



# 江西銅業股份有限公司 Jiangxi Copper Company Limited

(A Sino-foreign joint venture joint stock limited company incorporated in the People's Republic of China)  
(在中華人民共和國註冊成立之中外合資股份有限公司)

(Stock Code 股份代碼 · H Share H 股 : 0358) (A Share A 股 : 600362)

# 2020

## ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORT

### 環境、社會及管治報告





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# 關於本報告

## ABOUT THIS REPORT

本報告是江西銅業股份有限公司(本報告中也簡稱「江西銅業」、「江銅」、「公司」或「我們」)單獨發佈的第四份環境、社會及管治報告。本報告闡述了公司2020年度在環境、社會及管治方面的主要實踐和成果，以回應利益相關方的期望與關注，並促進公司持續提升可持續發展表現。

### 報告範圍

本報告為年度報告。時間範圍涵蓋2020年1月1日至2020年12月31日，部分信息涉及以往年度。除另有註明外，本報告組織範圍涵蓋江西銅業股份有限公司及所屬分、子公司。

### 編寫依據

本報告根據上海證券交易所《上市公司環境信息披露指引》、香港聯合交易所有限公司(「香港聯交所」)《環境、社會及管治報告指引》、全球報告倡議組織(Global Reporting Initiative)《可持續發展報告標準(GRI)》及《聯合國可持續發展目標企業行動指南(SDGs)》進行編製。

### 數據說明

本報告所涉及數據來自公司內部統計數據、審計報告等材料，部分數據如與年度報告有差異，以年度報告數據為準。若無特殊說明，本報告所使用的貨幣單位均為人民幣(元)。

### 報告發佈形式

本報告以網絡電子版發佈。電子版可在江西銅業官方網站(網址：[www.jxcc.com](http://www.jxcc.com))查閱。

### 獲取及回應

江西銅業十分重視利益相關方的意見，並歡迎讀者通過以下聯絡方式與公司聯繫。您的意見將協助公司進一步完善本報告以及提升整體履行可持續發展理念的表現。

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This report is the fourth environmental, social and governance report issued by Jiangxi Copper Company Limited (also referred to as “Jiangxi Copper”, “JCC”, the “Company” or “We”) separately, which describes the Company’s major practice and achievements in environmental, social and governance in 2020 in response to the expectations and concerns of stakeholders and to continue to improve the Company’s performance of sustainable development.

### SCOPE OF THE REPORT

This report is an annual report, covering from 1 January 2020 to 31 December 2020, with some information related to previous years. Unless otherwise specified, the organizational scope of this report covers Jiangxi Copper Company Limited as well as its branches and subsidiaries.

### COMPILATION BASIS

This report is compiled based on the Guidelines for Environmental Information Disclosure of Listed Companies issued by SSE, the ESG Reporting Guide on The Stock Exchange of Hong Kong Limited (the “Hong Kong Stock Exchange”), the GRI Standards issued by Global Reporting Initiative and the United Nations Sustainable Development Goals Corporate Action Guidelines (SDGs).

### DATA DESCRIPTION

The data involved in this report are from materials including the Company’s internal statistical data and audit reports. If some data is different from that of the annual report, the data in the annual report shall prevail. Unless otherwise specified, the monetary unit used in this report is RMB (yuan).

### PUBLICATION OF REPORT

This report is published in online electronic version. The electronic version can be founded on the official website of Jiangxi Copper (website: [www.jxcc.com](http://www.jxcc.com)).

### ACCESS AND RESPONSE

We place high importance on the opinions of stakeholders, and we welcome readers to get in touch with us via the following contacts. Your opinions will be helpful for us to further improve this report as well as enhance the overall environmental, social and governance performance of the Company.

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## 董事長致辭 CHAIRMAN'S STATEMENT

歡迎您閱讀本報告，感謝您一直以來對江西銅業的關心和支持。

2020年，在國內突發疫情的強烈衝擊下，在國際世界形勢的動盪變革下，我們攜手砥礪前行。在百年未有之大變局中，堅持可持續發展理念、保持高質量發展的戰略定力，成為最堅定的聲音，指引着企業緊抓生態環境建設不放鬆，率先復工復產、率先完成「雙百」試點、率先實現效益正增長。我們在春風和煦中成長，也在經歷寒潮湧動後繼續勇毅前行！

滴水不成海，獨木難成林，一個企業的發展離不開所在地政府以及民眾的大力支持，這片熱愛的土地給予了我們希望與動力，我們心懷感恩，以環保、就業、稅收、公益、社區等努力搭建着和諧發展的企業生態圈，以追求企業與員工、社會、自然和諧共進為發展目標，在2020年交出了優秀的年度答卷。

過去一年，我們誓做有質量的企業。以綠色賦能有色，開展資源綜合利用、「三廢」防治技術改造；以全力踐行安全，開展安全風險管控、隱患排查與治理、應急能力建設；以行動守護生態，開展生態恢復治理、打好污染防治攻堅戰。到2020年底，公司旗下累計共有3座礦山入選國家級綠色礦山，累計共有6家工廠入選國家級綠色工廠，1家企業被評為綠色設計示範企業。

Thanks for reading this report. fix spacing concern and support of Jiangxi Copper.

In 2020, under the headwinds of pandemic outbreaks in China and the great turbulence of the international landscape, we forged ahead hand in hand. In the great change unseen in a century, adhering to the sustainable development and maintaining the strategic determination of high-quality development have become our most determined voice, guiding enterprises to pay close attention to the development of ecological environment, take the lead in work and production resumption, completing the "Double-Hundred" pilot project and achieving benefit growth. We are growing with determination both in the warm breeze and after the cold wave!



Sea could not be created with a drop of water, and forest could not be created with a single tree. The development of an enterprise is inseparable from the strong support of the local government and people. The land we love gives us hope and motivation. In return, we are grateful to build a harmonious enterprise ecosystem from environmental protection, employment, taxation, public welfare and community. We pursue the harmony between the enterprise and its employees, and society and nature as our development goals. Thus, we have delivered excellent results in 2020.

Over the past year, we were committed to a quality enterprise. We carried out comprehensive utilization of resources and technological transformation of "industrial wastewater, waste gases and residues" prevention and control by enabling nonferrous metals with green actions. We fully practised safety principle by carrying out safety risk management and control, hidden danger investigation and management as well as emergency capability building. We took concrete actions to protect the ecology, such as carrying out ecological restoration and governance, and striving to fight a tough battle for pollution prevention and control. By the end of 2020, the Company's three mines were selected as national green mines in total, six factories were selected as national green factories in total, and one enterprise was rated as Model Enterprises for Green Design.

In the past year, we were committed to becoming a warm enterprise. With



## 董事長致辭(續) CHAIRMAN'S STATEMENT (continued)

過去一年，我們誓做有溫度的企業。以江銅並肩作戰的堅定投入到抗擊疫情的鬥爭中；以「責任專注包容務實」的核心價值觀營造發展的人文環境；以國有企業的責任擔當投身扶貧攻堅第一線，書寫群策群力的生動答卷。2020年，公司一手抓疫情防控，一手抓復工復產，為員工健康安全提供穩定保障，公司員工職位體系試點逐步擴大，員工績效文化正在形成，為公司可持續發展提供了堅實的人力資源保障。

過去一年，我們誓做可靠的企業。推出一系列穩增長、優結構、推改革、促創新、保和諧措施，公司生產經營持續穩健，各項事業發展穩中有進。秉持規範運營和合規運營的剛性要求，以誠信、守信與投資者共建溝通橋樑。雖然全球經濟深度調整、國內經濟增速下行、全球有色金屬行業「寒冬」的外部環境讓人唏噓，但2020年公司生產陰極銅164.25萬噸，黃金78.59噸，白銀1,126.39噸，硫酸511.96萬噸，實現營業收入3,185.63億元，仍然堅守國內同行第一梯隊。

江銅因銅而生，依銅而長！作為引領中國銅工業發展的排頭兵，長期以來，我們始終秉承「用未來思考今天」的發展理念和「與顧客共創價值」的經營理念，不斷優化產業結構、完善產業佈局，已成長為以銅全產業鏈為中堅、多種資源開發和多個板塊協調發展的綜合型企業。未來，我們將把創新作為核心驅動力，深入踐行可持續發展理念，圍繞高質量跨越式發展，奮力向具有全球競爭力、具有企業責任、具有可持續發展能力的世界一流企業目標邁出江銅步伐！

**江西銅業股份有限公司**  
董事長、總經理  
**鄭高清**

Jiangxi Copper's determination of fighting together, we were steadfast in combating the pandemic. We created a humanistic environment for development with the core values of "Responsibility, Concentration, Tolerance and Pragmatism". We took the responsibility of state-owned enterprises to join in the front line of poverty alleviation and show collective wisdom and efforts vividly. In 2020, the Company focused on pandemic prevention and control and resumption of work and production to safeguard the health and safety of employees. The pilot of the Company's employee position system has gradually expanded, and the culture of employee performance is breeding, which provides a solid guarantee in human resources for the sustainable development of the Company.

In the past year, we were committed to a reliable enterprise. We have carried out a series of measures to stabilize growth, optimize structure, promote reform and innovation, and ensure harmony. The Company's production and operation remained sustained and steady, with steady progress in various undertakings. We adhered to the rigid requirements of standardized operation and compliance operation, built a communication bridge with investors with integrity and trustworthiness. Although the deep adjustment of global economy, the decline of domestic economic growth and the "severe winter" like external environment of global nonferrous metal industry deeply affected people in 2020, the Company produced 1.6425 million tonnes of copper cathode, 78.59 tonnes of gold, 1,126.39 tonnes of silver and 5.1196 million tonnes of sulfuric acid, with an operating income of RMB318.563 billion, and remained to be the top of domestic peers.

JCC is born of copper and grows by copper. As a leader in the development of China's copper industry, we remained committed to the development approach of "Pondering Today for a Better Future" and the operation philosophy of "creating value with customers". We have continuously optimized the industrial structure and layout. In this way, we have grown into a comprehensive enterprise in the whole copper industry chain where we represent the backbone, with multiple resources development and coordinated development of multiple sectors. Looking ahead, taking innovation as the core driving force, we will deeply practise the concept of sustainable development, focus on high-quality leapfrog development, and make strides towards the goal of world-class enterprise with global competitiveness, corporate responsibility and sustainable development capability!

**Jiangxi Copper Company Limited**  
**Zheng Gaoqing**  
Chairman, General Manager



# 一. 關於我們

## 1. About Us

### (一) 公司簡介

江西銅業股份有限公司為1997年在江西省貴溪市成立的中外合資公司，1997年6月，公司境外上市外資股(0358.HK)在香港和倫敦同時掛牌上市，成為有色行業和江西省第一家境外上市的企業，2002年1月，公司人民幣內資股(600362.SH)在上海證券交易所掛牌上市。經過多年的積累發展，公司已成為中國最大的綜合性銅生產企業。2020年，公司位列《財富》中國500強第43位。

公司主要業務涵蓋了銅和黃金的採選、冶煉和加工；稀散金屬的提取與加工；硫化工，以及金融、貿易等領域。同時，公司在銅以及相關有色金屬領域已建立了集勘探、採礦、選礦、冶煉、加工於一體的完整產業鏈，是中國最大的銅產品生產基地、最大的伴生金、銀生產基地以及重要的硫化工基地。公司的產品包含陰極銅、黃金、白銀、硫酸、銅桿、銅管、銅箔、硒、碲、銻、鉍等50多個品種。

公司在中國擁有江西、環渤海地區、長三角地區、粵港澳大灣區四大產業基地，實現了沿江、沿海T字型產業佈局，並建立了覆蓋全國、輻射海外的投資、營銷、金融和貿易網絡。在海外也逐步以秘魯、哈薩克斯坦、阿富汗等國建立礦業基地為起點構建國際化發展版圖。

### (1) Company Profile

Jiangxi Copper Company Limited is a Sino-foreign joint venture company established in Guixi City, Jiangxi Province in 1997. In June 1997, the Company's overseas listed foreign shares (0358.HK) were listed in Hong Kong and London, becoming the first enterprise in the nonferrous industry and Jiangxi Province listed overseas. In January 2002, the Company's RMB denominated domestic shares (600362.SH) were listed in the SSE. After years of accumulated development, the Company has become the largest comprehensive enterprise producing copper in China. In 2020, the Company ranked 43rd on Fortune China 500.

The Company's principal business covers copper and gold mining and dressing, smelting and processing, extraction and processing of scattered metals, sulphuric chemistry as well as finance and trading fields. It has established a complete industrial chain integrated with exploration, mining, ore dressing, smelting and processing in copper and related nonferrous metal fields. It is the largest production base of copper products, associated gold and silver and an important base of sulphuric chemistry in the PRC. The Company's main products include more than 50 varieties, such as copper cathode, gold, silver, sulphuric acid, copper rod, copper tube, copper foil, selenium, tellurium, rhenium, bismuth, etc.

With Jiangxi, the Bohai Rim region, the Yangtze River Delta region, and the Guangdong-Hong Kong-Macao Greater Bay Area as four major industrial bases, we have achieved the T-shaped industrial layout along the Yangtze River and the coast and established an investment, marketing, finance and trading network covering the whole country with overseas presence. Overseas, the Company has also gradually established mining bases in Peru, Kazakhstan, Afghanistan and other countries as a starting point to build an international development map.



一. 關於我們(續)  
1. About Us (continued)

(一) 公司簡介(續)



未來，公司將繼續踐行「創新、協調、綠色、開放、共享」的新發展理念，開啟高質量、跨越式發展新征程，向具有全球競爭力的世界一流企業邁進，以更優的社會、經濟和環境效益，為員工、社區、客戶、股東帶來更具競爭力的價值回報。

(二) 核心價值觀

公司秉承「用未來思考今天」的核心理念制定發展規劃，確立戰略目標，以遠見卓識的戰略眼光，持續推動規劃的實施和目標的達成；恪守「同心 同創 同進」的精神和可持續發展承諾，以感恩和敬畏之心發掘礦產資源價值，尊重人與自然和諧共生與多樣化的文化習俗，推進利益相關者的合作共贏。

(1) Company profile (continued)

In the future, the Company will continue to practice the new development philosophies of “innovation, coordination, green, openness and sharing”, embark on a new journey of high-quality and leapfrog development, and make strides forward to a world-class enterprise with global competitiveness, so as to bring more competitive value returns for employees, communities, customers and shareholders with better social, economic and environmental benefits.

(2) CORE VALUE

Committed to the core concept of “Pondering Today For a Better Future”, the Company formulates development plans, establishes strategic objectives, and works hard to implement plans and achieve objectives with farsighted strategic vision; Committed to the spirit of “common thinking, joint creation and mutual progress” and the commitment of sustainable development, the Company taps the value of mineral resources with gratitude and awe, respects the cultural customs of harmony between human and nature and their diversity, and promotes win-win cooperation among stakeholders.



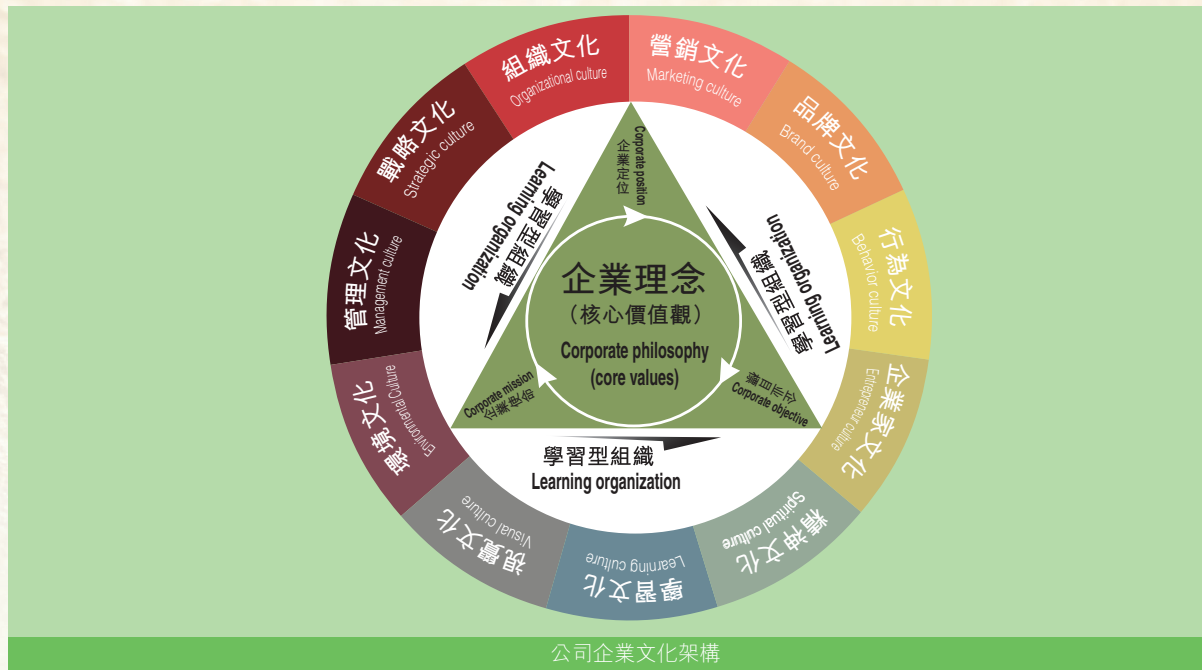
一. 關於我們(續)  
1. About Us (continued)

(二) 核心價值觀(續)

在「責任 專注 包容 務實」核心價值觀的指導下，公司圍繞企業定位、企業使命和企業目標，形成特有的企業文化，打造學習型組織，促進企業實現可持續高質量發展。

(2) CORE VALUE (continued)

Under the guidance of the core values of “Responsibility, Concentration, Tolerance and Pragmatism”, the Company has formed a unique corporate culture, built a learning organization, and promoted the sustainable development of the enterprise with high quality.



• 企業核心價值觀

責任 專注 包容 務實

以持續發掘資源價值為己任，專注礦業、綠色發展，不斷為員工、客戶、社會、股東等利益相關者創造具有競爭力的價值回報。

• 企業使命

致力於持續發掘資源價值，追求人與自然的和諧共生。

• Corporate core values

Responsibility, Concentration, Tolerance and Pragmatism

Continuously tap into the value of resources as our own responsibility, focus on mining, green development, and constantly create competitive value returns for employees, customers, society, shareholders and other stakeholders.

• Corporate mission

Committed to continuously tapping into the value of resources and pursuing the harmony between human and nature.



一. 關於我們(續)  
1. About Us (continued)

(二) 核心價值觀(續)

• **企業願景**

成長為廣受尊敬、可持續發展的全球化資源型企業。

• **企業發展戰略**

始終堅持「以銅為本，做強有色，多元發展，全球佈局」的發展戰略方針，圍繞實現資源儲備、產品影響力、技術創新、體制機制、核心指標「五個一流」，推動公司高質量發展，持續增強創新發展能力。

• **企業「十四五」(2021-2025年)總體目標**

持續引領中國銅工業發展，到2025年末，初步建成具有全球競爭力的世界一流企業，行業影響力、品牌美譽度、核心競爭力得到大幅提升。

(2) CORE VALUE (continued)

• **Corporate vision**

To become a globalised, resource-oriented enterprise with wide respect and sustainable development

• **Corporate development strategy**

Committed to the development strategy of “copper-based, stronger nonferrous, diversified development and global layout”, focus on the realization of “Five First-Class” of resource reserves, product influence, technological innovation, system and mechanism, and core indicators, promote the Company’s high-quality development and continuously enhance its innovation and development capacity.

• **Overall objectives of the 14th Five-Year Plan (2021–2025)**

We will continue to be the leader of the development of China’s copper industry. By the end of 2025, we will initially build a world-class enterprise with global competitiveness, and greatly enhance the industry influence, brand reputation and core competitiveness.



### (三) 2020年度環境、社會及管治亮點

公司為實現高質量跨越式發展，打造世界一流企業，堅持「以銅為本、做強有色、多元發展、全球佈局」的戰略方針和「創新引領、綠色發展、領跑銅業、擴大開放」的工作原則，向建成具有全球競爭力的世界一流企業大步邁進。

- **2020年經營生產績效**

2020年度，公司共生產陰極銅164.25萬噸，同比增長5.54%；黃金78.59噸，同比增長56.68%；白銀1,126.39噸，同比增長74.14%；銅加工產品147.12萬噸，同比增長22.89%；實現營業收入3,185.63億元，同比增加782.03億元，增長32.54%，實現歸母淨利潤23.20億元，同比減少5.92%。

- **2020年環境關鍵績效**

2020年，公司環保領域總投資3.29億元；公司水資源循環率95.67%；溫室氣體排放總量220.425萬噸二氧化碳當量；公司所屬礦山企業生態復墾面積達847餘公頃，80%以上可復墾廢棄地都進行了生態恢復，冶煉企業空地基本實現100%綠化；公司累計共有3座礦山入選國家級綠色礦山，6家工廠入選國家級綠色工廠；2020年，公司總能耗為59.69萬噸標煤，同比下降3.30%，可比價產值能耗0.0935噸標煤／萬元，同比下降0.45%，按可比價計算節能量2,596.76噸標煤，銅冶煉綜合能耗154.85千克標煤／噸，同比下降0.21%。

### (3) HIGHLIGHTS OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE IN 2020

In order to achieve high-quality leapfrog development and build a world-class enterprise, the Company adheres to the strategic policy of “copper-based, stronger nonferrous, diversified development and global layout” and the working principle of “innovation-oriented, green development, leading copper industry and expanding openness”, so as to move forward to build a world-class enterprise with global competitiveness.

- **Operating performance in 2020**

In 2020, the Company produced 1.6425 million tonnes of cathode copper, representing a year-on-year increase of 5.54%; 78.59 tonnes of gold, representing a year-on-year increase of 56.68%; 1,126.39 tonnes of silver, representing a year-on-year increase of 74.14%; 1.4712 million tonnes of copper processing products, representing a year-on-year increase of 22.89%. The operating revenue was RMB318.563 billion, representing a year-on-year increase of RMB78.203 billion, or 32.54%, and the net profit attributable to the parent company was RMB2.32 billion, representing a year-on-year decrease of 5.92%.

- **Environmental key performance in 2020**

In 2020, the Company's total investment in environmental protection is RMB329 million. The water resources circulation rate of the Company is 95.67%. The total amount of greenhouse gas emission is 2.20425 million tonnes of carbon dioxide equivalent. The ecological reclamation area of mining enterprises under the Company is more than 847 hectares, more than 80% of the reclaimed wasteland has been restored, and the open space of smelting enterprises has basically realized 100% of afforestation. The Company has three national green mines and six national green plants. In 2020, the total energy consumption of the Company was 596,900 tonnes of standard coal, representing a year-on-year decrease of 3.30%. The energy consumption of comparable output value was 0.0935 tonnes of standard coal/RMB10,000, representing a year-on-year decrease of 0.45%. According to the comparable price, the energy saving was 2,596.76 tonnes of standard coal, and the comprehensive energy consumption of copper smelting is 154.85 kg of standard coal/tonne, with a year-on-year decrease of 0.21%.



一. 關於我們(續)  
1. About Us (continued)

(三) 2020年度環境、社會及管治亮點(續)

• 2020年社會關鍵績效

2020年，公司員工人數達24,831人，其中女性員工佔比14.89%；員工勞動合同簽署率100%；員工社會保險覆蓋率100%；安全生產投入3.92億元，全年新增安全生產標準化證書2個，開展安全培訓193場，涉及8,859人次；公司扶貧投入金額627.072萬元。

• 榮譽獎項

序號 No.	獎項 Awards
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1	《財富》中國500強 Fortune China 500
2	國家級綠色工廠 National Green Factory
3	國家級綠色礦山 National Green Mine
4	江西名牌產品 Jiangxi Province Well-Known Product
5	廣東省科學技術進步獎(一等獎)《重金屬礦業廢棄地生態修復的直接植被技術及應用》 Guangdong Provincial Science and Technology Progress Award (First Prize) Direct Vegetation Technology and Its Application for Phytoremediation of Heavy Metal Mining Wasteland (《重金屬礦業廢棄地生態修復的直接植被技術及應用》)
6	江西省科學技術進步獎(一等獎)《銅陽極泥伴生稀貴金屬協同綠色提取關鍵技術及產業化》 Jiangxi Provincial Science and Technology Progress Award (First Prize) Key Technology and Industrialization of Collaborative Green Extraction of Rare and Precious Metals Associated With Copper Anode Slime
7	全國綠色高質量發展二十佳礦山 Top 20 Green and High Quality Mines in China
8	綠色礦山突出貢獻獎個人獎 Individual Award for Outstanding Contribution of Green Mine
9	國家級綠色設計示範企業 National Green Design Demonstration Enterprises
10	2020年全國有色金屬行業班組長綜合管理技能競賽團體三等獎 The third prize of the 2020 "China Copper Cup" comprehensive management skills competitions for team leaders of the national nonferrous industry

(3) HIGHLIGHTS OF ENVIRONMENTAL, SOCIAL AND GOVERNANCE IN 2020 (continued)

• Social key performance in 2020

In 2020, the number of employees of the Company reached 24,831, among which female employees accounted for 14.89%. The labor contract signing rate was 100%, and the social insurance coverage rate was 100%. A total of RMB392 million was invested in work safety. Two new work safety standardization certificates were issued, and 193 safety training sessions were conducted, involving 8,859 people. The Company invested RMB6.27072 million in poverty alleviation.

• HONORS AND AWARDS



(三) 2020年度環境、社會及管治亮  
點(續)

• 榮譽獎項(續)

序號 No.	獎項 Awards
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11	2020年度江西省工會新聞宣傳工作先進單位 Advanced unit of trade union news propaganda in Jiangxi Province in 2020
12	2020年安康杯優秀組織獎 2020 Ankang Cup Excellent Organization Award
13	2020年新冠肺炎疫情防控愛心捐贈榜樣企業 2020 Donation Model Enterprise for COVID-19 Prevention and Control
14	中智合作抗擊疫情特別貢獻企業 Special Contribution Enterprises of China-Chile Cooperation in Anti-pandemic
15	2020年「慈善一日捐」愛心單位 2020 "Charity Day donation" Love Unit

(3) HIGHLIGHTS OF ENVIRONMENTAL, SOCIAL  
AND GOVERNANCE IN 2020 (continued)

• HONORS AND AWARDS (continued)



## 二. 利益相關方參與

### 2. Stakeholder Engagement

公司重視與利益相關方的溝通，在日常經營過程中通過定期溝通與實時溝通相結合的方式，確保及時並充分理解各類內外部利益相關方在環境、社會及管治方面的訴求與期望，採取措施進行積極回應。

The Company attaches great importance to the communication with stakeholders. In the daily business process, the combination of regular and real-time communication ensures timely and full understanding of the demands and expectations of various internal and external stakeholders in environmental, social and governance, and the Company takes measures to provide positive response.

