

# 中国博奇环保(控股)有限公司

## China Boqi Environmental (Holding) Co., Ltd.

(Incorporated in the Cayman Islands with limited liability)

Stock Code: 2377

### ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

# 2017



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# Message from the Chairman

2017 was a special milestone of the Group characterised by innovation and continuous development. Faced with the complex economic environment, leveraging on outstanding technology, superior capability on research and development, excellent implementation ability as well as flexible and efficient market-oriented operating mechanism, the leadership of the Board and the joint efforts of all employees, we have upheld the 3 principles of “leading in technology, costs and services” using our Hong Kong listing position, as the main theme, expanding market share as the core and refining management as focus while maximizing economic benefits as our goal, we persevered with diligence and maintained favorable growth for the Group.

1. As a leading independent flue gas treatment service provider in the PRC, the Group takes advantage of its technology in flue gas treatment to expand its business into other environmental protection and energy-saving sectors. In 2017, the Group successfully tapped into new areas of non-electricity fields, including petrochemical, electrolytic aluminium and soil remediation, and new environmental protection business sector. We have maintained long-term and amicable business relationship with our customers. Riding on the proposal of “One Belt One Road”, the Group has actively expanded overseas environmental markets, and established corporation relationships based on mutual environmental and economic benefits with countries along the routes.
2. Actively responding to the “third-party treatment” policy of environmental pollution advocated by the PRC Government, the Group has performed the social responsibilities and focused on the development of concession operation and operation and maintenance business. In 2017, the proportion of concession operation and operation and maintenance business has increased significantly.
3. Through the introduction of strategic and financial investments, such as Sinopec, Pearl River Investment and Full Synergy, the Group achieved a diversified shareholding structure and realized the integration between capital and industry.
4. The Group’s corporate brand, professional ability and service quality were widely accepted by customers and the Group was awarded the “2017 China’s Chemical Industry Atmosphere Governance Environmental Protection Enterprises Preferred Brand” ( 2017年度中國化工行業大氣治理環保企業首選品牌), “2017 China’s Top Ten Atmosphere Governance Environmental Protection Enterprises” (2017年度中國大氣治理十大環保企業) and “the First Prize of Key Technique Study of Utilisation of Low Temperature Exhaust Heat in Utility Boiler” (電站鍋爐低溫餘熱深度利用關鍵技術研究一等獎), respectively.
5. The Group maintains an up to standard governance structure. With a sound organizational structure, established management system, efficient decision-making mechanism, escalating profit, abundant capital and prudent financial condition which further enhanced the operational and overall capabilities of the Group.
6. The Group achieved continuous technological innovation and enhancement with rapid iterative development, consistently promoted the post-doctorate science & research work station with simulation of different work scenario, a laboratory for physical model and flow field, a seawater desulfurization thermal experimental platform and a R&D test platform of the Group, so as to provide technical support for environmental pollution treatment.

## Message from the Chairman

In 2017, The Group manages the operation of the enterprise and business according to the laws and regulations and is committed to reducing the possibility of environmental and social risk being converted into financial risk. The Group has made breakthroughs and progress in energy conservation and emission reduction, making great contributions to the environmental industry. However, we understand that the problem of natural resource and environmental pollution remained critical and will severely damage the people's life and health. There is a long way to go for the ecological environmental treatment. The green, clean and sustainable energy developmental approach has become an irreversible historical trend. Our goals are to pursue an environment with green hills, blue sky and clear water. By taking "industry and capital" as support, the Group will continue to actively participate in the environmental pollution treatment and realize the integration and promotion between capital and industry, and promote "internal" and "external" growth strategies, and be economic, politically and socially responsible, so as to accelerate the path of becoming an integrated environmental protection industrial group. The Group commits to becoming a leading conglomerate in the environmental treatment service business in domestic and overseas markets, so as to contribute more to the environmental industry in China and around the world.

# Major Events in 2017

On 1 January, we undertook the operation and maintenance works for Guangdong Yangxi Power Plant #1-4 2\*600MW + 2\*660MW desulfurization and denitrification units.



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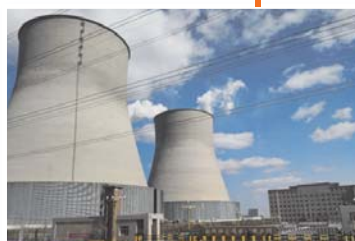
On 11 January, Sinopec Group became a strategic shareholder of the Group.

中国石化  
SINOPEC

On 1 March, we undertook the first Petrochemical industry ultralow emission project, being the Shanghai Petrochemical Boiler ultralow Emission upgrade project.



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On 15 June, the Company undertook the first concession operation project with a self-supply power plant, being the ultralow emission upgrade project of desulfurization, denitrification and dust removal of the flue gas unit of Xinjiang Shenhua Coal Power Co., Ltd. with capacity of 4\*350 MW.

On 17 July, Beijing Boqi Environmental Remediation Technology Co., Ltd., a joint venture owned as to 60% by Beijing Boqi, was established, and with our major project execution experience and industrial resources, it carried out our environmental service business of soil remediation and solid waste treatment. It undertook the first soil remediation project of the Group.



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On 15 September, a subsidiary of Beijing Boqi was established in Xinjiang.

## Major Events in 2017

On 25 September, Changjizhou Boqi Environmental Technology Co., Ltd. was established.



On 17 November, Beijing Boqi Electric Power SCI-TECH Co., Ltd. Yangxi branch was established.



In December, the Company was awarded the "2017 China's Chemical Industry Atmosphere Governance Environmental Protection Enterprises Preferred Brand" (2017年度中国化工行业大气治理环保企业首选品牌) and "2017 China's Top Ten Atmosphere Governance Environmental Protection Enterprises" (2017年度中国大气治理十大环保企业).



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On 16 November, the Company undertook the engineering work of flue gas oxidation process and flue gas desulfurization system of Aluminum Company I (铝业一公司) and Aluminum Company VI (铝业六公司) of the Zouping Hongmao New Materials Technology Co., Ltd. of Shandong Province (山东省邹平縣宏茂新材料科技有限公司).





# Group Introduction

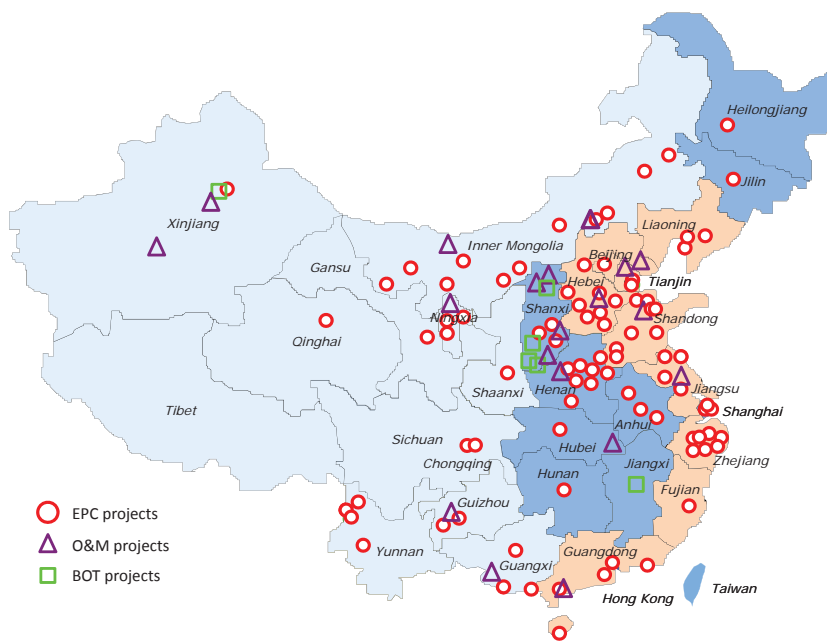
## ① About the Group

The Group commenced the flue gas treatment business in 2003 and is among the first participants in the flue gas treatment industry in China. The Group provides a variety of technologies and services to coal-fired power plants to reduce pollutant emissions and improve their production efficiency. The Group has strategically leveraged its extensive experience and specialised capabilities in R&D and design, construction and implementation, operation and management to achieve synergies among various business segments and to provide integrated environmental protection and energy conservation solutions to the customers. Particularly, the Group provides a range of services primarily for controlling air pollution from coal-fired power plants, including desulfurization services, denitrification services, dust removal services, and integrated flue gas treatment services. In addition, the Group provides water treatment services for coal-fired power plants. The Group's principal business has positive impact on the environment and has contributed greatly to the development of green economy.

