity securities, the classification is FVTPL regardless of the entity's business model. The only exception is if the equity security is not held for trading and the entity irrevocably elects to designate that security as FVTOCI. If an equity security is designated as FVTOCI then only dividend income on that security will be recognised in profit or loss. Gains, losses and impairments on that security will be recognised in other comprehensive income without recycling.

Based on the preliminary assessment, the Group expects that its financial assets currently measured at amortised cost and FVTPL will continue with their respective classification and measurements upon the adoption of IFRS 9.

#### 44 截至二零一六年十二月三十一日止年度已頒佈惟尚未生效的修訂、新訂準則及詮釋的可能影響(續)

##### 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號將取代有關金融工具會計處理方法的現有準則國際會計準則第39號，金融工具：確認及計量。國際財務報告準則第9號引入分類及計量金融資產、計算金融資產減值及對沖會計的新規定。另一方面，國際財務報告準則第9號納入且並無大幅變動國際會計準則第39號有關確認及終止確認金融工具及金融負債分類的規定。新規定對本集團財務報表的預期影響如下：

##### (a) 分類及計量

國際財務報告準則第9號包括金融資產的三個主要分類方法：(1)按攤銷成本；(2)按公平值計入損益(按公平值計入損益)；及(3)按公平值計入其他全面收益(按公平值計入其他全面收益)計量如下：

- 債務工具之分類乃基於實體管理金融資產的業務模式及該資產的合約現金流特點而釐定。倘債務工具分類為按公平值計入其他全面收益計量，則實際權益、減值及出售收益／虧損將於損益內確認。
- 就股本證券而言，不論實體採用何種業務模式均分類為按公平值計入損益計量，惟股本證券並非持作買賣及該實體不可撤回地選擇指定該證券為按公平值計入其他全面收益計量則例外。倘股本證券獲指定為按公平值計入其他全面收益計量，則僅該證券的股息收入將於損益內確認。該證券之收益、虧損及減值將於其他全面收益內確認且不可撥回。

根據初步評估，本集團預期其現時按攤銷成本及按公平值計入損益計量之金融資產將於採納國際財務報告準則第9號後繼續其各自之分類及計量。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 44 Possible impact of amendments, new standards and interpretations issued but not yet effective for the year ended 31 December 2016 (continued)

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

###### (a) *Classification and measurement (continued)*

With respect to the Group's financial assets currently classified as "available-for-sale", these are investments in equity securities which the Group may classify as either FVTPL or irrevocably elect to designate as FVTOCI (without recycling) on transition to IFRS 9. The Group has not yet decided whether it will irrevocably designate these investments as FVTOCI or classify them as FVTPL. Either classification would give rise to a change in accounting policy as the current accounting policy for available-for-sale equity investments is to recognise fair value changes in other comprehensive income until disposal or impairment, when gains or losses are recycled to profit or loss in accordance with the Group's policies set out in notes 2(h) and 2(m). This change in policy will have no impact on the Group's net assets and total comprehensive income but will impact on reported performance amounts such as profit and earnings per share.

The classification and measurement requirements for financial liabilities under IFRS 9 are largely unchanged from IFRS 39, except that IFRS 9 requires the fair value change of a financial liability designated at FVTPL that is attributable to changes of that financial liability's own credit risk to be recognised in other comprehensive income (without reclassification to profit or loss). The Group currently does not have any financial liabilities designated at FVTPL and therefore this new requirement may not have any impact on the Group on adoption of IFRS 9.

###### (b) *Impairment*

The new impairment model in IFRS 9 replaces the "incurred loss" model in IAS 39 with an "expected credit loss" model. Under the expected credit loss model, it will no longer be necessary for a loss event to occur before an impairment loss is recognised. Instead, an entity is required to recognise and measure expected credit losses as either 12-month expected credit losses or lifetime expected credit losses, depending on the asset and the facts and circumstances. This new impairment model may result in an earlier recognition of credit losses on the Group's trade receivables and other financial assets. However, a more detailed analysis is required to determine the extent of the impact.