利益相關方 Stakeholders	訴求與期望 Demands and expectations	溝通與回應方式 Communication and response
員工	<ul style="list-style-type: none"> <li>平等僱傭</li> <li>薪酬與績效</li> <li>身心健康</li> <li>權益保障</li> <li>晉升渠道</li> <li>工作環境</li> </ul>	<ul style="list-style-type: none"> <li>工會溝通</li> <li>文體活動</li> <li>組織培訓</li> <li>公司微信公眾號等自辦媒體平台</li> </ul>
employees	<ul style="list-style-type: none"> <li>Equal employment</li> <li>Remuneration and performance</li> <li>Physical and mental health</li> <li>Protection of rights and interests</li> <li>Promotion channel</li> <li>Working Environment</li> </ul>	<ul style="list-style-type: none"> <li>Trade union communication</li> <li>Cultural and sports activities</li> <li>Organized training</li> <li>the Company's we-media platforms including We-chat public account</li> </ul>
客戶	<ul style="list-style-type: none"> <li>產品質量</li> <li>溝通機制與渠道</li> <li>隱私安全</li> </ul>	<ul style="list-style-type: none"> <li>客戶滿意度調查</li> <li>客戶投訴渠道</li> <li>日常溝通</li> </ul>
Customers	<ul style="list-style-type: none"> <li>Product quality</li> <li>Communication mechanism and channel</li> <li>Privacy and security</li> </ul>	<ul style="list-style-type: none"> <li>Customer satisfaction survey</li> <li>Customer complaint channels</li> <li>Daily communication</li> </ul>
行業協會	<ul style="list-style-type: none"> <li>標準建設</li> <li>公平競爭</li> </ul>	<ul style="list-style-type: none"> <li>行業研討會</li> <li>課題項目合作</li> </ul>
Industry Association	<ul style="list-style-type: none"> <li>Standard construction</li> <li>Fair competition</li> </ul>	<ul style="list-style-type: none"> <li>Industry seminar</li> <li>Project cooperation</li> </ul>
政府及監管部門	<ul style="list-style-type: none"> <li>遵紀守法</li> <li>依法納稅</li> <li>合規經營</li> <li>環境保護</li> </ul>	<ul style="list-style-type: none"> <li>實地調研訪問</li> <li>政府項目、政策及建議參與</li> <li>節能減排與污染處理</li> </ul>
Government and Regulatory Authorities	<ul style="list-style-type: none"> <li>Observe discipline and law</li> <li>Pay taxes according to law</li> <li>Compliance operation</li> <li>Environmental protection</li> </ul>	<ul style="list-style-type: none"> <li>Field investigation and visit</li> <li>Government projects, policies and suggestions</li> <li>Energy saving, emission reduction and pollution treatment</li> </ul>
投資者與股東	<ul style="list-style-type: none"> <li>公司治理</li> <li>信息透明度</li> <li>決策參與</li> <li>風險管理</li> <li>業績增長</li> </ul>	<ul style="list-style-type: none"> <li>業績說明會</li> <li>股東大會</li> <li>上市公司信息披露</li> </ul>
Investors and shareholders	<ul style="list-style-type: none"> <li>Corporate governance</li> <li>Information transparency</li> <li>Participation in decision making</li> <li>Risk management</li> <li>Results growth</li> </ul>	<ul style="list-style-type: none"> <li>Performance presentation meeting</li> <li>Shareholders' meeting</li> <li>Information disclosure of listed companies</li> </ul>



## 二. 利益相關方參與(續)

### 2. Stakeholder Engagement (continued)

利益相關方 Stakeholders	訴求與期望 Demands and expectations	溝通與回應方式 Communication and response
合作夥伴 (包括材料設備供應商、服務提供方)	<ul style="list-style-type: none"> <li>採購標準</li> <li>供應鏈資金安全</li> <li>溝通機制與渠道</li> </ul>	<ul style="list-style-type: none"> <li>供應商交流</li> <li>供應商評估</li> <li>供應商培訓</li> </ul>
Partners (including material and equipment suppliers and service providers)	<ul style="list-style-type: none"> <li>Purchase standard</li> <li>Supply chain capital security</li> <li>Communication mechanism and channel</li> </ul>	<ul style="list-style-type: none"> <li>Supplier Communication</li> <li>Supplier evaluation</li> <li>Supplier training</li> </ul>
公益、社區組織	<ul style="list-style-type: none"> <li>公益慈善</li> <li>環境保護</li> <li>愛心福利</li> <li>社區影響</li> </ul>	<ul style="list-style-type: none"> <li>公益活動</li> <li>社區服務</li> <li>節能減排與污染處理</li> </ul>
Public welfare and community organizations	<ul style="list-style-type: none"> <li>Public welfare and charity</li> <li>Environmental protection</li> <li>Love and welfare</li> <li>Community impact</li> </ul>	<ul style="list-style-type: none"> <li>Public welfare activities</li> <li>Community service</li> <li>Energy saving, emission reduction and pollution treatment</li> </ul>
社會公眾	<ul style="list-style-type: none"> <li>信息透明</li> <li>扶貧濟困</li> <li>環境保護</li> <li>支持社會發展</li> <li>關注弱勢群體</li> </ul>	<ul style="list-style-type: none"> <li>扶貧工作</li> <li>信息披露</li> <li>輿情監測</li> </ul>
The public	<ul style="list-style-type: none"> <li>Information transparency</li> <li>Poverty alleviation</li> <li>Environmental protection</li> <li>Support for social development</li> <li>Care for vulnerable groups</li> </ul>	<ul style="list-style-type: none"> <li>Environmental support for social development</li> <li>Information disclosure</li> <li>Public opinion monitoring</li> </ul>



## 二. 利益相關方參與(續)

### 2. Stakeholder Engagement (continued)

#### (一) 重大關鍵性議題識別

根據《可持續發展報告標準(GRI)》的重大性、包容性、永續性和完整性四大原則，綜合考量聯合國可持續發展目標(SDGs)與香港聯交所《環境、社會及管治報告指引》，以及國際標準化組織《社會責任指南(ISO 26000)》等標準中對企業披露環境、社會及管治相關要求，公司通過問卷調查的方式對體現重大影響或對利益相關方的評估和決策有實質性影響的環境、社會及管治相關議題進行了識別，最終回收有效問卷125份。主要識別步驟為：首先通過問卷調查初步篩選出重大關鍵性議題，其次經三方專業機構進行確認並補充，最後交由相關負責人共同決議。其評估和鑒別的具體流程如下：

第一步，鑒別。由公司相關負責部門和三方專業機構以GRI準則為基礎，綜合考量聯合國可持續發展目標(SDGs)與香港聯交所等對ESG信息披露的相關要求，立足行業並參照同業發展情況，根據利益相關方溝通渠道所瞭解到的訴求與期望，篩選ESG相關關鍵性議題。

第二步，排序。經問卷發放辨識利益相關方對ESG關鍵性議題的關注程度，以及對公司經營活動的影響衝擊程度，2020年辨識出9項重大性環境議題、12項重大性社會議題和6項重大性管治議題。

第三步，確認。辨識出關鍵性議題後，由公司相關部門負責人及第三方專業機構共同確認議題的重大性，並進一步評估重大議題對於機構內外的考量邊界，確保重要的議題已被完整披露在此報告中。

#### (1) Identification of major and key issues

According to the four principles of significance, inclusiveness, sustainability and integrity of the sustainable development reporting standards (GRI), comprehensively considering the United Nations Sustainable Development Goals (SDGs) and Environmental, Social and Governance Reporting Guidance issued by the Hong Kong Stock Exchange and the relevant requirements of the corporate disclosure on environmental, social and governance in the standards including Guidance on Social Responsibility (ISO26000) issued by International Organization for Standardization. The Company identified the environmental, social and governance related issues that had significant or material impact on the evaluation and decision-making of stakeholders through questionnaire survey, and finally received 125 valid questionnaires. The main identification steps are as follows: first, major key issues are preliminarily selected through questionnaire survey, then three professional institutions confirmed and supplemented, and finally submit to relevant responsible persons for joint resolution. The specific process of evaluation and identification is as follows:

The first step is identification. Based on GRI standards, the relevant responsible departments and third party professional institutions of the Company comprehensively consider the relevant requirements of the United Nations SDGs and the SEHK on ESG information disclosure. Based on the industry and with reference to the development of the industry, and in accordance with the demands and expectations of the stakeholders' communication channels, select the key issues related to ESG.

The second step is sorting. The questionnaire was distributed to identify the degree of stakeholders' attention to ESG key issues and the impact on the Company's business activities. In 2020, nine major environmental issues, 12 major social issues and six major governance issues were identified.

The third step is to confirm. After identifying the key issues, the heads of relevant departments of the Company and the third-party professional institutions shall jointly confirm the significance of the issues, and further evaluate the consideration boundary of the major issues within and outside the organization, so as to ensure that the important issues have been fully disclosed in this report.



### (一) 重大關鍵性議題識別(續)

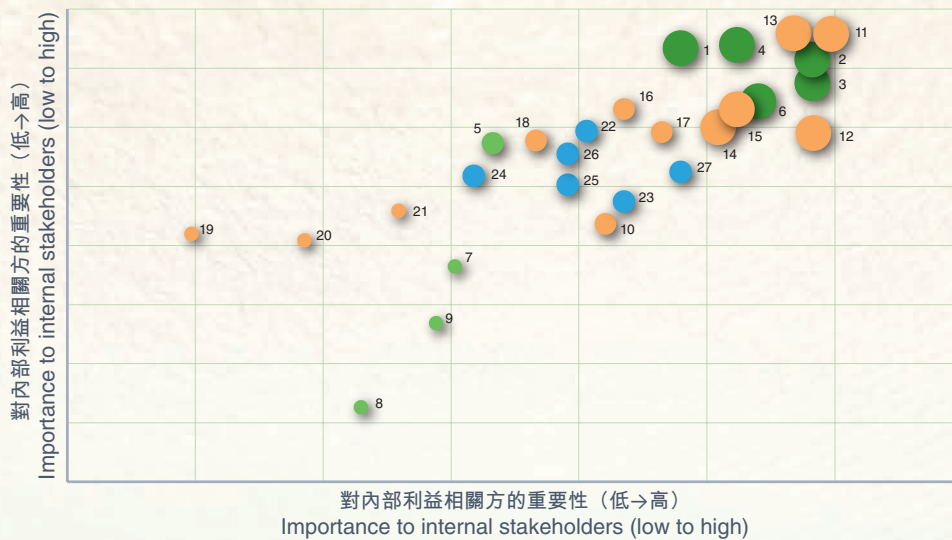
第四步，檢視。報告編製完成後，公司相關負責部門將進行最後的審閱和查核，以檢視ESG議題與相關績效是否有不當或不實的表達；另外針對重大議題的辨識結果與利益相關方的回饋，也可以作為下一報告週期進行信息披露的重要參考依據。

經識別，公司2020年重大ESG議題以矩陣圖呈現如下：

### (1) Identification of major and key issues (continued)

The fourth step is to examine. After the preparation of the report, the relevant responsible departments of the Company conducted final review and audit to check whether there are improper or false expressions between ESG topics and relevant performance. In addition, the identification results of major issues and feedback from stakeholders can also be used as an important reference for information disclosure in the next reporting cycle.

After identification, the major ESG issues of the Company in 2020 are shown in the matrix as follows:



註： 本次重大關鍵性議題調查向內外部利益相關方最終回收有效問卷125份。

Note: 125 valid questionnaires were finally collected from internal and external stakeholders in this survey.



## 二. 利益相關方參與(續) 2. Stakeholder Engagement (continued)

### (一) 重大關鍵性議題識別(續)

根據問卷調研結果對各維度下的重大關鍵性議題進行排序，對於公司內外部利益相關方而言，在環境層面最關注節能減排措施、污染處理措施、綠色生產、綠色技術及環境風險管理六項議題；在社會層面最關注員工職業安全與健康、員工待遇、發展及培訓、禁止使用童工及強制勞工、知識產權保障和產品質量與安全六項議題；在治理層面最關注組織架構與內部控制、合規管理與廉潔建設、風險管理和研發創新。同時，根據這27項重大關鍵性議題對聯合國可持續發展目標(SDGs)的響應，進一步說明公司對各項議題所採取的應對措施。

#### • 環境

序號 No.	重大關鍵性議題 Major and key issues	響應SDG目標 Response to SDG targets	公司採取措施 Measures taken by the Company
1	節能減排措施 Energy conservation and emission reduction	 Clean water and hygiene facilities	P98-P105
2	污染處理措施 Pollution treatment measures	 Clean energy applicable to economy	P90-P97
3	綠色生產 Green production	 Responsible consumption and production	P106、P122-P140
4	綠色技術 Green technology	 Climate change action	P101、P104-P105
6	環境風險管理 Environmental risk	 Aquatic wildlife	P86-P88
5	環境成本核算 Environmental cost accounting	 Terrestrial wildlife	P89
7	生物多樣性保護 Biodiversity conservation		P107-P118
8	綠色辦公 Green office		P119-P120
9	環保宣傳 Environmental protection propaganda		P121-P122

註：序號對應矩陣圖點位，並按議題重要性從高到低進行列示。

### (1) Identification of major and key issues (continued)

According to the survey results, the major key issues in different aspects are sorted out. For the internal and external stakeholders of the Company, the top six concerned issues in terms of the environment are energy conservation and emission reduction measures, pollution treatment measures, green production, green technology and environmental risk management. At the social level, the top six concerned topics are occupational safety and health of employees, the treatment, development and training of employees, the prohibition of child labor and compulsory labor, the protection of intellectual property rights and the quality and safety of products. At the governance level, the most attention is paid to organizational structure and internal control, compliance management and integrity construction, risk management and R&D innovation. Meanwhile, according to the response of these 27 key issues to the United Nations SDGs, the Company further explained the measures taken by the Company to deal with various issues.

#### • Environment

Note: The numbers correspond to the points in the matrix, and are presented in accordance with the importance of the issues from high to low.



(一) 重大關鍵性議題識別(續)

(1) Identification of major and key issues (continued)

• 社會

• Social

序號 No.	重大關鍵性議題 Major and key issues	響應SDG目標 Response to SDG targets	公司採取措施 Measures taken by the Company
11	員工職業安全與健康 Occupational safety and health of employees	 Poverty eradication	 Good health and well being
12	員工待遇、發展及培訓 Treatment, development and training of employees		P76-P85
13	禁止使用童工及強制勞工 Prohibition of child labor and compulsory labor		P62-P75
15	產品質量與安全 Quality and safety of products	 Gender equality	P60-P61
14	知識產權保障 Protection of intellectual property rights		P49-P54
10	尊重人權與平等僱傭 Respect for human rights and equal employment	 Decent jobs and economic growth	P28-P30
16	客戶隱私與信息安全 Customer privacy and information security		P60-P61
17	客戶服務質量與滿意度 Customer service quality and satisfaction	 Narrow the gap	P39-P41
18	供應鏈管理 Supply chain management		P55-P56
19	慈善與扶貧 Charity and poverty alleviation	 Sustainable city and community	P42-P48
20	社區公益 Community public welfare		P147-P160
21	公共衛生 Public health	 Partnerships for achieving goals	P141-P146
			P153-P160

註：序號對應矩陣圖點位，並按議題重要性從高到低進行列示。

Note: The numbers correspond to the points in the matrix, and are presented in accordance with the importance of the issues from high to low.



二. 利益相關方參與(續)  
2. Stakeholder Engagement (continued)

(一) 重大關鍵性議題識別(續)

(1) Identification of major and key issues (continued)

• 治理

• Governance

序號 No.	重大關鍵性議題 major and key issues	響應SDG目標 Respond to SDG targets	公司採取措施 Measures taken by the Company
22	組織架構與內部控制 Organizational structure and internal control	 Industry, innovation and infrastructure	P19-P21
26	風險管理 Risk management		P31-P39
27	研發創新 R&D innovation	 Peace, justice and strong institutions	P56-P59
23	合規管理與廉潔建設 Compliance management and integrity construction		P24-P30
24	投資者關係管理 Investor relationship management	 partnerships for achieving goals	P19、P22-P23
25	信息透明度 Information transparency		P22-P23

註：序號對應矩陣圖點位，並按議題重要性從高到低進行列示。

Note: The numbers correspond to the points in the matrix, and are presented in accordance with the importance of the issues from high to low.



## 三. 公司管治

### 3. Corporate Governance

公司將「以誠為節 信用守恆」的商業倫理以及「精細過程 效益優先」的管理理念貫穿於公司的日常經營管理，不斷完善合規運營、風險管控、隱私保護等機制，加強投資者管理，保障和提升公司長效經營與可持續發展能力。

#### (一) 投資者關係管理

公司建立《江西銅業股份有限公司投資者關係管理制度》，致力於進一步加強公司與投資者及潛在投資者之間的信息交互機制，通過增進公司信息透明度以及投資者對公司的瞭解和認同，有效提升公司投資價值和市場影響力。

#### (二) 管治架構

合規管治是保障公司高效運行、可持續發展的根本。公司嚴格遵照《中華人民共和國公司法》《中華人民共和國證券法》《上市公司治理準則》等公司管治相關的法律法規、規範性文件要求，不定期進行制度文件審查及更新，持續完善公司管治架構，保障公司合規運營及長期穩定發展。2020年度，公司共召開董事會10次，獨審會2次，薪酬會1次，監事會5次。

公司建立了清晰的管治架構，董事會及下設委員會、管理層各司其職，同時成立監事會進行獨立監督，堅守良好的公司管治原則，積極領導並不斷提升公司環境、社會及管治相關工作，強化公司環境、社會及管治能力建設。

The Company integrates the business ethics of “honesty is the key, keep our word” and the management concept of “fine process, benefit first” into the daily operation and management of the Company, constantly improves the compliance operation, risk management and control, privacy protection and other mechanisms, strengthens investor management, and safeguards and improves the long-term operation and sustainable development ability of the Company.

#### (1) Investor relationship management

The Company has established the investor relationship management system of Jiangxi Copper Company Limited., which is committed to further strengthening the information interaction mechanism between the Company, investors and potential investors, and effectively enhancing the Company's investment value and market influence by enhancing the Company's information transparency and investors' understanding and recognition of the Company.

#### (2) Governance structure

Compliance governance is the foundation to ensure the efficient operation and sustainable development of the Company. In strict accordance with the Company Law of the People's Republic of China (《中華人民共和國公司法》) the Securities Law of the People's Republic of China (《中華人民共和國證券法》) and the Code of Corporate Governance for Listed Companies (《上市公司治理準則》) and other relevant laws and regulations and normative documents related to corporate governance, the Company reviews and updates the system documents from time to time, continuously improves the corporate governance structure, and ensures the compliance operation and long-term stable development of the Company. In 2020, the Company held ten board meetings, two independent review meetings, one remuneration meeting and five board of supervisors meetings.

The Company has established a clear governance structure, the board of directors and its committees. The management perform their respective duties. At the same time, the board of supervisors has been set up for independent supervision. Committed to good corporate governance principles, the Company actively guides and continuously improves the Company's environmental, social and governance related work, and strengthened the Company's environmental, social and governance capacity-building.

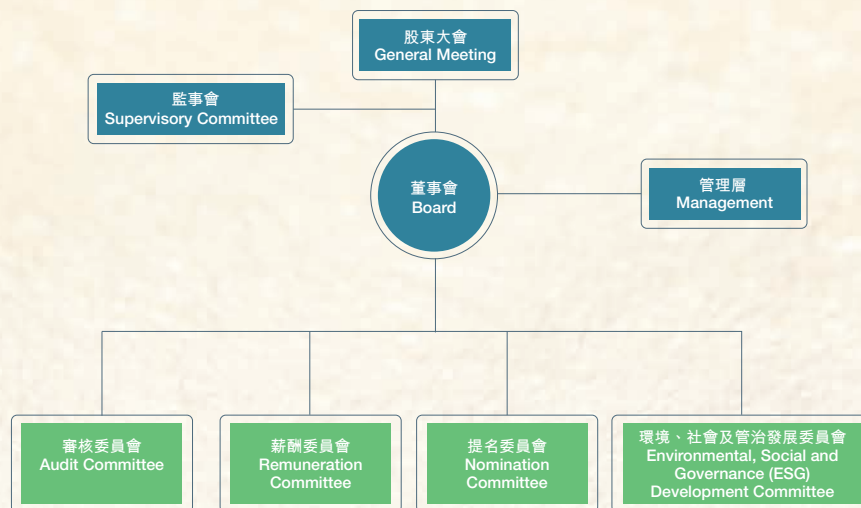


### 三. 公司管治 (續)

### 3. Corporate Governance (continued)

#### (二) 管治架構 (續)

#### (2) Governance structure (continued)



公司董事會管治架構  
Corporate governance structure of Board

#### 1. 董事會

董事會是公司的最高管治機構，主要負責公司整體戰略制定、運營監督、信息披露及定期審查的職責。董事會追求高標準的企業管治，為公司股東和利益相關方帶來長遠效益、為社會作出廣泛貢獻，是促進公司可持續發展的重要推手。公司董事會共有10名成員，其中6名執行董事，4名獨立非執行董事，由董事會成員共同負責指導及監督公司，進行規範運作及披露。所有董事的信息均已刊載於公司2020年度報告。

#### 1. Board

The Board is the highest governing body of the Company, which is mainly responsible for the overall strategy formulation, operation supervision, information disclosure and periodic review of the Company. The Board pursues high standards of corporate governance, brings long-term benefits to shareholders and stakeholders, and makes extensive contributions to the society. It is an important driving force to promote the sustainable development of the Company. There are 10 members in the Board of the Company, including 6 executive directors and 4 independent non-executive directors. The members of the Board are jointly responsible for guiding and supervising the operation and disclosure of the Company. All directors' information has been published in the Company's 2020 annual report.



## (二) 管治架構(續)

### 2. 委員會與監事會

為進一步明確董事會職能，董事會下設「審核委員會(審計委員會)」、「薪酬委員會」、「提名委員會」和「環境、社會及管治(ESG)發展委員會」四大委員會，主要由董事長、獨立董事及／或內部執行董事組成，為公司的組織架構提供支持，保障公司各部門的有效配合及可持續運作。其中，「環境、社會及管治(ESG)發展委員會」負責公司ESG相關事務和年度環境、社會及管治報告的審批，並下設相關工作小組，持續完善規範化和專業化的企業ESG發展體系。「環境、社會及管治(ESG)發展委員會」定期召開會議，就環境、社會及管治方面的相關議題制定公司戰略，致力於提升公司的ESG能力建設及表現水平。同時，公司設立監事會，由五名監事組成，依法監督公司的可持續經營情況、內控制度、商業道德、財務狀況以及董事、高級管理層的履責情況，並發表獨立意見。

### 3. 公司管治相關培訓

2020年，公司積極響應上級監管部門號召及自我提升的需求，多次參與公司管治主題專業培訓及活動，包括但不限於新《證券法》的專題學習培訓、參與提高江西省上市公司質量行動的啟動倡議、響應開展2020年防範非法證券期貨宣傳月活動等。

(更多內容請參考本公司2020 A股年度報告中第73頁至75頁「公司治理」章節及H股年度報告中第95頁至109頁「企業管治報告」章節)

## (2) Governance structure (continued)

### 2. Committee and board of supervisors

To further clarify the functions of the Board, there are four committees under the Board, namely "Audit Committee", "Remuneration Committee", "Nomination Committee" and "Environmental, Social and Governance (ESG) Committee", which are mainly composed of the chairman, independent directors and/or internal executive directors to support the organizational structure of the Company, ensure the effective cooperation and sustainable operation of all departments of the Company. Among them, the "Environmental, Social and Governance (ESG) Committee" is responsible for the ESG related affairs of the Company and the approval of the annual Environmental, Social and Governance report, and has set up relevant working groups to continuously improve the standardized and professional enterprise ESG development system. The Environmental, Social and Governance (ESG) Committee holds regular meetings to formulate the Company's strategies on environmental, social and governance related issues, and is committed to improving the Company's ESG capacity-building and performance. At the same time, the Company has set up a board of supervisors, which is composed of five supervisors, to supervise the Company's sustainable operation, internal control system, business ethics, financial situation and the performance of directors and senior management according to law, and express independent opinions.

### 3. Corporate governance related training

In 2020, the Company actively responded to the call of the superior regulatory authorities and the demand for self-improvement, participated in professional training and activities on corporate governance for many times, including but not limited to the special study and training of the new securities law, participated in the initiative to improve the quality of Listed Companies in Jiangxi Province, and responded to the propaganda month of preventing illegal securities and futures in 2020.

(For more information, please refer to the section headed "Corporate Governance" on pages 73 to 75 of the Company's 2020 annual report of A shares and the section headed "Corporate Governance Report" on pages 95 to 109 of the Company's annual report of H shares)

### 三. 公司管治(續)

### 3. Corporate Governance (continued)

#### (二) 管治架構(續)

##### 4. 信息披露

公司為保證及時、準確、完整地進行信息披露，按時按規報送有關證券監管部門備案，制定了《江西銅業股份有限公司信息披露事務管理制度》，其中強調公司對信息披露內容的真實、完整、準確、合規性負責。公司通過明確的責任制度和管理流程規範公司信息披露行為，有效強化了公司信息披露工作的信息質量和管理效率，在保證公司依法規範運作的同時，保護股東和投資者的合法權益。

2020年，公司在境內外共計發佈包括《2019年年度報告》《2019年度環境、社會及管治報告》《2020年中期業績報告》等在內的165個公告，完成了一季度、三季度報告的披露工作，積極推進公司信息披露工作。

##### 5. 股東權益及股東大會

公司對所有股東秉承公平公正、一視同仁的理念，其中特別關注中小股東的權利行使和義務履行情況。股東大會為所有股東特別是中小股東提供充分行使知情權、參與權與表決權的平台，致力於確保所有股東特別是中小股東享有平等地位，有效充分行使權利及履行義務。

2020年度，公司累計共召開股東大會5次，其中包括2019年年度股東大會、1次2020年A股類別股東大會、1次2020年H股類別股東大會，以及2次2020年臨時股東大會。各次會議召開的前期準備與執行均履行了相應的法律程序，充分保障了股東參會和表決權利。

#### (2) Investor relationship management (continued)

##### 4. Information disclosure

In order to ensure timely, accurate and complete information disclosure and timely report to relevant securities regulatory authorities for record, the Company has formulated the information disclosure affairs management system of Jiangxi Copper Company Limited., which emphasizes that the Company is responsible for the authenticity, integrity, accuracy and compliance of information disclosure. The Company standardizes the information disclosure through clear responsibility system and management process, effectively strengthens the information quality and management efficiency of the Company's information disclosure, and protects the legitimate rights and interests of shareholders and investors while ensuring the Company's standardized operation according to law.

In 2020, the Company issued 165 announcements including the annual report of 2019, the Environmental, Social and Governance Report of 2019, and the interim results report of 2020 at home and abroad, completed the disclosure of the first and third quarter reports, and actively promoted the Company's information disclosure.

##### 5. Shareholders' equity and general meeting

The Company adheres to the concept of fairness and equal treatment to all shareholders, and pays special attention to the rights and obligations of small and medium-sized shareholders. The general meeting of shareholders provides a platform for all shareholders, especially small and medium-sized shareholders, to fully exercise their right to know, participate and vote, and is committed to ensuring that all shareholders, especially small and medium-sized shareholders, enjoy equal status, effectively and fully exercise their rights and perform their obligations.

In 2020, the Company held a total of 5 shareholders' meetings, including the AGM in 2019, one A share shareholders meeting in 2020, one H share shareholders meeting in 2020, and two EGMs in 2020. The initial preparation and implementation of each meeting have fulfilled the corresponding legal procedures, which fully guaranteed the shareholders' rights to participate in the meeting and vote.



## (二) 管治架構(續)

### 6. 投資者溝通

公司通過多種渠道與投資者保持及時、深入、有效的溝通，主要溝通形式包括書面溝通、會議溝通、網絡溝通、訪談溝通等。其中，公司尤其關注利用互聯網平台進行投資者溝通，以提高溝通的時效性、全面性和準確性。

#### 公司投資者溝通渠道

##### 溝通形式 Form of communication

書面形式  
Written form  
會議形式  
Meeting forms

網絡平台  
Network platform

訪談形式  
Interview form  
其他形式  
Other forms

2020年，公司繼續積極與投資者保持良好的交流溝通，增進與投資者的關係。公司積極參與上交所、證監局組織的各種會議及活動，與上市公司監管部門保持溝通；與各投資機構、基金經理和新聞媒體保持良好關係。2020年4月，為使廣大投資者更加全面、深入地瞭解公司情況，公司通過上海證券交易所「上證e互動」網絡平台的「上證e訪談」欄目以網絡互動方式召開2019年度業績說明會，就投資者關心的公司經營業績、利潤分配方案等事項與廣大投資者進行充分交流。

## (2) Investor relationship management (continued)

### 6. Investor communication

The Company maintains timely, in-depth and effective communication with investors through various channels, including written communication, meeting communication, network communication, interview communication, etc. Among them, the Company pays special attention to the use of Internet platform for investor communication to improve the timeliness, comprehensiveness and accuracy of communication.