Specific business	Impact on the environment
① Desulfurization services	Remove the sulphur oxides in industrial boilers of coal-fired power plants, petrochemicals or metallurgical industry
② Denitrification services	Remove nitrogen oxides in industrial boilers of coal-fired power plants, petrochemicals or metallurgical industry
③ Dust removal services	Remove the dust in flue gas
④ Integrated flue gas treatment services	According to the characteristics of different types of boiler's flue gas, integrate a range of devices including desulfurization, denitrification and dust removal, in order to achieve environmental and energy-saving result by effective means of lowest energy consumption and low investment cost.
⑤ Water treatment services	Reuse desulfurized water and achieve zero waste water discharge

## Group Introduction

The projects of the Group have a broad geographic coverage, covering almost 30 provinces, municipalities and autonomous regions in China. Furthermore, the Group has started to expand its business into the overseas markets in 2007, ahead of most of the Group's competitors. The Group has undertaken more than 10 major desulfurization and denitrification projects in Europe, South Asia, Latin America, Africa and Southeast Asia, and is one of the few PRC companies that have successfully completed thermal power environmental protection projects in overseas markets.



The Group has advanced R&D equipment and facilities and has also established a professional R&D team. The Group has established an enterprise technology center which was accredited by the Beijing Municipality Commission of Economic and Information Technology and a post-doctoral research station with Nankai University. In recent years, the Group has established strategic partnerships with world-renowned multinational companies and has entered into extensive research cooperation with domestic and overseas research institutes, so as to maintain the Group's leading position in terms of techniques.





## Group Introduction

### ② Group Governance

The code of conduct of the Group applies to every employee and is to ensure that the business of the Group is in compliance with the prevailing laws and regulations.

#### **Combating corruption and upholding integrity**

To enhance combating corruption and upholding integrity, and to conduct anti-corruption work in a practical and effective way, the Group strictly abides by relevant national laws and regulations, Listing Rules and fair competition rules. Employees are required to observe the Professional Code of China Boqi (《中國博奇職業規範》), which covers topics such as anti-corruption, anti-bribery, resolution of conflict of interests and data confidentiality and security. In addition, the Group established a number of internal rules and regulations, such as the Management Regulations for Administrative Penalties of the Company (《公司行政處罰管理規定》), the Internal Control Guidelines, (《內部控制管理制度》), the Internal Audit Guidelines, (《內部審計管理制度》) and Administrative Measures on Anti-Money Laundering (Testing) (《反洗錢工作管理辦法(試行)》).

The Group has also set up an email for whistle-blowing and lodging complaints for all employees and the public to report possible wrongful conducts and integrity issues. Privacy of all informers is strictly confidential such that no retaliation would be resulted from such reporting. Anti-corruption system is established with early prevention, monitoring process of corruption incidents, and post-incident evaluation. The Group and the officers from the business and development department (mainly from the procurement department and the bid management department) have entered into the “Officer Professional and Ethics Agreement”, which outlines the industrial standards of the official’s duties and obligations in the Group’s working system and ethics. During the reporting period, the Group did not receive any complaints of corruption, bribery, extortion, fraud and money laundering against any employees. No concluded legal case regarding corrupt practices was brought against the Company or its employees.

#### **The interests of employees**

The Group strictly complies with the relevant laws and regulations relating to labor in the places where we operate, such as the Labour Law of the People’s Republic of China (《中華人民共和國勞動法》), the Labour Contract Law of People’s Republic of China (《中華人民共和國勞動合同法》) and the Trade Union Law of the People’s Republic of China (《中華人民共和國工會法》). In order to protect the legal rights and benefits of the employees, the Group has formulated and implemented human resources policies in relation to recruitment and admission management perspectives, performance management mechanisms, as well as comprehensive change of personnel system, remuneration and benefits, legal working hours, people-oriented leave and holidays.

During the reporting period, all employees have entered into labor contracts, which stipulated the respective employee’s compensation, position, benefits, training, confidentiality liabilities relevant to trade secrets and grounds for dismissal and termination. During the reporting period, we neither experienced major labor disputes nor received any penalties due to serious violations of the PRC labor laws and regulations.

# Environmental Governance





# Environmental Governance

## Measures

In strict compliance with the laws and regulations in relation to environment protection in the PRC, the Group proactively implements the relevant national measures and policies. The Group closely monitors the wastewater, flue gas and solid waste that might pollute the environment, ensuring compliance with the national emission standard, and it establishes preventive measures and emergency solutions for any possible environmental pollution accidents. Through applying index management in the operation of environmental protection facilities, as well as introducing and employing advanced domestic and oversea production skills and equipment, the Group ensures a reasonable use of resources and prevents environmental pollutions. With the fine vision of “let all of us enjoy the blue sky”, the Group strives to minimize any adverse impact on the environment arising from its production.

## Practices

The operation of the Group is currently subject to environmental laws and regulations with regards to its construction and operation, emissions in air and water, and management of hazardous substances and waste. As the industry in which we operate is not a major source of environmental pollution, we believe the impact of the Group’s operation on environment is limited and the Group has taken necessary internal precautionary measures. In 2017, the Group did not have any material environmental pollution accidents.

The Group has adopted advanced technologies and equipment to prevent and minimize pollution for years. The “ZFD Flue Gas Pollution Control Technology”, which is independently-developed by the Group, has unique advantages. It consolidates various kinds of flue gas treatment technologies, thus the Green Island is able to achieve a ultra-clean emission standard of  $\text{NO}_x \leq 50\text{mg/Nm}^3$  ( $\text{mg/Nm}^3$  refers to milligrams per standard cubic meter, a unit of emission concentration),  $\text{SO}_2 \leq 10\text{mg/Nm}^3$  and  $\text{dust} \leq 2\text{mg/Nm}^3$ . At the same time, the Group’s desulphurization wastewater treatment has nearly 100 sets of operating performance. It has mature technology with stable and reliable operation, and has rich experience in project implementation. In recent years, the Group has also been committed to the research and development of advanced desulfurization wastewater treatment technologies. It adopts advanced foreign concentration technique, which reuses desulfurized water and achieves zero waste water discharge. The Group has been in compliance with relevant environmental protection rules and regulations, and not subject to any major fines or administrative penalties involving non-compliance with any relevant regulations.

The Group will also continue to strictly abide by applicable laws, regulations and laws regarding health, safety and environment of the places where the Group has business operations in our overseas operations. Before deciding to carry out business in foreign jurisdictions, the Group takes into account our ability to comply with local laws.

The Group has obtained the ISO9001 Quality Management System Certification in 2003, and the ISO14001 Environmental Management System Certification and GB/T28001 Occupational Health Safety Management System Certification in 2005.

# Group's Environmental Efforts

## ① Environmental Protection and Energy-saving Solutions

### 1. Environmental Protection

The Group is persistently committed to the development of the environmental protection industry in the PRC and in the world. By its state-of-art technologies, strong capabilities on research and development and excellent service, the Group is committed to performing its corporate mission and social responsibilities through promoting emission reduction, clean energy, energy-saving and cost-saving with an aim to protect the clear water and blue sky and contribute to the sustainable development of society.

Beijing Boqi Electric Power SCI-TECH Co., Ltd. ("Beijing Boqi"), a subsidiary of the Group, is one of the earliest companies which specialises in flue gas treatment for thermal power plants and electricity environmental industry in the PRC. According to the 2017 thermal power plant in environmental industry's registration information issued by China Electricity Council, the Group ranked first and fourth in the independent flue gas desulfurization and denitrification environmental protection facilities engineering service provider respectively based on the cumulative capacity of unit in operation in late 2017; the Group ranked seventh and sixth in the independent desulfurization and denitrification concession operation business among the providers respectively based on the capacity of flue gas desulfurization and denitrification unit in operation with concession contract in 2017; the Group ranked second and fourth in operation and maintenance of desulfurization and denitrification among service providers respectively based on the commissioned operating unit capacity of thermal power plant desulfurization and denitrification in operation in 2017. The Group independently developed the "ZFD Flue Gas Pollution Control Technology" integrating efficient, reliable, convenient, energy-saving desulfurization technology, low-low temperature dust removal technology that achieves energy conservation and emission reduction, various combination of denitrification technology and dust removal technology with "ultra-clear emission". The green island built can adapt to different kinds of coals and different production conditions in order to provide targeted solutions for the problem of coal-fired boiler operation and environmental protection as well as to achieve the "ultra-clear" discharge standard.

