



# Jiangxi Copper Company Limited

(A Sino-foreign joint venture joint stock limited company incorporated in the People's Republic of China)  
(Stock Code · H Share: 0358 · A Share: 600362)

## 2017

### ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT



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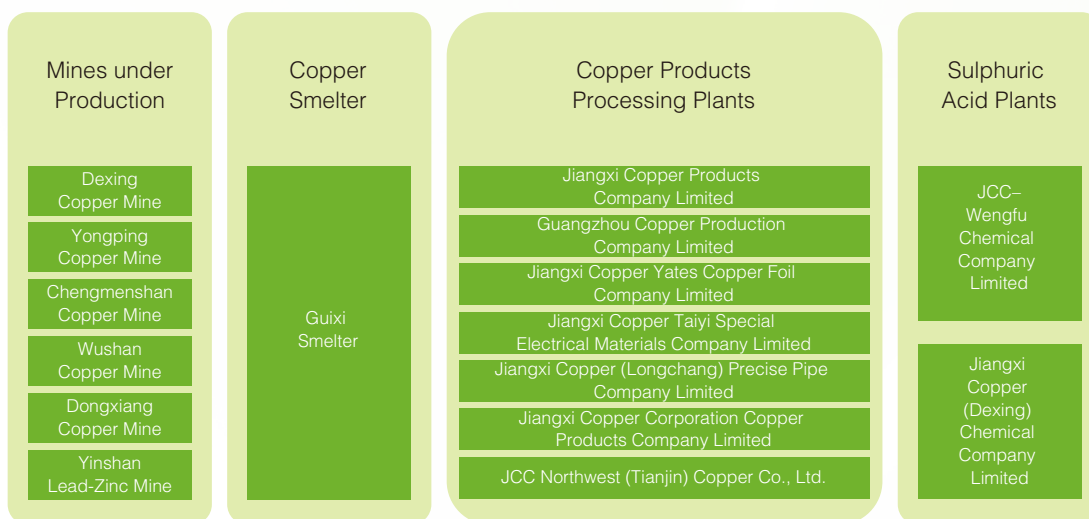
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## About Us

Jiangxi Copper Company Limited (the “Company” or “Jiangxi Copper”) was listed in Hong Kong in 1997. The operating activities of the Company, together with its subsidiaries (collectively referred to as the “Group”), are mainly the production and sales of copper and other related products. The principal business of the Group covers copper mining and dressing, smelting and processing, extraction and processing of the precious metal and scattered metal, sulphuric chemistry as well as finance and trade fields. It has established the complete industrial chain integrated with exploration, mining, ore dressing, smelting and processing in copper and related non-ferrous metal fields. It is an important production base of copper, gold, silver and sulphuric chemistry. The main products of the Group include more than 50 varieties, such as copper cathode, gold, silver, sulphuric acid, copper rod, copper tube, copper foil, selenium, tellurium, rhenium, bismuth, etc.

Jiangxi Copper owns industrial assets within and outside the People’s Republic of China (the “PRC”), including the United States, Peru, Albania, Afghanistan and Singapore. In the PRC, the main assets owned and controlled by the Company include:



Among those, Guixi Smelter is the largest blister and copper concentrate smelter and refiner in the PRC with the largest scale, most advanced technologies and best environmental protection facilities.

Throughout the whole year of 2017, the Group produced 1,370,000 tonnes of copper cathode, 25.6 tonnes of gold, 484 tonnes of silver, 3,570,000 tonnes of sulphuric acids and 1,140,000 tonnes of various copper products in total. The Group achieved consolidated operating income of RMB205 billion, representing an increase of 1.35% as compared with 2016.

Meanwhile, the Group was awarded the first session of the “Annual Green Development Leading Enterprise of China Non-ferrous Metals Industry” by the China Non-ferrous Metals Industry Association, which drives Jiangxi Copper to continue to work on its sustainable development. The Group will constantly strive to create optimised environmental and social benefits.

## Message from Directors

As one of the largest copper cathode producers in the PRC, Jiangxi Copper possesses a complete industry chain, forming an industry-leading development advantage in the PRC, and has become the enterprise with the highest self-sufficiency rate in terms of copper concentrates in the PRC. In recent years, the PRC increasingly attaches importance to discussion topics such as environmental protection and resources conservation, which sets higher requirements on the energy exploitation industry. Jiangxi Copper, being a domestic leading group of copper exploitation and processing, is keen on strengthening its own market competitiveness and fulfilling its commitment on sustainable development for society.

With regard to environmental protection, Jiangxi Copper proactively adopts the internationally advanced regulations on pollution prevention and control, builds ancillary facilities in mines and smelting plants for treating pollutants, and carries out technological transformation in accordance with the new national standards, such as the Industrial Emission Standard of Pollutants for Copper, Nickel and Cobalt Industry (《銅、鎳、鈷工業污染物排放標準》). In the meantime, the Group strictly implements various national standards for emissions and local environmental protection requirements. To refine the environmental management, Jiangxi Copper has established a three-tier management system comprising of the safety and environmental protection division, secondary units and their environmental protection departments, which are responsible for guiding, standardising and monitoring environmental problems encountered in the course of corporate operations and development. Through development and improvement in several years' time, the Group has obtained international certifications such as ISO14000 Environmental Management System, ISO50001 Energy Management System, ISO10012 Measurement Management System, etc., so as to perform the environmental and social obligations held responsible by the Company and realise corporate green development.

With regard to production and management, Jiangxi Copper has set up a safety and regulatory mechanism consisting of "a three-tier agency and a four-tier network", namely the three-tier safety management agency constituted by the Group's management departments, factory mines and plant constructions, and the four-tier safety management network constituted by the chairman, general managers, department heads and the heads of production units. Such regulatory mechanism establishes an institutional protection for the Group's management of safe production.