#### Communication channels for corporate investors

##### 具體方式 Specific ways

定期報告與臨時公告、郵寄資料  
Regular report, temporary announcement and mailing materials  
年度報告說明會、股東大會、債券持有人會議、分析師會議和業績說明會  
Annual report presentation meeting, shareholders' meeting, bondholders' meeting, analysts' meeting and performance presentation meeting  
公司網站、上海證券交易所「上證e互動」等網絡平台  
The company's website, Shanghai Stock Exchange "SSE E-Information" and other network platforms  
一對一溝通、電話諮詢  
One to one communication and telephone consultation  
現場參觀、媒體採訪和報道、路演等  
Site visit, media interview and report, roadshow, etc

In 2020, the Company will continue to actively maintain good communication with investors and enhance the relationship with investors. The Company actively participates in various meetings and activities organized by Shanghai Stock Exchange and China Securities Regulatory Bureau, and maintains communication with the regulatory authorities of listed companies; Maintain good relationship with investment institutions, fund managers and news media. In April 2020, in order to enable investors to have a more comprehensive and in-depth understanding of the Company's situation, the Company held the 2019 annual results presentation meeting through the "SSE E-Interview" column of the "SSE E-interaction" network platform of SSE, and fully communicated with investors on the Company's operating performance, profit distribution scheme and other matters concerned by investors.

### 三. 公司管治 (續)

### 3. Corporate Governance (continued)

#### (三) 商業道德

公司秉承「以誠為節、信用守恆」的商業發展理念，嚴格遵守商業道德準則，以合規經營作為企業發展基石，致力於營造廉潔誠信、公平競爭的企業文化。

##### 1. 反貪污反腐敗

公司嚴格遵守《中華人民共和國公司法》《中華人民共和國反洗錢法》《中華人民共和國反不正當競爭法》《關於禁止商業賄賂行為的暫行規定》等有關防範貪污賄賂的法律法規，並結合公司業務和經營特點制定了《江銅加強領導幹部履職情況監督檢查辦法(修訂版)》《江西銅業股份有限公司領導人員公務迴避暫行規定》《江銅紀委關於加強政治監督工作的實施意見》等規章辦法，通過拆分業務流程、分層級管控的方式對反貪污、反賄賂風險重點領域進行嚴格監督，致力於在提升信息公開透明的同時，促進反貪污反腐敗工作的縱深發展。

公司持續推進體制機制創新，提高制度執行力，確保制度落實，努力從源頭上防止腐敗。通過建立健全反貪污反腐敗「懲戒機制、防範機制、教育機制」的三大機制，加強對重點領域和關鍵環節的監督，推行發現苗頭性問題及時提醒、發現重大問題線索及時報告的管控流程。公司每年至少召開兩次反貪污反腐敗工作領導小組會議，聽取相關工作匯報，以及時聽取與及時解決的機制設置促進廉潔風險防控工作落實。

#### (3) Ethical Business

The Company adheres to the business development concept of “Honesty is the key, keep our word”, strictly abides by the code of business ethics, takes compliance management as the cornerstone of enterprise development, and is committed to creating an enterprise culture of integrity and fair competition.

##### 1. Anti-corruption

The Company strictly abides by the Company Law of the People's Republic of China (《中華人民共和國公司法》), the Law of the People's Republic of China on Anti-money Laundering (《中華人民共和國反洗錢法》), the Anti-Unfair Competition Law of the People's Republic of China (《中華人民共和國反不正當競爭法》), the Interim Provisions on Banning Commercial Bribery (《關於禁止商業賄賂行為的暫行規定》) and other relevant laws and regulations on prevention of corruption and bribery, and formulates the Measures for Strengthening the Supervision and Inspection of the Performance of Leading Cadres in Jiangxi Copper Company Limited. (Revised Version), the Interim Provisions on Official Avoidance of Leaders of Jiangxi Copper Company Limited, and Opinions of Jiangxi Copper Discipline Inspection Commission on Strengthening Political Supervision. By separating the business process and hierarchical management and control, we strictly supervise the key areas of anti-corruption and anti-bribery risk, and strive to promote the in-depth development of anti-corruption work while improving the transparency of information.

The Company continues to promote the innovation of system and mechanism, improve the execution of the system, ensure the implementation of the system, and strive to prevent corruption from the source. Through the establishment and improvement of the anti-corruption “disciplinary mechanism, prevention mechanism and education mechanism”, the Company strengthens the supervision of key areas and key links, and implements the management and control process of timely warning of emerging problems and timely reporting of major problem clues. The Company holds at least two anti-corruption leading group meetings every year to listen to relevant work reports, and timely listen to and solve the mechanism setting, so as to promote the implementation of integrity risk prevention and control.



(三) 商業道德(續)

(3) Ethical Business (continued)

1. 反貪污反腐败(續)

1. Anti-corruption (continued)

**案例：組織「深化警示教育 增強紀法觀念」主題宣傳教育月活動**

2020年6月，公司以「深化警示教育、增強紀法觀念」為主題，開展了廉潔建設主題宣傳教育月工作，進行主題宣傳教育，包括堅持與強化案例警示教育、開展「作風監督檢查專項行動」及治理「微腐敗」工作等。公司旨在通過宣教月活動強化職工責任意識，充分利用自媒體、宣傳欄等渠道，營造公司廉潔文化氛圍，推動反貪污反腐败工作進程。

**Case: Organizing the publicity and education month with the theme of “deepening warning education and strengthening the concept of discipline and law”**

In June 2020, with the theme of “deepening warning education and strengthening the concept of discipline and law”, the company carried out the theme publicity and education month of clean construction, including adhering to and strengthening the case warning education, carrying out the “special action of work style supervision and inspection” and controlling “micro-corruption”. The Company aimed to strengthen the staff’s sense of responsibility through publicity and education month activities, made full use of we-media, billboards and other channels to create a clean cultural atmosphere of the Company, and promote the process of anti-corruption work.

### 三. 公司管治(續) 3. Corporate Governance (continued)

#### (三) 商業道德(續)

##### 1. 反貪污反腐敗(續)

**案例：公司組織開展大課堂、大培訓和大約談活動，增強紀檢監察幹部履職使命和能力**

為全面落實省紀委省監委全員培訓有關要求，2020年9月7日至9月9日，公司紀委在二級單位德興銅礦舉辦了為期3天的「開講啦」大課堂暨2020年公司紀檢監察業務培訓班，進一步強化公司紀檢監察幹部的職責使命，提升其履職能力和業務水平。本次培訓將大課堂、集中培訓和集中約談結合在一起開展。省紀委省監委相關領導到現場為學員們授課，公司紀委領導及公司專兼職紀檢監察幹部共87人參加了培訓。



「開講啦」大課堂  
“VOICE” Big Class



專題學習輔導  
Special study guidance

#### (3) Ethical Business (continued)

##### 1. Anti-corruption (continued)

**Case: the Company organizes and carries out large-scale class, large-scale training and interview activities to enhance the mission and ability of discipline inspection and supervision cadres**

In order to fully implement the training requirements of the provincial Commission for Discipline Inspection and the provincial supervision commission, from 7 September to 9 September 2020, the Company's Commission for Discipline Inspection held a three-day “VOICE” big class and 2020 discipline inspection and supervision business training class in Dexing Copper Mine, a secondary unit, to further strengthen the responsibilities and missions of the Company's discipline inspection and supervision cadres and improve their performance ability and business level. This training combined large class, collective training and collective interview. Relevant leaders of the provincial Commission for Discipline Inspection and the provincial supervision commission went to the scene to give lectures for the participants. 87 leaders of the Company's Commission for Discipline Inspection and full-time and part-time discipline inspection and supervision cadres participated in the training.



集中述職和集體約談  
Collective work report and collective interview training



集中測試  
Collective examination



### (三) 商業道德(續)

#### 2. 反壟斷與法制宣傳

公司嚴格遵守反壟斷、反不當競爭相關法律法規，鼓勵和強調「公平競爭」的關鍵議題，通過強化主體責任，加強管理人員及員工的法律法規意識，制止不正當競爭行為，有效保護經營者和消費者的合法權益，推動市場經濟健康發展。

2020年，公司多次組織法律專場學習培訓活動，包括：「七五普法」、「百萬網民學法律」、《中華人民共和國外商投資法》專場學習競賽、公司高級管理層人員參加網上法律知識學習與考試、民法典專題講座、《反壟斷法》專題培訓。

### (3) Ethical Business (continued)

#### 2. Anti-monopoly and legal publicity

The Company strictly abides by the laws and regulations related to anti-monopoly and anti-unfair competition, encourages and emphasizes the key issues of “fair competition”. By strengthening the main responsibility, awareness of laws and regulations of managers and employees, the Company stops unfair competition, effectively protects the legitimate rights and interests of operators and consumers, and promotes the healthy development of market economy.

In 2020, the Company organized several special legal training activities, including “7th Five-Year Plan” to popularize the law”, “Millions of netizens study law”, “the Foreign Investment Law of the People’s Republic of China (《中華人民共和國外商投資法》) Special study competition, online legal knowledge learning and examination for senior management personnel of the Company, special lectures on Civil Code and Special Training on Anti-Monopoly Law.

#### 案例：2020年「憲法宣傳週」活動

2020年12月4日是第七個國家憲法日，為深入學習《中華人民共和國憲法》《中華人民共和國民法典》、疫情防控以及證券期貨市場法律法規，公司在全公司範圍內開展了2020年「憲法宣傳週」活動。為增強宣傳實效，同時結合當前疫情防控需要，避免人員過度集中，公司創新宣傳形式，通過線上與線下相結合的方式開展宣傳學習活動。各二級單位也紛紛行動，積極響應，營造濃厚的法治氛圍。



憲法宣傳週，公司員工積極領取手冊  
During the Constitution Publicity Week, the Company employees actively received the manual

#### Case: 2020 “Constitution Publicity Week” activity

4 December 2020 is the Seventh National Constitution Day. In order to further study the Constitution of the People’s Republic of China, the Civil Code of the People’s Republic of China, the epidemic prevention and control, and the laws and regulations of the securities and futures market, the Company carried out the “Constitution Publicity Week” in 2020. In order to enhance the effectiveness of publicity, at the same time, combined with the current epidemic prevention and control needs, to avoid excessive cluster of personnel, the Company changed the form of publicity, and carried out publicity and learning activities through the combination of online and offline. All secondary units also took actions to actively respond and create a strong atmosphere of rule of law.



《反壟斷法》專題培訓  
Special training on Anti-monopoly Law

### 三. 公司管治(續)

### 3. Corporate Governance (continued)

### (三) 商業道德(續)

#### 3. 知識產權及商標

公司重視無形資產的價值及智力成果的保護，嚴格知識產權、商標的規範使用與管理工作。公司制定了《江西銅業股份有限公司知識產權管理辦法》《江西銅業股份有限公司商標使用管理辦法》《「江銅」牌商標許可及規範使用的指導意見》等管理辦法，積極保護自身合法權益，一方面持續推進公司的市場競爭優勢，另一方面有效防範客戶被侵權主體誤導的風險。同時，公司也尊重他人知識產權，在業務生產運營過程中避免侵犯其他公司或個人的任何版權。

隨著公司業務的擴展和研發技術的提升，公司產品也已逐步走出國門得到了國際認可，如「貴冶牌」、「江銅牌」以及恒邦股份的「HUMON-D牌」陰極銅為倫敦金屬交易所註冊產品，「江銅牌」黃金、白銀為倫敦金銀市場協會註冊產品。商標方面，「江銅」、「江銅集團」和「江銅圖形」三枚商標已拿到國際註冊證明。

#### 案例：認定「江銅」牌商標為馳名商標工作情況介紹

2020年4月，公司下發《關於推進品牌提升工作並加快推動江銅商標馬德里國際註冊及認定馳名商標事宜的通知》，2020年9月8日，在經過幾輪證據材料的收集與整理後，公司正式將馳名商標申報材料上報至國家知識產權局。2020年9月17日，國家知識產權局下發了《商標評審申請受理通知書》，申請馳名商標工作進入正式審理階段。截至2021年3月8日國知局官網顯示，商標申報已進入評審分案階段。

### (3) Ethical Business (continued)

#### 3. Intellectual property and trademark

The Company attaches importance to the protection of intangible assets value and intellectual achievements, and strictly uses and manages the intellectual property rights and trademarks. The Company has formulated management measures such as the Measures for the Management of Intellectual Property Rights of Jiangxi Copper Company Limited., 《江西銅業股份有限公司知識產權管理辦法》) the Measures for the Management of the Use of Trademarks of Jiangxi Copper Company Limited., 《江西銅業股份有限公司商標使用管理辦法》) and the Guidance on Licensing and Standardized Use of the Trademark of JCC 《「江銅」牌商標許可及規範使用的指導意見》) to actively protect its legal rights and interests, and continuously promote the Company's market competitive advantage on the one hand, and effectively prevents the risk that the client is misled by infringement on the other hand. At the same time, the Company also respects the intellectual property rights of others and avoids infringement of any copyright of other companies or individuals in business production and operation

With the expansion of the Company's business and the improvement of R & D technology, the products of the Company have gradually won international recognition, such as "Guiye", "JCC" and "HUMON-D" cathode copper of Humon Smelting are registered products of the London Metal Exchange, and "JCC" gold and silver are registered products in the London Bullion Market Association In terms of trademark. JCC, JCC Group and JCC Graphics trademarks have obtained the international registered certification.

#### Case: Introduction to the work of identifying JCC brand as a well-known trademark

In April 2020, the Company issued the notice on Promoting the Brand Promotion and Accelerating the Madrid International Registration and Recognition of Well-known Trademark of JCC. On 8 September 2020, after several rounds of collection and collation of evidence materials, the Company officially reported the well-known trademark application materials to China National Intellectual Property Administration. On 17 September 2020, China National Intellectual Property Administration issued the Notice of Acceptance of Trademark Review Application, and the application for well-known trademark entered the formal trial stage. As of 8 March 2021, the official website of China National Intellectual Property Administration showed that the trademark declaration has entered the stage of evaluation and division.



(三) 商業道德(續)

(3) Intellectual property and trademark (continued)

3. 知識產權及商標(續)

3. Intellectual property and trademark (continued)

**案例：「江銅」牌商標馬德里國際註冊  
情況介紹**

2020年4月，公司已向國家知識產權局提交「江銅」、「江銅集團」和「江銅圖形」三枚商標在國際商標尼斯分類第1、6、14類指定歐盟及英國的馬德里國際註冊申請。

2020年8月底，公司三枚商標獲得世界知識產權組織(WIPO)下發的國際註冊號，分別為「江銅」(第G1541341號)、「江銅集團」(第G1548547號)和「江銅圖形」(第G1542153號)。世界知識產權組織(WIPO)國際局已將商標申請分派到英國和歐盟的知識產權局進行進一步審查。

2021年2月8日隨著最後一枚註冊號為G1548547的「江銅集團」商標在歐盟成功授權保護，三枚江銅商標馬德里國際註冊在英國、歐盟已全部拿到註冊證明。

**Case: Introduction to the international registration of  
“JCC” Madrid International**

In April 2020, the Company submitted to China National Intellectual Property Administration an application for the international registration of JCC, JCC Group and JCC Graphics trademarks in the European Union and Madrid of the United Kingdom designated by categories 1, 6 and 14 of International Classification of Goods lawpanel.

As of the end of August 2020, three trademarks of the Company won the international registration number issued by the World Intellectual Property Organization (WIPO), namely “JCC” (No. G1541341), “JCC Group” (No. G1548547) and “JCC Graphics” (No. G1542153). The International Bureau of the World Intellectual Property Organization (WIPO) has assigned trademark applications to the intellectual property offices of the United Kingdom and the European Union for further examination.

On 8 February 2021, as the last trademark “JCC Group” with the registration number of G1548547 successfully authorized and protected in the European Union, the three JCC trademarks Madrid international registration in the United Kingdom and the European Union have all obtained the registered certification.



**江銅商標馬德里國際註冊  
Jiangxi Copper Trademark Madrid International Registration**

三. 公司管治(續)  
3. Corporate Governance (continued)

(三) 商業道德(續)

3. 知識產權及商標(續)

案例：江西名牌產品

2020年，公司貴冶牌陰極銅和工業硫酸通過江西省名牌戰略促進會複評，繼續保持「江西名牌產品」榮譽稱號。



江西銅業工業硫酸江西名牌證書  
Jiangxi Copper sulfuric acid  
Jiangxi famous brand certificate

(3) Ethical Business (continued)

3. Intellectual property and trademark (continued)

Case: Jiangxi famous brand product

In 2020, “Guiye” copper cathode and industrial sulfuric acid of the Company will pass the re-evaluation of Jiangxi famous brand strategy promotion association, and continue to maintain the honorary title of “Jiangxi famous brand product”.



江西銅業陰極銅江西名牌證書  
Jiangxi Copper cathode copper  
Jiangxi famous brand certificate

4. 依法納稅

公司嚴格遵守稅收相關法律法規，堅持誠信經營、依法納稅，為業務所在地提供稅收來源，助力所在地社會與經濟的繁榮發展。更多有關公司納稅方面信息請參考本公司2020年度報告中「財務報告」章節內容。

4. Pay taxes according to law

The Company strictly abides by the relevant laws and regulations of Taxation, adheres to the integrity of operation and tax payment according to law, provides tax sources for the business location, and helps the prosperity and development of the local society and economy. For more information about the Company's tax payment, please refer to the section of “Financial Report” in the Company's 2020 Annual Report.



#### (四) 風險管理與內控合規

公司通過建立健全與公司發展規模相適應的大風控體系，實現風險管理總體目標，並提供合理保證的過程與方法。風險管理和內部控制體系框架可以有效監控、評估及管理公司內外部相關風險，為公司的持續經營、績效表現、合規管理提供強力支持。

2020年，為進一步完善公司管理和經營過程中各個環節的風險管理體系、制度、流程等，培育良好的風險管理文化，有效提升公司風險管理與內部控制管理的水平，公司修訂《江西銅業股份有限公司風險管理與內部控制管理辦法(2020年版)》。

##### 1. 基本原則

公司風險管理和內部控制主要遵循以下五大原則：

##### 江西銅業風險管理和內部控制原則

##### 原則 Principles

全面性原則

Principle of comprehensiveness

重要性原則

Principle of importance

適用性原則

Principle of applicability

成本效益原則

Principle of cost effectiveness

持續改進原則

Principle of continuous improvement

#### (4) Risk management and internal control compliance

Through the establishment and improvement of the significant risk management system in line with the company's development scale, the Company achieves the overall goal of risk management, and provides the process and method of reasonable guarantee. The framework of risk management and internal control system can effectively monitor, evaluate and manage the internal and external risks of the Company, and provide strong support for the Company's continuous operation, performance and compliance management.

In 2020, in order to further improve the risk management system, system and process in all aspects of the Company's management and operation, cultivate a good risk management culture, and effectively improve the level of risk management and internal control management of the Company, the Company revised the Measures for Risk Management and Internal Control Management of Jiangxi Copper Company Limited. (2020 Edition).

##### 1. Basic principles

The Company's risk management and internal control mainly follow the following five principles:

##### Risk management and internal control principles of Jiangxi Copper

##### 主要內容 Main Contents

圍繞總體經營目標，貫穿於決策、執行和監督等各個環節，實現全過程控制和全員控制。

Centre its work around the overall business objectives, and throughout the decision-making, implementation and supervision of all aspects, in order to achieve the whole process control and full control.

在全面性原則的基礎上，重點關注中高風險領域和重要業務事項。

On the basis of the principle of comprehensiveness, focus on medium and high risk areas and important business matters.

與外部經營環境、公司發展的階段性特徵、業務範圍、競爭狀況、風控管理水平等內外部條件相適應，並隨著情況的變化及時加以調整。

Adapt to internal and external conditions such as external operating environment, stage characteristics of the Company's development, business scope, competitive situation, risk control management level, and adjust in time with the changes of the situation.

應當權衡實施成本和預期收益，以合理的成本實現有效的控制。

Balance the implementation cost and expected benefits to achieve effective control at a reasonable cost.

持續不斷地對各種變化保持敏感並做出恰當反應，使風險管理和內部控制得到持續改進。

Continuously keep sensitive to changes and make appropriate response, so as to continuously improve risk management and internal control.

### 三. 公司管治 (續)

#### 3. Corporate Governance (continued)

#### (四) 風險管理與內控合規(續)

##### 2. 風險管理架構

公司董事會及其授權機構、公司風險管理委員會、公司法務風控部及其他各部門和所屬單位，共同構成公司風險管理和內部控制組織體系，分別履行風險管理和內部控制相關的決策、執行、監督等職責權限，形成科學有效的職責分工和協作監督機制。

**公司董事會及其授權機構：**公司董事會及其授權機構是風險管理和內部控制的領導決策機構。

**公司管理層：**公司管理層負責全面統籌和領導公司風險管理和內部控制體系建設，並維護其有效運行。

**風險管理委員會：**公司管理層成立風險管理委員會作為負責公司風險管理和內部控制的專門工作機構。風險管理委員會由公司總經理擔任主任，公司協管副職領導擔任常務副主任，公司其他行政副職領導擔任副主任，委員包括公司各部門的主要負責人。

**法務風控部：**法務風控部是公司風險管理委員會的日常辦事機構，也是公司風險管理與內部控制的主管部門和大歸口部門，總部其他部門負責本專業風險管理與內部控制的小歸口。根據公司領導分工安排，執行法務風控。

#### (4) Risk management and internal control compliance (continued)

##### 2. Risk management framework

The Company's board of directors and its authorized institutions, the Company's risk management committee, the Company's legal risk management department and other departments and affiliated units jointly constitute the Company's risk management and internal control organization system, respectively perform the decision-making, implementation, supervision and other responsibilities and authorities related to risk management and internal control, and form a scientific and effective division of responsibilities and collaborative supervision mechanism.

**The Board and its authorized institutions of the Company:** the board of directors and its authorized institutions are the leading and decision-making institutions for risk management and internal control.

**The Company's management:** the Company management is responsible for overall planning and leading the company's risk management and internal control system construction, and maintaining its effective operation.

**Risk Management Committee:** the Company's management establishes a risk management committee as a specialized organization responsible for the Company's risk management and internal control. The general manager of the Company serves as the director of the risk management committee, the deputy leader of the Company's assistant management serves as the executive deputy director, and other deputy leaders of the Company's administration serve as the deputy director. The members include the main responsible persons of all departments of the Company.

**Legal risk management department:** the legal risk management department is the daily office of the Company's risk management committee. It is also the competent department and major centralized department of the Company's risk management and internal control. Other departments of the headquarters are responsible for the minor centralized department of the professional risk management and internal control. Implement legal risk management according to the division of labor arrangement of company leaders.



(四) 風險管理與內控合規(續)

2. 風險管理架構(續)

**公司總部各部門：**公司總部各部門是風險和內部控制管理的責任部門，負責建立健全本部門風險管理與內部控制子系統，並對部門內日常風險管理與內部控制工作進行監督檢查。

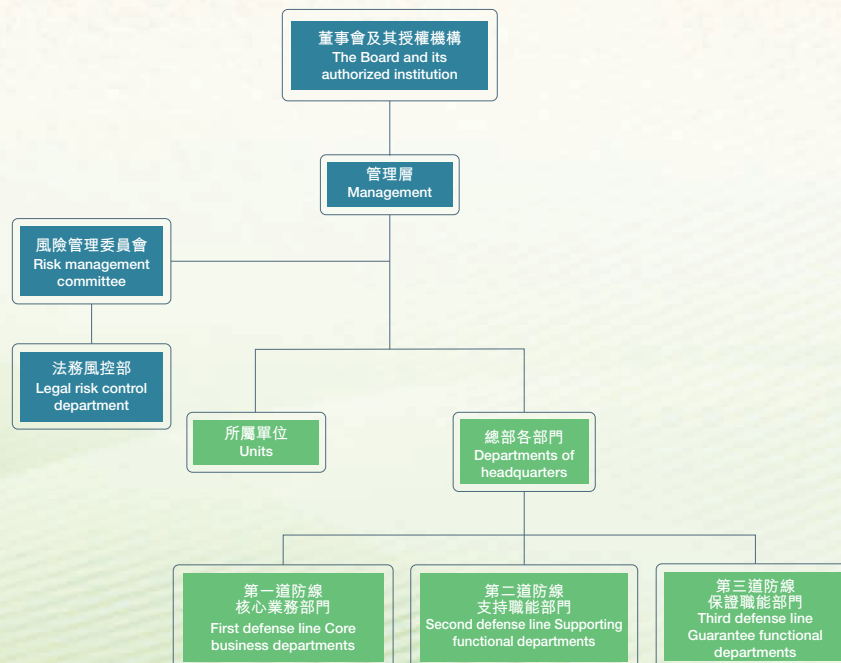
**所屬單位：**所屬單位是公司風險管理與內部控制管理的具體實施單位和責任主體。按要求設立或落實主管職責部門，配置專職或兼職人員，歸口管理本單位的風險管理與內部控制日常工作，接受本單位風險管理委員會和分管領導的領導，同時接受公司法務風控部的業務指導和監督。

(4) Risk management and internal control compliance (continued)

2. Risk management framework (continued)

**Each department of the Company's headquarters:** each department of the Company's headquarters is responsible for the risk and internal control management. It is responsible for establishing and improving the risk management and internal control subsystem of the department, and supervising and inspecting the daily risk management and internal control work of the department.

**Affiliated unit:** affiliated unit is the specific implementation unit and responsibility subject of the Company's risk management and internal control management. Set up or implement the competent department as required, allocate full-time or part-time personnel, centrally manage the daily work of risk management and internal control of the unit, accept the leadership of the risk management committee and the leader in charge of the unit, and accept the business guidance and supervision of the legal risk management department of the Company.



風險管理與內部控制組織架構  
Risk management and internal control organizational structure

### 三. 公司管治 (續)

#### 3. Corporate Governance (continued)

#### (四) 風險管理與內控合規 (續)

##### 3. 江銅大風控管理體系

以公司戰略為引領，以問題為導向，公司在遵循《企業內部控制基本規範》《企業內部控制配套指引》《中央企業全面風險管理指引》《中央企業合規管理指引(試行)》以及COSO(Committee of Sponsoring Organizations of the Treadway Commission)《企業風險管理框架》的基礎上，構建了多層次、全過程、全方位的「江銅大風控管理體系」，進一步升級完善了公司的內部控制管理體系。

公司的大風控體系建設，緊緊圍繞「一個體系、兩監管理、三道防線、四位一體、五大領域、六個完善」的目標開展，推動合規、法務、內控、風險管理協同運作，以建立科學的大風控體系，形成閉環的風險管理工作流程，進一步完善並形成覆蓋全公司的風險防範體系，並向源頭治理、防患於未然的更深層次挺進。

##### 一個體系：

- 建立科學的大風控體系，營造良好風控文化；
- 按照風險分級管控的原則，形成閉環的風險管理工作流程；
- 強化關鍵風險監控、風險績效考核以及問責等環節管理；
- 引入成熟先進的風險管理工具，有效進行風險管理。

#### (4) Risk management and internal control compliance (continued)

##### 3. Jiangxi Copper significant risk management system

Guided by the Company's strategy, problem-oriented, on the basis of following the Fundamental Norms on Corporate Internal Control, Supporting Guidelines on Corporate Internal Control, Guidelines on Comprehensive Risk Management for Central Enterprises, Guidelines on Compliance Management for Central Enterprises (Trial), COSO (Committee of Sponsoring Organizations of the Treadway Commission) and Enterprise Risk Management Framework, the company has built a multi-level, whole process and all-round "Jiangxi Copper significant risk management system", further upgraded and improved the Company's internal control management system.