#### 44 截至二零一六年十二月三十一日止年度已頒佈惟尚未生效的修訂、新訂準則及詮釋的可能影響(續)

##### 國際財務報告準則第9號，金融工具(續)

###### (a) 分類及計量(續)

關於本集團現時分類為可供出售資產的金融資產，均為權益證券投資，一旦採納國際財務報告準則第9號，本集團可能將其分類為按公允價值計入損益計量或不可撤回地選擇指定這些投資為按公平值計入其他綜合收益計量(不可撥回)。本集團現時尚未確定是否要不可撤回地選擇指定這些投資為按公平值計入其他綜合收益計量或分類為按公平值計入損益計量。任何一種分類將會導致會計政策的改變，因為現時可供出售權益投資的會計政策規定，將公平值的變動計入其他綜合收益，直至處置或減值時，將會根據本集團在附註2(h)和2(m)提及的會計政策，將利得或損失計入損益表。該等變化對本集團的淨資產和綜合收益總額沒有影響，但會影響列報的經營表現，比如利潤和每股收益。

國際財務報告準則第9號有關金融負債之分類及計量規定與國際會計準則第39號相較基本保持不變，惟國際財務報告準則第9號規定因指定為按公平值計入損益計量之金融負債信貸風險有變而導致其公平值變動之部份乃於其他全面收益內確認(不會重新分類至損益)。本集團現時並無任何指定為按公平值計入損益計量之金融負債，因此於採納國際財務報告準則第9號時，該新規定不會對本集團造成任何影響。

###### (b) 減值

國際財務報告準則第9號之新減值模式以「預期信貸虧損」模式取代國際會計準則第39號項下的「已產生虧損」模式。根據預期信貸虧損模式，毋須再待發生虧損事件方確認減值虧損。相反，實體須根據資產以及事實及情況確認及計量預期信貸虧損為12個月預期信貸虧損或永久預期信貸虧損。新減值模式可能導致提早就本集團貿易應收款項及其他金融資產確認信貸虧損。然而，仍需更詳細的分析以釐定影響之程度。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 44 Possible impact of amendments, new standards and interpretations issued but not yet effective for the year ended 31 December 2016 (continued)

##### IFRS 15, Revenue from contracts with customers

IFRS 15 establishes a comprehensive framework for recognising revenue from contracts with customers. IFRS 15 will replace the existing revenue standards, IAS 18, Revenue, which covers revenue arising from sale of goods and rendering of services, and IAS 11, Construction contracts, which specifies the accounting for revenue from construction contracts. The Group is currently assessing the impacts of adopting IFRS 15 on its consolidated financial statements. Based on the preliminary assessment, the Group has identified the following area which is likely to be affected:

##### (a) Timing of revenue recognition

The Group's revenue recognition policies are disclosed in Note 2(w). Currently, revenue arising from the construction engineering of desulphurisation, water treatment, solar energy and other environment protection and provision of integrated services relating to environmental protection, energy conservation and renewable energy business is recognised over time, whereas revenue from the sale of ignition equipment, wind turbines, solar cells and modules and other related electric equipment for power plants is generally recognised when the risks and rewards of ownership have passed to the customers.

Under IFRS 15, revenue is recognised when the customer obtains control of the promised good or service in the contract. IFRS 15 identifies 3 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.

#### 44 截至二零一六年十二月三十一日止年度已頒佈惟尚未生效的修訂、新訂準則及詮釋的可能影響(續)

##### 國際財務報告準則第15號，來自客戶合約收益

國際財務報告準則第15號建立了確認來自客戶合約收益的全面框架。國際財務報告準則第15號將取代現有收益準則，即國際會計準則第18號，收益(包括銷售貨物及提供服務所產生的收益)及國際會計準則第11號，建造合約(訂明建造合約收益的會計處理方法)。本集團現正評估採納國際財務報告準則第15號對其合併財務報表之影響。根據初步評估，本集團已識別以下可能受影響之方面：

##### (a) 收益確認之時間

本集團之收益確認政策披露於附註2(w)。目前，脫硫建造合同收入、水處理收入、太陽能及其他環保以及環保相關配套服務收入隨著時間推進而確認，而銷售點火設備、風機、太陽能組件及其他電站相關電子設備所得收益通常於所有權風險及回報轉移予客戶時確認。

根據國際財務報告準則第15號，收益於客戶獲得合約之承諾貨物或服務之控制權時確認。國際財務報告準則第15號確定了以下對承諾貨物或服務之控制被視為隨時間轉移之三種情況：

- (i) 當客戶於實體履約時同時接受及使用實體履約所提供之利益時；
- (ii) 當實體履約創造或增強一項於資產被創造或增強時由客戶控制之資產(如在建工程)時；
- (iii) 當實體之履約並無創造對實體而言具替代用途之資產，且該實體對迄今完成之履約付款具有可執行權利時。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 44 Possible impact of amendments, new standards and interpretations issued but not yet effective for the year ended 31 December 2016 (continued)

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

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

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 will be considered in determining when the transfer of control occurs.