Jiangxi Copper always gives top priorities to education on safety knowledge and safety awareness of employees at all levels. In recent years, the Group strengthens the production safety knowledge training for main persons-in-charge, management personnel and team leaders, and stringently supervises the proof for safety qualifications of main persons-in-charge and safety management personnel of non-coal mine corporations, production enterprises for dangerous chemicals, etc. Meanwhile, the Group makes good use of laws and regulations for safe production in various forms to advocate education and enhance the employees' awareness on production safety laws, and is committed to creating a law-abiding environment of safe production and a cultural atmosphere for safety.

## Message from Directors

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Adhered to the concept of “thinking about today from the perspective of future”, Jiangxi Copper formulates long-term development plans, sets strategic goals and continuously promotes the implementation of plans and achievement of goals. Jiangxi Copper insists on the idea of “common thinking, joint creation and mutual progress”, complies with covenants, respects differences, advances cooperation for a win-win situation among various stakeholders. Looking forward, the Group will continue to put the development concept of “innovation, coordination, going green, openness and sharing” into practice with copper industry as the main task while keeping pace with the polymetallic mining industry, striving to become the world’s top mining company.

**Jiangxi Copper Company Limited**

**Long Ziping**

*Chairman, Secretary to the Party Committee and Executive Director*

## About This Report

This is the second environmental, social, and governance (ESG) report issued by the Company. Through reporting on the Group's ESG policies, measures, and performance, this report aims at better informing each of the Group's stakeholders of the progress of and direction for the Group's sustainability issues. This report is written in both Chinese and English and has been uploaded to the official websites of The Stock Exchange of Hong Kong Limited (the "Stock Exchange") and the Company ([www.jxcc.com](http://www.jxcc.com)).

### Scope of this report

This report covers the environmental, social and governance performance of the Company from January 2017 to December 2017 (the "Year"), including the Group's operations in relation to the production and sales of copper and related products, with a focus on the office of the Group's headquarters at High-tech Zone, Nanchang, Jiangxi Province, the PRC and businesses at Dexing Copper Mine and Guixi Smelter. At present, this report does not cover all of the Group's operations, while the Group is now improving its internal data collection procedure and will gradually expand the scope of disclosure.

### Standards of this report

This report complies with the "comply or explain" provisions of the Environmental, Social and Governance Reporting Guide (the "Guide") promulgated by the Stock Exchange and the four reporting principles as set out by the Guide – materiality, quantitative, balance and consistency – which serve as the basis of preparation of this report. A complete index is attached in the last chapter of this report to allow readers to read this report in accordance with the Guide.

### Confirmation and approval

All information cited herein derives from the Group's official documents, statistics, as well as management and operation data collected. This report was approved by the board of directors of the Company in July 2018.

#### Opinions and Feedbacks

The Company highly values the opinions of its stakeholders. Should you have any doubts or suggestions regarding the content or form of this report, please contact us via followings:

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# Stakeholder Engagement

## Main Stakeholder Engagement Methods

Stakeholders<sup>1</sup> engagement is an important part of Jiangxi Copper's business management, as it is favorable for the Group to understand the potential commercial risks and identify upcoming business opportunities. In the previous year, the Group used different methods to communicate with stakeholders.



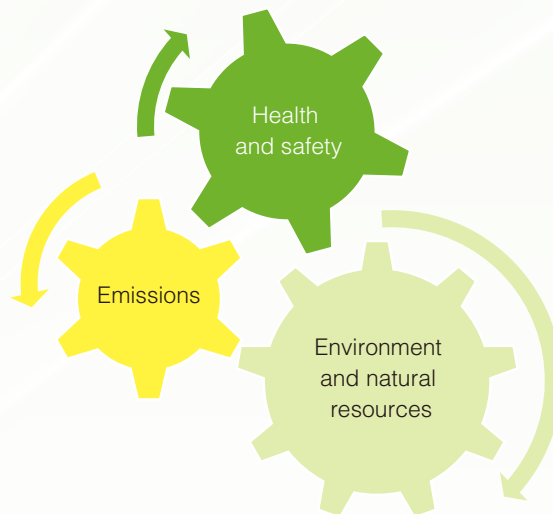
The Group intends to expand the scope of stakeholders and the content of communication, in order to include more stakeholders and more issues in the ESG report. Jiangxi Copper will establish a more efficient and diversified communication mechanism to interact with stakeholders, so as to increase the level of involvement of stakeholders, and become committed to creating a more mutually beneficial relationship.

<sup>1</sup> "Stakeholders", also known as "interested parties", refer to groups and individuals that have a significant impact on the businesses of corporations or who may be affected by the businesses, including, internally, directors, management, employees, and externally, customers, business partners and regulators.

# Stakeholder Engagement

## Material Sustainability Issues

Jiangxi Copper identifies those environmental and social issues which are the most crucial to the Group and its stakeholders through exchange of views among the management. According to the results of exchange of views, the Group selected three environmental and social discussion topics from the Guide as the key issues for discussion in this report.



## Environmental Protection

As a company with a sense of social responsibility, Jiangxi Copper values the protection of natural resources and the environment. Due to the specialties of copper mining industry, the Group's operations bring certain effects to surrounding waters and air quality, and its discharge of solid waste would affect the soil conditions and underground water conditions. Hence, with an aim to prevent damage on natural resources and the environment, the Group implemented relevant national laws, regulations and policies, including Emission Standard of Pollutants for Copper, Nickel and Cobalt Industry (GB25467-2010) (《銅、鎳、鈷工業污染物排放標準》), and Emission Standard of Pollutants for Lead and Zinc Industry (GB25466-2010) (《鉛、鋅工業污染物排放標準》) of the PRC, Emission Standard for Industrial Enterprises Noise at Boundary (GB12348-2008) (《工業企業廠界環境噪聲排放標準》) against noise, Standard for Pollution Control on the Storage and Disposal Site for General Industrial Solid Waste (GB18599-2001) (《一般工業固體廢物貯存、處置場污染控制標準》) against solid waste, as well as other local environmental protection regulations.