The construction of the Company's significant risk management system is carried out closely around the goal of "one system, two supervisors management, three defense lines, four in one, five sectors and six improvements", and promotes the coordinated operation of compliance, legal affairs, internal control and risk management, to establish a scientific significant risk management system, form a closed-loop risk management workflow, further improve and form a risk prevention system covering the whole company, and advance to the deeper level of source control and prevention.

##### One system:

- Establish scientific significant risk management system and build a good risk management culture;
- According to the principle of hierarchical risk management and control, a closed-loop risk management workflow is formed;
- Strengthen the management of key risk monitoring, risk performance assessment and accountability;
- Introduce mature and advanced risk management tools to effectively manage risks



(四) 風險管理與內控合規(續)

3. 江銅大風控管理體系(續)

兩監管理：

- 完善並落實財務總監、法務總監的派駐制度，提高所屬單位財務監督和法務管理水平；
- 重要子公司應設置財務總監和法務總監。

三道防線：

- 第一道防線為核心業務部門，是風險的所有者，在日常運營活動中直接參與業務和管理風險；
- 第二道防線為支持職能部門，是風險的管理者，運用專業技能協助風險管理；
- 第三道防線為保證職能部門，是風險的監督者，通過獨立開展檢查、監督、監察、問責等工作，對風險管理全流程的有效性進行檢查和監督。

四位一體：

- 合規、法務、內控、風險管理協同運作，風控職能四位一體共同進行有效的風險管理；

(4) Risk management and internal control compliance (continued)

3. Jiangxi Copper significant risk management system (continued)

Two supervisors management:

- Improve and implement the appointment system of CFO and legal director, and improve the level of financial supervision and legal management of affiliated units;
- Important subsidiaries shall have chief financial officer and chief legal officer.

Three defense lines:

- The first line of defense is the core business department, which is the owner of risk, and is directly involved in the business and management risk in daily operation activities;
- The second line of defense is the supporting functional department, which is the risk manager and uses professional skills to assist in risk management;
- The third line of defense is guarantee functional department, which is the supervisor of risk. Through independent inspection, supervision, accountability and other work, it inspects and supervises the effectiveness of the whole process of risk management.

Four in one:

- Cooperate in compliance, legal affairs, internal control and risk management, and four in one risk control function to jointly carry out effective risk management;

### 三. 公司管治 (續)

#### 3. Corporate Governance (continued)

#### (四) 風險管理與內控合規(續)

##### 3. 江銅大風控管理體系(續)

###### 五個領域：

- 加強公司對投資、貿易、金融、技術創新和人力資源五大重點領域的風險管理；
- 制定專項風險應對方案，落實風險管理工作，切實有效地控制相關風險。

###### 六個完善：

- 完善風險管理相關制度建設；
- 完善公司高層和專業風控人員的風險示範作用；
- 完善風險績效評價指標；
- 完善風險文化培養機制；
- 完善風險管理文化宣傳活動；
- 完善和落實兩監制度。

同時，公司通過加強風控手段和工具的應用，完善考核和問責機制，增強投資、貿易、金融等重要領域的風險敞口管理，綜合提升公司的風險管理能力，在公司形成「人人知風險、人人懂風險、人人防風險」的良好風控環境。通過優化風險管理機制、加強重點風險應對以及風險管理工具的應用，形成充分的風險管理組織保障，提升風險管控能力，構建具有江銅特色的開放、高效的大風控管理系統。

#### (4) Risk management and internal control compliance (continued)

##### 3. Jiangxi Copper significant risk management system (continued)

###### Five sectors:

- Strengthen the Company's risk management in the five key sectors of investment, trade, finance, technological innovation and human resources;
- Formulate special risk response plan, implement risk management, and effectively control relevant risks.

###### Six improvements:

- Improve the risk management related system construction;
- Improve the risk demonstration role of senior management and professional risk control personnel of the Company;
- Improve the risk performance evaluation indicators;
- Improve the risk culture training mechanism;
- Improve risk management culture publicity activities;
- Improve and implement the two supervisors management system.

At the same time, by strengthening the application of risk control means and tools, improving the assessment and accountability mechanism, enhancing the risk exposure management in investment, trade, finance and other important fields, comprehensively improving the Company's risk management ability, to form a good risk control environment of "everyone knows risk, everyone understands risk, and everyone prevents risk" in the company. By optimizing the risk management mechanism, strengthening the application of key risk response and risk management tools to form sufficient risk management organization guarantee, improve the risk management and control ability, and build an open and efficient significant risk management system with the characteristics of Jiangxi Copper.



(四) 風險管理與內控合規(續)

3. 江銅大風控管理體系(續)

優化大風控體系  
Optimize the significant risk  
management system

重點風險應對  
Key risk response

其他專項風險應對和  
通用風險管理的應用  
Application of other special risk  
response and general risk  
management

(4) Risk management and internal control compliance  
(continued)

3. Jiangxi Copper significant risk management system  
(continued)

- 明確治理層和風險管理三道防線的組成及其風險管控職責；加強所屬單位兩監的風險監督職責；
- Make clear the composition of the three lines of defense of governance and risk management and risk control responsibilities; Strengthen the risk supervision responsibilities of the two supervisors of affiliated units;
- 建立第一道防線的業務風險管理，第二道防線的專業風險小歸口和大歸口管理，第三道防線的內審、檢查、巡察和問責的風險閉環管理；
- Establish business risk management of the first line of defense, small and large centralized management of professional risk of the second line of defense, and risk closed-loop management of internal audit, inspection, check and accountability of the third line of defense;
- 加強風險文化的建設和培育。
- Strengthen the construction and cultivation of risk culture.
- 基於風險管理存在的薄弱環節，加強重點風險的應對和防範，強化投資、貿易營銷和金融風險的應對措施；
- Based on the weak links of risk management, strengthen the response and prevention of key risks, and strengthen the countermeasures of investment, trade marketing and financial risks;
- 加強技術創新和人力資源風險管理，為公司風險管理和運營發展提供基本保障。
- Strengthen technological innovation and human resource risk management to provide basic guarantee for the Company's risk management and operation development.
- 通過建立完善的供應鏈管理機制和合規管理體系，加強供應鏈風險和合規風險應對；
- Through the establishment of a sound supply chain management mechanism and compliance management system, strengthen the supply chain risk and compliance risk response;
- 通過運用合理的風險管理工具，如引進保險工具、推動風控工作信息化和大數據化，提高風險管控效率。
- Through the use of reasonable risk management tools, such as the introduction of insurance tools, to promote the informatization and big data of risk control work, and improve the efficiency of risk management and control.

江西銅業大風控管理體系  
Jiangxi Copper significant risk management system

三. 公司管治 (續)  
3. Corporate Governance (continued)

(四) 風險管理與內控合規(續)

4. 組織風險培訓

**案例：舉辦「江銅集團法律、風控知識培訓班」**

2020年12月，為進一步提高風險防範能力，提高全公司法律、風控隊伍素質，公司舉辦了「江銅集團法律、風控知識培訓班」，公司機關及所屬各單位法務、風控人員共100餘人參加。培訓結合公司實際，通過理論教學、案例研討、互動座談相結合的方式，以《風險管理經驗和實際案例分享》為主題，重點講解了公司日常涉及的法律風控問題，進一步強化了員工的法務風控防範意識。



江西銅業風險控制培訓現場  
Jiangxi Copper risk control training site

(4) Risk management and internal control compliance (continued)

4. Organize risk training

**Case: hold “JCC legal and risk control knowledge training class”**

In December 2020, in order to further improve the risk prevention ability and improve the quality of the legal and risk control team of the Company, the Company held the “JCC legal and risk control knowledge training class”, which was attended by more than 100 legal and risk control personnel of the Company’s organs and affiliated units. Based on the actual situation of the Company, through the combination of theoretical teaching, case discussion and interactive discussion, the training focused on the company’s daily legal risk control issues with the theme of “risk management experience and actual case sharing”, and further strengthened the staff’s awareness of legal risk control prevention.



江西銅業風險控制培訓現場  
Jiangxi Copper risk control training site



(四) 風險管理與內控合規(續)

(4) Risk management and internal control compliance (continued)

4. 組織風險培訓(續)

4. Organize risk training (continued)

**案例：組織開展內控手冊修訂培訓**

2020年4月，公司下發《關於開展內控手冊修訂培訓的通知》，要求所屬單位、公司機關各職能部門參與內控手冊修訂相關人員就公司下發培訓視頻及課件進行自主學習，為內控手冊修訂工作奠定基礎。學習內容包括內部控制基礎理論知識、內控手冊修訂步驟、主要業務流程和特殊業務流程講解等。

**Case: organize and carry out training on revision of internal control manual**

In April 2020, the Company issued the Notice on Carrying Out the Training on the Revision of the Internal Control Manual, requiring the affiliated units and functional departments of the Company to participate in the revision of the internal control manual, and the relevant personnel to carry out autonomous learning on the training videos and courseware issued by the Company, so as to lay the foundation for the revision of the internal control manual. The learning contents include the basic theoretical knowledge of internal control, the revision steps of internal control manual, the explanation of main business processes and special business processes, etc.

(五) 信息安全管理

(V) Information security management

公司為進一步規範和加強公司信息管理工作，確保利益相關方(包括供應商、客戶、投資者等)的信息隱私安全，在便利信息資源合理利用方針的同時，遵循「統一領導、分級管理」、「業務工作誰主管，保護工作誰負責」的原則，開展信息安全管理工作。

In order to further standardize and strengthen the Company's information management, ensure the information privacy security of stakeholders (including suppliers, customers, investors, etc.). While facilitating the rational use of information resources, the Company carries out information security management in accordance with the principles of "unified leadership, hierarchical management" and "who is in charge of business work and who is responsible for protection work".

2020年，公司信息管理工作做到準確無誤，未發生文件丟失和信息泄密事件。

In 2020, the Company's information management work was accurate, and no document loss and information leakage incidents have occurred.

### 三. 公司管治 (續)

#### 3. Corporate Governance (continued)

#### (五) 信息安全管理(續)

同時，公司高度重視網絡與信息安全工作，定期發佈網絡安全工作報告，對全公司網絡、信息系統和網站的安全問題組織自查及匯報。公司保護網絡信息安全的舉措主要如下：

##### (1) 成立領導小組，進行規範管理

成立網絡安全領導小組，引導督促全公司員工安全上網、綠色上網、科學上網。

定期對網絡安全相關管理制度及應急預案從提高網絡安全性、人員操作規範性及處置流程有效性等方面進行修訂完善，以加強公司網絡安全管理的規範性。

##### (2) 出台應急預案，組織應急演練

公司出台一系列應急管理制度，並成立了專門的網絡信息安全應急演練領導小組。2020年，領導小組制定了《2020年度網絡安全應急演練具體實施方案》並定期組織舉行應急演練，以檢驗公司應急管理制度的有效性、網絡安全實操人員的技能水平及應急處理能力，確保網絡安全事件處置迅速、規範、閉環、精準，旨在進一步提升公司整體網絡安全水平。

#### (V) Information security management (continued)

At the same time, the Company attaches great importance to network and information security work, regularly issues network security work reports, and organizes self-inspection and report on the security problems of the Company's network, information system and website. The main measures taken by the Company to protect network information security are as follows:

##### (1) Set up a leading group for standardized management

Set up a network security leading group to guide and supervise the Company's employees to access the Internet safely, green and scientifically.

Regularly revise and improve the network security-related management system and emergency plan from the aspects of improving network security, standardization of personnel operation and effectiveness of disposal process, so as to strengthen the standardization of the Company's network security management.

##### (2) Formulate emergency plans and organize emergency drills

The Company has issued a series of emergency management systems and established a special network information security emergency drill leading group. In 2020, the leading group formulated the Specific Implementation Plan for 2020 Network Security Emergency Drill and regularly held emergency drills to test the effectiveness of the Company's emergency management system, the skill level and the emergency handling ability of network security practitioners, and to ensure the rapid, standardized, closed-loop and accurate handling of network security incidents to further improve the overall network security level of the Company.



(五) 信息安全管理(續)

(V) Information security management (continued)

(3) 加強宣傳教育，提高員工意識

每年開展網絡安全科普教育活動，提高公司全體員工的安全防範意識及能力。具體活動包括：組織全體幹部員工參與簽名牆活動；在協同辦公系統刊載網絡安全技術手冊；在公司公共大屏展示網絡安全標語；邀請專業廠商以網絡授課形式向公司全體專業技術人員進行網絡安全培訓；在「江銅E家親」企業公眾號上進行網絡安全問題有獎答題活動等。

(3) Strengthen publicity and education to improve staff awareness

Carry out network security science popularization education activities every year to improve the safety awareness and ability of all employees of the Company. Specific activities include: organizing all cadres and employees to participate in the signature wall activities; Publish network security technical manual in collaborative office system; Display network security slogans on the Company's public screen; Invite professional manufacturers to conduct network security training for all professional and technical personnel of the Company in the form of network teaching; Organized and conducted Network security prize answering activities through the "Jiangxi Copper E Family" (江西銅業E家親) WeChat corporate account



## 四. 可持續供應鏈

### IV. Sustainable Supply Chain

公司一直秉持「質量興企」的理念，堅守著高標準的質量管理體系，以客戶為中心，深化大質量管理體系建設，構建可持續供應鏈，並不斷加強自身科技研發創新能力，堅持鑄造匠心產品。

#### (一) 供應鏈管理

供應商是物資供應的源頭，也是公司持續健康發展的重要支持力量。尤其是在2020年的抗擊疫情中，廣大供應商重合同守信用，在物資供應、質量保障、供貨服務等方面給予了公司有力支持，保障了公司在非常時期下生產建設的平穩有序。2020年，公司在材料設備採購方面與超過1,000家供應商開展合作。

在供應鏈管理方面，公司一直以來嚴格把控供應商環境、社會及管治方面的行為規範，並致力於影響供應商以更高標準來響應環境、社會及管治責任，共同創造可持續的產業供應鏈。

##### 1. 供應商篩選與評價

公司建立了完善的供應商管理制度，秉持合法合規、誠信、公開、公平、公正的原則，在開展合作時除在性能、壽命、安全性、經濟性等方面對所有供應商進行常規評價外，也要求供應商能夠滿足環境、社會及管治方面的要求。

The Company has been adhering to the concept of “enterprise flourishes with quality”, and has been maintaining a high-standard quality management system, customer-centered, deepens the construction of the large quality management system, constructs the sustainable supply chain, and constantly strengthens its scientific and technological research and innovation capabilities, and keeps developing high-quality products.

#### (1) Supply chain management

Supplier is the source of material supply, and also an important support for the sustainable and healthy development of the Company. Especially in the fight against the epidemic in 2020, the majority of suppliers abided by the contract and kept their promise, and gave strong support to the Company in material supply, quality assurance, supply service and other aspects, so as to ensure the stable and orderly production and construction of the Company in an emergency period. By 2020, the Company has cooperated with more than 1,000 suppliers in material and equipment procurement.

In terms of supply chain management, the Company has been strictly controlling the code of conduct of its suppliers in environment, society and governance, and is committed to influencing suppliers to respond to environmental, social and governance responsibilities with higher standards, so as to jointly create a sustainable industrial supply chain.

##### 1. Supplier screening and evaluation

The Company has established a sound supplier management system, adhering to the principles of legality, compliance, integrity, openness, fairness and impartiality. When carrying out cooperation, in addition to routine evaluation of all suppliers in terms of performance, life, safety and economy, the Company also requires suppliers to meet the requirements of environment, society and governance.



(一) 供應鏈管理(續)

1. 供應商篩選與評價(續)

對涉及安全、環保物資等有許可證要求的，公司明確供應商在資質審查階段就必須提供生產經營許可證等相關資質證明材料；在供應商評價標準中，公司納入環境、社會及管治方面的指標對所有供應商的表現進行綜合評估，主要涉及指標如下：

- **環保責任**(如綠色發展水平、環保情況、產品節能降耗水平等)
- **社會責任**(如安全防護、勞動實踐、扶貧救災項目、社區服務等)
- **管治責任**(如證書資質、商業行為、管理能力、技術能力等)

與供應商合作期間，公司持續對供應商的環境、社會及管治行為進行監控，與第三方網絡公信平台(天眼查)合作對供應商的環保問題、商業行為、失信問題等進行實時重點監控，當供應商出現重大風險時及時採取措施中止或取消合作。

同時，為促進與合作夥伴繼續深化戰略互信、拓展合作領域、擴大合作成果，公司每年都會根據供應商上一年度的評價得分結果，對合格供應商進行A、B、C、D四個等級的評級，其中A級為最高等級，在同等價格條件下可優先中標。自2009年開始，公司堅持每年度給A級供應商授牌。

(1) Supply chain management (continued)

1. Supplier screening and evaluation (continued)

For the safety and environmental protection materials with license requirements, the Company makes it clear that suppliers must provide production and operation license and other relevant qualification certification materials at the qualification examination stage; In the supplier evaluation criteria, the Company includes environmental, social and governance indicators to comprehensively evaluate the performance of all suppliers. The main indicators are as follows:

- **Environmental protection responsibility** (such as green development level, environmental protection situation, product energy saving and consumption reduction level, etc.)
- **Social responsibility** (such as safety protection, labor practices, poverty alleviation and disaster relief projects, community services, etc.)
- **Governance responsibilities** (such as certificates and qualifications, business practices, management capabilities, technical capabilities, etc.)

During the cooperation with suppliers, the Company continuously monitors the environmental, social and governance behaviors of suppliers, cooperates with the third-party network public trust platform (tianyancha) to conduct real-time key monitoring on the environmental protection problems, business behaviors and trust-breaking problems of suppliers, and takes timely measures to stop or cancel the cooperation in case of major risks.

At the same time, in order to further deepen strategic mutual trust, expand cooperation fields and expand cooperation achievements with partners, the Company will grade qualified suppliers with four grades A, B, C and D according to the evaluation results of the suppliers in the previous year every year, among which A-level is the highest level, and can be preferred to win the bid under the same price. Since 2009, the Company insists on awarding A-level suppliers every year.

#### 四. 可持續供應鏈(續)

#### IV. Sustainable Supply Chain (continued)

##### (一) 供應鏈管理(續)

###### 1. 供應商篩選與評價(續)

此外，公司持續為供應商提供外部培訓，以更好為供應商發展提供支持，培訓形式包括一對一輔導、不定期舉辦供應商培訓會議、在電子商務採購平台發佈教程等。

##### (1) Supply chain management (continued)

###### 1. Supplier screening and evaluation (continued)

In addition, the Company continues to provide external training for suppliers to better support the development of suppliers. The training forms include one-to-one tutoring, irregular supplier training meetings, publishing tutorials on the e-commerce procurement platform, etc.



2020年11月，公司召開A級供應商、優秀供應商授牌大會，對上一年度的優秀和A級供應商授牌。

In November 2020, the Company held an awarding meeting for A-level suppliers and excellent suppliers to award the excellent and A-level suppliers of the previous year.

###### 2. 採購電子商務平台

為進一步加強供應商管理，公司建立了採購電子商務平台，利用互聯網、大數據、微架構、雲技術、電子簽章等先進的信息化、智能化技術，實現計劃管理、購銷管理、合同管理、供應商管理、物料管理、其他(倉儲管理、雲結算管理、計劃和合同跟蹤功能、採購數據大屏功能、電子招投標、京東網購和微信審批等)六大功能。同時，公司協助財務將結算模塊從ERP遷移至採購電子商務平台，大大提高了財務工作效率，推動業務和財務的無紙化；並協助財務部門將結算模塊與國家金稅系統對接，實現了發票在線驗證功能，避免了假票、錯票、廢票等情形發生。

###### 2. Procurement e-commerce platform

To further strengthen supplier management, the company has established the procurement e-commerce platform, which utilizes advanced information and intelligent technologies such as Internet, big data, micro architecture, cloud technology, electronic signature and so on, to realize six functions, including plan management, purchase and sales management, contract management, supplier management, material management, other functions (warehouse management, cloud settlement management, plan and contract tracking function, procurement data screen function, electronic bidding, JD online shopping and wechat approval, etc.). At the same time, the Company assisted the finance department to transfer the settlement module from ERP to the procurement e-commerce platform, which greatly improved the financial efficiency and promoted the paperless business and finance; And assisted the financial department to connect the settlement module with the National Golden Tax System, realized the online invoice verification function, and avoided the occurrence of fake, wrong and invalid tickets.



(一) 供應鏈管理(續)

2. 採購電子商務平台(續)

在供應商管理上，公司實行供應商從引進、使用到退出的全生命週期管理，並主要採用以下六個步驟來管理供應商的可持續風險：

1. 在供應商註冊階段，確定社會統一信用代碼為唯一識別碼。
2. 通過與第三方網絡公信平台(天眼查)合作，實現對供應商風險的實時監控，包括對擬引進供應商相關風險的查詢和供應同類物資的供應商幕後關係查詢等。
3. 在供應商使用過程中，對供應商各類風險、新聞輿論進行持續監控。
4. 對供應商信息及電子檔案進行管理，並對正在開發供應特殊產品供應商的資質有效期進行管理。
5. 實現供應商狀態管理，通過採購平台，實現臨時供應商有效期、暫停業務供應商使用時間、備選供應商有效期、供應商取消資格、供應商黑名單等供應商狀態的自動管理，改變過去由人工控制容易誤選的現象。
6. 正在開發供應商線上評價模塊，通過在採購電子商務平台上創建供應商產品使用及服務評價窗口，及時收集供應商產品使用過程中的信息，最終實現供應商在線即時評價。

(1) Supply chain management (continued)

2. Procurement e-commerce platform (continued)

In terms of supplier management, the company implements the whole life cycle management of suppliers from introduction, use to exit, and mainly adopts the following six steps to manage the sustainable risk of suppliers:

1. In the supplier registration stage, the social unified credit code is determined as the unique identification code.
2. Through the cooperation with the third-party network public trust platform (Tianyancha), the real-time monitoring of supplier risk is realized, including the query of the risk related to the supplier to be introduced and the query of the behind-the-scenes relationship of suppliers supplying similar materials.
3. In the use process of suppliers, continuously monitor all kinds of risks, news and public opinions of suppliers.
4. Manage supplier information and electronic files, and manage the qualification validity period of suppliers who are developing and supplying special products.
5. Achieve supplier status management. Through the procurement platform, achieve the automatic management of supplier status, such as the validity period of temporary suppliers, the use time of business suppliers suspension, the validity period of alternative suppliers, the disqualification of suppliers, and the blacklist of suppliers, so as to change the phenomenon that it is easy to be mistakenly selected by manual control in the past.
6. The online evaluation module of suppliers is being developed. By creating the evaluation window of suppliers' product use and service on the procurement e-commerce platform, the information of supplier products in the use process can be collected in time, and the online real-time evaluation of suppliers can be realized finally.

#### 四. 可持續供應鏈(續)

#### IV. Sustainable Supply Chain (continued)

##### (一) 供應鏈管理(續)

##### 3. 關注本土供應商

公司作為中國銅業的領軍企業，積極承擔相應的行業責任，支持本土供應商及當地社會經濟發展，適當為優秀本土供應商提供材料設備的「試驗」支持。2020年，公司材料設備採購中有97.23%的資金投入到中國本土供應商，53.89%的資金投入到江西省區域內的供應商，其中不乏一些中小型本土供應商。

2020年，全球新冠肺炎疫情對公司進口物資的供應造成了極大的影響，部分核心設備部件都存在「斷供」的可能性。為了保證物資的供應，公司除了加大設備部件本土化力度外，還與進口物資主機廠家溝通協商將產地由國外轉至國內，此舉不但保證了物資的正常供應，還解決了進口物資常年存在的諸如採購價格高、交貨週期長等痛點。

##### (1) Supply chain management (continued)

##### 3. Focus on local suppliers

As a leading enterprise in China's copper industry, the Company actively undertakes corresponding industry responsibilities, supports local suppliers and local social and economic development, and appropriately provides "test" support for excellent local suppliers of materials and equipment. In 2020, 97.23% of the Company's material and equipment procurement funds were invested in local suppliers in China, and 53.89% were invested in suppliers in Jiangxi Province, including some small and medium-sized local suppliers.

In 2020, the global COVID-19 epidemic had a great impact on the supply of imported materials of the Company, and some core equipment parts were in the possibility of "breaking supply". In order to ensure the supply of materials, the Company not only increased the localization of equipment parts, but also communicated with the host manufacturers of imported materials to transfer the origin from abroad to China. This not only ensured the normal supply of materials, but also solved the perennial problems of imported materials, such as high purchase price and long delivery cycle.



(一) 供應鏈管理(續)

4. 建立合作夥伴關係

截至2020年底，公司加入了中國企業聯合會、江西省企業聯合會和中國礦業聯合會等37家行業協會(學會)，並協助建立了礦業行業內的交流平台，充分發揮了龍頭企業的核心作用，推動礦業行業在環境、社會方面的持續改善，並帶動公司所在地區域經濟持續、健康發展。公司加入的協會例如：

- 中國有色金屬工業協會
- 有色重金屬短流程節能冶金產業技術創新戰略聯盟
- 江西省節能技術學會
- 江西省環境協會
- 中關村綠色礦山產業聯盟
- 有色安全學會
- 中國質量協會
- 全國有色金屬標準化技術委員會
- 江西省標準協會
- 江西省生產力協會
- 中國工業經濟聯合會
- 中國有色金屬學會
- 中國礦業聯合會
- 江西省工業經濟聯合會
- 江西省招標投標協會

(1) Supply chain management (continued)

4. Establish partnerships

By the end of 2020, the Company has joined 37 industry associations (societies) including China Enterprise Confederation, Jiangxi Enterprise Confederation and China Mining Association, and helped to establish an exchange platform in the mining industry, made full use of the core role of leading enterprises to promote the continuous improvement of environment and society in the mining industry, and promoted the sustainable and healthy development of the regional economy where the company is located. The Company has joined the following associations:

- China Nonferrous Metals Industry Association
- Technology innovation strategic alliance of nonferrous heavy metal short process energy saving metallurgical industry
- Jiangxi Energy Saving Technology Association
- Jiangxi Environmental Association
- Zhongguancun Green Mine Industry Alliance
- Nonferrous Metals safety Society
- China Association for Quality
- China National Nonferrous Metal Standardization Technology Commission
- Jiangxi Standards Association
- Jiangxi Productivity Association
- China Federation of Industrial Economics
- China Nonferrous Metals Industry Association
- China Mining Association
- Jiangxi Federation of Industrial Economy
- Jiangxi tendering and bidding Association

#### 四. 可持續供應鏈(續)

#### IV. Sustainable Supply Chain (continued)

##### (一) 供應鏈管理(續)

##### (1) Supply chain management (continued)

#### 4. 建立合作夥伴關係(續)

#### 4. Establish partnerships (continued)

##### 案例：有色企業採購論壇

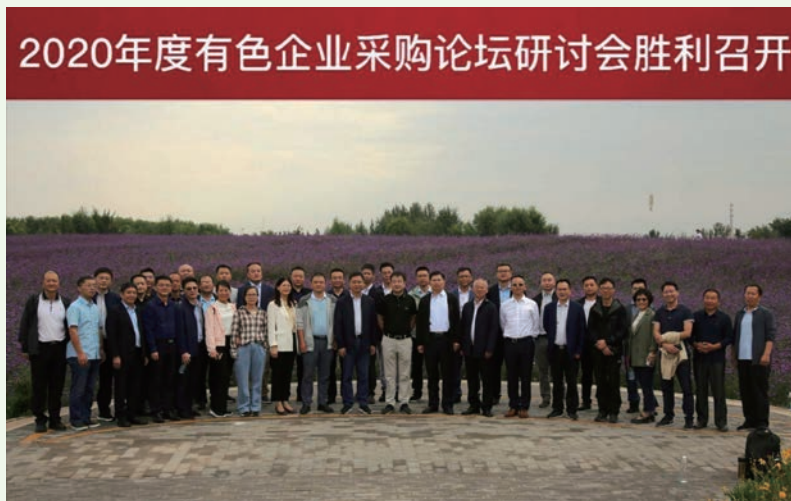
公司與四家同行業企業共同發起有色企業採購論壇，倡導「合作共贏」，旨在通過這一平台，分享採購經驗、共享供應商資源、相互提供應急指導和幫助。

2020年9月，2020年度有色企業採購論壇研討會順利召開，本次研討會增加了「創新共享」，意在通過交流研討，共同提高物資供應管控水平。研討會上，公司就「物資採購流程風險管理與信息化的融合」、「銅行業採購指數的探討與應用」、「供應商分級分類管理探討」、「按質計價採購應用與實踐」等4個課題與其他單位進行了交流，並學習了其他單位的先進經驗和做法。

##### Case: Nonferrous Enterprise Procurement Forum

The Company and four enterprises in the same industry jointly launched the nonferrous enterprise procurement forum, advocating "win-win cooperation", aiming to share procurement experience, share supplier resources, and provide emergency guidance and help to each other through this platform.