Regarding construction, in 2017, the Group completed 44 units of 9,984MW (megawatt, a unit of power, 1MW equals 1,000 kW) generator with "ultra-low emission" upgrading and 2 newly-built units of 2,000MW generator with environmental protection facility construction. The Group has achieved an accumulation of 264 units in operation with installed capacity of 114,421MW as at 31 December 2017. In 2017, the Group's construction projects of environmental protection facilities, concession operations and operation and maintenance projects have achieved an emission reduction of 787,500 tons of SO<sub>2</sub> and 23,500 tons of NO<sub>x</sub>. In order to let everyone live under a blue sky with white clouds, the Group makes remarkable efforts to the establishment of a beautiful and ecological environment in China.

### 2. Energy-saving Solutions

While the Group uses energy-saving solutions throughout its pollutants treatment related business, we leverage our solid experience in environment design, project management and construction to actively embark a range of energy-saving and integrated exploitation business.

### 3. International Development

The Group is one of the few PRC companies that has successfully completed thermal power environmental protection projects in overseas markets. The Group was the pioneer in expanding its business into the overseas markets in 2007. The Group has undertaken more than 10 major desulfurization and denitrification projects in Southeast Asia, Europe, South Asia, Latin America and Africa. The Group works closely with overseas energy engineering main contractors, engineering



and technology companies and engineering project international main contractors, and maintains long-term cooperation relationship with main contractors such as China National Machinery Import and Export Corporation. In October 2016, we signed “Co-development of India Bituminous Coal Pollution Discharge Control Market Framework Agreement” (《共同開拓印度煙煤污染排放控制市場框架性協議》) with an Indian company, Macawber Beekay, to co-develop and implement power plant emission control project in India.

#### **4. Lower energy consumption, establish resource-saving corporation**

Energy-saving is a crucial economy policy in the PRC. In the present social environment which advocates resource-saving, the Group is obliged to take the social responsibilities to develop green economy and promote sustainable development. The Group attaches great importance to green development, strictly enforces laws and regulations related to environmental protection, adheres to the principle of making the Company's profit grow while concerning energy and protecting the environment. Aiming at “saving energy, lowering consumption, reducing emission, increasing efficiency”, we reinforce scientific management and scientific utilization on energy, and persistently raise energy efficiency for turning the Group into a resource-saving and technological corporation.

As a provider engaged in the environmental protection sector, the Group sets itself as an example and emphasizes on the performance of the Group's environmental management. We strictly comply with environmental protection laws and regulations such as “Environmental Protection Law of the People's Republic of China” (《中華人民共和國環境保護法》), “Law of the People's Republic of China on Conserving Energy” (《中華人民共和國節約能源法》), “Atmospheric Pollution Prevention and Control Law of the People's Republic of China” (《中華人民共和國大氣污染防治法》). We strictly control waste discharge and reduce the impact that the Group's activities have on the environment. In 2017, there were no incidents of material environmental non-compliance. All projects of the Group are in compliance with related national and local environmental protection laws and regulations. Meanwhile, in order to minimize pollutant emission, we continue to improve our craftsmanship by undertaking proprietary research and development and conducting in-depth research on each segment of flue gas pollution control, and dedicate to developing new technologies and products. At the same time, we strive to enhance existing technologies, meet the ever-changing market requirements and introduce advanced technology to the PRC. Our technology can achieve 99.8% and 98% of SO<sub>2</sub> removal efficiency and NO<sub>x</sub> removal efficiency respectively and 1mg/Nm<sup>3</sup> in dust removal. These have outperformed the technical requirements of “ultra-low emission” set by the PRC government.

The Group gave consideration to its business model in establishing its energy-saving management system, which actively responds to the call of the country for an energy-saving society while paying attention to the consumption of resources. The Group has made efforts to improve awareness of its staff on energy-saving and reducing consumption, advocating water and electricity conservation, as well as promoting paperless office. We motivate resource-saving effectively through various mechanisms, avoid wastage, and continually optimize the construction of external and internal environment for supporting a resource-saving corporation, in order to ensure resource-saving at a long term and sustainable basis.

##### **4.1 Energy Management**

The energy resources consumed by the Group during the production and operation process mainly includes electricity and gasoline. Power consumption mainly arises from the operation of fans, pumps, agitators, demisters and other large equipment during the operation process of flue gas desulfurization denitrification operation and maintenance project and concession project as well as power consumption in the office. Gasoline consumption mainly arises from the use and maintenance of commercial vehicles and equipment repairing vehicles.



## Group's Environmental Efforts

Performance Indicator	2017
Total power consumption (kWh)	979,553,568
Office power consumption <sup>1</sup> (kWh)	303,568
Project operation power consumption (kWh)	979,250,000
Power consumption per capita in the office (kWh)	220
Gasoline consumption (tonne)	430
Greenhouse gas emission <sup>2</sup> (carbon dioxide equivalent) (tonne)	770,540
Greenhouse gas emission intensity (tonne CO <sub>2</sub> equivalent/ ten thousand of revenue)	5.80

Note: 1. As branches and project departments have not established statistical procedure, we are unable to compile statistics of the Group's full aperture power consumption as a whole for the year, and only disclose the power consumption of the Group's headquarters. Mechanism on gathering such statistics will be established in the coming year.

2. Calculated according to the Company's total power consumption and gasoline consumption.

In order to achieve energy-saving and reduce consumption within the office area, the Group established policies to manage its power usage: duty officers shall switch off the lights, air-conditioners, drinking machines, computers, printers and other devices which consume energy and cut off the power on festivals, holidays and non-office hours. In summer, while providing a cool office environment, we set the office temperature at not lower than 26 degrees celsius, in order to lower energy consumption.

In order to reduce gasoline consumption during the operation process, we adopt stringent management over the dispatch and use of vehicles, to maximize the efficient use of vehicle. We undertake regular maintenance over vehicles, keep vehicles on central basis during festivals and holidays and strictly prohibit private use of the company's vehicles. The Group initiates "Green Travel" among the staff and encourages the use of public transport for business travel in the city, in order to reduce gasoline consumption and reduce exhaust fume emission.

The Group actively pursues the philosophy of "Energy-saving is no trivial matter, environmental protection starts with me" (節約能源無小事，環境保護、從我做起), encourages staff to reduce paper use in office by using both sides of printing papers and to circulate files via the internet instead of paper files by advocating paperless office.

### 4.2 Water Resource Management

The water consumption for the Group and its subsidiaries mainly arises from the water used in production, industrial and cleaning equipment as well as the water used for domestic purposes, such as drinking water and water used in washrooms. In respect of acquiring suitable water resources, the Group has not identified any material risk of water resource shortage.

Performance Indicator	2017
Total water consumption (tonne)	10,857,015
Office water consumption (tonne)	20,932
Project operation water consumption (tonne)	10,836,083
Water consumption per capita in the office (tonne)	15





## Group's Environmental Efforts

According to the Group's water resource management system, the Group's office is responsible for the Group's water resource management, and its responsibilities include: fulfilling the requirements under the laws and regulations in relation to water resources management in the PRC, establishing water resource management system of the Group, implementing mechanism on accountability and supervising its implementation; establishing and optimizing the measuring facilities on water resource, managing the accounts and practising water saving measures, promoting the application of new water-saving technology and new craftsmanship.

In respect of the use of water resources, the Group strictly complies with the relevant laws and regulations in the PRC, and plans the Group's water usage accordingly. There is no water resource consumption problem during the report period. The Group formulates reuse plan for production waste water, designs appropriate waste water reuse plan for each project to reduce wastewater discharge while maximizing water resource utilization rate.

In respect of water conservation, the main measures of the Group are raising our staff's awareness towards water conservation through training and publicity, posting "water conservation" signs around domestic water source in office area so as to remind our staff to save water; raising the wastewater reutilization rate during the course of project operation, for example, desulphurization wastewater after treatment can be used as supplementing water for desulphurization and absorption towers, water for limestone pulping systems, desulfurization systems for cleaning mixing pit, and other systems. The Group also strengthens the daily maintenance management of water equipment and repairs damaged water supply facilities promptly, and water supply equipment such as water tap, pipeline valve and flushing valve are checked and replaced regularly.

### 4.3 The energy-saving measures of the Group's project department

The Group also promotes the philosophy of saving energy and reducing resource consumption in each project department, and adopts the following energy-saving measures. Such measures can effectively help the Group supervise, control and manage the energy consumption of each project, reduce energy use and substantially improve energy-saving efficiency.

1. Set up energy-saving operation optimization card (節能運行優化卡) in each project department for optimizing energy-saving operation of circulating pump;
2. Convene monthly meeting on energy consumption analysis, rectifying projects that exceed energy consumption limit;
3. The main duty office in O&M center can supervise energy consumption curve, supervise energy consumption on concession operation project, and delegate staff for on-site adjustment once unreasonable fluctuation is identified;
4. Participate in corporate benchmarking management of the industry of the China Electricity Council, identify energy consumption spot of the Group's project operation and enhance the refinement of energy consumption management measure.