In respect of the system, Jiangxi Copper manages and implements a three-tier management system comprising of the safety and environmental protection division, secondary units and their environmental protection departments. The corporate safety and environmental protection division is responsible for the arrangement, supervision, inspection and coordination of Jiangxi Copper's daily environmental protection management. The environmental protection department of Dexing Copper Mine is in charge of the internal environmental protection management for the mine. The Group also has designated environmental monitoring stations with a sub-station in Dexing Copper Mine, responsible for daily environmental monitoring. The related monitoring methods strictly execute the relevant national technical standards and specifications, such as HJ 558-2010 Cleaner Production Standard – Copper Smelting Industry.

As of the Year, Jiangxi Copper has built a total of over 400 environmental protection devices or device sets, 16 of which are large-scale wastewater treatment plants. The annual operating costs of such environmental protection facilities exceeded RMB1.6 billion, so the Group's environmental protection treatment systems have been basically developed. The Group puts the concept of “green development, environmental protection as priority” into practice, and will constantly increase its investment in environmental protection for the 13th Five-Year Plan and equip itself with pollution prevention and control capacity in the future.

# Environmental Protection

## Carbon emissions

As greenhouse gas emissions are closely related to climate change and global warming, corporations from various countries, one after another, have formulated reduction measures on and goals for carbon emissions. Jiangxi Copper quantifies greenhouse gas emissions (or carbon emissions)<sup>2</sup> from operations of Dexing Copper Mine and some other mines under production as well as Guixi Smelter for the first time during the Year. The process of the quantification was undergone with reference to the guidelines issued by the National Development and Reform Commission (NDRC) in the PRC<sup>3</sup>, and ISO14064-1 to ensure accuracy of the data for environmental key performance indicators.

In the meantime, in order to respond to the PRC's call for addressing climate change and achieving low-carbon transformational development, Jiangxi Copper will set long-term carbon reduction goals and specific measures. Through the aforementioned carbon assessment, Jiangxi Copper acquires more intuitive understanding to its internal resources utilisation and reviews the effectiveness of its existing emission reduction measures.

Scope	Emission Source	Emissions (Tonnes of CO <sub>2</sub> Equivalent)
Scope 1: Direct greenhouse gas emissions	Fossil fuel burning – Stationary sources	297,006.9
	Carbonate decomposition and discharge	31,369.3
	Discharge of energy as a reducing agent	1,054.3
Scope 2: Indirect greenhouse gas emissions from energy	Purchased electricity	1,635,681.4
	Purchased thermal power	43,515.4
<b>Total Greenhouse Gas Emissions</b>		
2,008,627 tonnes of CO <sub>2</sub> equivalent		

2 The data of greenhouse gas emissions for the Year cannot be accounted for separately according to the scope of this report (Dexing Copper Mine, Guixi Smelter and headquarters' office).

3 Guidelines for accounting and reporting of greenhouse gas emission from mining enterprises (Trial) (《礦山企業溫室氣體排放核算與報告指南(試行)》) and Guidelines for accounting and reporting of greenhouse gas emission from other non-ferrous metal smelting, refining and processing industries and enterprises (Trial) (《其他有色金屬冶煉和壓延加工企業溫室氣體排放核算與報告指南(試行)》).

# Environmental Protection

## Carbon Intensity Indicator

Carbon intensity (calculated at output value per RMB10,000): 0.35 tonnes of CO<sub>2</sub> equivalent

According to findings of the carbon assessment, the main source of carbon emission from the Group's operations is purchased electricity, and the second is fossil fuel burning. The Group will carry out electricity conservation measures for mines and Guixi Smelter, such as shutting down unnecessary production equipment, optimise smelting techniques and save fuel consumption.

## Other emissions

All kinds of emissions are under monitoring and control of the environmental monitoring stations. According to the 24-hour automatic monitoring of the PRC-controlled pollution sources (being a joint network with the environmental protection department) and the information derived from the Group's own monitoring, the Group's daily average emission rate at the discharge points of the PRC-controlled pollution sources basically reaches 100%.

Within the scope of the report, the Group's emissions are mainly from Dexing Copper Mine and Guixi Smelter, including wastewater, exhaust gas, non-hazardous solid waste (for example, industrial waste, construction waste and various kinds of plastics), as well as hazardous waste (for example, white dust, arsenic filter cake and refuse oil). The Group is committed to adopting advanced production equipment and techniques to prevent discharge of hazardous waste and measuring the amount of non-hazardous waste by quantifying tailing generation. Part of the tailings generated from Dexing Copper Mine is recycled and reused, and the remaining unrecycled part is initially piled in tailings ponds, and then transported to suitable venues for disposal in landfills. The tailings generated from Guixi Smelter, all of which are blended with cement, are used as construction materials.

## Dexing Copper Mine

Dexing Copper Mine, as an important production unit under Jiangxi Copper, the main emissions of which during copper exploitation include ammoniacal nitrogen, sulphur dioxide, nitrogen oxide, dust and chemical oxygen demand (COD). Dexing Copper Mine reduces the effect of emission through environmental technology. The mines of Dexing Copper Mine applies decontamination and diversion, extraction of copper from wastewater by vulcanisation (unprecedented in the PRC), high density slurry (HDS) treatment technology (unprecedented in the PRC), biological extraction of copper from waste ore containing copper and other technologies; during the smelting process, the "double conversion and double absorption" method for acid generation technology is adopted, so as the activated coke dry desulfurization technology, the organic amine desulfurization technology, the wastewater electrochemical treatment technology, and the membrane bio-reactor (MBR) technology, etc.. Through capacity expansion and renovation and new environmental protection and control projects, the reuse rate of industrial water of Dexing Copper Mine increased from 80% in 2005 to 94% for the Year, of which the reuse rate of industrial water during the smelting process reached more than 97%. The application of such technologies reduced consumption of fresh water and discharge of wastewater, thus turning wastewater into resources.