In September 2020, the 2020 annual nonferrous enterprises procurement forum seminar was successfully held. This seminar added "innovation sharing", which is intended to jointly improve the level of material supply management and control through exchange and discussion. At the seminar, the Company communicated with other units on four topics, including "integration of risk management and informatization of material procurement process", "discussion and application of copper industry procurement index", "discussion on supplier classification management", "application and practice of quality pricing in procurement", and learned advanced experience and practices of other units.



公司參加2020年度有色企業採購論壇研討會

The Company participated in the 2020 annual nonferrous enterprise procurement forum seminar



## (二) 產品責任

公司始終相信卓越的品牌要靠一流的質量來鑄就。自成立以來，公司踐行「質量興國、質量興省、質量興企」的基本理念，堅持「品質源於細節」的質量理念，積極主動強化質量管理，構建現代化質量管控體系，先後獲得全國「卓越管理組織」獎、全國質量工作先進集體、江西省首屆井岡質量獎、江西省計量工作先進單位等榮譽稱號。

公司已獲得ISO 9001質量管理體系認證，承諾並實施有效的質量管理體系，同時以打造高於行業標準的產品為目標，致力於為客戶提供優質可靠的產品。

## (II) Product liability

The Company always believes that excellent brand depends on first-class quality. Since its establishment, the Company has practiced the basic concept of “invigorating the country with quality, invigorating the province with quality and invigorating the enterprise with quality”, adhering to the quality concept of “quality comes from details”, actively strengthening quality management and building a modern quality control system. The Company has successively won the national “Excellent Management Organization” award, National Advanced Collective of Quality Work, Jiangxi First Jinggang Quality Award, Jiangxi Advanced Unit of Measurement Work and other honorary titles.

The Company has obtained ISO 9001 quality management system certification, and is committed to implementing an effective quality management system. At the same time, it is committed to providing customers with high-quality and reliable products with the goal of creating products higher than industry standards.



公司及下屬二級單位已獲得ISO 9001質量管理體系認證證書  
The Company and its subordinate secondary units have obtained ISO 9001 quality management system certification

公司榮獲江西省質量協會40週年「質量管理優秀企業」  
The Company won the title of “Excellent Quality Management Enterprise” for the 40th anniversary of Jiangxi Quality Association

### 1. 質量管理體系

為保障並持續提升公司各類產品和服務的質量水平，滿足利益相關方要求，公司嚴格遵守《中華人民共和國產品質量法》《中華人民共和國消費者權益保護法》等一切涉及產品和服務的健康與安全、廣告、標籤及私隱以及補救方法的相關法律法規，相關法律法規，建立一體化管理體系，覆蓋了陰極銅、工業硫酸、金錠、銀錠、三氧化二砷、硫精礦、鋅精礦、鉛精礦、鉬精礦、鉬酸鉍、銻酸鉍、硫酸銅、銅管、銅箔等產品的生產和服務。

### 1. Quality management system

In order to ensure and continuously improve the quality level of various products and services of the Company and meet the requirements of stakeholders, the Company strictly abides by the Product Quality Law of the People's Republic of China (《中華人民共和國產品質量法》) and the Protection of Consumer Rights and Interests Law of the People's Republic of China (《中華人民共和國消費者權益保護法》) and other relevant laws and regulations related to the health and safety of products and services, advertising, labeling and privacy and remedies, and has established an integrated management system, covering the production and services of cathode copper, industrial sulfuric acid, gold ingot, silver ingot, arsenic trioxide, sulfur concentrate, zinc concentrate, lead concentrate, molybdenum concentrate, ammonium molybdate, ammonium rhenate, copper sulfate, copper pipe, copper foil and other products.

#### 四. 可持續供應鏈(續)

#### IV. Sustainable Supply Chain (continued)

### (二) 產品責任(續)

#### 1. 質量管理體系(續)

2020年，公司下發《2020年一體化管理體系運行計劃》，深化「大質量」管理體系建設，固化已有改進成果，持續夯實各項基礎管理；啟動體系量化分級評價工作，引導公司一體化管理體系由符合型向績效改進型轉變，為公司實現高質量跨越式發展奠定管理基礎。截至2020年底，公司管理目標基本完成，表明所建立的管理體系是切實有效的。

### (II) Product liability (continued)

#### 1. Quality management system (continued)

In 2020, the Company issued the Operation Plan for Integrated Management System for 2020 and has deepened the construction of "high quality" management system, solidified the existing improvement achievements, and continuously consolidated the basic management; Started the quantitative and hierarchical evaluation of the system, guided the Company's integrated management system to transform from conformity type to performance improvement type, realized the high-quality leap-forward development, and laid the management foundation. By the end of 2020, the Company's management objectives have been basically completed, indicating that the established management system is effective.



公司質量管理體系  
Company quality management system



## (二) 產品責任(續)

### 2. 質量管理能力提升

為助推公司打造世界一流品牌，實現高質量發展，提高市場競爭力，公司不斷深入推進全面質量管理，激發員工參與企業管理、改進質量的積極性和創造性，建立了質量管理小組(QC小組)，並鼓勵員工自覺、紮實、健康、有效地開展QC小組活動，不斷提高產品、工程、服務質量。

同時，公司對QC小組制定了分層次教育計劃，各二級單位至少要培養一名QC小組活動診斷師。同時，每個QC小組成員都必須參加質量管理教育培訓，內容包括全面質量管理基本知識、GB/T19000-ISO9000族標準；企業的方針目標管理；QC小組活動程序、方法、常用的數理統計工具等。

2020年，按照公司培訓計劃的相關要求，同時結合體系運行的管理需要，公司制定了相應的一體化體系培訓計劃。

#### 公司一體化體系培訓計劃

序號 No.	培訓班名稱 Name of training course
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1	質量、安全、環境、能源體系內審員取證班 Quality, safety, environment and energy system internal auditor forensics class
2	測量過程控制與技術培訓 Measurement process control and technical training
3	對標攻關方法工具培訓 Benchmarking methods and tools training

## (II) Product liability (continued)

### 2. Improvement of quality management ability

In order to boost the Company to build a world-class brand, realize high-quality development and improve market competitiveness, the Company continuously promotes total quality management, stimulates the enthusiasm and creativity of employees to participate in enterprise management and improve quality, establishes quality management group (QC group), and encourages employees to carry out QC group activities consciously, solidly, healthily and effectively, so as to continuously improve the quality of products, engineering and services.

At the same time, the Company has formulated a hierarchical education plan for the QC group, and each secondary unit should train at least one QC group activity diagnostician. At the same time, each QC group member must participate in quality management education and training, including the basic knowledge of total quality management and GB/T19000-ISO9000 family standards; Enterprise policy and objective management; QC group activity procedures, methods, commonly used mathematical statistics tools, etc.

In 2020, according to the relevant requirements of the Company's training plan and the management needs of system operation, the Company has formulated the corresponding integrated system training plan.

#### Integration system training plan of the Company

培訓時間 Training time (時長：小時) (duration: hours)
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40
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16
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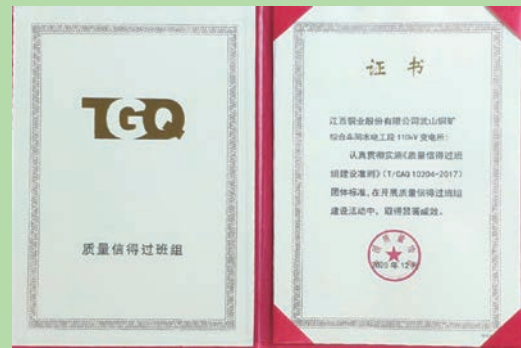
18
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#### IV. Sustainable Supply Chain (continued)

## (II) Product liability (continued)

## 2. Improvement of quality management ability (continued)

Under the effective training plan, the Company's QC group has achieved remarkable results. In 2020, among the QC groups established by the Company, 1 won the honor of 2020 National Excellent Quality Management Group, 1 won the honor of 2020 National Quality Trustworthy Group, 8 won the honor of 2020 Excellent Quality Management Group in Nonferrous Metal Industry, 24 won the honor of 2020 Excellent Quality Management Group of Jiangxi Province, and 33 won the honor of 2020 Excellent Quality Management Group of the Company.



公司QC小組榮獲全國質量信得過班組榮譽

The QC group of the Company won the honor of National Quality Trustworthy Group



#### 四. 可持續供應鏈(續) IV. Sustainable Supply Chain (continued)

##### 案例：開展「質量月」活動

2020年9月，公司開展了以「建設質量強國決勝全面小康」為主題的「質量月」活動。

##### 先進理念，從質量管理理論學習討論及答題展開

公司各二級單位均購買新版《全面質量管理》發放到相應崗位，組織學習討論。主要質量管理崗位制訂學習計劃，將全面質量管理理論學習常態化。經過半個多月的基礎質量管理理論學習後，組織公司員工參加質量月質量管理知識答題，公司共4,445人參加線上答題，1,012人獲得100分好成績，90分以上2,368人。

##### 採取多種形式，廣泛宣傳，增強全員質量意識

充分利用現有的宣傳媒介開展宣傳活動。利用局域網、閉路電視、簡報、標語和版畫等宣傳手段，採取知識專題講座和報刊專欄等多種形式，普及質量知識，加大宣傳聲勢。

##### Case: conduct "Quality Month" activity

In September 2020, the company conducted the "Quality Month" activity with the theme of "Building a Quality Country and Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects".

##### The advanced concept starts from the study, discussion and answer of quality management theory

All secondary units of the Company purchased the new version of Total Quality Management and distributed them to corresponding posts to organize study and discussion. The main quality management positions made learning plans to normalize the learning of total quality management theory. After more than half a month's study of basic quality management theory, the Company organized employees to participate in the quality month quality management knowledge answering. A total of 4,445 employees participated in the online answering, 1,012 employees got 100 points and 2,368 employees got more than 90 points.

##### Adopt a variety of forms, extensive publicity to enhance the quality awareness of all staff

Make full use of the existing media to carry out publicity activities. Local area network, closed-circuit television, bulletin boards, slogans, print and other publicity means, as well as knowledge lectures and newspaper columns are used to popularize quality knowledge and increase publicity momentum. Form: popularize quality knowledge and increase publicity momentum.



四. 可持續供應鏈(續)  
IV. Sustainable Supply Chain (continued)



公司多種形式宣傳質量管理

popularize quality knowledge and increase publicity momentum

**結合自身實際，突出重點，開展專題活動**

公司各二級單位分別結合自身業務情況和實際特點，開展了不同主題、形式的質量月專題活動，積極推進質量管理水平的提升。

**The Company publicizes quality management in various forms Combined with our own realities, highlight the key points, Conduct special activities**

Each secondary unit of the Company has carried out quality month special activities with different themes and forms in combination with its own business situation and actual characteristics to actively promote the improvement of quality management level.



公司所屬二級單位開展質量月專題活動

Secondary units of the Company conduct quality month special activities



## (二) 產品責任(續)

### 3. 質量投訴處理機制

公司把客戶的利益、企業的信譽作為公司長久發展的支撐，對品質管理的重視始終如一。為了處理計質量異議，公司成立了原料和產品計質量爭議處理委員會；建立了以公司總部為中心，輻射華南、華東、西南和華北的全國營銷網絡體系；建立質量管理月報制度；同時公司始終堅持每年召開用戶座談會，並委託權威機構進行第三方用戶滿意度評價調查，以獲取產品質量改進信息。

為規範客戶投訴的處理程序，完善投訴應對機制，提高投訴處理工作的時效性，有效提升公司產品質量，助推公司高質量跨越式發展，公司制定了《江西銅業產品計量質量投訴處置管理辦法》，確保客戶對產品的使用體驗能及時反饋至各生產單位。

## (II) Product liability (continued)

### 3. Quality complaint handling mechanism

The Company takes the interests of customers and the reputation of the enterprise as the support for the long-term development of the Company, and attaches great importance to quality management consistently. In order to deal with the quality dispute, the Company established a dispute settlement Committee for the quality of raw materials and products; Established a national marketing network system with the headquarters as the center and radiating South China, East China, southwest and North China; Established quality management monthly report system; At the same time, the company always insists on holding user forum every year, and entrusts an authoritative organization to conduct a third-party user satisfaction evaluation survey, so as to obtain product quality improvement information.

In order to standardize the handling procedures of customer complaints, improve the complaint response mechanism, improve the timeliness of complaint handling work, effectively improve the Company's product quality, and boost the Company's high-quality leap-forward development, the Company has formulated the "Administrative Measures for Handling Complaints about Product Measurement and Quality of Jiangxi Copper" to ensure that customers' experience on the use of products can be timely fed back to the production units.



公司投訴處理流程  
Complaint handling process of the Company

對銷售過程中出現的客戶投訴，公司積極回應客戶問題，第一時間根據客戶書面異議填寫《產品投訴處理單》，提交至公司計劃與生產部審核，由公司計劃與生產部對各單位提出的建議方案進行審核或召開會議審議，再由貿易事業部或各自營單位根據《產品投訴處理單》的處理意見第一時間反饋至客戶，由客戶認同處理意見後按此執行。處理意見結果一般為退貨、換貨或降價銷售。

For customer complaints in the sales process, the company actively responds to customer questions, fills in the Product Complaint Handling Form according to the customer's written objection as soon as possible, and submits to the planning and production department of the Company for review, and the planning and production department of the Company shall review or hold a meeting to review the proposals put forward by each unit, and then the trade business department or their respective business units shall immediately feed back to the customers according to the handling opinions of the product complaint handling sheet, and after the customer agrees with the handling opinions, it shall be implemented accordingly. The result of handling opinions is generally return, exchange or sale at reduced price.

#### 四. 可持續供應鏈(續)

#### IV. Sustainable Supply Chain (continued)

### (二) 產品責任(續)

#### 4. 顧客滿意度調查

2020年，公司委託第三方對公司主營產品顧客進行顧客滿意度調查，調查採用信函、傳真、電子郵件和電話問卷方式，調查的主題包括顧客期望、顧客滿意度、顧客忠誠度、感知質量、感知價值、顧客抱怨率、服務質量特徵、不滿意度狀況、改進點分析等方面內容。

總體來看，公司品牌形象指數、顧客質量預期值、感知產品質量、感知服務質量等方面均在90分以上，屬於很高水平。公司產品陰極銅、白銀、工業硫酸、硫酸銅、銅桿線的客戶滿意度分別為94.67、93.64、92.95、90.63、89.0，均為用戶滿意產品。

### (三) 科技創新

公司持續推進以科技創新為核心的全面創新，強化自主創新能力，深化產學研用合作，重點圍繞銅加工、新材料、稀貴稀散金屬等方面開展專項攻關，為公司高質量發展創造條件。

圍繞中長期發展戰略，結合生產經營實際，公司在「採礦、選礦、冶煉、銅加工、新材料、安全環保」等方面開展一系列研究開發項目，重點研究銅及銅合金新產品等新技術，持續提高礦山和冶煉智能化水平，強化安全環保防治水平，促進降本增效。2020年，公司啟動產研項目(包含結項和階段性成果)111個，其中，與綠色相關的研發創新項目19個。截至2020年底，公司累計獲得授權專利95項，其中發明專利9項。

### (II) Product liability (continued)

#### 4. Customer satisfaction survey

In 2020, the company entrusted a third party to conduct customer satisfaction survey on its main products. The survey was conducted by letter, fax, e-mail and telephone, and the subjects of the survey include customer expectation, customer satisfaction, customer loyalty, perceived quality, perceived value, customer complaint rate, service quality characteristics, dissatisfaction status, improvement point analysis, etc.

Overall, the company's brand image index, customer quality expectations, perceived product quality, perceived service quality and other aspects are all above 90 points, belonging to a very high level. The customer satisfaction of cathode copper, silver, industrial sulfuric acid, copper sulfate and copper rod and wire are 94.67, 93.64, 92.95, 90.63 and 89.0 respectively.

### (III) Technological innovation

The Company continues to promote the comprehensive innovation with scientific and technological innovation as the core, strengthens the ability of independent innovation, deepens the cooperation between industry, University, research and application, and focuses on copper processing, new materials, rare, precious and scattered metals, so as to create conditions for the Company's high-quality development.

Focusing on the medium and long-term development strategy, combined with the actual production and operation, the Company has carried out a series of research and development projects in the aspects of "mining, mineral processing, smelting, copper processing, new materials, safety and environmental protection", focusing on new technologies such as new copper and copper alloy products, continuously improving the intelligent level of mining and smelting, strengthening the prevention and control level of safety and environmental protection, and promoting cost reduction and efficiency. In 2020, the Company has launched 111 production and research projects (including final projects and phased achievements), including 19 green related R & D and innovation projects. By the end of 2020, the Company has obtained 95 authorized patents, including 9 invention patents.



四. 可持續供應鏈(續)  
IV. Sustainable Supply Chain (continued)

(三) 科技創新(續)

隨著5G配套銅箔、大螺旋角內螺紋銅管、瘦高齒內螺紋銅管等一批高端產品的研發成功，以及貴冶智能工廠、城銅智慧礦山建設的加速推進，標誌著公司即將進入一個信息化水平更高、自動化程度更高、工業化效率更高的發展新階段。下一步，公司將緊緊圍繞實施人才強企戰略，不斷加大科技投入，讓人才與科技轉化為生產力，助力公司高質量發展。

公司近三年研發投入

	2020	2019	2018
年度研發投入金額(單位：億元)	39.59	35.96	29.01
Annual R & D investment (unit: 100 million yuan)	39.59	35.96	29.01

公司2020年所獲省部級科學技術獎勵

(III) Technological innovation (continued)

With the successful R&D of 5G supporting copper foil, large spiral angle internal thread copper tube, thin and high tooth internal thread copper tube and other high-end products, as well as the acceleration of the construction of Guiye intelligent plant and Chengtong intelligent mine, the Company is about to enter a new stage of development with higher information level, higher automation degree and higher industrialization efficiency. In the next step, the Company will closely focus on the implementation of the strategy of strengthening the enterprise with talents, continuously increase investment in science and technology, so as to transform talents and technology into productivity and help the Company's high-quality development.

R & D investment of the Company in recent three years

The Company won provincial and ministerial level science and technology awards in 2020

項目名稱 Name of project	獲獎類別 Category of awards	獎勵等級 Reward level
新一代大型和超大型680立方米浮選裝備研發及應用 Research and development and application of new generation of large and super large 680 m3 flotation equipment	中國有色金屬協會科技進步獎 Science and Technology Progress Award of China Nonferrous Metals Association	一等獎 First prize
重金屬礦業廢棄地生態修復的直接植被技術及應用 Direct vegetation technology and its application in ecological restoration of heavy metal mining wasteland	廣東省科技進步獎 Guangdong Science and Technology Progress Award	一等獎 First prize
銅陽極泥伴生稀貴金屬協同綠色提取關鍵技術及產業化 Key technology and industrialization of collaborative green extraction of rare and precious metals associated with copper anode slime	江西省科技進步獎 Jiangxi Science and Technology Progress Award	一等獎 First prize
大螺旋角無縫內螺紋銅管的研究與開發 Research and development of seamless internal thread copper pipe with large helix angle	江西省科技進步獎 Jiangxi Science and Technology Progress Award	二等獎 Second prize
電解銅箔綠色高性能化表面處理關鍵技術集成創新及產業應用 Integrated innovation and industrial application of key technologies of green and high performance surface treatment of electrolytic copper foil	江西省科技進步獎 Jiangxi Science and Technology Progress Award	三等獎 Third prize
磨礦分級過程優化與控制及其工業應用 Optimization and control of grinding classification process and its industrial application	江西省科技進步獎 Jiangxi Science and Technology Progress Award	三等獎 Third prize

四. 可持續供應鏈(續)  
IV. Sustainable Supply Chain (continued)

(三) 科技創新(續)

(III) Technological innovation (continued)





(三) 科技創新(續)

(III) Technological innovation (continued)

**案例：「新一代大型和超大型680立方米浮選裝備研發及應用」項目**

公司投入的「新一代大型和超大型680立方米浮選裝備研發及應用」項目研發出首套全球最大的680立方米超大型浮選機及相關關鍵技術，選廠綜合回收率平均提高了1.48個百分點，對全球浮選裝備技術的發展具有持續引領作用。該項目獲得了2020年度中國有色金屬工業科學技術獎一等獎。

當前該項目的轉化試驗系統已建成投用。為提高系統綜合效益，公司進一步開展成果轉化延深應用試驗—替代兩槽130m<sup>3</sup>浮選機並流程優化改造，在短流程驗證試驗中，試驗期間一期選銅綜合回收率85.79%，較二期提高1.10個百分點。

**Case: “Research and Development and Application of New Generation of Large and Super Large 680 m<sup>3</sup> Flotation Equipment” Project**

The project of “Research and development and application of new generation of large and super large 680 m<sup>3</sup> flotation equipment” invested by the Company has developed the first set of the world's largest 680 m<sup>3</sup> super large flotation machine and related key technologies, and the comprehensive recovery rate of the concentrator increased by 1.48 percentage points on average, playing a continuous leading role in the development of global flotation equipment technology. The project won the first prize of 2020 China Nonferrous Metals Industry Science and Technology Award.

At present, the transformation test system of the project has been completed and put into use. In order to improve the comprehensive benefits of the system, the Company has further carried out the application test of achievement transformation and extension – replacing the two slots 130m<sup>3</sup> flotation machine and optimizing the process. In the short process verification test, the comprehensive recovery rate of copper in the first stage during the test was 85.79%, which was 1.10 percentage points higher than that in the second stage.

## 五. 員工和勞動文化

### V. Employee and Labor Culture

人才是企業實現持續發展、創造美好未來的基石，公司始終提倡以人為本的人力資源戰略，積極維護和保障全體員工的各項權益，努力促進員工的福祉和多元化，為員工營造安全健康的工作環境以及公平公正的職業成長環境。

#### (一) 人權

公司高度重視人權問題，尊重和保障員工人權和人格。公司遵循《中華人民共和國民法典》《中華人民共和國勞動合同法》《中華人民共和國勞動合同法實施條例》《禁止使用童工規定》《中華人民共和國未成年人保護法》等現行關於人權保護和勞工準則的法律法規，制定了《江西銅業集團公司(江西銅業股份有限公司)規範用工方案》《江西銅業集團(股份)公司勞動合同管理規定》等政策，明確禁止僱傭童工及強制勞動，保障公司用工符合法律規定。

在國際層面，公司一貫遵守國際人權公約，如《經濟、社會和文化權利國際公約》《消除就業和職業歧視公約》等，在用工時、禁止僱傭童工及強制勞動等方面嚴守東道國的相關法律、法規和制度。公司尊重員工的宗教信仰、文化背景、性別、名族、國籍等，平等對待境外勞工，抵制一切形式的強迫和強制性勞動。在項目規劃期與當地社區、部落、利益相關者和特殊利益團體舉行利益相關方參與方案和公共諮詢會議，充分考慮項目建設對於社區的負面影響，並積極採取緩解措施消除影響，如提供必要的商品和供水和商業服務基礎設施，促進當地經濟增長和就業提升。

Talent is the cornerstone for enterprises to achieve sustainable development and create a better future. The Company has always advocated the human resources strategy of people focused, actively maintained and protected the rights and interests of all employees, strived to promote the well-being and diversification of employees, and created a safe and healthy working environment and a fair and just career growth environment for employees.

#### (I) Human Rights

The Company attaches great importance to human rights issues, respects and protects the human rights and personality of employees. The Company complies with the existing laws and regulations on human rights protection and labor standards, such as the Civil Code of the People's Republic of China, the Labor Contract Law of the People's Republic of China, the Regulations on the Prohibition of Using Child Labour, the Law of the PRC on Protection of Minors, the Implementation Rules on the Labor Contract Law of the People's Republic of China, the Regulations on the Prohibition of the Use of Child Labor and the Law on the Protection of Minors of the People's Republic of China, and has formulated the Standardized Employment Plan of Jiangxi Copper Corporation (Jiangxi Copper Company Limited), the Labor Contract Management Regulations of Jiangxi Copper Company Limited and other policies to clearly prohibit the employment of child labor and forced labor and ensure the compliance of employment with laws and regulations.

At the international level, the Company has always abided by international human rights conventions, such as the International Covenant on Economic, Social and Cultural Rights and the Convention concerning Discrimination in respect of Employment and Occupation, etc., and strictly abided by the relevant laws, regulations and systems of the host country for employment and the prohibition of employment of child labor and forced labor. The Company respects the religious belief, cultural background, gender, ethnic group, nationality, etc. of its employees, treats overseas workers equally, and resists all forms of forced and compulsory labor. During the project planning period, the Company held stakeholder participation programs and public consultation meetings with local communities, tribes, stakeholders and special interest groups, fully considered the negative impact of project construction on the community, and actively took mitigation measures to eliminate the impact, such as providing necessary commodities, water supply and commercial service infrastructure, and promoting local economic growth and employment promotion.



五. 員工和勞動文化(續)  
V. Employee and Labor Culture (continued)

(二) 多元性與包容性

公司公平對待職工，致力促進性別平等，尊重女性員工和少數民族員工權益，杜絕性別、民族、年齡、宗教、國籍等各種歧視，進行合規、公平的僱傭。2020年，公司新進員工1,418人，截至12月31日，員工總數達24,831人，公司員工勞動合同簽署率及社會保險覆蓋率均為100%，消除童工及強制勞動隱患。

(II) Diversity and Inclusiveness

The Company treats its employees fairly, strives to promote gender equality, respects the rights and interests of female employees and ethnic minority employees, eliminates all kinds of discrimination such as gender, ethnicity, age, religion and nationality, and conducts compliant and fair employment. In 2020, there were 1,418 new employees in the Company, and as of December 31, the total number of employees reached 24,831. The labor contract signing rate and social insurance coverage rate of employees in the Company are both 100%, eliminating the potential risks of child labor and forced labor.