As a result of this change from the risk-and-reward approach to the contract-by-contract transfer-of-control approach, it is possible that once the Group adopts IFRS 15 some of the Group's provision of supporting services that are currently recognised using the percentage of completion method may not meet the IFRS 15 criteria for revenue recognition over time. This will depend on the terms of the sales contract and the enforceability of any specific performance clauses in that contract, which may vary depending on the jurisdiction in which the contract would be enforced. It is possible that for the remainder of the Group's contracts the point in time when revenue is recognised may be earlier or later than under the current accounting policy. However, further analysis is required to determine whether this change in accounting policy may have a material impact on the amounts reported in any given financial reporting period.

###### (b) Significant financing component

IFRS 15 requires an entity to adjust the transaction price for the time value of money when a contract contains a significant financing component, regardless of whether the payments from customers are received significantly in advance or in arrears.

Currently, the Group would only apply such a policy when payments are significantly deferred, which is currently not common in the Group's arrangements with its customers. Currently, the Group does not apply such a policy when payments are received in advance. Advance payments are not common in the Group's arrangements with its customers.

#### 44 截至二零一六年十二月三十一日止年度已頒佈惟尚未生效的修訂、新訂準則及詮釋的可能影響(續)

##### 國際財務報告準則第15號，來自客戶合約收益(續)

###### (a) 收益確認之時間(續)

任何該等三種情況，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益。所有權風險及回報之轉移僅為釐定控制權轉移發生時將考慮的其中一項指標。

由於從風險及回報法向按合約轉讓控制權法轉變，一旦本集團採納國際財務報告準則第15號，就本集團若干合約而言，收益確認之時間點亦可能較根據現有會計政策之時間點提前或推遲。本集團餘下合約確認收入的時點亦有可能較現有的會計政策提早或延遲。然而，釐定有關會計政策變動是否會對任何特定財務報告期間呈報之金額有重大影響仍須待進一步分析。

###### (b) 重大融資部份

國際財務報告準則第15號要求實體於合約包含重大融資部份時就貨幣時間價值調整交易價格，而不管來自客戶之付款將大部份提前收取或延後收取。

目前，本集團僅於付款大幅延期時(目前本集團與其客戶間之安排中並不常見)採納此政策。目前，本集團並無於付款提前收取時採納此政策。預付款於本集團與其客戶間之安排中並不常見。



## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 44 Possible impact of amendments, new standards and interpretations issued but not yet effective for the year ended 31 December 2016 (continued)

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

###### (b) Significant financing component (continued)

The Group is in the process of assessing whether this component in the Group's advance payment schemes would be significant to the contract and therefore whether, once IFRS 15 is adopted, the transaction price would need to be adjusted for the purposes of recognising revenue.

Any adjustment to the transaction price under IFRS 15, if considered necessary, would result in interest expense being recognised while the construction work is still in progress to reflect the effect of the financing benefit obtained from the customers, with a corresponding increase to revenue on sale of application solutions recognised when control of the completed application solutions is transferred to the customer.

###### (c) Sales with a right of return

Currently when the customers are allowed to return the products, the group estimates the level of returns and makes an adjustment against revenue and cost of sales. The group expects that the adoption of IFRS 15 will not materially affect how the group recognises revenue and cost of sales when the customers have a right of return. However, the new requirement to recognise separately a return asset for the products expected to be returned will impact the presentation in the consolidated statement of financial position as the group currently adjusts the carrying amounts of inventory for the expected returns, instead of recognising a separate asset.

##### IFRS 16, Leases

As disclosed in Note 2(l), 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.