## Group's Environmental Efforts

### 5. Be clean and environmental friendly, reduce pollutants emission

The Group is one of the first market players in the PRC flue gas treatment industry, our services cover the whole-industry-chain of the flue gas treatment. Our Group is an outstanding market player in flue gas treatment industry, especially in the area of desulfurization and denitrification services, and has greatly contributed to the reduction of emission of SO<sub>2</sub>, NO<sub>x</sub> and dust to the atmosphere.

The Group strictly complies with laws and regulations such as "Environmental Protection Law of the People's Republic of China" (《中華人民共和國環境保護法》), "Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste" (《中華人民共和國固體廢棄物污染環境防治法》), "Atmospheric Pollution Prevention and Control Law of the People's Republic of China" (《中華人民共和國大氣污染防治法》), adopts "13th Five-Year Plan for Ecological and Environmental Protection" (《“十三五”生態環境保護規劃》) and "13th Five-Year Plan for Comprehensive Energy Conservation and Emission Reduction" (《“十三五”節能減排綜合工作方案》) of the PRC as the guideline, pays strong emphasis on the impact of all kinds of waste to the environment, strictly regulates the waste emission management, sets waste emission reduction as the ultimate goal, reasonably undertakes the work of waste recycling and reusing and safe disposal. In 2017, no environmental non-compliance incidents which have material impact on the Group has been reported.

#### 5.1 Harmful Waste Management

The harmful waste produced by the Group during production operation mainly include: toner cartridge waste, ink cartridge and unserviceable office electronic products.

Performance Indicator	2017
Total weight of harmful waste produced (tonne)	0.166
Intensity of harmful waste produced (kg/ten thousand of revenue)	0.0012

In order to reduce such harmful waste, the Group establishes "Waste management control measure" (《廢棄物管理控制辦法》), refills the powder of toner cartridge repeatedly, reduces the scrap rate of toner cartridge, recycles, reuses or disposes office toner cartridge by sales unit. For unserviceable computer and monitors, the Group engages the professional repurchase entity to recycle such harmful waste.

#### 5.2 Harmless Waste Management

The harmless waste produced by the Group during the production operation is mainly domestic waste.

Performance Indicator	2017
Total weight of domestic waste produced (tonne)	0.289
Weight of domestic waste per capita (tonne)	0.00021
Intensity of domestic waste produced (kg/ten thousand of revenue)	0.00022

The Group separates domestic waste into recyclable, non-recyclable and food waste, before passing such separated domestic waste to a cleaning company for processing. Domestic waste includes office waste such as papers. In order to reduce such waste, the Group advocates printing on both sides of printing papers and promotes paperless office.



### 5.3 Exhaust Fume Management

The Group produces small amount of exhaust fume during the operation process, including: SO<sub>2</sub>, NO<sub>x</sub> and smoke dust. The SO<sub>2</sub>, NO<sub>x</sub> and dust emissions from desulfurization and denitrification project comply with national emission standard. As the emission falls into the permitted standard of the country, the Group keeps no such statistics. Also, a small amount of SO<sub>2</sub> and NO<sub>x</sub> emissions mainly come from tail gas emissions from company vehicles. Since the Group is not a manufacturing enterprise, it does not produce other exhaust fume and particulate.

Performance Indicator	2017
SO <sub>2</sub> emission volume (tonne)	17
NO <sub>x</sub> emission volume (tonne)	1

Note: SO<sub>2</sub> and NO<sub>x</sub> emission volume are the exhaust fume emitted through the use of the Company's vehicles.

### 6. Awareness of the ecology and pursuit of sustainable development

To protect the ecology around the coal-fired power plants, the Group establishes "Civilized construction management system" (《文明施工管理制度》) and "Safety, Health and Environment Management System" (《安全健康與環境管理制度》) for each project department, minimizes the impact of power plant construction, equipment repair and maintenance and office activity on the plants and ecology. The Group continues to carry out afforestation and ecological construction in the power plant area, and immediately restores the grassland damaged by construction and repair work.

### ② Highlights of Environmental Protection and Energy-saving Projects

#### Environmental Protection Facility Engineer

##### Zhejiang Lishui Hangli Thermoelectric Desulphurization Ultra-low Emission Upgrade Project

The Group successfully completed ultra-low emission upgrade project of flue gas treatment process of Zhejiang Lishui Hangli Thermoelectric Co., Ltd. (浙江麗水杭麗熱電有限公司).

This technological upgrading project adopts the environmental protection facility construction model. The flue gas desulphurization facility adopts the limestone gypsum wet process. After being treated with desulfurization and wet dust removal equipment, the emission of flue gas has met the requirements of the ultra-low emission standard, that means the smoke and dust are less than  $5\text{mg}/\text{Nm}^3$ , and  $\text{SO}_2$  is less than  $35\text{mg}/\text{Nm}^3$ . After the implementation of this ultra-low emission upgrade project, it will effectively reduce the emission of  $\text{SO}_2$ ,  $\text{NO}_x$  and dust and other atmospheric pollutants in order to achieve energy conservation, emission reduction and environmental protection.



##### Jiangsu Jinjiang Guoxin Jijiang #1, #2 Unit Desulfurization Ultra-low Emission Upgrade Project

Jiangsu Guoxin Jinjiang Power Plant has ultra-supercritical coal-fired units with a total installed capacity of two 660MW units. The Group completed the ultra-low emission upgrade of two units during 2016 to 2017, and #1 Unit has achieved a desulfurization rate of 99.06%, and 98.95% for #2 Unit. After both units were brought into operation in 2017, they recorded an emission reduction of 36,987.27 tons of  $\text{SO}_2$  in total.







## Group's Environmental Efforts

### Shanghai Jinshan Petrochemical Thermal Power Cogeneration #1, #2, #5A, #5B, #7 Unit Ultra-low Emission Upgrade Project

The Group has undertaken the Shanghai Jinshan Petrochemical Thermal Power Cogeneration #1, #2, #5A, #5B, #7 unit Ultra-low Emission Upgrade Project in March 2017. The unit capacities of the two units, two units and one unit are 410 t/h, 310 t/h and 620 t/h, respectively. Based on the technical and economic analysis, the Group designed this environmental protection solution with the dust, SO<sub>2</sub> and NO<sub>x</sub> emission concentration being less than 10 mg/Nm<sup>3</sup>, 35 mg/Nm<sup>3</sup> and 50 mg/Nm<sup>3</sup>, respectively. The upgraded facility satisfied the contract requirements in respect of purchasing, installing and schedule execution. According to the data from Shanghai Environmental Monitoring Platform, all the emission data of the #1-#2 unit currently in operation has achieved or even outperformed the emission index of the same unit in the PRC.



### Operation and Maintenance Projects

#### Shanxin Jincheng Yangcheng International Electric Power Co., Ltd. #1-#6 Unit, Datang Yangcheng Electric Co., Ltd #7, #8 Coal-fired Generating Units Flue Gas Denitrification Operation, Inspection and Maintenance Project

Yangcheng Operation and Maintenance Project, which is undertaken by the Group in July 2008, have 8 units with a total installed capacity of 3,300MW. This project is one of the earliest denitrification operation concession service projects in China, with a considerable scale and two desulfurization techniques are applied at the same time for operation and maintenance. Phase I #3-#6 Unit desulfurization facilities were constructed by the Group, and #1-#6 Unit had ultra-low upgrade undertaken by the Group. In 2017, the 8 units have realized ultra-low emission with an annual reduction of SO<sub>2</sub> emissions of 161,909.85 tons, desulfurization rate of above 99.4%.



## Group's Environmental Efforts

### Guangdong Yangxi Power Plant #1–#4 Unit Denitrification and Denitration System Operation and Maintenance Project

The Group provides operation, daily repair and maintenance service for two 600MW units and two 660MW units of Yangxi Power Plant, for a term from January 1, 2017 to December 31, 2025. Such four units in this project applied advanced operation and maintenance management model with high efficiency, and the ultra-low emission upgrade has been completed in 2017. They all have completed ultra-low emission with a desulfurization rate of no less than 98%, denitrification rate of no less than 80% and dust removal rate amounting to 99.76%.

Emission concentration of each pollutants of Yangxi Power Plant #1–#4 Unit meet the national and local relevant emission requirements, which significantly reduced emissions of pollutants. The cleaner production indicators of the Power Plant have reached advanced levels, and the production wastewater has been partially recycled and the solid waste has been disposed appropriately, which improved utilization rate of resources, maximized the effect on atmospheric environment by the Power Plant, achieved better environmental benefits and made indelible contributions to the emission reduction of total pollution load in Yangjiang.