# Environmental Protection

## Guixi Smelter

In order to avoid environmental pollution caused by emissions such as exhaust gas, wastewater, solid waste and noise, etc., Guixi Smelter has set up an emission control process, in combination of a series of emission standards and policies to restrain the emission of pollutants. The policies executed by the smelter for emission management include: Emission Standard of Air Pollutants for Boilers (GB13271) (《鍋爐大氣污染物排放標準》) and Emission Standard of Pollutants for Copper, Nickel and Cobalt Industry (GB25467) (《銅、鎳、鈷工業污染物排放標準》), etc. against exhaust gas and dust; Emission Standard of Pollutants for Recycled Copper, Aluminium, Lead and Zinc Industry (GB31574) (《再生銅、鋁、鉛、鋅工業污染物排放標準》), etc. against wastewater; Standard for Pollution Control on the Storage and Disposal Site for General Industrial Solid Waste (GB18599) (《一般工業固體廢物貯存、處置場污染控制標準》), etc. against solid waste; and Emission Standard for Industrial Enterprises Noise at Boundary (GB12348) (《工業企業廠界環境噪聲排放標準》), etc. against noise.

# Environmental Protection

**Treatment Methods of Pollutants from Guixi Smelter**

Emissions	Process	Pollutants	Treatment Method
Exhaust gas and Dust		Sulphur dioxide, nitrogen oxide, dust, sulphuric acid smog, etc.	<ol style="list-style-type: none"> <li>1. To adopt clean fuel to reduce the pollutant emission during combustion.</li> <li>2. To require related operation staff to attend induction trainings prior to reporting duty.</li> <li>3. To prohibit burning of materials such as oil refuse, rubber, plastic and leather, etc. in open areas.</li> </ol>
Waste water	Classification of pollutants		
	Formulation of emission standard	Oil, heavy metal, acidic or alkaline substances, suspended substances, chemical oxygen demand (COD), ammoniacal nitrogen, total phosphonium, etc.	<ol style="list-style-type: none"> <li>1. To repeat use of industrial water to reduce wastewater discharge.</li> <li>2. To install devices for measuring wastewater flow to control total wastewater discharge.</li> <li>3. To require related operation staff to attend induction trainings prior to reporting duty.</li> <li>4. To require domestic wastewater to be treated by domestic wastewater treatment equipment before discharge.</li> </ol>
	Control measures		
	Process control		
Solid waste	Monitoring	Lead filter cake, white dust, arsenic filter cake, refuse oil, various kinds of smoke and slag of wet smelting, etc.	<ol style="list-style-type: none"> <li>1. Non-hazardous solid waste: To send to slag fields for landfill after sorting.</li> <li>2. Hazardous solid waste: To hand over to a qualified unit for disposal; when leakage occurs in such waste, it should be dealt with in accordance with the corresponding emergency handling measures.</li> </ol>
	Prevention measures		
Noise		Main noise coming from production equipment in the factory	<ol style="list-style-type: none"> <li>1. To use isolation, sealing and other methods to control excessive noise sources.</li> <li>2. To adopt appropriate personal protective methods.</li> </ol>

# Environmental Protection

Due to the nature of business, the daily operations of headquarters' office do not involve discharge of harmful pollutants, but mainly domestic garbage and domestic effluent. Domestic garbage is collected by a qualified contractor for disposal in landfills or for incineration, while domestic effluent will cause no harm to the environment after being treated by municipal sewage pipe network.

## Environment and Natural Resources

Jiangxi Copper is committed to reducing the impact on the environment and natural resources caused by its exploitation business. In addition to compliance with the national and local laws and regulations, the Group has formulated the Environmental Factors Identification and Impact Assessment Process of Guixi Smelter (《貴溪冶煉廠環境因素識別與影響評價流程》) to identify important sources of hazards, and regularly follow up and assess environmental factors, so as to ensure that the impact on the environment and natural sources is minimised.

Environmental Factors Identification and Impact Assessment		
Environmental Factors Identification and Impact Assessment	Process	Environmental Impact
	<ul style="list-style-type: none"> <li>→ Establishment of organisation</li> <li>→ Determination of scope</li> <li>→ Environmental factors identification</li> <li>→ Impact assessment</li> <li>→ Control measures</li> <li>→ Review and approval</li> <li>→ Identification of important environmental factors</li> </ul>	<ul style="list-style-type: none"> <li>• On atmosphere: gases such as sulphur dioxide and dust, etc. incurred during production.</li> <li>• On water: such as effluent from boilers and wastewater containing oil, etc..</li> <li>• Solid waste: such as smoke produced during copper smelting.</li> <li>• Noise: noise produced by factory equipment.</li> <li>• Others: such as electromagnetic radiation, photothermal radiation, and stench, etc..</li> </ul>

Focused on these identified environmental factors, the Group makes efforts to update and replace the existing technologies and improve the environmental management efficiency of management, formulate management solutions accordingly against incompliance with environmental laws and regulations and report to the corporate safety and environment protection department of the Group.

During the Year, Dexing Copper Mine started the ecological reclamation project on the upper and eastern sides of Shuilong Mountain to prevent harmful emissions from endangering the environment, and established emergency handling system in the water tank at the bottom of the copper factory to prevent wastewater from leakage and affecting underground water condition. As of the Year, the ecological reclamation project of Dexing Copper Mine covers an area of more than 430 hectares, and over 80% of the reclaimable abandoned land has been ecologically restored.

No violation of laws or regulations on emissions or environment were found in the Group within the scope of the report during the Year.