江西銅業人員結構

Employee structure of Jiangxi Copper

指標 Index		人數 Total number of people
員工人數合計(人) Total number of employees (person)		24,831
性別(人) Gender (person)	男 Male	21,133
	女 Female	3,698
僱傭類型(人) Employment Type(person)	兼職 Part-time	0
	全職 Full-time	24,831
年齡(人) Age (person)	25歲及以下 25 and below	1,531
	26歲至35歲 26-35	5,483
	36歲至45歲 36-45	5,075
	46歲至55歲 46-55	9,208
	56歲及以上 56 and above	3,534
學歷(人) Education background (person)	博士研究生 Doctoral degree	36
	碩士研究生 Master's degree	399
	大學本科 Bachelor's degree	4,276
	大學專科 Diploma	4,835
	中專 Technical secondary school	1,535
	高中及以下 High school and below	13,750
地區劃分(人) Division by region (person)	江西省內 Within Jiangxi Province	18,049
	江西省外 Outside Jiangxi Province	6,782

五. 員工和勞動文化(續)  
V. Employee and Labor Culture (continued)

(三) 人才管理與培養

1. 人才管理

(1) 組建人才工作領導小組

公司始終把人才工作擺在突出位置，建立了由公司主要領導任組長的人才工作領導小組，並明確領導小組的責任清單和工作規程，形成了緊密配合、協同高效的人才運行機制。

2020年，公司繼續強化人才工作基礎提升和責任落實，在全面分析公司人才隊伍現狀、主要做法和經驗體會基礎上，提出了新時代加強和改進人才工作的目標任務，加強了人才工作頂層設計和系統謀劃。各級部門依據《關於印發〈江銅黨委人才工作領導小組責任清單及工作規程〉的通知》，持續貫徹執行公司人才制度，落實推動人才管理工作。

• 責任機制

公司人才工作領導小組

Talent work leading group of the Company

公司人才工作領導小組辦公室

Office of the Leading Group for Talent Work of the Company

公司黨委組織部

Party Committee Organizational Department of the Company

(III) Talent management and training

1. Talent management

(1) Set up a leading group for talents

The Company has always placed the work relevant with talents in a prominent position, established a talent work leading group headed by the Company's main leaders, and defined the responsibility list and work rules of the leading group, forming a close cooperation, collaborative and efficient talent operation mechanism.

In 2020, the Company continued to enhance the foundation of talent work and implement its responsibilities. Based on a comprehensive analysis of the current situation, main practices and experience of the Company's talent team, the Company put forward the objectives and tasks of strengthening and improving talent work in the new era, and strengthened the top-level design and system planning of talent work. Departments at all levels continue to implement the Company's talent system and promote talent management in accordance with the Notice on Printing and Distributing the Responsibility List and Work Rules of the Leading Group for Talent Work of Party Committee of JCC.

• Responsibility mechanism

對公司人才工作進行宏觀指導，綜合協調，督查檢查，研究和部署人才中長期規劃和重點工作，推進人才工作體制機制創新等。

Macro guidance, comprehensive coordination, supervision and inspection, research and deployment of medium-and long-term planning and key work of talents, and promotion of innovation of system and mechanism of talent work.

負責人才工作領導小組日常工作，制定人才工作計劃和年度工作要點，組織責任清單檢查考核等。

Responsible for the daily work of the talent work leading group, formulate the talent work plan and annual work points, organize the inspection and assessment of the responsibility list, etc.

將人才工作納入公司建設考評和直管幹部年度考核和述職內容；協調統籌制定和實施人才工作規劃，做好高層次人才聯繫服務工作等。

Incorporating talent work into the Company's construction evaluation and the annual assessment and debriefing content of the directly-managed cadres; Coordinating the formulation and implementation of talent work planning, and doing a good job in high-level talent contact service.



### (三) 人才管理與培養(續)

#### 1. 人才管理(續)

##### (1) 組建人才工作領導小組(續)

- 責任機制(續)

公司人力資源部

Human resources  
department of the  
Company

公司科技部

Science and  
technology  
department of the  
Company

公司工會

Labor union of the  
Company

技術研究院

Technical research  
institute

其他相關部門

Other related  
departments

### (III) Talent management and training (Continued)

#### 1. Talent management (Continued)

##### (1) Set up a leading group for talents (Continued)

- Responsibility mechanism (Continued)

牽頭建立健全人才引進、培養、評價、流動、使用、激勵和服務保障機制；負責做好全國技術能手等國家、省級各類人才工程的推薦申報工作；牽頭抓好專業技術人才隊伍建設和技能人才隊伍建設等。

Taking the lead in establishing and perfecting the mechanism of talent introduction, training, evaluation, mobility, use, incentive and service guarantee; taking the responsibility for the recommendation and declaration of national and provincial talent projects, such as national technical experts; taking the lead in the construction of professional and technical personnel and skilled personnel.

建立完善支持專業技術人員技術成果轉化激勵、獎勵措施；編製科研計劃，支持優秀專業技術人員開展項目開發、項目推廣等工作；鼓勵指導科技人員申請專利。

Establishing and improving rewards and incentives to support the transformation of technical achievements of professional and technical personnel; preparing scientific research plans and support outstanding professional and technical personnel to carry out project development and project promotion; encourage and guide scientific and technical personnel to apply for patents.

組織和指導「勞模(工匠)創新工作室」創建、命名和表彰；開展職工自主管理、合理化建議等群眾性技術創新活動；協助培養高技能人才，組織開展崗位練兵、技能比賽等。

Organizing and guiding the creation, naming and commendation of "model worker (craftsman) innovation studio"; carrying out mass technological innovation activities such as self-management of employees and rationalization proposals; assist in training highly skilled personnel, and organizing job training and skill competition.

負責高端人才平台建設和統籌管理工作；做好高層次人才或人才團隊的引進、服務和管理工作。

Responsible for the construction and overall management of high-end talent platform; do a good job in the introduction, service and management of high-level talents or talent teams.

對重點工作或重要事項涉及其他部門或單位的，相關方面應及時協調溝通，研究佈置相關工作，形成工作合力。

For key work or important matters involving other departments or units, relevant parties should coordinate and communicate in time, study and arrange related work, and form joint efforts.

五. 員工和勞動文化(續)  
V. Employee and Labor Culture (continued)

(三) 人才管理與培養(續)

1. 人才管理(續)

(1) 組建人才工作領導小組(續)

- 工作規程
- 抓好年度工作部署  
Grasping the annual work deployment
- 年中強化督促檢查  
Strengthening supervision and inspection in the middle of the year
- 年底開展考核評估  
Conducting assessment and evaluation at the end of the year
- 平常加強溝通協調  
Strengthen communication and coordination usually

(III) Talent management and training (Continued)

1. Talent management (Continued)

(1) Set up a leading group for talents (Continued)

- Work regulations
- 召開公司人才工作領導小組會議，研究部署全年人才工作；  
Convening meetings of the Company's talent work leading group to study and deploy the annual talent work
- 根據任務分工，制定具體落實措施；  
Formulating specific implementation measures based on the division of tasks;
- 確定年度重點人才工作，以點帶面、推動工作；  
Determining the annual key talent work to promote the work from point to area;
- 研究部署職責範圍內人才工作，主要負責人帶頭抓好人才工作。  
Studying and deploying talent work within the scope of duties, and the main person in charge takes the lead in doing a good job in talent work.
- 定期召開公司人才工作領導小組會議，通報人才工作情況，研究有關重點工作和重要制度；  
Convening regular meetings of the Company's talent work leading group, report the situation of talent work, and study relevant key work and important systems;
- 指導和督促所屬二級單位開展人才工作。  
Guiding and supervise the secondary units to carry out talent work.
- 各責任部門、單位對照年初目標任務進行自查和總結，提出下一年度的主要工作任務；  
Conducting self-examination and summary against the objectives and tasks at the beginning of the year by all responsible departments and units, and putting forward the main tasks for the next year;
- 開展人才工作考核，將人才工作納入公司黨的建設考評、直屬單位領導班子和幹部考核；  
Carrying out talent work assessment, and incorporating talent work into the party building assessment of the Company and the leadership team and cadres assessment of directly affiliated units;
- 在一定範圍內反饋，通報考核情況並運用考核結果。  
Feedback within a certain range, informing the assessment situation and using the assessment results.
- 一般每半年召開一次領導小組會議，研究解決問題；  
Generally, a leading group meeting is held every six months to study and solve problems;
- 建立人才工作重大事項報告制度，各成員部門制定重大人才制度、重大人才改革等工作時，需及時向公司人才工作領導小組報告；  
Establishing a reporting system for major issues in talent work. When member departments formulate major talent systems and major talent reforms, they should report to the Company's talent work leading group in a timely manner;
- 建立人才工作聯絡員制度。公司所屬二級單位確定一名聯絡員，加強溝通聯繫和信息交流。  
Establishing a liaison system for talent work. Secondary units of the company shall appoint a liaison officer to strengthen communication and information exchange.



### (三) 人才管理與培養(續)

#### 1. 人才管理(續)

##### (2) 推進員工職位體系改革

員工職位體系關乎公司的可持續發展與高質量成長，良好有效的員工職位體系不僅能夠拓寬公司人才成長通道，還有助於充分調動員工學習技術、創造業績、提升能力的積極性。公司持續建立和完善員工職業發展路徑，全面拓展人才成長通道，為公司戰略目標的實現發揮了積極作用。

為進一步落實《江西銅業股份有限公司員工職位體系管理辦法》，2020年，公司率先在冶煉、礦山和管理三類單位開展先行試點，拉開了公司參與人數最多、涉及利益最廣的員工職位體系改革序幕。公司各二級單位對職位體系改革高度重視，積極組織，成立職位體系推進領導小組，明確具體負責部門，制定推進日程安排，定期調度推進情況，探索出一套推進重點工作的操作規範。

##### (3) 吸引培育高質量創新型人才

創新創效是公司高質量發展的關鍵，其中核心人才的「引、育、用、留」則在其中具備戰略性的作用。公司推出掛職鍛煉、員工職位體系改革、科技成果轉化獎勵等系列舉措，開創人才輩出、人盡其才、才盡其用的人才發展新局面，構築人才聚集新高地。

### (III) Talent management and training (Continued)

#### 1. Talent management (Continued)

##### (2) Promoting the reform of the employee position system

The employee position system is related to the Company's sustainable development and high-quality growth. A good and effective employee position system can not only broaden the channels for the Company's talent growth, but also fully mobilize the enthusiasm of employees to learn technology, create performance and enhance their ability. The Company has continuously established and improved the career development path of employees, and comprehensively expanded the channels for talent growth, which has played a positive role in realizing the strategic objectives of the company.

To further implement the Measures for the Administration of Staff Position System of JCC, in 2020, the Company took the lead in carrying out pilot projects in smelting, mining and management units, which kicked off the reform of the employee position system with the largest number of participants and the widest interests. Secondary units of the Company attach great importance to the reform of the position system, actively organize and set up a leading group for promoting the position system, specify the specific responsible departments, formulate the promotion schedule, regularly schedule the promotion situation, and explore a set of operational specifications for promoting key tasks.

##### (3) Attracting and cultivating high-quality innovative talents

Innovation and efficiency are the key to the Company's high-quality development, in which the "introduction, education, use and retention" of core talents plays a strategic role. The Company launched a series of measures, such as on-the-job training, staff position system reform, scientific and technological achievements transformation reward, etc., to create a new situation of talent development and build a new highland for talent gathering.

## 五. 員工和勞動文化(續)

### V. Employee and Labor Culture (continued)

#### (三) 人才管理與培養(續)

##### 1. 人才管理(續)

##### (3) 吸引培育高質量創新型人才(續)

公司以優厚待遇延攬天下英才，先後引進多名國家「萬人計劃」、中科院「百人計劃」等尖端人才，以及博士和雙一流碩士百餘人。2020年，公司引進境內外知名院校優秀畢業生46人，並以公司研究院為孵化平台，組建了由90名博士、碩士構成的高端科研團隊。一批高層次、高技能人才加入，使得科技創新成為推動公司改革發展的強大引擎。

此外，公司廣泛開展職工自主管理、合理化建議、勞模(工匠)創新工作室創建、先進操作法評審命名等活動，進一步激發廣大職工的創新智慧和活力。2020年，各二級單位發佈自主管理成果1,877項，其中42項優秀成果獲公司表彰。

- 公司組織開展第三屆「雙創」全員創效獎評比，評選出優秀項目148個，創效6,912萬元。
- 貴溪冶煉廠劉亮勞模創新工作室被授予「全國示範性勞模和工匠人才創新工作室」。
- 德興銅礦趙銀保勞模創新工作室被評為「全國機械冶金建材行業示範性創新工作室」。

#### (III) Talent management and training (Continued)

##### 1. Talent management (Continued)

##### (3) Attracting and cultivating high-quality innovative talents (Continued)

The Company has recruited talents from all over the world with generous treatment, and has successively introduced a number of cutting-edge talents such as the National “Ten Thousand Talents Program” and the “Hundred Talents Program” of the Chinese Academy of Sciences, as well as more than 100 doctors and first-class masters. In 2020, the Company introduced 46 outstanding graduates from well-known universities at home and abroad, and established a high-end research team consisting of 90 doctors and masters with the Company’s research institute as the incubation platform. With the participation of a group of high-level and high-skilled talents, scientific and technological innovation has become a powerful engine to promote the reform and development of the Company.

In addition, the Company has extensively carried out activities such as employee self-management, rationalization proposals, creation of model worker (craftsman) innovation studio, evaluation and naming of advanced operation methods, etc., which further stimulated the innovation wisdom and vitality of employees. In 2020, each secondary unit released 1,877 independent management achievements, of which 42 outstanding achievements were commended by the Company.

- The Company organized the third “Double Creation” All-staff Efficiency Award, and selected 148 outstanding projects with an efficiency of RMB69.12 million.
- Liu Liang Model Worker Innovation Studio of Guixi Smelter was awarded “National Model Model Worker and Craftsman Talent Innovation Studio”.
- Zhao Yinbao’s Model Worker Innovation Studio in Dexing Copper Mine was named “National Model Innovation Studio in Machinery, Metallurgy and Building Materials Industry”.



### (三) 人才管理與培養(續)

#### 2. 人才培養

公司始終注重人才內部培養和員工全面發展，開創教育培訓、技能競賽、崗位練兵等多種途徑，為員工職業發展搭建良好平台，積極強化隊伍建設，引導和激勵各類人才立足崗位成長成才、成就事業。

##### (1) 教育培訓

公司近年來不斷優化培訓管理體系，深入推進技能人才自主培養與評價體系建設，完善人才培養機制，夯實管理、技術、技能三支人才隊伍基礎，為公司實現可持續發展不斷增強人才保障能力。

2020年，由於遭受新冠疫情影響，公司培訓工作經受了重大考驗。教培中心加強溝通，積極作為，充分利用和調動教學資源，合理安排辦班，公司層面全年共舉辦各類培訓班60期，合計培訓4,252人次。

### (III) Talent management and training (Continued)

#### 2. Talent training

The Company has always paid attention to the internal training of talents and the all-round development of employees, and creates various ways such as education and training, skill competition, job training, etc., so as to build a good platform for employees' career development, actively strengthen team building, and guide and motivate all kinds of talents to grow up and achieve careers based on their posts.

##### (1) Education training

In recent years, the Company has continuously optimized the training management system, further promoted the construction of independent training and evaluation system for skilled talents, improved the talent training mechanism, and consolidated the foundation of three talent teams: management, technology and skills, so as to continuously enhance the talent guarantee ability for the Company to achieve sustainable development.

In 2020, due to the impact of the COVID-19 pandemic, the Company's training work has undergone a major test. The Education and Training Center strengthened communication, acted positively, fully utilized and mobilized teaching resources, and arranged classes reasonably. The Company level held 60 training courses throughout the year, with a total of 4,252 talents were trained.

五. 員工和勞動文化(續)  
V. Employee and Labor Culture (continued)

(三) 人才管理與培養(續)

(III) Talent management and training (Continued)

2. 人才培養(續)

2. Talent training (Continued)

(1) 教育培訓(續)

(1) Education training (Continued)

指標 Index		單位 Unit	2020年度 2020
受訓總人數 Total number of trainees		人數 person	18,443
按僱員類型劃分的受訓僱員人數 Number of trained employees by employee type	高級管理層 Senior management	人數 person	10
	中級管理層(如部門經理) Middle management(such as department manager)	人數 person	130
	一般員工 General staff	人數 person	18,303
按性別劃分的受訓僱員人數 Number of trained employees by gender	男員工 Male employee	人數 person	15,861
	女員工 Female employee	人數 person	2,582
總平均時數 Total average hours		小時 Hours	40.7
按僱員類型劃分的每名僱員受訓 的平均時數 Average hours of training per employee by employee type	高級管理層 Senior management	小時 Hours	239.1
	中級管理層(如部門經理) Middle management(such as department manager)	小時 Hours	160.6
	一般員工 General staff	小時 Hours	39.7
按性別劃分的每名僱員受訓的平 均時數 Average hours of training per employee by gender	男員工 Male employee	小時 hours	40.7
	女員工 Female employee	小時 hours	40.7

江西銅業2020年培訓情況  
Training of JCC in 2020



### (三) 人才管理與培養(續)

#### 2. 人才培養(續)

##### (1) 教育培訓(續)

#### 案例：標準研討培訓班

2020年9月27日至28日，公司在教培中心舉辦標準研討培訓班，來自貴溪冶煉廠、永平銅礦、城門山銅礦等二級單位共27名人員參加了此次培訓。培訓主要採用研討的方式，提升學員對標準化管理工作的認識，目的在於切合實際地做好標準化管理工作。此外，培訓班按照新冠肺炎疫情防控常態化要求，做好了疫情防控相關工作：制定了疫情防控學員須知，並分發給每位學員；張貼了疫情防控提示標語；上課前對學員進行了體溫監測等，以實現疫情防控與開展教育培訓兩不誤的目的。



江西銅業2020年標準研討培訓班  
2020 Standard Seminar Training Course of JCC

### (III) Talent management and training (Continued)

#### 2. Talent training (Continued)

##### (1) Education training (Continued)

#### Training Case of JCC in 2020: Standard Seminar Training Class

From 27 to 28 September 2020, the Company held a standard seminar training class at the Education and Training Center. A total of 27 personnel from Guixi Smelter, Yongping Copper Mine and Chengmenshan Copper Mine participated in the training. Training mainly adopts the way of discussion to enhance participants' understanding of standardized management, with the aim of doing standardized management practically. In addition, the training class has done a good job in pandemic prevention and control in accordance with the normalization requirements of COVID-19 pandemic prevention and control: formulated the instructions for pandemic prevention and control participants and distributed them to each participant; posted the slogan of pandemic prevention and control; before class, body temperature of participants was measured, so as to achieve the goal of preventing and controlling the pandemic and carrying out education and training.

五. 員工和勞動文化(續)  
V. Employee and Labor Culture (continued)

(三) 人才管理與培養(續)

2. 人才培養(續)

(2) 技能競賽

2020年，圍繞疫情防治、復工復產，公司進一步深化對標創標，分層次、多維度組織開展各類勞動競賽。在「穩增長、提質量、轉動能」勞動競賽中，全年38項競賽目標值有29項超額完成，有力提升了公司技術經濟指標水平，在實現生產經營目標中發揮了積極作用。同時，公司繼續有力推進技能競賽，以奧林匹克技能比賽為重點，推出了《2020-2024年度奧林匹克技能比賽規劃》，進一步完善了「培訓—練兵—競賽—晉級—激勵」五位一體的技能競賽機制；探索建立「網上練兵」系統，為職工學習培訓提升技能搭建了新平台。

2020年，公司有3,000餘人參加了各層次的培訓和崗位練兵，共賽出「江西省五一勞動獎章」1名、「江西省技術能手」18名、「江西省青年崗位能手」14名；組織參加全國技能大賽，6人被授予「有色金屬行業技術能手」榮譽稱號。

此外，公司緊貼女職工優勢和崗位特點，開展「愛崗敬業比貢獻、爭做江銅女工匠」主題競賽活動，一大批女工匠脫穎而出，充分彰顯了巾幗風采。德興銅礦檢化中心化驗室多元素組、銀山礦業井下採礦場3#卷揚機組榮獲江西省「五一巾幗標兵崗」稱號，城門山銅礦艾燕榮獲江西省「五一巾幗標兵」稱號。

(III) Talent management and training (Continued)

2. Talent training (Continued)

(2) Technique contest

In 2020, focusing on pandemic prevention, resumption of work and production, the Company will further deepen benchmarking and create standards, and organize various labor competitions at different levels and in multiple dimensions. In the labor competition of “stabilizing growth, improving quality and turning energy”, 29 of the 38 competition target values were completed throughout the whole year, which greatly improved the technical and economic index level of the Company and played an active role in realizing the production and operation objectives. At the same time, the Company continued to vigorously promote the skills competition, focusing on the Olympic skills competition, and launched the “2020–2024 Olympic Skills Competition Plan”, further improving the five-in-one skills competition mechanism of “training-training-competition-promotion-incentive”; explore the establishment of “online training” system, and build a new platform for employees to learn, train and upgrade their skills.

In 2020, more than 3,000 people participated in training and job training at all levels, winning a total of 1 “Jiangxi May 1 ST Labor Medal”, 18 “Jiangxi Technical Experts” and 14 “Jiangxi Young Post Experts”; the National Skills Competition was held, and 6 people were awarded the honorary title of “Technical Experts in Nonferrous Metals Industry”.

In addition, the Company closely followed the advantages and post characteristics of female workers and launched the theme competition of “Love your post and dedication than contribution, and strive to be a female craftsman of JCC”, and a large number of female craftsmen came to the fore, fully demonstrating their graceful demeanor. The multi-element group of laboratory of Dexing Copper Mine Inspection and Chemical Center and the No. 3 winch group of Yinshan Mining Underground Mine won the title of “May 1 Women’s Model” in Jiangxi Province, and Ai Yanrong of Chengmenshan Copper Mine won the title of “May 1 Women’s Model” in Jiangxi Province.



(三) 人才管理與培養(續)

2. 人才培養(續)

(2) 技能競賽(續)



(III) Talent management and training (Continued)

2. Talent training (Continued)

(2) Technique contest (Continued)



江西銅業女工風采  
Female craftsman Illustration of JCC

## 五. 員工和勞動文化(續)

### V. Employee and Labor Culture (continued)

#### (四) 民主溝通

公司重視與員工的溝通，在公司和各二級單位都設有工會，並定期召開工代會、職代會，來保障與員工溝通的渠道。2020年初，公司克服疫情影響，以通訊方式召開了公司四屆二次職代會、工代會，切實維護了職工的知情權、參與權、表達權、監督權。在廣泛調研、聽取職工意見建議、平等協商的基礎上，完成了《公司2020-2022年集體合同》的起草、簽訂工作，對集體合同履行情況進行了監督檢查，職工滿意率達100%，從源頭上維護了職工合法權益。通過開展集體合同調研、簽訂，職工隊伍穩定性風險排查、化解等活動，引導員工以理性合法的方式反映利益訴求。此外，聚焦企業改革，公司主動做好宣傳引導、釋疑解惑工作，妥善接待並處理來信來訪35件，切實保障勞動關係和諧穩定。

#### (4) Democratic communication

The Company attaches great importance to communication with employees, and has labor unions in the Company and all secondary units, and regularly holds workers' congresses and employees' congresses to ensure communication channels with employees. At the beginning of 2020, the Company overcame the impact of the pandemic and held the second employee congress and workers' congress of the fourth session of the Company by means of communication, which effectively safeguarded the employees' right to know, participate, express and supervise. On the basis of extensive investigation, listening to the opinions and suggestions of employees and equal consultation, the drafting and signing of the Collective Contract of the Company for 2020-2022 was completed, and the performance of the collective contract was supervised and inspected. The satisfaction rate of employees reached 100%, which safeguarded the legitimate rights and interests of employees from the source. Through the investigation and signing of collective contracts, the investigation and resolution of the stability risks of the workforce and other activities, we will guide employees to reflect their interest demands in a rational and legal way. In addition, focusing on enterprise reform, the Company took the initiative to do a good job of propaganda and guidance, and properly received and handled 35 letters and visits to ensure the harmonious and stable labor relations.



(五) 豐富文體生活

以滿足職工美好生活需求為主題，公司開展豐富多彩的職工文化活動，充實職工精神文化生活。2020年，開展公司級體育賽事17項，二級單位舉辦各類文體活動120場，吸引17,033人次參與；參加江西省第二屆職工網上藝術節活動，獲得4個二等獎，2個三等獎和2個優秀獎；公司工會被評為「網聚職工正能量 爭做中國好網民」暨江西省第二屆職工網上藝術節優秀組織單位。



2020年職工氣排球比賽

2020 Employee Gas Volleyball Competition



2020年職工籃球邀請賽

2020 Staff Basketball Invitational Tournament

(5) Rich Cultural And Sports Life

With the theme of satisfying employees' needs for a better life, the Company carries out colorful cultural activities for employees to enrich their spiritual and cultural life. In 2020, 17 company-level sports events were held, and 120 cultural and sports activities were held by secondary units, attracting 17,033 participants; participated in the second online art festival of Jiangxi Province, and won 4 second prizes, 2 third prizes and 2 excellent prizes. The Company's labor union was rated as "Gathering employees' positive energy to be good netizens in China" and the excellent organization unit of the second online arts festival for employees in Jiangxi Province.



2020網球邀請賽

2020 Tennis Invitational Tournament



2020年羽毛球比賽

2020 Badminton contest



## 五. 員工和勞動文化(續)

### V. Employee and Labor Culture (continued)

#### (五) 豐富文體生活(續)

此外，公司圍繞「只爭朝夕謀發展，黨建引領強保障」主題，大力開展形式多樣的主題教育實踐活動，培育江銅精神，厚植江銅情懷。

2020年，公司通過專題講座、班組大討論、主題演講、宣傳報道、板報展示、線上答題、攝影比賽、女工匠故事會等形式大力開展形勢任務教育活動，引導職工與企業同呼吸共命運，近40餘萬人次參與網上答題活動，18,740人次參與班組討論，征集展板和攝影作品200餘幅。

#### (六) 幫扶關懷

公司與控股股東江銅集團持續推進幫扶送溫暖工作常態化、制度化、規範化，積極探索普惠性、常態性、精準性服務方式，加大職工普惠服務力度，妥善安置老員工，讓看得見、摸得着、有感覺的服務覆蓋廣大職工群眾。

- 2020年「兩節」期間，公司與江銅集團共走訪慰問困難職工、勞動模範等人員1,254戶，發放困難補助和慰問金173.55萬元；
- 職工醫療互助會補助、慰問246人，發放補助、慰問金98.77萬元；
- 關心關愛疫情期間困難職工生活，按每人每月500元的標準，連續四個月共向22名低保戶、低保邊緣戶家庭成員發放疫情生活補助4.4萬元；
- 撥出42.8萬元資金看望慰問420名奮戰在抗疫一線的職工；
- 資助職工參加互助保障計劃109萬元，給付保障金、慰問金225.19萬元，受益職工399人次；
- 出台「獎勵職工子女高考優秀生暫行辦法」，為41名高考優秀生發放獎勵金17.6萬元。

#### (5) Rich Cultural And Sports Life (Continued)

In addition, focusing on the theme of “seize every day for development, and party building leads strong guarantee”, the Company has vigorously carried out various theme education and practice activities, cultivated the spirit of JCC and cultivated the feelings of JCC.

In 2020, the Company vigorously carried out situation and task education activities in the form of special lectures, team discussions, keynote speeches, publicity reports, blackboard newspaper presentations, online answering questions, photo competitions, and stories of female craftsmen, guiding employees and enterprises to share the same fate. Nearly 400,000 people participated in online answering activities, 18,740 people participated in team discussions, and collected more than 200 exhibition boards and photographs.

#### (6) Help And Care

The Company and its controlling shareholder, JCC, continue to promote normalization, institutionalization and standardization of helping send warmth, actively explore inclusive, normal and accurate service methods, increase the inclusive service for employees, properly arrange old employees, and make visible, tangible and sensible services cover the broad masses of employees.