### Concession Operation Projects

#### Jiangxi Ji'an Huaneng Power International Jinggangshan Power Plant Phase I and II Flue Gas Denitrification Project

Huaneng Power International, Inc. Jinggangshan Power Plant (shortly named as "Huaneng Jinggangshan Power Plant") is located in Qingyuan District, Ji'an City, Jiangxin Province, 10 kilometers away from downtown and 220 kilometers away from Nanchang City. Huaneng Jinggangshan Power Plant has a total installed capacity of 1.92 million KW, the first unit with the ultra-supercritical, desulfurization and denitrification 660,000 KW coal-fired generator in Central China.

The Group undertook the desulfurization concession operation of four units in Huaneng Jinggangshan Power Plant, which was responsible for the construction and operation of desulfurization projects. The concession period was 21 years. In October 2017, Huaneng Jinggangshan Power Plant completed its ultra-net emission upgrade work, and ultra-net emission environmental protection acceptance check of the four units in December. In 2017, Huaneng Jinggangshan Power Plant was under safe and steady operation, and its four units generated electricity totaling 9,369.953 million KW, with an aggregate emission reduction of 18,480.33 tons of  $\text{NO}_x$ , 4,298.38 tons of dust, 67,468.5 tons of  $\text{SO}_2$ , and denitrification rate amounting to 99.7%.





## Group's Environmental Efforts

Since the Group's Jinggangshan Project began its operation, it has not only reduced  $\text{SO}_2$ ,  $\text{NO}_x$  and dust emissions, but also provided approximately 150 job opportunities for Qingyuan District, Ji'an, Jiangxi, and generated approximately RMB 20.00 million in tax revenue for Ji'an every year and the Group was awarded as "Grade A Taxpayer" by Jiangxi Provincial Office, SAT.



### Ultra-low Emission Upgrade Project of Xinjiang Shenhua Coal Power

The Group has undertaken the Xinjiang Shenhua four 350MW units ultra-low emission concession operation project, with a concession period of 15 years. The #1 facility has successfully completed the testing operation at full load for 168 hours with the desulfurization, denitrification and ESP systems on 16 September 2017. All the technical specifications reached the design standard and met the ultra-low emission standard.



## Group's Environmental Efforts

### ③ Innovation in Research and Development

Technological innovation capabilities are the cornerstone of our Group's sustainable development, so the Group attaches great importance to scientific research investment. In 2017, the Group continued to strengthen its technological innovation and strived to improve its capabilities of independent innovation and core competitiveness. The two new projects "flue gas denitrification technology adapting to ultra-low emission of fuel coal" and "dust removal technology adapting to the ultra-low emission of fuel coal" are independent research and development projects, which constantly improve the Group's technologies.

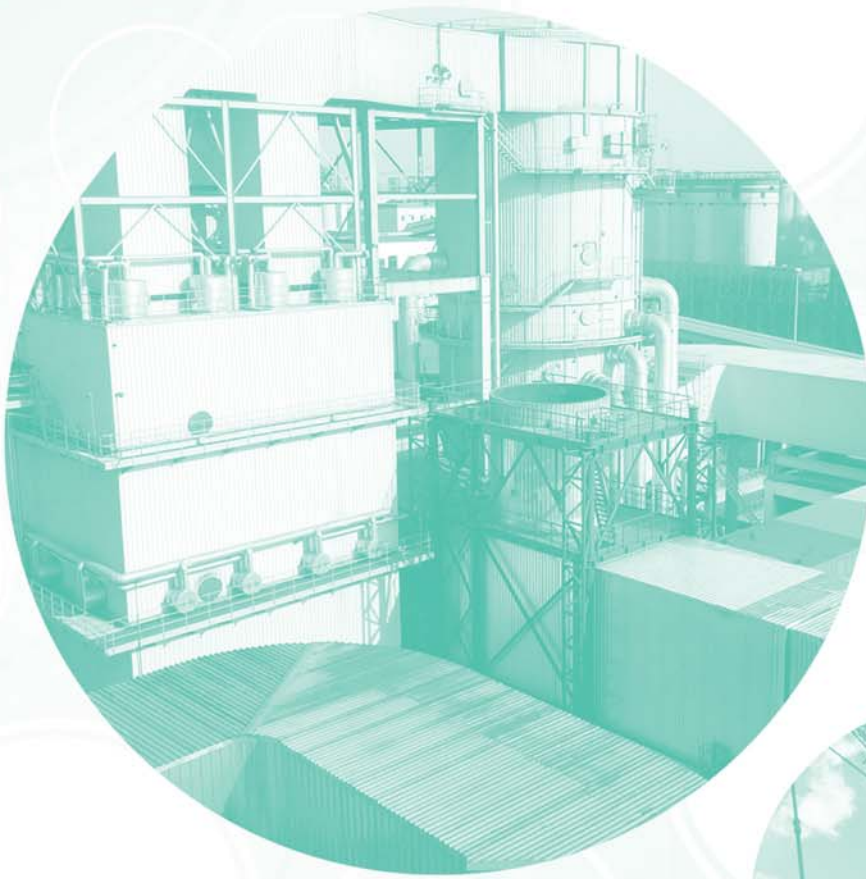
The Group pays attention to innovation incentive and intellectual property rights protection, and requires Beijing Boqi, a core operating subsidiary, to formulate relevant intellectual property rights management and protection measures and sign non-disclosure agreement with technical personnel with intellectual property rights owned by the enterprise, reward the technical personnel in respect of intellectual property rights, thus not only protecting the technology, but also arousing the enthusiasm of the employees in invention and creation, continuously optimizing and improving the construction and layout of the intellectual property system of the enterprise.

As of December 31, 2017, the Group has obtained 49 patents and 6 software copyrights. It compiled or co-compiled 4 national standards and 6 industrial standards. The Group has established a Beijing enterprise technology center, with a Zhongguancun patent pilot unit and a Zhongguancun standard pilot unit. In addition to various national certifications, the Group has applied for 6 patents, including 2 inventions during the reporting period, demonstrating that the Group has made remarkable progress on the path of independent innovation.

Our Group's research on key technologies for deep utilization of low temperature residual heat of power plant boilers (電站鍋爐低溫餘熱深度利用關鍵技術研究) was awarded the "Award For Scientific and Technological Advancement of China Southern Power Grid Company" (中國南方電網公司科技進步獎)



# A Green Supply Chain



# A Green Supply Chain

Projects undertaken by the Groups cover desulfurization, denitrification and electrostatic dust removal in a wide range of fields, including electricity industry, petrochemical industry, electrolytic aluminum and steel industries etc., and we have suppliers from various industries. The establishment of sustainable green supply chains and a supplier selection management mechanism are necessary for the implementation of our projects.

The Group aims to achieve coexistence of social benefits and economic efficiency, as well as to maintain quality while striving for efficiency, and growth. The business suppliers of the Group are divided into three categories: manufacturers, agents and distributors of equipment and materials; construction contractors; integrated suppliers in respect of law, finance, audit, etc. In terms of the supplier management, the Group learned advanced experience in the industry, optimized the qualified supplier development process, introduced excellent suppliers of the enterprises ranking the top in the industry, has formulated stringent Qualified Supplier Management Guidelines, and established a qualified supplier management committee, whose team leader is the Chairman of the Group and team members include vice-presidents and the head of the procurement department. This committee conducts comprehensive management on areas such as the engagement termination and appraisal of qualified suppliers. In addition, in accordance with the applicable laws and regulations regarding competitive bidding, we are committed to hiring construction subcontractors with good reputation and qualifications in accordance with our construction subcontractors' access conditions and cooperation agreements. As of date, we have approximately 360 qualified suppliers and 150 alternative suppliers. Among them, there are 492 enterprises in Mainland China and 18 enterprises outside China.

The Group's source of suppliers was accumulated for years, and they were selected based on their quality and will be phased out if they do not meet the requirements of the Group. Our suppliers must be the leading ones among the suppliers. With the expansion of its business, the Group continues to update its list of qualified suppliers, adding new ones from industries such as petrochemical and steel.

In terms of identifying suppliers, the Group solicits biddings from both sub-contractors and its bidding platform. The bidding and procurement documents contain requirements for environmental protection, safety, labor and quality, and those who do not meet the requirements are treated as invalid bids.