# Environmental Protection

## Use of resources

Highly reputed as the 'Annual Green Development Leading Enterprise of China Non-ferrous Metals Industry' ("中國有色金屬工業年度綠色發展領軍企業"), 'the first PRC-level green mines' ("國內首個國家級綠色礦山單位") and 'Advanced Industrial Energy Saving Enterprise at Provincial Level under the 11th Five-Year Plan' ("十一五全省工業節能先進企業") etc., the Group upholds energy conservation as one of the development values through the implementation of relevant laws and regulations, such as Water Resources Law of the PRC (《中華人民共和國水利法》), Electric Power Law of the PRC (《中華人民共和國電力法》), Energy Law of the PRC (《中華人民共和國能源法》) and Law of the PRC on Energy Conservation (《中華人民共和國能源節約法》), as well as the keen practice of its green development vision of 'increase output, not consumption' ("增產不增耗"), which attaches great importance to technological innovation and reducing resources consumption to lower overall energy consumption of the Group.

The Group encounters no difficulty in applying to applicable water source. Dexing Copper Mine and Guixi Smelter avail themselves of the water resources at the rivers in the vicinity and possess water supply processing plants, with regular examination conducted at the water intake points. The Group has achieved certain results in enhancing water use efficiency. The maintenance technology of cooling water circulation that Guixi Smelter adopts enables wastewater to be cooled for reuse, and thereby raises efficiency of water use and reduces water consumption. Dexing Copper Mine works towards optimisation of transportation routes and oil consumption management to reduce oil use and render resources utilisation more efficient.

With exploration, mining, smelting and processing being an integral part of our business activities, Jiangxi Copper demands considerable energy consumption for copper processing craftsmanship, so the Group has addressed through the rectification of excess heat generation due to over-length of copper bars by transforming the copper bar rectifiers. Meanwhile, to reduce electricity consumption and energy use, Jiangxi Copper also installs high efficiency motor for its pump unit.

During the Year, the total energy consumption of the Group (some operating mine sites of Dexing Copper Mine and Guixi Smelter<sup>4</sup>) amounted to 15,920,113 GJ, with energy intensity measured at 2.79 GJ/RMB10,000 output value. Looking ahead, the Group will continue its effort in reducing energy consumption, and maintaining its leading position in green development of the industry.

4 The data of energy use for the Year cannot be accounted for separately according to the scope of this report (Dexing Copper Mine, Guixi Smelter and headquarters' office).

## Caring for Our People

As a copper mining and processing company, Jiangxi Copper has a focus on health and safety. In the meantime, the Group's dedication to understanding and caring employees' need is also reflected by the implementation of a recruitment mechanism which makes occupational training and professional development available for our employees.

### Health and Safety

As part of our endeavors to reduce accidents and occupational injuries or casualties, the Group has formulated a series of safety management regulations such as the Administrative Measures of Jiangxi Copper Company Limited on Occupational Health (《江銅集團職業健康管理辦法》), the Administrative Measures of Jiangxi Copper Company Limited on Production Safety (《江西銅業股份有限公司安全生產管理辦法》), the Administrative System of Jiangxi Copper Company Limited on Occupational Injuries or Casualties (《江西銅業股份有限公司傷亡事故管理制度》), Measures on Health and Safety at Smelters (《冶煉廠健康與安全相關的措施》), Measures on Health and Safety at Mines (《礦山健康與安全相關的措施》) and A Collection of Safety Systems of Dexing Copper Mine (《德興銅礦安全制度彙編》).

For employees' health and safety, the Group has given priority to the use of new technology, skills and materials for the prevention of occupational diseases and protection of employees' health, and provided protective suits for employees undertaking dangerous operations. Also, facilities including changing rooms and shower rooms are also available for employees at Dexing Copper Mine and Guixi Smelter. To safeguard employees' health, employees at risk-prone positions are required to take mandatory leaves on an annual basis, in which normal terms of payment and treatment are promised.

Prior to assuming any duty assignment, the Group arranges production safety education training for employees. Engagement in any actual duty assignments is forbidden for employees who have not received safety education training, or those who attended training but have not attended or passed the assessment. The training content is tailored to job types, with not less than 8 hours and 16 hours of training for operational personnel on land and in mine pit respectively. Completion of special safety training under the relevant national regulations and possession of special qualification certificates are required for personnel undertaking particular operations (for instance, soldering and thermal cutting, metallurgy production safety operation, and dangerous chemical safety operation) before officially assuming duties.

As set out in the Administrative System of Jiangxi Copper Company Limited on Occupational Injuries or Casualties (《江西銅業股份有限公司傷亡事故管理制度》), the severity of an incident can be classified into six levels, ranging from minor injury to maximal accident, with designated emergency handling mechanisms according to the level of severity.

## Caring for Our People

Type of Accident	Definition of Accident	Accident Reporting	Accident Investigation
Minor Injury	Work suspension within one working day after injury	To be reported to Jiangxi Copper within 24 hours	Investigation to be organised and led by each subordinate workshop of the plant (mine)
Serious Injury	Bodily dysfunction or loss of work capacity	To be reported to Jiangxi Copper and local competent	Investigation to be organised and led by the plant (mine)
Moderate Accident	3 or less deaths, 10 or less severe injuries or economic loss and property damage of RMB10 million	department for production safety within 1 hour. Local health administrative	Investigation to be conducted by local municipal governments at provincial, city and county levels.
Severe Accident	More than 3 but less than 10 deaths, more than 10 but less than 50 severe injuries, or economic loss of more than RMB10 million but less than RMB50 million	department should also be notified in case of acute intoxication.	Personnel of the Group will also take part in accident investigation.
Critical Accident	More than 10 but less than 30 deaths, more than 50 but less than 100 severe injuries, or economic loss of more than RMB50 million but less than RMB100 million		
Maximal Accident	More than 30 deaths, more than 100 severe injuries or economic loss of more than RMB100 million		

## Caring for Our People

In compliance with the rules and regulation of the Group, Dexing Copper Mine and Guixi Smelter have also disclosed relevant safety information and suggested quantitative targets to control occupational injuries, respectively.