- During the “two festivals” in 2020, the Company and JCC visited 1,254 households and model workers with difficulties, and distributed difficulties subsidies and solatium of RMB1,735,500;
- The Workers' Medical Mutual Aid Association subsidized and consoled 246 people, and distributed subsidies and solatium of RMB987,700;
- Concerned about the life of workers in difficulty during the pandemic, according to the standard of RMB500 per person per month, a total of RMB44,000 of pandemic living allowance was paid to 22 low-income households and family members of low-income marginal households for four consecutive months;
- Allocate RMB428,000 to visit and sympathize with 420 employees who fought in the front line of anti-pandemic;
- Subsidize employees to participate in the mutual aid security plan of RMB1.09 million, and pay security and solatium RMB2,251,900, benefiting 399 person-times;
- The “Interim Measures for Rewarding Outstanding Students in the College Entrance Examination for Workers' Children” was issued, and a reward of RMB176,000 was awarded to 41 outstanding students in the college entrance examination.



(六) 幫扶關懷(續)



(6) Help and Care (Continued)



公司董事長、總經理鄭高清到貴溪冶煉廠走訪慰問  
Zheng Gaoqing, chairman and general manager of the Company, visited Guixi Smelter for condolences

(七) 薪酬與福利

針對公司員工在薪酬及解僱、招聘及晉升、工作時數、假期、平等機會、多元化、反歧視以及其他待遇及福利方面，公司始終遵守《中華人民共和國勞動法》《中華人民共和國勞動合同法》《中華人民共和國社會保險法》《國務院關於工人退休、退職的暫行辦法》《職工帶薪年休假條例》等一系列現行有效的法律法規及規範性文件規定，保證員工各項基本權益，和員工依法簽訂勞動合同，並為其足額繳納「五險一金」。公司自2015年起建立年金制度，提高員工退休後的生活水平，使其老年生活有所保障，給予員工福利關懷。2020年，江銅年金收益達到10.43%，超過了年金行業通用的比較基準三年定期存款收益，比公司確定的每4.5%絕對業績基準提高5.93%，再創歷史新高。

2020年，公司新增印發《江西銅業股份有限公司崗位工資動態管理規定》和《江西銅業股份有限公司員工績效管理指導意見(試行)》兩份規章制度，不斷完善薪酬管理體系，堅持人崗匹配與業績優先原則。此外，公司按照負面清單的管理方式，開展薪酬市場化對標、員工職位體系建設等改革措施，為建設世界一流公司提供了堅實保障。

在員工福利方面，公司嚴格遵守國家法規條例保障員工休假權利，其中包括女性員工帶薪產假。在此基礎上，公司持續提高員工福利水平，例如員工子女教育獎勵、餐飲補貼、節假日補貼、定期健康體檢等，全面滿足員工的工作和生活需求，給予員工鼓勵和關懷，為員工營造了良好的工作環境和氛圍。

(7) Remuneration And Benefits

In terms of salary and dismissal, recruitment and promotion, working hours, holidays, equal opportunities, diversity, anti-discrimination and other benefits and welfare for employees the Company always abides by the Labor Law of the People's Republic of China, the Labor Contract Law of the People's Republic of China, the Social Insurance Law of the People's Republic of China, Interim Measures on Workers' Retirement and Resignation of the State Council, the Regulations for Employees' Paid Annual Leaves and a series of current effective laws, regulations and regulatory documents, the Company ensures that all basic rights and interests of employees, sign labor contracts with employees according to law, and pay "social insurances and housing fund" in full. Since 2015, the Company has established an annuity system to improve the living standards of employees after retirement, so as to ensure their old age life and give employees welfare care. In 2020, JCC's annuity income reached 10.43%, exceeding the three-year fixed deposit income, which is the general benchmark of the annuity industry, and increasing by 5.93% compared with the absolute performance benchmark of 4.5% determined by the Company, reaching a new record high.

In 2020, the Company newly issued two rules and regulations, namely, "Regulations on Post Salary Dynamic Management of JCC" and "Guiding Opinions on Employee Performance Management of JCC (Trial)", constantly improving the salary management system and adhering to the principle of matching people and posts and giving priority to performance. In addition, according to the management method of negative list, the Company carried out reform measures such as salary market benchmarking and employee position system construction, which provided a solid guarantee for building a world-class company.

In terms of employee benefits, the Company strictly abides by national laws and regulations to protect employees' vacation rights, including paid maternity leave for female employees. On this basis, the Company continuously improves the welfare level of employees, such as education rewards for employees' children, catering subsidies, holiday subsidies, regular physical examinations, etc., so as to fully meet the work and life needs of employees, give employees encouragement and care, and create a good working environment and atmosphere for employees.

## 五. 員工和勞動文化(續)

### V. Employee and Labor Culture (continued)

#### (八) 安全生產與健康

作為礦業企業，公司十分重視安全生產，近年來堅持以問題為導向，下大力氣「補短板、堵漏洞、強弱項」，以深入開展安全生產專項整治三年行動為抓手，全面推動風險隱患排查治理、應急能力建設、職業病防治等各項工作。2020年，公司切實加強了溝通協調，深入推進公司各項安全生產重點工程，部分重點、難點工作取得了實質性進展。

2020年全年，公司安全生產總投入共計3.92億元，全公司重傷員工人數為零，工亡一人，月均千人負傷率為0.06‰。

#### (8) Safety production and health

As a mining enterprise, the Company attaches great importance to safety production. In recent years, it has adhered to the problem-oriented, made great efforts to “fill shortcomings, plug loopholes, strengths and weaknesses”, and comprehensively promoted the investigation and management of potential risks, the construction of emergency response capacity, and the prevention and control of occupational diseases. In 2020, the Company effectively strengthened communication and coordination, and further promoted the Company’s key safety production projects, and some key and difficult work made substantial progress.

In the whole year of 2020, the Company’s total investment in safety production totaled RMB392 million, and the number of seriously injured employees in the whole company was zero, and one person died during work, with an average monthly injury rate of 0.06‰.

指標 Index	單位 Unit	2020年 2020	2019年 2019	2018年 2018
百萬工時損工事故率(LTIF)	百分比	0.38	-	-
loss time rate per a million working hours	Percentage	0.38		
工亡數	人	1	0	0
Number of work deaths	Person	1		
工亡率	百分比	0.003	0	0
Work death rate	Percentage	0.003		

#### • 年度安全工作計劃

2020年初，公司結合安全生產工作的新形勢、新特點，立足實際，面向未來，以目標為引領、以問題為導向，從「把安全環保存量問題減下去、把安全環保新增問題控制住、把安全環保管理水平提上來」三個方面出發制定了年度安全工作計劃，下發《關於切實做好2020年安全環保工作的通知》，提出全年安全生產工作目標。

#### • Annual safety work plan

At the beginning of 2020, the Company combined with the new situation and new characteristics of safety production work, based on reality, facing the future, taking the goal as the guide and taking the problem as the direction, and formulated the annual safety work plan from three aspects: “reducing the safety and environmental protection stock problem, controlling the new safety and environmental protection problems, and raising the safety and environmental protection management level”. The Notice of Safety and Environmental Protection Work in 2020 puts forward the goal of safe production work throughout the year.



## (八) 安全生產與健康(續)

### • 安全生產管理制度與認證

公司高度重視安全生產管理體系建設，通過不斷完善制度，強化制度落實，促進安全管理的規範化。2020年，為適應當前安全生產工作的新形勢、新要求，公司遵守《中華人民共和國安全生產法(修正草案)》《金屬非金屬礦山安全規程》《尾礦庫安全規程》《生產經營單位生產安全事故應急預案編製導則》等一批法律法規及國家標準規範，並對安全管理制度進行了全面梳理，先後修訂下發了《消防安全管理辦法》《安全生產管理辦法》《關於進一步規範安全環保責任目標考核方案的通知》，並根據公司下發的《關於對公司總部規章制度開展系統整理工作的通知》，擬保留安全管理制度五項、修訂三項、廢止兩項。

在體系認證方面，公司已獲得GB/T 45001-2020/ISO45001：2018職業健康安全管理體系認證。截至2020年12月31日，公司已擁有安全生產標準化證書41個，其中二級安全生產標準化證書31個，三級安全生產標準化證書4個。

## (8) Safety production and health (Continued)

### • Safety production management system and certification

The Company attaches great importance to the construction of safety production management system, and promotes the standardization of safety management by constantly improving the system and strengthening its implementation. In 2020, in order to adapt to the new situation and new requirements of the current safety production work, the Company abided by a series of laws and regulations and national standard requirements, such as the Production Safety Law of the People's Republic of China (amended draft), the Safety Regulations for Metal and Non-metal Mines, the Safety Regulations for Tailing Ponds, the Guidelines for Enterprises to Develop Emergency Response Plan for Workplace Accidents, and comprehensively improved the safety management system, successively revised and issued the Measures for the Administration of Fire Safety, the Measures for the Administration of Safety Production, and the Notice on Further Standardizing the Assessment Plan for Safety and Environmental Responsibility Objectives. According to the Notice on Systematic Arrangement of Rules and Regulations of the Company Headquarters issued by the Company, it is proposed to retain five safety management systems and revise them.

In terms of system certification, the Company has obtained GB/T 45001-2020/ISO45001: 2018 occupational health and safety management system certification. As of 31 December 2020, the Company has 41 safety production standardization certificates, including 31 secondary safety production standardization certificates and 4 tertiary safety production standardization certificates.



安全生產與職業健康相關證書  
Safety production and certificates related to occupational health

## 五. 員工和勞動文化(續)

### V. Employee and Labor Culture (continued)

#### (八) 安全生產與健康(續)

##### • 安全生產專項整治三年行動

為解決安全生產重點難點，紮實推進安全生產治理體系和治理能力現代化，公司制定並下發了實施方案，設立了領導機構，成立了工作小組，紮實推進了各項工作。公司通過安委會和安全環保工作例會對安全生產專項整治三年行動實施方案進行宣貫動員、督導部署，並結合安全環保檢查對相關工作的落實情況進行了檢查，確保各項工作落實落地。公司下屬生產單位也根據國家、省、市及公司要求，結合本單位實際，制定了實施方案並報地方應急管理部門及公司備案。

在專項整治方面，2020年，公司重點強化了非煤礦山和危險化學品方面的安全生產專項整治，特別是對於礦山安全，公司已根據專項整治方案組織相關部門及所屬地下礦山單位進行了專題研究，關於外包單位安全管理和自身隊伍建設方面的有關事項，形成了一些建設性的意見，部分工作已得到有力推動。在危險化學品安全生產專項整治方面，面對如疫情中暴露出來的硫酸\氧化砷脹庫、物流受阻、銷售不暢等問題，加大了危險化學品儲運能力的建設。此外，公司及各單位還有針對性地對安全生產開展全方位、多角度解讀宣傳，牢固樹立各級員工安全發展理念，增強從根本上消除事故隱患的思想自覺和行動自覺。

#### (8) Safety production and health (Continued)

##### • Three-year action of special rectification of safe production

In order to solve the key difficulties in safety production and solidly promote the modernization of safety production governance system and governance capacity, the Company formulated and issued the implementation plan, set up the leading organization, set up the working group, and solidly promoted all the work. The Company publicized, mobilized, supervised and deployed the implementation plan of the three-year action for special rectification of production safety through the Safety Committee and the regular meeting of safety and environmental protection work, and checked the implementation of relevant work in combination with safety and environmental protection inspection to ensure the implementation of all work. According to the requirements of the state, province, city and the Company, the subordinate production units of the Company have formulated the implementation plan and reported it to the local emergency management department and the Company for the record.

In terms of special rectification, in 2020, the Company focused on strengthening the special rectification of safety production in non-coal mines and dangerous chemicals, especially for mine safety. The Company has organized relevant departments and underground mining units to conduct special research according to the special rectification plan, and has formed some constructive opinions on safety management of outsourcing units and related matters of team building, and some work has been strongly promoted. In the special rectification of the safety production of dangerous chemicals, faced with the problems such as the expansion of sulfuric acid and arsenic oxide, the obstruction of logistics, the unsmooth sales and so on, the construction of storage and transportation capacity of dangerous chemicals has been increased. In addition, the Company and all units have targeted to carry out all-round and multi-angle interpretation and publicity on safety production, firmly establish the safety development concept of employees at all levels, and enhance the ideological consciousness and action consciousness of fundamentally eliminating hidden dangers of accidents.



(八) 安全生產與健康(續)

(8) Safety production and health (Continued)

• 安全生產專項整治三年行動(續)

• Three-year action of special rectification of safe production (Continued)



安全生產專項整治三年行動重點工作

Key work of three-year action for special rectification of production safety

## 五. 員工和勞動文化(續)

### V. Employee and Labor Culture (continued)

#### (八) 安全生產與健康(續)

- **防範化解尾礦庫風險**

2020年，公司持續加強公司尾礦庫風險防控，着力提升了尾礦庫安全風險管控能力。

**在責任落實層面**，公司首次推行尾礦庫安全環保包保責任制，全面加強了公司尾礦庫的安全生產和應急管理，落實了國家和省委省政府對防範化解尾礦庫安全風險的要求，對於尾礦庫落實企業主體責任、防範化解安全風險、提升安全管理水平具有重要意义。

**在風險管控層面**，2020年，公司督促各礦山單位按照「一庫一策」的要求認真編製了尾礦庫安全風險管控方案，並報屬地應急管理部門進行了備案。2020年4月，公司還開展了長達一個月時間的尾礦庫風險隱患排查治理，全面完成了隱患治理、包保責任清單公告、管控措施、應急預案完善四個100%全覆蓋的工作目標。同時積極推動了尾礦庫安全風險監測預警機制建設。截至2020年12月31日，公司已有11座尾礦庫與省尾礦庫在線監測平台聯網。此外，公司大力推動尾礦庫閉庫及頭頂庫治理工作，切實防範化解尾礦庫安全風險，在2020年期間完成了德興銅礦一號尾礦庫的閉庫，銀山礦業老尾礦庫「頭頂庫」閉庫治理工程已完成計劃總投資的80.5%。

#### (8) Safety production and health (Continued)

- **Prevent and resolve the risk of tailings pond**

In 2020, the Company continued to strengthen the risk prevention and control of the Company's tailings pond, focusing on improving the safety risk management and control ability of the tailings pond.

**At the level of responsibility implementation**, the Company first implemented the responsibility system for safety and environmental protection of tailings pond, comprehensively strengthened the safety production and emergency management of the Company's tailings pond, and implemented the requirements of the state, the provincial party committee and the provincial government for preventing and defusing the safety risks of tailings pond, which is of great significance for implementing the main responsibility of enterprises, preventing and defusing safety risks and improving the safety management level of tailings pond.

**At the level of risk management and control**, in 2020, the Company urged all mining units to carefully prepare the safety risk management and control plan of tailings pond according to the requirements of "one reservoir, one policy", and reported it to the local emergency management department for filing. In April 2020, the Company also carried out the investigation and management of hidden dangers in tailings ponds for a month, and fully completed four 100% coverage objectives, namely, hidden dangers management, announcement of the list of guarantee responsibilities, control measures and improvement of emergency plans. At the same time, it actively promoted the construction of safety risk monitoring and early warning mechanism of tailings pond. As of 31 December 2020, the Company has 11 tailings ponds connected with the provincial tailings pond online monitoring platform. In addition, the Company vigorously promoted the closure of tailings reservoir and the treatment of overhead reservoir, effectively prevented and resolved the safety risks of tailings reservoir, and completed the closure of No.1 tailings reservoir of Dexing Copper Mine in 2020. The closure treatment project of "overhead reservoir" of Yinshan Mining Old tailings reservoir has completed 80.5% of the planned total investment.



## (八) 安全生產與健康(續)

### • 隱患排查治理

公司堅持「四不推」原則，即查出的問題班組能整改的不推給工段、工段能整改的不推給車間、車間能整改的不推給廠礦、廠礦里能整改的不推給公司，對查出隱患，嚴格按照「五落實」的原則及時整改到位。在堅持「班組日檢、工段週檢、車間月檢、廠礦及公司季檢」的同時，公司還開展不定期、專業性節假日期間臨時性的安全檢查，2020年開展公司級安全大檢查5次，發現隱患116條，絕大部分隱患已整改到位。

### • 吸取事故教訓

為認真汲取事故教訓，有效遏制事故多發、頻發勢頭，2020年，公司採取了一系列措施狠抓安全管理：

#### ➤ 督促安全責任落實

- ◆ 堅持召開季度公司安委會會議，通過高位引領作用，層層傳遞安全工作壓力，督促責任落實。

## (8) Safety production and health (Continued)

### • Hidden danger investigation and management

The Company adheres to the principle of “four no evading”, that is, problems found by the team that can be rectified will not be pushed to the workshop, workshop that can be rectified will not be pushed to factories and mines, and those found in factories and mines will not be pushed to the Company. While adhering to the “daily inspection of teams and groups, weekly inspection of sections, monthly inspection of workshops, quarterly inspection of factories and mines and the Company”, the Company also carried out temporary safety inspections during irregular and professional holidays. In 2020, it carried out five major safety inspections at the company level, and found 116 hidden dangers, most of which have been rectified in place.

### • Learn from accidents

In order to seriously learn from accidents and effectively curb the frequent occurrence of accidents, in 2020, the Company adopted a series of measures to pay close attention to safety management :

#### ➤ Supervise the implementation of safety responsibilities

- ◆ Insist on holding quarterly meetings of the Company's safety committee, and pass on the pressure of safety work layer by layer through the leading role of high positions, and urge the implementation of responsibilities.

## 五. 員工和勞動文化(續)

### V. Employee and Labor Culture (continued)

#### (八) 安全生產與健康(續)

##### • 吸取事故教訓(續)

- 提升事故管理與追責問責力度
  - ◆ 事故發生後，公司迅速派人前往事故現場查明原因，指導事發單位做好善後事宜和輿情管控工作，並嚴格按照事故「四不放過」的原則對事故進行內部調查與處理，對有關責任人進行嚴肅處理。
  - ◆ 修訂《江西銅業集團有限公司安全環保責任目標考核方案》，加大安全生產獎懲與責任追究力度。
- 加強外包管理和報告制度
  - ◆ 加強了外包單位安全管理，首次推行了事發單位年度安全生產履職報告制度。

#### (8) Safety production and health (Continued)

##### • Learn from accidents (Continued)

- Improve the level of accident management and accountability
  - ◆ When an accident emerges, the Company quickly sends people to the accident site to find out the reasons, instructs the incident institution to do a good job in the aftermath and public opinion control, and conduct internal investigation and treatment of the accident in strict accordance with the principle of “four not forgiven”, and severely punish the responsible persons.
  - ◆ Revise the Assessment Plan for Safety and Environmental Protection Responsibility Objectives of JCC and intensify rewards and punishments and accountability for safety production.
- Strengthen outsourcing management and reporting system
  - ◆ The safety management of outsourcing units was strengthened, and the annual safety production performance reporting system of the incident units was implemented for the first time.



(八) 安全生產與健康(續)

• 安全健康培訓

為夯實安全管理基礎，不斷提高廣大員工的安全健康素質，2020年，公司舉辦公司級及廠礦級安全培訓193場，約8,859人次。公司所有新進員工均嚴格按照有關規定進行了三級安全教育，打好從入職安全教育「第一關」，所屬各單位主要負責人、安全管理人員、特種作業人員等均按要求取證、年審，做到了應取盡取、持證上崗，外委施工隊伍也均根據外包項目的特點進行了入場安全教育和技術交底。公司所屬各單位也都十分注重培訓實效，在日常班組安全學習中，採用了豐富多彩、形式多樣的培訓教育手段，切實提高了班組員工安全意識和技能。



2020年德興銅礦非煤礦山安全管  
理人員考核培訓班  
2020 Dexing Copper Mine Safety  
Management Personnel Assessment  
Training Course

(8) Safety production and health (Continued)

• Safety and health training

In order to consolidate the foundation of safety management and continuously improve the safety and health quality of employees, in 2020, the Company held 193 safety trainings at company level and factory and mine level, with about 8,859 person-times. All new employees of the Company have been given three-level safety education in strict accordance with relevant regulations, and laid the “first level” of on-the-job safety education. The principal responsible persons, safety management personnel and special operation personnel of all subordinate institutions have obtained certificates and conducted annual examination according to requirements, and they have taken all the jobs with certificates. The outsourced construction teams have also conducted on-the-job safety education and technical disclosure according to the characteristics of outsourced projects. All units affiliated to the Company also pay great attention to the effectiveness of training. In their daily study in security team, they have adopted various training and education methods, which have effectively improved the safety awareness and skills of team members.



2020年貴溪冶煉廠安全培訓  
Safety Training of Guixi Smelter in 2020

## 五. 員工和勞動文化(續)

### V. Employee and Labor Culture (continued)

#### (八) 安全生產與健康(續)

- **安全健康培訓(續)**

2020年12月，公司組織開展了安全、消防管理兩期培訓班，邀請了外部專家對企業如何開展安全生產專項整治三年行動、如何落實企業主體責任、如何開展職業衛生及消防安全等工作進行授課，公司所屬二級單位95名負責生產安全、消防管理的管理人員參加了培訓，通過培訓各級安全及消防管理人員對如何開展有關工作有了更清楚的認識。此外，公司還開展了「安康盃」競賽活動，對全體職工進行《職業病防治法》宣傳，保障職工生命安全和職業健康權益。

- **員工心理健康**

心理和諧是構建和諧社會的重要內容之一，也是公司勞工管理的重要組成部分。員工有了健康的心理，才能理性應對工作中的複雜問題和矛盾糾紛，組織才能穩定發展。公司在日常組織管理中充分關注員工心理健康，並採取各項活動提升員工心理健康水平和幸福指數。公司開展素質提升和拓展訓練，大力開展各項文體活動，使員工在輕鬆、愉快的環境中構建和諧的人際關係，在快樂的氛圍中釋放壓力。除此以外，公司將員工心理健康因素納入各項工作日程，從多個維度保障員工心理健康。

#### (8) Safety production and health (Continued)

- **Safety and health training (Continued)**

In December 2020, the Company organized two training courses on safety and fire control management, and invited external experts to give lectures on how to carry out the three-year action of special rectification of safety production, how to implement the main responsibility of enterprises, and how to carry out occupational health and fire control safety. 95 managers in charge of production safety and fire control management of secondary units of the Company participated in the training, and through training safety and fire control managers at all levels, they had a clearer understanding of how to carry out relevant work. In addition, the Company also launched the "Safety and Health Cup" competition to publicize the Occupational Disease Prevention Law for all employees to protect their life safety and occupational health rights and interests.

- **Mental health of employees**

Psychological harmony is one of the important contents of building a harmonious society, and it is also an important part of the Company's labor management. Only when employees have a healthy psychology can they rationally deal with complex problems and contradictions and disputes in their work, and the organization can develop steadily. The Company pays full attention to employees' mental health in daily organization and management, and takes various activities to improve employees' mental health level and happiness index. The Company carries out quality improvement and development training, and vigorously develops various cultural and sports activities, so that employees can build harmonious interpersonal relationships in a relaxed and happy environment and release pressure in a happy atmosphere. In addition, the Company incorporates employees' mental health factors into various work schedules to protect employees' mental health from multiple dimensions.



(八) 安全生產與健康(續)

- 員工心理健康(續)

(8) Safety production and health (Continued)

- Mental health of employees (Continued)



城門山銅礦採礦場員工  
Employees of Chengmenshan Copper Mine Mining Site

**案例：疫情防控期間員工心理健康防護機制**

在應對新型冠狀病毒感染肺炎爆發時期，公司根據員工心理健康的工作需要，發揮各級群團組織作用，廣泛動員、組織群眾、凝聚群眾，落實聯防聯控措施。積極開展志願服務，關心關愛職工，加強心理疏導和人文關懷，引導職工嚴格落實疫情防控責任要求。公司以科學的態度認識疫情、應對疫情，做好員工心理輔導，助力打贏防疫攻堅戰。

**Case: Psychological health protection mechanism of employees during pandemic prevention and control**

In response to the outbreak of Covid-19 and according to the needs of employees' mental health, the Company played the role of mass organizations at all levels, widely mobilized, organized and rallied the masses, and implemented joint prevention and control measures. Actively carry out voluntary service, care for employees, strengthen psychological counseling and humanistic care, and guide employees to strictly implement the responsibility requirements for pandemic prevention and control. The Company understands and responds to the pandemic with a scientific attitude, and gives psychological counseling to its employees to help win the battle against Covid-19.

## 六. 環境與氣候變化

### VI. Environment and Climate Change

公司一切行為意識都堅持從創造美好環境的角度出發，不僅致力於為今天的世界創造美好環境，也超前致力於為未來世界創造美好環境。「綠色發展，環保優先」是公司經營恪守的不二法則，「創造永遠的綠色」是江銅永遠的追求。

All behavior consciousness of the Company insists on creating a beautiful environment, and is committed not only to creating a beautiful environment for today's world, but also to creating a beautiful environment for the future world ahead of time. "Green development, giving priority to environmental protection" is the only rule that the Company strictly abides by, and "creating eternal green" is the eternal pursuit of JCC.

#### (一) 環境管理體系

公司全面落實綠色低碳戰略，注重運營生產過程對環境的影響，嚴格遵守《中華人民共和國環境保護法》等相關法律法規，制定了《江西銅業集團有限公司（江西銅業股份有限公司）生態環境保護管理辦法》等內部規章制度，並遵照ISO14000環境管理體系等相關規範，建立健全環境管理體系。2020年，公司環保工程建設總投入約為3.29億元。

#### (1) Environmental management mechanism

The Company fully implements the green and low-carbon strategy, pays attention to the impact of the operation and production process on the environment, strictly abides by the Environmental Protection Law of the People's Republic of China and other relevant laws and regulations, and complies with ISO 14000 environmental management system and other relevant specifications, formulates the Administrative Measures for Ecological Environmental Protection of Jiangxi Copper Corporation Limited (Jiangxi Copper Company Limited) and other internal rules and regulations, and establishes and improves the environmental management system. In 2020, the total investment of the Company's environmental protection project construction is about RMB329 million.

##### 1. 環境管理系統(EMS)

公司自2012年以來持續推行「三標一體」管理體系，管理一體化平台已持續運行多年，體系化管理作為一種高效的管理模式在公司主要生產單位中得到較好的施行。一體化管理方式有機融合了安全生產標準化、隱患排查治理體系、風險分級管控體系、職業健康管理體系和環境管理體系的優點，確保了企業安全環保的長週期穩定運行。

2020年11月，公司組織對環境和職業健康安全體系進行內審。根據相關標準和程序規範要求，對產品生產或服務過程中遵守相關法律法規、規章制度進行了符合性評價。通過內部審核，公司沒有違反國家法律法規的情況發生，對法律法規及其他要求的符合性執行情況良好。

在建設項目生態環境保護管理方面，公司要求所屬生產經營單位新建、改建、擴建工程及技改項目時，嚴格按照《中華人民共和國環境影響評價法》《建設項目環境保護管理條例》等法律法規要求執行環境影響評價制度和「三同時」制度。

##### 1. Environmental management system

Since 2012, the Company has continuously implemented the management system of "three standards and one system", and the integrated management platform has been running for many years. Systematic management as an efficient management mode has been well implemented in the main production units of the Company. The integrated management mode organically combines the advantages of safety production standardization, hidden danger investigation and management system, risk classification management and control system, occupational health management system and environmental management system, and ensures the long-term stable operation of enterprise safety and environmental protection.

In November 2020, the Company organized an internal audit of the environmental and occupational health and safety management system. According to the requirements of relevant standards and procedures, the compliance evaluation of compliance with relevant laws, regulations and rules in the process of product production or service is carried out. The Company did not violate national laws and regulations, and the compliance with laws, regulations and other requirements was well implemented after internal review.

In terms of ecological environmental protection management of construction projects, the Company requires its production and business units to implement the environmental impact assessment system and the "three simultaneities" system in strict accordance with the Environmental Impact Assessment Law of the People's Republic of China, Regulations on Environmental Protection Management of Construction Projects and other laws and regulations when building, rebuilding, expanding and technological transformation projects.