The Group's process of supplier selection includes:

- comprehensive recommendation and selection criteria
- review of qualifications
- exchange of technologies
- site inspection of operation premises, production base and project case studies
- supervision on production procedures
- pre-delivery inspection
- inspection of special equipment
- comprehensive project on-site examination before acceptance





## A Green Supply Chain

In the course of its daily management, suppliers are evaluated, in all aspects, on a quarterly and annual basis by purchasing department, bidding management department, design institute, engineer management center and qualified supplier management committee. This ensures the quality of our qualified suppliers while maintaining a strong pool of alternative suppliers.

Through stringent selection and comprehensive management, the Group has established a green supply chain, with an aim to maintain quality among its suppliers in terms of products and focus on environmental protection. The Group hopes to work together with its suppliers in completing its mission of environmental treatment and environment protection.

# Quality Service

The Group's main customers are coal-fired power plants. The Group is committed to provide outstanding quality services for customers subject to the principle of "Long-term Plan, Quality First" by formulating systematic targets and policies on quality control. The Group complies with national laws, regulations and standards in relation to energy saving and emissions reduction, such as the Environmental Protection Law of the People's Republic of China (《中華人民共和國環境保護法》), the Atmospheric Pollution Prevention and Control Law of the People's Republic of China (《中華人民共和國大氣污染防治法》) and upholds the guiding philosophy of "full commitment in prevention". Through continuous innovation and technological upgrade, the Group has improved its competitiveness in the industry. Meanwhile, the Group has obtained ISO9001 Quality Management System Certification in 2003, which further promoted and standardized the Group's quality control efforts, while improving the quality of its products and services. We have maintained a good relationship with our customers for a long time, and customers' satisfaction has continuously improved. In 2017, there was no occurrence of non-compliance that had significant impact on the Group.

The Group adapts various operating business modes, such as constructions, operations and maintenance as well as concession operations of environmental protection facility, and is well-recognized for the quality of its products and services is fundamental to the reputation and survival of an enterprise. Hence, the Group adheres to the principle of "Customer Satisfaction" in its pursuit of excellence. Quality control mechanisms have been well established through adopting a market demand oriented approach and consistently prioritising the quality of its products and services. The first responsible person for project quality is the chairman of the Group, and each of the project managers also has responsibilities. The relevant officers are responsible for the quality throughout the implementation of projects. In accordance with national, industrial and local standards, we have set up the Project Quality Control Guideline (《工程品質管制制度》), System of Quality Inspection and Acceptance (《工程品質檢查驗收制度》) and the Award and Penalty policy for the Quality of Projects (《工程品質獎懲制度》), which have been applied throughout all the phases of construction, This has resulted in consistent improvement in the quality of the Group's projects.

In respect of environmental protection facility engineering of our Group, for our newly build projects and certain upgrading projects, once the environmental protection facility we build is under stable operation upon system debug, the facility goes into a 168-hour trial operation stage. If such facility can operate 168 hours steadily under this stage with each indicator (technical parameters such as desulfurization and denitrification efficiency and energy and raw material consumption) satisfying the performance assurance requirements as specified in the technical agreement, then the device passes the trial operation. The facility will then be granted a preliminary certificate of acceptance and be transferred to our customer. For our upgrading projects that do not require the 168-hour trial operation, the facilities are transferred to the customers once the construction is completed and the facilities are under stable operation. After a project is granted a preliminary certificate of acceptance, it will go through a period of operation adjustment and defect handling. Within 3 to 6 months upon being granted of the preliminary certificate of acceptance, the project will be inspected by the government authority on environmental protection so as to meet the governmental discharge requirement, and be tested on performance by third parties with independent testing qualification so as to meet the requirements of the technical agreement. Upon the completion of the performance test, the project will be granted the final certificate of acceptance and enter into the quality guarantee period. Within the guarantee period, our Group will provide repair and maintenance services at our own cost if quality issues occur to the equipment provided by us; and we will send technicians to provide free guidance if it is due to other reasons.





## Quality Service

For the operation and maintenance business and the completed concession operation business, the Group is responsible for the operation and maintenance of the projects. We set up a remote data real-time monitor system for the projects in the headquarter of the Group, making full use of the advantages of the Internet and the terminal equipment to keep informed of the operation of the system and equipment on the site on a real-time basis and guide the project system to meet the environmental emission standards and the operation of the project system in safe and energy-saving way.

The Group has always placed great emphasis on customer management and has set up regular and ad-hoc visit systems for customers. Meantime, the Group has also solicited information and recommendations on customers' need through conducting surveys on customers' satisfaction every year. After paying return visit to customers and analyzing the information collected from surveys, we accessed the level of satisfaction of its customers and other stakeholders on its quality and service, and keeps improving its products and services through rectifying any unsatisfactory performance.

The Group has two levels of complaint mechanisms for its headquarters and project companies. Through giving on-site feedback, customers can make complaints to relevant management departments from the Group's headquarter and project companies via channels such as e-mail, telephone or fax. All sorts of customer complaints will be received and handled by dedicated officers who are responsible for close follow-up. Based on the seriousness of the complaints, the Group will report to the management departments of its project companies, the head of its management department and the Group's senior management who follow up the entire handling process until the customers are satisfied.

In 2017, the Group had not encountered any serious customer complaint that affects user's safety production. The percentage of delivered projects that are required to be recovered as a result of health or safety is 0%.

# Safe Production

## ① Rationale and Goals

“Care for life, people-oriented, full participation, safety assurance” is the safety management concept of the Group. Based on the safety management principle of “paying attention to image, setting the benchmark, optimizing management, zero accident” and establishing the firm concept of “securing safety is to increase efficiency and to promote the corporate image”, the Group sticks to the principle of “technology guarantees safety” and “the management shall be accountable for safety”, strengthens the safety management capability and implements the safety production liability system at all levels. The Group effectively prevents safety incidents and risks by means of monitoring, reporting and rewards and punishment to achieve the following goals:

1. No substantial casualty, fire accident, mechanical equipment issue and traffic accident;
2. No substantial environmental contamination accident;
3. No occupational hazard accident;
4. No serious electrical malfunction accident;
5. Prevention of unplanned suspension of desulfurization and denitrification mainframe systems caused by human error;
6. 100% qualification rate of importing equipment materials;
7. 100% inspection and acceptance rate of one-off completion projects;
8. No material quality accident relating to engineering, operation and maintenance;
9. Functional index meeting the contract requirements;
10. Customers' satisfaction over 95%;
11. Synchronization of project technical information and project entity;
12. No safety and quality accident caused by design error.



## Safe Production

### ② Major Safety Management Events in 2017

1 January

The NO. 1 Document on Managing Quality and Safety of China Boqi was issued in 2017

#### 中国博奇环保（控股）有限公司

中国博奇（2017）001 号

##### 中国博奇 2017 年安全质量管理 1 号文件

公司各部门、分子公司、EPC 及运维项目经理部：

2016 年我们公司上下齐心协力，使得年度安全质量管控目标顺利实现。2017 年我们仍需继续开，强化管理，落实安全质量管理责任，切实做好安全质量管理工作，贯彻“安全第一，质量为本”的意识，落实安全生产主体责任，有效遏制安全质量事故发生，力争 2017 年公司安全质量管理再创新高，现就有关事项通知如下：

##### 一、指导思想

以《中华人民共和国安全生产法》《中共中央国务院关于推进安全生产领域改革发展的意见》为指导，以全面落实中国博奇 1 号文件为主线，坚持以人为本，坚持“安全第一、预防为主、综合治理”的方针和安全“零死亡、零伤害”“零事故”，质量“零事件”的理念，坚持以全面落实安全风险预控管理为基础，突出责任落实、隐患排查和 unsafe 行为管理，不断夯实安全管理基础，积极构建自我约束、持续改进的安全生产长效机制。

##### 二、安全质量管控工作目标

- 1、杜绝重大安全事故；
- 2、杜绝重大人身伤亡事故；
- 3、杜绝重大火灾事故；
- 4、不发生交通事故；
- 5、不发生重大环境污染事故；
- 6、不发生职业危害事故；
- 7、不发生电气恶性误操作事故；
- 8、杜绝人为引起的脱碳脱硝系统主机非计划停运；
- 9、重大质量事故为零。