	High-risk Positions	Number of Injuries in 2017	Control Targets in 2018
Dexing Copper Mine	Tasks that involves the use of electricity, mechanical operation, the use of chemical products, and smelting	9	Rate of injuries and deaths per 1,000 persons : 0.4 Number of injuries and deaths : 0 Cases of injuries and deaths : 0
Guixi Smelter	Working at height, in confined space, dusty and smoky environment and outdoors, etc.	0	Rate of injuries and deaths per 1,000 persons : 0.5

During the Year and within the scope of the report, the Group was involved in 1 on-the-job death, 2 serious injuries and 7 minor injuries due to production safety incidents. The monthly average rate of on-the-job injuries per 1,000 persons was 0.03. Currently, detailed investigation reports have been compiled for all of the incidents in accordance with the provisions of incident handling, and supplementary relief allowances have been granted to personnel involved in the incidents in accordance to rules (such as Regulations on Work-Related Injury Insurances of the PRC (《中華人民共和國工傷保險條例》) and Measures for the Ascertainment of Work-related Injuries (《工傷認定辦法》) issued by the Ministry of Human Resources and Social Security of the PRC, etc.). The Group complies with the Work Safety Law of the PRC (《中華人民共和國安全生產法》). During the Year, no violations of laws and regulations in relation to safe and healthy working conditions were found within the scope of the report.

## Employment

Committed to establishing a comprehensive talent recruitment mechanism, which recruits talents most suitable for the Group's future development in compliance with local laws and regulations, the Group has formulated Regulations on the Administration of Labour Contracts of Jiangxi Copper Company Limited (《江西銅業集團(股份)公司勞動合同管理規定》), Measures for the Administration of Human Resources Recruitment and Disposition of Jiangxi Copper Company Limited (《江西銅業股份有限公司人力資源招聘與配置管理辦法》), Performance-based Salary System of Jiangxi Copper Company Limited (《江西銅業集團(股份)公司崗位績效工資制度》) and Administrative Measures for Social Security of Jiangxi Copper Company Limited (《江西銅業集團(股份)公司社會保障管理辦法》). The system safeguards the Group's employee rights and interests in terms of recruitment, remuneration, promotion, working hours, holidays, benefits and other areas.

## Caring for Our People

For talent retention, the Group employs a performance-based salary system, and offers allowance for employees under special work conditions. Such allowance includes: seniority allowance, skill allowance, allowance for underground mine employees, and allowance for afternoon and night shifts. Taking into consideration and valuing the needs for employees to maintain balance between work and family life, family-friendly policies such as additional annual leave, home leave (a maximum of 38 days to visit spouses or parents living in other provinces in a year), marital leave and maternity leave are also available. During the Year, the Group launched 'Autumn Education Aid' ("金秋助學") where children of employees with financial difficulties received education subsidy of up to RMB100,000.

To achieve the vision of equal opportunity, the Group adheres to stringent and fair employment principles: 1. the competency-based principle, with no preferential treatment on the grounds of education qualification or reputation of colleges of which the candidates are from; 2. the quality-based principle, with no compromise on recruitment standard; 3. the reasonable gender ratio principle, that female employees are recruited based on factors such as features of vacant positions and current gender ratio; and 4. the even distribution principle, with the rational distribution of the candidates, such as locations of schools and birth places, taken into consideration during the recruitment process. Upon completion of the recruitment process, Jiangxi Copper will conduct an internal assessment to refine the future recruitment procedures.

The Group complies with laws and regulations such as the Labour Law of the PRC (《中華人民共和國勞動法》) and the Labour Contract Law of the PRC (《中華人民共和國勞動合同法》), etc.. During the Year, no violations of laws and regulations on the employment and labour standards were found in the Group within the scope of the report.

## Development and Training

The Group's emphasis on the cultivation of employees' occupational skills and professional quality is demonstrated by the formation of various training systems, which drives employees to strengthen their own working capability, enrich professional knowledge, and map out their own career path. The Administrative Measures for Staff Education and Training of Jiangxi Copper Company Limited (《江西銅業股份有限公司員工教育培訓管理辦法》) has also been implemented to enhance employees' work efficiency through internal training.

The Group has set up an education and training centre, which is designated for the management of functional departments and chiefly responsible for the implementation and development of its education and training business.

### Major Duties of Jiangxi Copper Education and Training Centre

- ① To establish and improve the education and training management system of the Group
- ② To formulate the annual education and training plan of the Group
- ③ To classify and develop the education and training system
- ④ To standardise, direct and assess the education and training business of the Group
- ⑤ To construct self-assessment system of employees' occupational skills
- ⑥ To implement education scheme for in-service degrees and other academic qualifications

## Caring for Our People

The Group's annual performance assessment on education and training focuses on the annual education and training plan and work quality. The assessment result will be considered during the Group's annual performance assessment for relevant units and functional departments, and also forms part of the important basis to determine employees' career development, such as his/her promotion, ranking, employment and merit appraisal.

Also, training contents and measures are tailor-made to training targets of the Group.