#### 44 截至二零一六年十二月三十一日止年度已頒佈惟尚未生效的修訂、新訂準則及詮釋的可能影響(續)

##### 國際財務報告準則第15號，來自客戶合約收益(續)

###### (b) 重大融資部份(續)

本集團正在評估本集團提前付款計劃中之該部份是否對合約而言屬重大，及於國際財務報告準則第15號採納後，交易價格是否將因此須就確認收益而作出調整。

雖然建造工程仍處於在建狀態，任何因國際財務報告準則第15號對交易價格進行的必要調整，將會導致確認利息費用，以表明從客戶處獲得的財務影響，另外當已完工的解決方案軟件的控制權轉移至客戶時，解決方案軟件的銷售收入相應增長。

###### (c) 附帶退貨權利的銷售

現時當客戶允許退貨時，本集團將對退貨水平進行估計，並且對收入和成本進行相應調整。當客戶擁有退貨權利時，本集團預期採納國際財務報告準則第15號後不會對本集團確認收入和成本的方法產生重大影響。然而，單獨將預期將退回的貨物確認為退回資產的新要求，將會影響合併資產狀況表的列示，因為本集團現時針對預期退回的貨物而調整存貨的賬面價值，而非單獨確認資產。

##### 國際財務報告準則第16號，租賃

誠如附註2(i)所披露，本集團現時將租賃分類為經營租賃，並根據租賃的性質對租賃安排進行列賬。本集團作為承租人訂立租約。

## NOTES TO THE FINANCIAL STATEMENTS (CONTINUED)

### 財務報表附註(續)

(Expressed in Renminbi) (以人民幣列示)

#### 44 Possible impact of amendments, new standards and interpretations issued but not yet effective for the year ended 31 December 2016 (continued)

##### IFRS 16, Leases (continued)

IFRS 16 is not expected to impact significantly on the way that lessors account for their rights and obligations under a lease. However, once HKFRS 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.

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. As disclosed in Note 38, at 31 December 2016 the Group's future minimum lease payments under non-cancellable operating leases amount to RMB45,320,000 and RMB7,291,000 for properties and other assets respectively, the majority of which is payable either between 1 and 5 years after the reporting date or in more than 5 years. 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.

The Group is considering whether to adopt IFRS 16 before its effective date of 1 January 2019. However, early adoption of IFRS 16 is only permitted if this is no earlier than the adoption of IFRS 15. It is therefore unlikely that IFRS 16 will be adopted before the effective date of IFRS 15, being 1 January 2018.

#### 44 截至二零一六年十二月三十一日止年度已頒佈惟尚未生效的修訂、新訂準則及詮釋的可能影響(續)

##### 國際財務報告準則第16號，租賃(續)

預期國際財務報告準則第16號將不會大幅影響出租人根據租約將彼等權利及義務入賬的方式。然而，一旦採納香港財務報告準則第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賬，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。

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若干物業、廠房及設備（現時分類為經營租賃）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，及影響租約期間於損益表確認開支的時間。誠如附註38所披露，於二零一六年十二月三十一日，本集團於不可撤銷經營租賃項下就物業和其他資產的日後最低租賃付款分別達人民幣45,320,000元和人民幣7,291,000元，其中大部份須於報告日期後一至五年內支付。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為租賃負債，並附帶相應使用權資產。經考慮可行權宜方法的適用性及就現時與採納國際財務報告準則第16號期間已訂立或終止的任何租約及貼現影響作出調整後，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號時經營租賃承擔所產生的新資產及負債的金額。

本集團正考慮是否於國際財務報告準則第16號生效日期二零一九年一月一日前對其進行應用。然而，提前採納國際財務報告準則第16號僅可於採納國際財務報告準則第15號後方可進行。因此國際財務報告準則第16號不大可能於國際財務報告準則第15號之生效日期（即二零一八年一月一日）前獲採納。

# OUTLOOK

## 展望

### 1. Accelerating structural optimization, promoting transition and upgrade

The Group plans to promote structural adjustment, optimizing the volume of stock and increment. It will accelerate downsizing, and with environmental protection, energy saving, general contracting for power stations, new energy products manufacturing services and operations, electronic informatization of electricity power and other sectors as the focus, to vigorously develop strategic emerging business. Through structural adjustment, the Group aims to solve the problem of unbalanced and uncoordinated business structure, and optimize the industrial layout and business mix, reducing ineffective and low-end supply and expanding effective and middle-to-high-end supply. It will promote the flow and optimization of elements, improving the efficiency of the allocation of elements, so as to promote the transformation and upgrade of the enterprise as a whole.