##### 三、工作措施

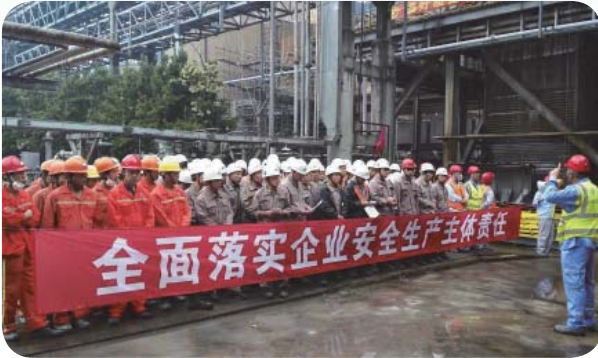
25 March

The Group carried out the 2017 Spring Safety Inspection



## Safe Production

1 June      The Group launched various activities in its month of safety production



13 September      The Group carried out the 2017 Autumn Safety Inspection



15 December      The Group published the Articles of Association of the safety management committee



## Safe Production

### ③ Preventive Measures

<b>Safety monitoring system</b>	<p>In order to fully ensure the authority of safety specialists on supervision and to reduce the resistance on such work, the Group encourages and arranges safety specialists to be stationed at every project. This establishes channels for safety specialists to directly give feedback on safety issues and creates favorable conditions for them to carry out work independently, so that the Group can effectively detect any negligence of the relevant staff, any deficiency of the technical system, any changes to meet a tight deadline thereby disregarded the increasing safety risks, in order to guarantee the execution of safety monitoring.</p>
<b>Safe production liability system</b>	<p>The leader of the Group is the first responsible person for the Group's safe production, and shall be accountable for the overall safety management of the Group. When arranging for project tasks, the first priority is safety. In every inspection conducted in 2017, the Group issued a checklist (《安健環檢查表》) for projects with hidden risks on site promoted the rectification and increased efforts on the inspection and evaluation of departments at all levels, including project management department and related professionals to monitor employees to perform their safety duties.</p>
<b>Standardization of safety management</b>	<p>The safety quality management department completed the compilation of safety standardization guide manual, based on the Group's corporate culture, safety facilities and system information. The Group gradually implemented the measures in manual, carried out pilot projects, set up project standards, implemented safe and civilized construction plan and highlighted the importance of safety management.</p>
<b>Fire prevention efforts</b>	<p>In 2017, the Group focused on fire prevention to further improve the safety measures in relation to the anti-corrosion of the absorption tower and the installation of internal parts. The Group must strictly inspect before the construction of anti-corrosion facilities in accordance with requirements for anti-corrosion safety management, including pipe plugging, scale mixing, testing the ventilation of towers and attendance personnel. Before the construction of anti-corrosion facilities, fire extinguishers and temporary water pipes are properly prepared. All operating staff are required to be trained in fire drills and be familiar with the use of fire extinguishers before conducting anti-corrosion projects.</p> <p>During the period of undertaking such work on anti-corrosion and scaling, ignition of fire is strictly prohibited. During the installation of internal parts of the tower, measures shall be strictly implemented. Workers are required to take measures on fire isolation. Workers shall be deployed to stay at the tower on duty and log all persons who enter the tower. Flammable materials with workers shall be checked to minimize fire hazards and eliminate fire risks.</p>



## Safe Production

<b>Safety education and training</b>	<p>The Group conducted effective safety training which could improve the quality of safety management and skills of all employees on safety. The Group organized staff at all levels to hold diversified safety trainings. For example, the Group will engage external trainers to conduct trainings regarding to laws and regulations on safe production and devote greater efforts to safe production and training for front-line employees.</p> <p>The Group prepared Identification and Preventive Measures for Operation and Maintenance of Unplanned Shutdown (《運維非停危險點辨識與預控措施》) and Identification and Notification of Dangers (《危險源辨識告知牌》) for professional workers at dangerous work sites, and then posted on production site and dispatched to workers, allowing all workers to understand the risks of the industry and the corresponding control measures to improve their safety awareness.</p>
<b>Control risks in advance</b>	<p>According to the requirements of Regulation of Safety Operation in Power Engineering Construction (《電力建設安全工作規程》), the engineers of project departments of the Group and subcontractors have strengthened their capability in identifying and controlling risks. They are required to carefully prepare and review the construction plan and safety measures. For major construction procedures, such as installation and demolition hoisting machinery, demolishment of the absorption tower and chimney, upgrade of the absorption tower, erection/demolishment of the scaffolding inside and outside of the tower and anti-corrosion, or projects of which the construction has posed higher degree of risks, special construction plan must be prepared. Safety measures have to be tailored, reliable and operable, which may require justifications.</p>
<b>“Three delivery” and “three checks”</b>	<p>The Group requires project management departments to strictly implement the daytime and night shift policy (早晚班會制度). Before changing shifts, the “three delivery”, namely on tasks, the safety issues, and technology, the “three checks”, namely on outfits, mental states and the “three important items” (helmet, safety belt and safety net), need to be completed. Records should be kept every day for the Group’s regular inspection.</p>
<b>Collection of safety information and feedbacks</b>	<p>A brief report on safety quality can reflect the management conditions of each project and play an active role in pushing forward the safety management. The quality and safety management department of the Group will publish a safety brief about O&amp;M projects, environmental protection facility engineering projects and quality services every month, and these brief reports summarize the safe production and quality management of every project in the month. The Group may discover deficiencies by comparing figures and analyzing the management of every project, then take appropriate actions and arrange follow-up work.</p>

In 2017, the death number and death rate of employees of the Group dying on the job were zero.





## Safe Production

### ④ Emergency Measures

By consistently adhering to the safe production protocol of “Put Safety and Prevention First with Comprehensive Governance”, the Group has established a sound emergency management system, prepared emergency plans, conducted drills and set up a dedicated rescue team to timely respond to and dynamically manage emergencies, in order to raise the employees' awareness of safety protection and improve their abilities of dealing with emergencies. In 2017, the Group further established emergency plans and the top-down approach of prevention with mass participation.

The Group put great importance to the prevention of natural disasters, especially for the preventive measures in the department of costal projects, and focuses on the prevention against unexpected natural disasters, such as abnormal weather and geological disasters. The Group conducted emergency management and implemented appropriate measures in terms of plans, materials, drills and stations to effectively control the negative impacts that natural disasters exert on the Group's production. In 2017, the Group successfully managed the impacts from Typhoons “Muifa”, “Hato” and “Pakhar” and other natural disasters, thus ensured the safe production.

# Employee Care





# Employee Care

The employees of the Group are the driving force in maintaining its market position and achieving satisfactory performance results. We consistently believe that employees are the most valuable asset and considered as a force to our sustainable corporate development. We actively create favorable conditions for our staff's career development and physical and mental health.

As of December 31, 2017, China Boqi had 1,375 employees in total.

## ① Human Resources Overview

As of December 31, 2017

Employee number (by gender)	
Female	314
Male	1,061
Employee number (by age group)	
Under 30 years old	587
30–40 years old	420
over 40 years old	368
Employee number (by function)	
Franchise management personnel	85
Engineering and technical staff	170
Sales personnel	27
R&D personnel	73
Administrative Personnel	39
Production personnel	981
Others	0

## ② Human Resource Policies

**Employees' Recruitment** Upholding to the principle of "fairness, justness and openness", in accordance with the requirements of Labor Law, Labor Contract Law and other relevant laws and regulations, the Group gives full consideration to its business development needs and employee structure in selecting and recruiting employees in accordance with the Group's recruitment and employment policies. Stringent interview procedures for assessment and approval during recruitment have been adopted to avoid any forms of discrimination.

Child labour and forced labour are strictly prohibited. We strictly prohibit the recruitment of child labor and forced labour in strict compliance with Labour Law of People's Republic of China (《中華人民共和國勞動法》) and Prohibition of Child Labour Provisions (《禁止使用童工規定》). We verify the identity of employees at the signing of labor contracts with employees, which in turn prevent the use of child labor. During the reporting period, the Group did not have any incidents of child labour or forced labour.

## Employee Care

### Training for Employees

The Group places great importance to the development of its employees and has taken into consideration of the overall development strategy of the Group in organizing a number of staff training sessions to improve their skills, technical competency and professional knowledge. These policies aim to enhance the Group's competitiveness by providing appropriate human resources, improve the overall quality and capabilities of the Group's employees in all aspects, and help promote a healthy and rapid development of the Group.

In 2017, the Group has completed more than 150 training sessions covering various aspects, such as new staff training, constructions of environmental protection facility, operation and maintenance project managerial training, concession operation model and basic knowledge in project investment, special training by the Design Institute, safety education training, Golden Tax Project Phase III and enterprises' social security training, and there was more than 1,000 in number of attendance of these trainings.

### Remuneration and Benefits

The remuneration packages of the employees include salaries, bonuses and allowances. Our employees also receive supplementary medical benefits, transportation allowances, meal allowances and other benefits. The Group carries out employee performance appraisals and establishes diversified and dynamic appraisal mechanisms. The department heads' salaries and remunerations will be adjusted according to the results of their performance appraisals. Pursuant to applicable PRC regulations, the Group has contributed to social insurance funds, including pension plans, basic medical insurance, work-related injury insurance, unemployment insurance and maternity insurance, and housing funds for all of its employees. In 2017, there was no social security underpaid.