Training Targets	Training Objectives	Training Contents	Department-in-charge
Senior Management Personnel	To strengthen leadership skills and decision-making skills	Elementary training, improvement on professional quality and on-job training	Organization Department, Human Resources Department, etc.
Senior and Middle Management Personnel	To cultivate high-level calibre and well-rounded talents	Decision-making skills, capital operation skills, etc.	Human Resources Department
Senior and Middle Management Personnel	To cultivate international talents	International technology, and operation and management	Human Resources Department
Middle Management Personnel	To strengthen leadership skills and decision-making skills	Elementary training, improvement on professional quality and on-job training	Organization Department, Human Resources Department, etc.
Junior Management Personnel	To strengthen execution skills and organisation skills	Elementary training and improvement on professional quality	Relevant departments and Education and Training Centre
Professional Management Personnel	To enhance management quality	Subject to actual business segments	Relevant departments and Education and Training Centre
Professional Technical Personnel	To enhance professional technical quality	Subject to types of professional skills and production skills	Relevant departments and Education and Training Centre
Technical Operation Personnel	To enhance quality of operation and maintenance	Elementary training, improvement of professional quality and on-job training	Relevant departments and Education and Training Centre

## Caring for Our People

### Labour Standards

Recruitment work of the Group is conducted in accordance with the relevant laws and regulations at local and national levels. The Group does not approve, and is well aware of the significant potential threat from the use of child labour and forced labour. To prevent any accidental employment of child labour, our recruitment process involves age verification and detailed registration with reference to candidates' identification documents in compliance with the Regulation on the Prohibited Use of Child Labour (《禁止使用童工規定》) promulgated by the State Council of the PRC.

The Group also closely observes the Labour Law of the PRC (《中華人民共和國勞動法》), the Labour Contract Law of the PRC (《中華人民共和國勞動合同法》) and the relevant local laws and regulations in formulating the Regulations of Jiangxi Copper Company Limited on the Administration of Labour Contract (《江西銅業集團(股份)公司勞動合同管理規定》). Discussions at employees' representative meetings (職工代表大會) or by all members of staff, and announcement in public notice are needed for the passing of policies which are of immediate concerns to employees, such as leaves, overtime work allowance and labour quota. Opposition views proposed by any individual or groups at the stage of implementation shall be resolved via fair and equal communication.

During the Year, no violations of laws and regulations in relation to child labour or forced labour were found in the Group within the scope of the report. Jiangxi Copper will continue its effort to improve overtime work management system and remedial measures in case of accidental child labour employment, in order to ensure the abidance of our labour system by the international labour standards and the relevant rules and regulations.

## Responsible Operations

Jiangxi Copper upholds 'Responsibility, Tolerance, Concentration, Pragmatism' as its core values in promoting product and service quality. With product quality being the foundation of its leading position in the market, the Group strives to identify risks and explore opportunities through overall supply chain management.

### Supply Chain Management

Supply chain management plays a significant part in product quality maintenance, and therefore, much emphasis has been given to the Group's cooperation with suppliers at all levels, and control of supply chain's impact on the environment and society.

Regulations of Jiangxi Copper on the Administration of Examination for Imported Raw Materials (《江銅進口原料檢驗管理規定》) of the Group demands a strict compliance of the quality of all imported materials with the relevant national laws and regulations. Such regulations also subject the acceptance inspection and management of imported materials to further control, and thereby enable the Group to control the environmental and social risks of suppliers' products. Being aware of the impact of arsenic and other harmful substances found in copper concentrates in different aspects (such as the environment), the Group also ensures that the import amount of harmful substance in copper concentrate(s) complies with the relevant requirements as set out in the Announcement on Disclosure of the Limit on Import Amount of Arsenic and other Harmful Substances Found in Copper Concentrates No. 49 [2006] (《2006年第49號關於公佈進口銅精礦中砷等有害元素限量的公告》).

In the future, the Group will identify, assess and manage the social and environmental risks of suppliers' products and services, and select suppliers who can meet our rising standards regarding environment, occupational health and safety standard by implementing a more comprehensive supplier selection system.

### Product Responsibility

The Group attaches great importance to the health and safety of its copper products and processing implements, and steers its development towards the provision of qualified products and satisfactory services. The Group has formulated measures in relation to the vetting of raw materials and supervision of finished products, with Quality Control Procedure (《品質管制流程》) and Measures on the Administration of Product Quality Management (《產品質量控制管理辦法》) in place to facilitate quality management, where unqualified items shall be handled in accordance with Procedure on Resolution of Disputes on Product Quality (《產品計質量異議處理流程》) and Procedure on Control of Unqualified Products of Dexing Copper Mine (《德興銅礦不合格品控制流程》). The implementation and formulation of such measures highlights our objectives to safeguard product quality, and to minimize health and safety risks during the process of production and sales.

To maintain product quality, all employees are obliged to conduct supervision and examination for purchased materials, acquired raw materials, semi-manufactured products and finished products in compliance with regulations set out in Quality Control Procedure (《品質管制流程》) so that the products meet relevant requirement of the PRC and the industry. Semi-manufactured products may also be labelled by designated staff if necessary.

## Responsible Operations

To prevent any unqualified products from entering into the market, Dexing Copper Mine imposes a special procedure on handling unqualified products:

- ① To determine whether the finished products are qualified according to product standard, contract and examination results.
- ② In case of serious non-compliance issues of the finished products, it is the duty of Production Operation Department to analyse the cause with the relevant units.
- ③ In case of frequent non-compliance of the finished products, it is the duty of the deputy mine production manager to analyse the cause with the relevant units, and submit examination reports on the quality issues.
- ④ In case of product failure in quality identified after delivery, it is the duty of the Supply and Sales Department to establish communication with client and solve any issues in a prompt manner. Clients have the right to seek relevant legal proceedings according to terms of contracts should any disputes regarding the handling process arise.
- ⑤ Records of the examination, assessment and treatment of unqualified products are being stored by the relevant department for future reference.

During the Year, there was one complaint on non-compliance of sulfuric acid. A working team was deployed to the site to carry out sampling examination and no abnormality was identified as a result. It was shown in the Group's investigation that such complaint arose due to shortcomings of the local enterprise in the examination method as well as its environment, weighing amount, and the use of implements and burettes. To prevent recurrence of any similar incidents, Trade Affairs Department of the Group will invite local enterprises to visit the Group on technical exchange, which will represent a joint effort to enhance the quality of examination and assessment, and to produce high-quality products.