### 2. Strengthening technological innovation and institutional innovation

The Group intends to enhance the ability of independent innovation and self-development, through continuous technological innovation and nurturing high-tech capabilities, with a focus on the promotion of science and technology projects such as ultra low and ultra-ultra low emissions, water saving and wastewater zero emission, integration of coal-fired units reducing the coal consumption rate in power supply, nuclear power conventional island DCS applications, to form new advantages for enterprise transformation and development. It will optimize the organizational structure and management and control model, construct a "six-in-one" talent retention incentive system supported by incentives for chief engineers, internal trainers, distinguished experts and special talents, so as to stimulate the enthusiasm of key staff; and roll out pilot profit-sharing incentive schemes for professional managers and positions so as to release inherent motivation for enterprise development.

### 3. Integrating strengths, striving to expand the internal and external markets

The Group will explore the marketing system and reform of management and control model. The Group will experiment with the construction of regional channels to establish a sharing system of marketing information and resources within the company's system, in order to put together its high-quality resources to achieve the breakthrough in core customers and quality projects outside the system. In line with the national strategy of "One Belt, One Road", the Group will strengthen overseas business investment and coordination efforts, with the company in Hong Kong as a pioneer, to promote the development of international business.

### 4. Strengthening centralized management and control, effectively avoiding operational risks

The Group insists on further increasing its efficiency by improving its centralized management, so as to effectively avoid operational risks. In 2017, the Group will continue to strengthen centralized management and control of investment, procurement, finance and other aspects, and optimize business processes, with an aim to form an operating system featuring orderly convergence, efficient collaboration, upstream and downstream coordination and checks and balances. Through the improvement of the audit system, standardization of the management and control processes, strengthening of the financial base, promotion of corporate governance in accordance with the law and a series of other work, it can further strengthen its management and control capabilities, and enhance the efficiency of management and control.

### 1. 加速結構優化，促進轉型升級

本集團計劃推進結構調整，優化存量，做好增量。加快推進瘦身健體，以環保、節能、電站總承包、新能源產品製造服務與運營、電力電子信息化等板塊為重點，大力發展戰略性新興業務。通過結構調整，解決業務結構不平衡、不協調等問題，優化產業佈局及業務組合，減少無效和低端供給，擴大有效和中高端供給，促進要素的流動和優化，提高要素的配置效率，從而推動企業整體的轉型升級。

### 2. 加強技術創新和體制機制創新

本集團計劃增強自主創新、自我發展能力，通過持續技術創新和培育高科技基因，重點推進超低及超超低排放、節水及廢水零排放、燃煤機組降低供電煤耗一體化、核電常規島DCS應用等科技項目，形成企業轉型發展的新優勢。優化組織架構和管控模式，構建以首席師、內訓師、特聘專家和特殊人才激勵為支撐的「六位一體」人才保留激勵發展體系，激發骨幹員工隊伍積極性；推進職業經理人和崗位分紅激勵試點工作，釋放企業發展內生動力。

### 3. 整合優勢力量，全力開拓內外部市場

本集團將探索研究營銷體系工作及管控模式改革，試點區域化渠道建設，建成公司系統營銷信息及資源共享體系，集中優勢資源，突破系統外重點客戶及優質項目。緊跟國家「一帶一路」戰略，加強海外業務投入和協調力度，以香港公司為先鋒，全力推動國際業務發展。

### 4. 加強集中管控，有效規避經營風險

本集團將堅持推進通過提升管理進一步提升效益，有效規避經營風險，2017年將繼續加強投資、採購、財務等方面的集中管控，優化業務流程，形成有序銜接、高效協同、上下聯動、監督制衡的運轉體系。通過完善審計體系、規範管控流程、夯實財務基礎、推進依法治企等一系列工作，進一步強化管控能力，提高管控效率。



Longyuan Engineering Hainan Project Power Plant Panorama on 30 May 2016  
2016年5月30日，龍源工程海南項目電廠全景



中國國電  
CHINA GUODIAN

# 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  
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財務報告



推介會資料



公益活動

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