### Incentives and Promotion

According to the business development requirements, the Group, by setting the operational strategies and annual operational goals as its guidance, market demands as its direction, economic effectiveness as its focus as well as technology research and development as its support, established and improved the entire staff performance evaluation system. In order to inspire the potential and work enthusiasm of its employees, the Group objectively evaluates and assesses work performance of its employees by setting performance targets, and realizing awards according to the points that is formed by the quantified evaluation results.

Concurrently, these evaluation results are the references for the employees' career progression. Upholding the principle of "matching right people to the right posts", the Group creates a sound career development channel for both management and technicians by implementing comprehensive promotion mechanisms and providing favorable opportunities for promotion to our employees.



## Employee Care

### Occupational Health

The Group pays attention to the effective operation of medical security and occupational health management system, strengthens its efforts in the inspection of occupational illnesses and work environment, enhances its supervision over noise pollution in the production, improves its insulating protective measures and first aid facilities, and regularly distributes, inspects and maintains its protective gears for employees. The Group carries out safety and health trainings and emergency exercises for its employees, as well as educates them with general knowledge of occupational illnesses prevention and occupational health.

The Group organizes physical health checks for employees every year, and adds special physical examination to special work staff. The Group improved its health rewards filing system, carries out follow-up reviews, and protects employees from suffering from occupational illnesses. In 2017, the physical health checks rate and health record coverage rate were 100%.



# Community Services





# Community Services

The Group always dedicates to contributing to society and protecting the environment. In addition, the Group actively participates in different science and technology seminars, extends strategic corporation with education institutions, builds up laboratories with schools, provides internship for students. These initiatives establish a good public image for the Group.

## ① Tree-planting Activity

On 1 April 2017, the Group arranged volunteers for the Tree-planting Activity with the theme of “Protecting Ecological Environment and Natural Resources” at the Huairou Yimuqiantian Tree-planting Base (懷柔億畝千田植樹基地) for volunteers from different departments.



After planting trees, they wrote their blessings on green cards, such as “absorbing sunshine and swaying in the wind just for blue sky and white cloud”, “cypress fights against scorching Summer and freezing cold, and works on environmental protection with Boqi all the time”, all of which demonstrated Boqi’s dream of making blue sky and white cloud.



## ② Providing Practical Learning Opportunities

With Yangcheng Training Base as its technology platform, the Group provides opportunity of technology learning for college institutions of electricity and environmental protection.

In July 2017, Harbin Power Vocational Technology College (“Harbin Power College 哈電校”) dispatched 4 head tutors specialized in boiler and thermal power to learn desulfurization technology at Yangcheng Training Base during the summer vacation.

During the period of study, tutors of Harbin Power College focused on the structure and on-off operation of desulfurization equipment based on their own specialised expertise. As required by safety protocol, the training base arranged staff to take those tutors to production site for a 15-day imitate study, which helped them to have a new understanding and experience of PRC’s desulfurization environmental protection work both theoretically and practically, which enriched their teaching experience.

## Community Services



### ③ Highlights of Other Social Activities in 2017

On 13 April 2017, the Group's Party Branch participated in the Party Day Activity of "Praise our capital for its development and promote green ideas" in Fengtai Technology Park.



From 13 to 16 June 2017, the Group was invited to participate in the 15<sup>th</sup> China International Environmental Protection Exhibition & Conference.



From 22 to 23 September 2017, the Group was invited to participate in 2017 seminars concerning flue gas emission control technology in the steel industry.





# About this Report

## Report Compilation Principles

The report has been prepared in accordance with relevant requirements of “Environmental, Social and Governance Reporting Guide” issued by the Hong Kong Stock Exchange.

## Reporting Period

The reporting period spans from January 1, 2017 to December 31, 2017, with some information tracing back to earlier years.

## Data Source

All data used in the report are derived from internal official documents and relevant statistics of the Company.

## Reference

In order to facilitate the presentation, the words “we”, “the Company”, “the Group” or “Boqi Environmental” in this report refer to “China Boqi Environmental Engineering (Holding) Co., Ltd.”.



# Appendix I — Hong Kong Stock Exchange Environmental, Social and Governance Reporting Guides' Index

Environmental, Social and Governance Reporting Guides		Page	Reference to the Report/Explanation
A. Environmental			
A1 Emissions			
A1	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.	15	Be clean and environmental friendly, reduce pollutants emission
A1.1	The types of emissions and respective emissions data.	16	Waste Management
A1.2	Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	12	Energy Management
A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	15	Harmful Waste Management
A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	15	Harmless Waste Management
A1.5	Description of measures to mitigate emissions and results achieved.	10–11	Environmental Governance Measures, Practices, Environmental Protection and Energy-saving Solutions
A1.6	Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved.	11,15	Environmental Protection, Harmful Waste Management, Harmless Waste Management
A2 Use of Resources			
A2	General Disclosure Policies on the efficient use of resources, including energy, water and other raw materials.	12	Lower energy consumption, establish resource-saving corporate





## Appendix I – Hong Kong Stock Exchange Environmental, Social and Governance Reporting Guides' Index

Environmental, Social and Governance Reporting Guides		Page	Reference to the Report/Explanation
A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).	12–13	Energy Management
A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility).	13	Water Resources Management
A2.3	Description of energy use efficiency initiatives and results achieved.	12	Lower energy consumption, establish resource-saving corporate
A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	13	Water Resources Management
A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	N/A	The construction and operation of environmental protection projects do not produce packaging materials, and the packaging used for equipment and materials is recycled by the suppliers
A3 The Environment and Natural Resources			
A3	General Disclosure	12	Lower energy consumption, establish resource-saving corporate
	Policies on minimising the issuer's significant impact on the environment and natural resources.		
A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	6	About the Group

## Appendix I — Hong Kong Stock Exchange Environmental, Social and Governance Reporting Guides' Index

Environmental, Social and Governance Reporting Guides		Page	Reference to the Report/Explanation
B. Social			
B1	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	34–35	Employee Care
B1.1	Total workforce by gender, employment type, age group and geographical region.	34	Human Resources Overview
B1.2	Employee turnover rate by gender, age group and geographical region.	–	–
B2 Health and Safety			
B2	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	30	Preventive Measures
B2.1	Number and rate of work-related fatalities.	31	Preventive Measures
B2.2	Lost days due to work injury.	–	No relevant case
B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored.	30–31	Preventive Measures
B3 Development and Training			
B3	General Disclosure Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	34	Human Resources Policies
B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	–	–



## Appendix I – Hong Kong Stock Exchange Environmental, Social and Governance Reporting Guides' Index

Environmental, Social and Governance Reporting Guides		Page	Reference to the Report/Explanation
B3.2	The average training hours completed per employee by gender and employee category.	–	–
B4 Labour Standards			
B4	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	34	Human Resources Policies
B4.1	Description of measures to review employment practices to avoid child and forced labour.	34	Human Resources Policies
B4.2	Description of steps taken to eliminate such practices when discovered.	34	Human Resources Policies
B5 Supply Chain Management			
B5	General Disclosure Policies on managing environmental and social risks of the supply chain.	23	Green Supply Chain
B5.1	Number of suppliers by geographical region.	23	Green Supply Chain
B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	23–24	Green Supply Chain
B6 Product Responsibility			
B6	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to the health and safety of product and service rendered, advertising logo, privacy matters and remedies.	25–26	Quality service
B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	26	Quality Service
B6.2	Number of products and service related complaints received and how they are dealt with.	26	Quality Service

## Appendix I — Hong Kong Stock Exchange Environmental, Social and Governance Reporting Guides' Index

Environmental, Social and Governance Reporting Guides		Page	Reference to the Report/Explanation
B6.3	Description of practices relating to observing and protecting intellectual property rights.	21	Innovative Service
B6.4	Description of quality assurance process and recall procedures.	25	Quality Service, the Group is a non-production enterprise, not applicable to "product recovery procedures".
B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored.	N/A	The Group is selected by the clients through bidding and tendering, and the information of the client's bidding and tendering is announced.
B7 Anticorruption			
B7	General Disclosure Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.	8	Group Governance
B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.	8	Group Governance
B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	8	Group Governance
B8 Community Investment			
B8	General Disclosure Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.	38–39	Community Services
B8.1	Focus areas of contribution.	38–39	Community Services
B8.2	Resources contributed (e.g. money or time) to the focus area.	38–39	Community Services

**中国博奇环保(控股)有限公司**  
China Boqi Environmental (Holding) Co., Ltd.