The Group complies with the provisions on product liability in laws and regulations such as the Contract Law of the PRC (《中華人民共和國合同法》) and the Tort Liability Law of the PRC (《中華人民共和國侵權責任法》). During the Year, no violations of laws and regulations in relation to product liability were found in the Group within the scope of the report.

The Group will keep on with the commitment to the protection of clients' rights and the enhancement of its product responsibility management and service quality through active imposition of policies that regulate advertisement, labelling and clients' privacy.

## Responsible Operations

### Anti-Corruption

Anti-corruption is not only the primary concern of the Group, but also a key to the sustainable development of Jiangxi Copper. In view of this, Measures of Jiangxi Copper on the Development of Clean Governance (《江銅黨風廉政建設責任追究辦法》), Measures of Jiangxi Copper Company Limited on the Prevention Management, Pre-warning and Accountability of Corruption Risks (Trial) (《江西銅業股份有限公司廉潔風險防範管理預警及責任追究辦法(試行)》) and Measures of Jiangxi Copper on Implementation of Personal Information Reporting System cum Compliance with Occupational Integrity for Management Personnel (《江銅落實領導人員個人事項報告制度暨完善領導人員廉潔從業檔案的實施辦法》) are in place to deter any illegal conducts as to corruption, bribery, extortion, frauds and money laundering at source.

Employees' receipt of gifts and benefits in business activities should be handed over within the stipulated period of time, and Registration Form for Directing Staff on the Receipt and Handover of Gifts (Benefits) (《領導人員收受禮品(禮金)及上繳情況登記表》) should be completed for reporting. The Group has established a three-tier risk forecast system ("Orange", "Amber" and "Red") which operates in accordance with the impact and severity of any potential risks of corruption, which is applicable to all units, departments and risk-prone positions. Cases involving illegal and criminal conducts shall be directly referred to the judicial authority. Comprehensive investigations and rectifications for any potential issues will also be performed to foster a healthy growth of the Group.

The Group complies with the laws and regulations such as the Regulations on Suppression of Corruption of the PRC (《中華人民共和國懲治貪污條例》) and the Eight Requirements ("八項規定") initiated by the central government. During the Year, no lawsuits or violations of laws and regulations in relation to corruption were found in the Group within the scope of the report.

## Community Investment

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The Group demonstrates its active fulfilment of social responsibility through 'Fixed-Point Poverty Alleviation' ("定點扶貧"), a project-based poverty relief program that provides occupational, educational and cultural assistance. The community investment of Jiangxi Copper has helped provide solutions to employment and income issues facing impoverished households. The Group's philanthropic contribution, with an amount of over billions of RMB as of the Year, has been channelled to various aspects of charitable endeavours to aid medical assistance, natural disaster assistance and 'The Construction of New Rural Village' ("新農村建設"). After making donations, the Group also carries out donation assessment through sharing sessions and field trips, and compiles detailed assessment reports.

Looking ahead, the Group will continue its commitment to responding to the appeal of its controlling shareholder, Jiangxi Copper Corporation and members of the public, to construct a more harmonious social environment, and step up our social commitment through designing community investment plan that caters to different needs of the community so as to improve the scope of our dedicated contribution.

## Overview of Key Performance Indicators

### Environmental Performance

Dexing Copper Mine and Guixi Smelter		Amount	Unit
Atmospheric Pollutants	Nitrogen oxide	7.3	tonnes
	Sulphur oxide	5,292.8	tonnes
Hazardous waste	Total hazardous waste produced	Unmeasured, Quantification will take place in the coming year	
	Intensity of hazardous waste produced		
Non-hazardous waste <sup>5</sup>	Total non-hazardous waste produced	5,500	10,000 tonnes
	Intensity of non-hazardous waste (calculated by production volume)	53.9	10,000 tonnes/ 10,000 tonnes (cathode copper)
Water Consumption	Total water consumption	1,012.6	Million m <sup>3</sup>
	Water consumption intensity (calculated by estimated output value)	0.02	Million m <sup>3</sup> /RMB million
Packaging Material	Total consumption of packaging material	Substantial use of packaging material is not present in the Group's mines and smelting production	
	Intensity of packaging material		

5 Data for non-hazardous waste includes only the amount of tailings generated by Dexing Copper Mine.

## Overview of Key Performance Indicators

Mine Sites <sup>6</sup> in Operation and Guixi Smelter		Amount	Unit
Atmospheric Pollutants	Suspended particulates <sup>7</sup>	38.2	tonnes
Greenhouse Gas Emissions	Scope 1	329,430	tonnes of CO <sub>2</sub> e
	Scope 2	1,679,197	tonnes of CO <sub>2</sub> e
	Total greenhouse gas emissions	2,008,627	tonnes of CO <sub>2</sub> e
	Intensity of greenhouse gas (calculated by output value)	0.35	tonnes of CO <sub>2</sub> e/ RMB10,000
Energy	Direct energy – Anthracite	65,608	GJ
	Direct energy – Bituminous coal	46,552	GJ
	Direct energy – Coal	69,856	GJ
	Direct energy – Fuel oil	723,505	GJ
	Direct energy – Petrol	18,661	GJ
	Direct energy – Diesel	1,908,201	GJ
	Direct energy – Natural gas	1,490,970	GJ
	Indirect energy – Electricity	3,111,435	MWh
	Indirect energy – Heat	395,594	GJ
	Total energy consumption	15,920,113	GJ
	Energy intensity (calculated by output value)	2.79	GJ/RMB10,000

6 Data for mine sites in this table includes four copper mines in operation: Dexing Copper Mine, Yongping Copper Mine, Chengmenshan Copper Mine and Wushan Copper Mine.

7 Data for fine suspended particulates represents only the emission amount from the use of diesel, fuel oil and natural gas.

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