(一) 環境管理體系(續)

(1) Environmental management mechanism (Continued)

1. 環境管理系統(EMS)(續)

1. Environmental management system (Continued)

公司近兩年更新的環境管理體系認證如下：

The environmental management system certification updated by the Company in recent two years were as follows:

年份 Year	體系認證 System certification
2019 2019	ISO 9001:2015質量體系認證資質 ISO 9001:2015 quality system certification qualification GB/T19001-2016質量體系認證資質 GB/T19001-2016 quality system certification qualification ISO 14001 : 2015環境管理體系認證資質 ISO 14001 : 2015 environmental quality system certification qualification GB/T24001-2016環境管理體系認證資質 GB/T24001-2016 environmental quality system certification qualification
2020 2020	ISO 10012 : 2003測量管理體系認證資質 ISO 10012 : 2003 measurement management system certification qualification GB/T19022-2003測量管理體系認證資質 GB/T19022-2003 measurement management system certification qualification



## 六. 環境與氣候變化(續)

### VI. Environment and Climate Change (continued)

#### (一) 環境管理體系(續)

##### 2. 環境風險管理

建立事故災難應急救援預案是公司環境風險管理的重要組成部分。公司事故災難應急救援預案體系分為兩個層面，即廠礦層級(I級)、集團公司層級(II級)。公司所屬二級單位根據應急預案體系各自建立事故災難應急救援預案，其中包括了綜合預案、專項預案和現場處置方案，以保持穩定的生產和生活秩序，這也是公司應急救援預案的重要組成部分。

根據《中華人民共和國安全生產法》《中華人民共和國突發事件應對法》《中華人民共和國消防法》《生產安全事故報告和調查處理條例》《危險化學品安全管理條例》《江西省安全生產條例》《生產安全事故應急預案管理辦法》等法律法規及部門規章，公司按照《江西銅業集團公司(江西銅業股份有限公司)事故災難應急救援預案》的要求，樹立「統一指揮，依靠科學，分工負責，協調配合，快速反應，處理妥善」的救援原則，以有效防範環境事故的發生，迅速應對並處理突發環境事故，合理控制和消除環境污染，保障員工健康的工作環境。

除此以外，公司建立環境風險管理機制，在環境風險管控方面對重大環境危險事件進行預先識別，編製《江西銅業集團公司(江西銅業股份有限公司)司控重大危險源》，對於各礦區的潛在環境風險事件如設備損壞等進行預分析，並採取控制措施，如主要採取檢查、查閱相關記錄、收集統計各類報表、督促隱患整改情況等措施進行管理。各二級單位控危險源具體日常管理措施由各相關單位根據生產實際情況進行制定和管理。

#### (1) Environmental management mechanism (continued)

##### 2. Pollutant And Waste Discharge Management

Establishing emergency rescue plan for accidents and disasters is an important part of environmental risk management of the Company. The emergency rescue plan system for accidents and disasters of the Company is divided into two levels, namely, factory and mine level (level I) and group company level (level II). Secondary units of the Company have established their own emergency rescue plans for accidents and disasters according to the emergency plan system, including comprehensive plans, special plans and on-site disposal plans to maintain stable production and living order, which is also an important part of the Company's emergency rescue plan.

According to the Production Safety Law of the People's Republic of China, the Emergency Response Law of the People's Republic of China, the Fire Prevention Law of the People's Republic of China, the Regulation on the Reporting, Investigation and Handling of Work Safety Accidents, the Regulations on the Safety Administration of Dangerous Chemicals, the Safety Production Regulations of Jiangxi Province, the Guidelines for Enterprises to Develop Emergency Response Plan for Work Place Accidents, the Company complies with the requirements of Emergency Rescue Plan for Accidents and Disasters of Jiangxi Copper Corporation (Jiangxi Copper Company Limited), and has established the rescue principle of "unified command, relying on science, division of responsibilities, coordination and cooperation, quick response and proper handling", so as to effectively prevent the occurrence of environmental accidents, quickly respond to and deal with sudden environmental accidents, reasonably control and eliminate environmental pollution and ensure the healthy working environment of employees.

In addition, the Company established an environmental risk management mechanism, pre-identified major environmental hazard events in environmental risk management and control, compiled Major Hazard Sources Controlled by JCC (Jiangxi Copper Company Limited.), pre-analyzed potential environmental risk events such as equipment damage in various mining areas, and adopted control measures, such as mainly taking measures such as inspection, consulting relevant records, collecting and counting various reports, and urging the rectification of hidden dangers. Specific daily management measures for controlling hazards in secondary units shall be formulated and managed by relevant units according to actual production conditions.



(一) 環境管理體系(續)

3. 環境績效考核

為進一步強化對環境風險事件的管理，公司將環境績效考核納入公司直管幹部問責工作之中，印發《江西銅業股份有限公司直管幹部工作問責辦法》，並在其中明確「因管理制度、管理規定缺失或違反管理制度、管理規定，造成安全、環保、設備、工程等管理重大事故」或「履行生態環境和資源保護職責不力、造成生態環境和資源嚴重破壞或惡劣影響」的採取問責制度。問責方式分為組織處理、行政處分和扣減薪酬、禁入限制。公司對於領導幹部嚴格的問責管理制度加大了環境保護方面的責任追究力度，體現出公司對於生態環境和資源保護的重視。

4. 生命週期評估(Life Cycle Assessment)

生命週期評估(Life cycle assessment, LCA)是一種標準化的科學方法，用來系統地分析產品系統從原材料獲取到生命週期終端全過程所有物質和能量流及其環境影響，其已受到廣泛認可並應用於各個行業。公司與深圳大學和國際銅業協會合作，對德興銅礦銅精礦和貴溪冶煉廠陰極銅展開生命週期評估研究，以識別銅生產過程中所產生的不同維度的環境影響，為今後減少銅生產過程中產生的環境影響相關研究提供數據基礎。

(1) Environmental management mechanism (continued)

3. Climate Change Response

In order to further strengthen the management of environmental risk events, the Company incorporated environmental performance assessment into the accountability work of the Company's direct management cadres, and issued the Accountability Measures for the Work of JCC, which clearly stated that "the management system and management regulations are missing or violated, resulting in major management accidents such as safety, environmental protection, equipment and engineering" or "ineffective performance of ecological environment and resource protection duties, causing serious damage or adverse impact on ecological environment and resources" Accountability is divided into organizational processing, administrative punishment, salary deduction and prohibition. The Company's strict accountability management system for leading cadres has increased the accountability for environmental protection, which reflects the Company's emphasis on ecological environment and resource protection.

4. Life Cycle Assessment

Life cycle assessment(LCA) is a standardized scientific method, which is used to systematically analyze all material and energy flows and their environmental impacts in the whole process of product system from raw material acquisition to life cycle terminal. LCA has been widely recognized and applied in various industries. The Company cooperated with Shenzhen University and International Copper Association to carry out life cycle assessment research on copper concentrate of Dexing Copper Mine and cathode copper of Guixi Smelter, so as to identify different dimensions of environmental impacts produced during copper production and provide data basis for future research on reducing environmental impacts produced during copper production.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(二) 污染物與廢棄物排放管理

1. 水資源與水污染防治

對於生產過程中產生的廢水和污水，遵循《中華人民共和國水法》《中華人民共和國水污染防治法》《中華人民共和國防止陸源污染物污染損害海洋環境管理條例》《江西省水資源條例》等法律法規，公司按照《江西銅業集團有限公司(江西銅業股份有限公司)生態環境保護管理辦法》(以下簡稱《辦法》)從生產環節、排放環節和治理環節進行了全方位流程化的水管理。

在生產環節，公司對清污分流工程、節水工藝進行了規定：

- 所屬生產經營單位在生產、建設過程中要不斷建立和完善清污分流工程，減少廢水產生量；
- 不斷進行節水工藝改造，提高工業水復用率，減少廢水排放量。

在排放環節，公司對排污口、排放量、排放濃度進行了規定：

- 向水體排放廢水的單位要按照法律、法規和各級生態環境保護主管部門的規定規範設置排污口；在江河、湖泊設置排污口的，還應當遵守水行政主管部門的規定；禁止向週邊水體設置暗管偷排，傾倒工業廢渣和生活垃圾以及其他廢物；
- 水污染物排放濃度不得超過國家、地方或行業規定的排放標準；單位所在地區實行重點水污染物排放總量控制的要求的，必須滿足總量控制要求。

(2) Management of pollutant and waste discharge

1. Water resources and prevention and control of water pollution

For the wastewater and sewage produced in the production process, the Company complies with the Water Law of the People's Republic of China, the Law of the People's Republic of China on Prevention and Control of Water Pollution, the Regulations of the People's Republic of China on Prevention of Land-sourced Pollutants from Damage to the Marine Environment, the Water Resources Regulations of Jiangxi Province and other laws and regulations. According to the the Administrative Measures for Ecological Environmental Protection of Jiangxi Copper Corporation Limited (Jiangxi Copper Company Limited) (hereinafter referred to as the "Measures"), the Company has carried out all-round process water management from the production link, discharge link and treatment link.

In the production process, the Company has stipulated the diversion project and water-saving technology:

- In the process of production and construction, the production and business units should constantly establish and improve the sewage diversion project to reduce the amount of wastewater generated;
- Continuously carry out water-saving process transformation, improve industrial water reuse rate and reduce wastewater discharge.

In the discharge link, the Company has stipulated the sewage outlet, discharge amount and discharge concentration;

- Units that discharge wastewater into water bodies shall, in accordance with laws, regulations and ecological environmental protection at all levels. The provisions of the management department regulate the setting of sewage outlets; if a sewage outlet is set in a river or lake, it shall also comply with the provisions of the water administrative department; it is forbidden to set concealed pipes to the surrounding water bodies, and dump industrial waste residue, domestic garbage and other wastes;
- The discharge concentration of water pollutants shall not exceed the discharge standards prescribed by the state, local or industry; where the unit is located, it must meet the requirements of total control of key water pollutants.



(二) 污染物與廢棄物排放管理(續)

1. 水資源與水污染防治(續)

在治理環節，公司對治理設施進行了規定：

- 所屬生產經營單位現有廢水治理設施必須保證長期有效運行，確保達標排放；
- 新建廢水治理設施不得選用淘汰落後的工藝和設備。

2020年，公司生產經營所使用的水資源不存在水質和水量的問題，全年用水績效如下表所示：

指標 Index	單位 Unit	數據 Data
總用水量 Total water consumption	萬噸 00'000 tonnes	83,713
新水使用量 New water consumption		5,026
總排水量 Total water displacement		5,427
用水密度 Intensity of water consumption	噸/萬元收入 Tonne/RMB10,000	26.28
水循環利用率 Water cycle utilization rate	%	95.67

註：水密度中採用的萬元收入取自公司2020年營業收入。

2020年，公司主要污染物排放指標低於國家標準50%以下，二氧化硫、化學需氧量排放量大幅小於所在地政府下達的總量控制目標。公司廢水排放績效如下表所示：

排放物 Discharge	單位 Unit	排放量 discharge amount
COD	噸 tonnes	1,404.77
氨氮 ammonia nitrogen		133.68
銅 copper		1.45
鋅 Zinc (Zn)		2.42
鉛 Lead (Pb)		1.97

註：統計範圍為城門山、德銅、德銅化工、貴冶、銅箔、龍昌、武山、銀山、東同、清遠、永銅、甕福十二個二級單位。

(2) Management of pollutant and waste discharge (continued)

1. Water resources and prevention and control of water pollution (continued)

In the governance link, the Company has stipulated rules for the governance facilities:

- The existing wastewater treatment facilities of the subordinate production and operation units must ensure long-term effective operation and ensure the discharge to meet the standard ;
- The newly built wastewater treatment facilities are forbidden to adopt backward technologies and equipment.

In 2020, the water resources used in the production and operation of the Company had no issues of water quality and volume, and the annual water-use performance of the Company is as follows:

Note: the revenue of RMB10,000 used in water density is derived from the Company's operating revenue in 2020.

In 2020, the major pollutant emission indicators of the Company were 50% below the national standards, and the emission of SO<sub>2</sub> and COD was significantly lower than the total volume control targets set by the local government. The Company's wastewater discharge performance is as follows:

Note: The statistical scope covers twelve secondary units, namely Chengmenshan, Detong, Detong Chemical, Guiye, Tongbo, Longchang, Wushan, Yinshan, Dongtong, Qingyuan, Yongtong and Wengfu.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(二) 污染物與廢棄物排放管理(續)

1. 水資源與水污染防治(續)

**案例：廢水提銅，變廢為寶**

公司二級單位德興銅礦在開展低品位原生硫化銅礦濕法冶金提銅試驗研究的基礎上，把酸性水污染防治和其中有用金屬回收技術有機結合起來，建成千噸級能力的濕法提銅工廠，利用細菌浸出—萃取—電積新工藝，不僅每年從廢石中回收銅金屬1,300多噸，而且減少酸性水處理的壓力，截至2020年底，已累計從廢石中回收銅金屬22,632噸。

此外，公司與加拿大百泰環保科技有限公司合資成立子公司，應用化學硫化技術從低濃度酸性水中回收銅資源並達標處理水資源進行循環利用，2020年從酸性水中回收1,502噸銅金屬，取得顯著的環保和經濟效益，截至2020年末累計回收銅金屬13,134噸。

(2) Management of pollutant and waste discharge (continued)

1. Water resources and Prevention and control of water pollution (continued)

**Case : Copper extraction from wastewater, turning waste into wealth**

Dexing Copper Mine, a secondary unit of the Company, has organically combined the prevention and control of acid water pollution with the recovery technology of useful metals on the basis of the experimental study of hydrometallurgical copper extraction from low-grade primary copper sulfide ores, and built a wet copper extraction plant with a capacity of 1,000 tonnes. By using the new technology of bacterial leaching-extraction-electrowinning, not only more than 1,300 tonnes of copper metal are recovered from waste rocks every year, but also the pressure of acid water treatment is reduced. By the end of 2020, 22,630 copper metals have been recovered from waste rocks.

In addition, the Company established a joint venture with Canada Baitai Environmental Protection Technology Co., Ltd. to recover copper resources from low-concentration acidic water by chemical vulcanization technology and treat water resources up to meet the standard for recycling. In 2020, 1,502 tonnes of copper were recovered from acidic water, which achieved remarkable environmental protection and economic benefits. By the end of 2020, a total of 13,134 tonnes of copper metal had been recovered.



(二) 污染物與廢棄物排放管理(續)

2. 大氣污染防治

對於生產過程中產生的廢氣，遵循《中華人民共和國大氣污染防治法》等法律法規，公司在《辦法》中對生產環節、排放環節、處理環節進行了明確規定。其中，生產環節的規定主要包括能源結構、生產工藝和設施等：

- 所屬生產經營單位要不斷改進能源結構，推廣使用清潔能源，減少大氣污染物的排放量；
- 建設項目在施工過程中要採取有效措施治理揚塵，做到文明施工；
- 冶煉單位應當採用清潔生產工藝，配套建設除塵、脫硫等裝置，或者採取技術改造等其他控制大氣污染物排放的措施；同時要加強除塵、脫硫等治理設施的運行管理，確保其正常運行；
- 禁止擅自拆除、停運污染治理設施，確保生產設施與環保設施的同步、高效運行。

在排放環節，向大氣排放廢氣的單位要按照法律、法規和國務院生態環境保護主管部門的規定規範設置排放口。

在處理環節，礦山、化工單位要精細生產過程管理，採取集中收集處理等措施，嚴格控制粉塵和氣態污染物的排放；有除塵設備的必須保持正常運行，無降塵設備的要採取有效防塵、抑塵措施，減少無組織粉塵的排放。

(2) Management of pollutant and waste discharge (continued)

2. Air pollution prevention and governance

For the waste gas produced in the production process, the Company complies with the laws and regulations such as the Law of the People's Republic of China on the Prevention and Control of Air Pollution and also clearly stipulates the production link, emission link and treatment link in the Measures. Among them, the provisions of production links mainly include energy structure, production technology and facilities, etc.:

- The production and operation units should continuously improve the energy structure, promote the use of clean energy, and reduce the emission of atmospheric pollutants ;
- Effective measures should be taken to control dust in the construction process of construction projects to achieve civilized construction;
- Smelting units should adopt clean production technology, supporting the construction of dust removal and desulfurization devices or take technical transformation and other measures to control the emission of atmospheric pollutants; at the same time, it is necessary to strengthen the operation and management of dust removal, desulfurization and other treatment facilities to ensure their normal operation;
- It is forbidden to dismantle and stop pollution control facilities without authorization to ensure the synchronous and efficient operation of production facilities and environmental protection facilities.

In the emission link, the units that discharge waste gas to the atmosphere shall set up the discharge port in accordance with laws, regulations and the provisions of the competent department of ecological environmental protection under the State Council.

In the treatment process, mining and chemical units should manage the production process carefully, take measures such as centralized collection and treatment, and strictly control the emission of dust and gaseous pollutants; those with dust removal equipment must keep normal operation, and those without dust removal equipment should take effective dust prevention and suppression measures to reduce unorganized dust emission.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(二) 污染物與廢棄物排放管理(續)

2. 大氣污染防治(續)

2020年，公司廢氣排放績效如下表所示：

排放物 emission	2020年度排放量 2020 annual emission
氮氧化物(噸) oxynitride (tonnes)	42.54
二氧化硫(噸) sulphur dioxide (tonnes)	1,453.50
煙塵(噸) dust (tonnes)	209.75

註：統計範圍為德銅化工、貴冶、清遠、永銅、甕福五個二級單位。

(2) Management of pollutant and waste discharge (continued)

2. Air pollution prevention and governance (continued)

In 2020, the Company's exhaust emission performance is as follows:

Note: The statistical scope is five secondary units: Detong Chemical, Guiye, Qingyuan, Yongtong and Wengfu

案例：離子液法脫硫

為降低硫酸生產尾氣中的二氧化硫濃度，公司所屬控股子公司江銅－甕福化工有限責任公司採用離子液法脫硫技術對尾氣吸收系統進行改造，脫除和回收煙氣中的二氧化硫。脫硫改造裝置自投入運行以來，運行穩定，尾氣排放中的二氧化硫濃度控制在100mg/Nm<sup>3</sup>左右，低於國家規定的400mg/Nm<sup>3</sup>的排放標準，在尾氣脫硫方面取得了巨大的環境效益。

Case : Desulfurization by ionic liquid method

In order to reduce the concentration of sulfur dioxide in the tail gas of sulfuric acid production, JCC Wengfu Chemical Co., Ltd., a holding subsidiary of the Company, adopted ionic liquid desulfurization technology to reform the tail gas absorption system to remove and recover sulfur dioxide in flue gas. Since the revamped desulfurization unit was put into operation, it has been running stably, and the concentration of sulfur dioxide in the exhaust gas is controlled at about 100mg/Nm<sup>3</sup>, which is lower than the national emission standard of 400mg/Nm<sup>3</sup>. Great environmental benefits have been achieved in the exhaust gas desulfurization.



離子液法脫硫吸收塔  
Ion liquid desulfurization absorption tower



(二) 污染物與廢棄物排放管理(續)

3. 一般固體廢物和危險廢棄物污染防治

礦業企業在生產過程中產生的固體廢物主要分為一般固體廢物和危險廢物。遵循《中華人民共和國固體廢物環境污染防治法》《國家危險廢物名錄》《江西省生態環境廳關於進一步加強危險廢物環境監管的實施意見》等法律法規，公司在《辦法》中公司從貯存和收集利用方面對其帶來的污染防治進行規定。

在貯存方面公司所屬生產經營單位應按照固體廢物種類和特性，按照《一般工業固體廢物貯存、處置場污染控制標準》《危險廢物貯存污染控制標準》等要求設置臨時或永久性貯存場所，對於危險廢物，將暫時不利用或者不能利用的工業固體廢物，按照固體廢物貯存技術規範建設貯存設施、場所，分類存放。並且在選擇場所時，公司依照危廢特性選擇臨時或永久性貯存場所，同時做好防滲漏、防揚散、防流失等措施。

在收集利用方面，對外收集利用危險廢物的單位必須依法申請辦理經營許可資質，產生危險廢物且不能自行利用的單位必須依法辦理轉移、審批手續，並轉移到有資質的單位進行處置，不得非法處置利用。同時，在對危險廢物的綜合利用、轉移運輸、貯存等過程中採取一定措施，防止產生二次污染。

(2) Management of pollutant and waste discharge (continued)

3. Pollution prevention and control of general solid waste and hazardous waste

The solid waste produced by mining enterprises in the production process is mainly divided into general solid waste and hazardous waste. According to the laws and regulations such as the Law of the PRC on the Prevention and Control of Environmental Pollution by Solid Waste, the Directory of National Hazardous Wastes, and Opinions of the Department of Ecology and Environment of Jiangxi Province on Further Strengthening Environmental Supervision of Hazardous Waste, the Company regulates the prevention and control of pollution from the aspects of storage, collection and utilization in the Measures.

In terms of storage, the production and business units affiliated to the Company shall set up temporary or permanent storage places according to the types and characteristics of solid wastes, the Pollution Control Standards for Storage and Disposal Sites of General Industrial Solid Wastes and Pollution Control Standards for Storage of Hazardous Wastes, etc. For hazardous wastes, the industrial solid wastes that are temporarily unused or unavailable shall be stored in different categories according to the technical specifications for solid waste storage. When selecting the place, the Company shall select the temporary or permanent storage place according to the characteristics of hazardous waste, and take measures to prevent leakage, scattering and loss.

In respect of collection and utilization, units that collect hazardous wastes must apply for the qualifications of the operating licenses in accordance with the law, and units that produce hazardous wastes that cannot be used by themselves must be transferred and examined and approved in accordance with the law, and transferred to qualified units for disposal, and shall not be disposed illegally. At the same time, certain measures are adopted during the process of comprehensive utilization, transfer and transportation, and storage of hazardous wastes to prevent secondary pollution.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(二) 污染物與廢棄物排放管理(續)

3. 一般固體廢物和危險廢棄物污染防治(續)

2020年度公司有害物廢棄物和無  
害廢棄物排放情況如下表所示：

排放物

Emission

無害廢棄物  
Non-hazardous waste

尾礦處置量(萬噸)  
Amount of tailings disposed (10,000 tonnes)  
尾礦綜合利用量(萬噸)  
Amount of tailings comprehensively used (10,000 tonnes)

有害廢棄物  
Hazardous waste

礦山廢礦物油(萬噸)  
Used oil from mines (10,000 tonnes)  
冶煉產生的危險廢棄物(萬噸)  
Hazardous waste from smelting (10,000 tonnes)

2020排放量  
Emission amount  
in 2020

4,990.45

698.46

0.06

3.68

4. 噪聲污染防治

遵循《中華人民共和國環境噪聲  
污染防治法》等法律法規，公司  
《辦法》明確規定，公司所屬生產  
經營單位在項目初步設計設備選  
型中，禁止選用國務院有關部門  
公佈限期淘汰的環境噪聲污染嚴  
重的設備。除此以外，所屬生產  
經營單位應加大機械設備的維護  
力度，採取有效的隔音減振降噪  
措施，減輕噪聲對週邊環境的影  
響。

(2) Management of pollutant and waste discharge  
(continued)

3. Pollution prevention and control of general solid waste  
and hazardous waste (continued)

The following table shows the discharge of the hazardous  
waste and non-hazardous waste of the Company in 2020:

4. Prevention and control of noise pollution

According to the Law of the People's Republic of China on the  
Prevention and Control of Pollution from Environmental Noise  
and other laws and regulations, the Company's Measures  
expressly stipulates that in the preliminary design of equipment  
for the project, the production and business operation units  
of the Company are prohibited from selecting the equipments  
issued by the relevant departments of the State Council to  
eliminate material environmental noise pollution within a certain  
period. In addition, the production and business operation units  
should increase the maintenance of machinery and equipment,  
adopt effective noise absorption and noise reduction  
measures, and reduce the impact of noise on the surrounding  
environment.



**(二) 污染物與廢棄物排放管理(續)**

**5. 土壤污染防治**

遵循《中華人民共和國土壤污染防治法》《江西省土壤污染防治條例(徵求意見稿)》等法律法規，公司《辦法》明確規定，公司所屬生產經營單位在一切生產經營活動中應當採取有效措施，防止有毒有害物質滲漏、流失、揚散，避免土壤受到污染。不僅如此，被列為土壤污染重點監管單位應制定、實施土壤自行監測方案，並將監測數據報生態環境主管部門。

**6. 水土保持**

公司密切關注業務所在地的水土保持情況，尤其是公司總部所在的江西省水資源與土壤資源的使用壓力。對此，公司《辦法》對水土保持進行明確規定，凡建設項目對自然植被和水土保持有破壞的，必須按《中華人民共和國水土保持法》要求制定相應的水土保持方案和生態恢復措施計劃，並報相關行政主管部門審批，在規定期限內予以實施。

**(2) Management of pollutant and waste discharge (continued)**

**5. Soil pollution prevention and control**

According to the Law of the People's Republic of China on the Prevention and Control of Soil Pollution, the Regulations on the Prevention and Control of Soil Pollution in Jiangxi Province (Exposure Draft) and other laws and regulations, the Company's Measures clearly stipulates that all production and business operations of the Company shall adopt effective measures to prevent the leakage, loss and spreading of toxic and hazardous substances and to avoid soil contamination. In addition, the key soil pollution monitoring authorities shall formulate and implement soil self-monitoring plans and report the monitoring data to the competent department of ecological environment.

**6. Water and soil conservation**

The Company pays close attention to the water and soil conservation in the places where it operates, especially the use pressure of water resources and soil resources in Jiangxi Province where the Company's headquarters is located. In this regard, the Company's Measures clearly stipulates the soil and water conservation, and any construction project that has damage to natural vegetation and soil and water conservation shall comply with the requirements on Water and Soil Conservation Law of the People's Republic of China to formulate corresponding plans for water and soil conservation and ecological restoration measures, and submit to the relevant administrative departments for approval and implement within a prescribed period.

## 六. 環境與氣候變化(續)

### VI. Environment and Climate Change (continued)

#### (三) 應對氣候變化

進入21世紀以來，慢性氣候變化與極端天氣事件的影響日益顯著，規模和範圍逐步擴大，頻率不斷提高，為人類社會帶來了極大挑戰。2020年中國宣佈將力爭於2030年前實現碳達峰，在2060年前實現碳中和。作為負責任的國有企業，公司在實現國家「30·60」目標過程中負有不可推卸的責任，高度關注氣候變化問題帶來的實體風險，在溫室氣體排放和洪澇災害方面採取積極措施應對。此外，公司還關注到與監管變化、法律、技術、市場和聲譽相關的過渡風險，並據此及時調整公司內部政策與氣候應對措施。

##### 1. 碳足跡

在應對氣候變化方面，公司積極響應《聯合國氣候變化框架公約》《巴黎協定》和中國政府《國家適應氣候變化戰略》等相關文件，通過優化能源結構，提高能源使用效率，設立節能考核目標等方式減少生產運營活動對全球氣候變化的影響。2020年，公司通過能源管理，減少自身的溫室氣體排放量，應對氣候變化的影響，並取得成效。

2020年，公司生產活動溫室氣體排放情況如下圖所示：

指標 Indicators	單位 Unit	2020年排放量 Emission in 2020
溫室氣體排放(範圍一) Greenhouse gas emissions (scope I)	噸二氧化碳當量 Tonnes of CO2 equivalent	282,245.451
溫室氣體排放(範圍二) Greenhouse gas emissions (scope II)	噸二氧化碳當量 Tonnes of CO2 equivalent	1,922,007.380
溫室氣體排放(範圍三) Greenhouse gas emissions (scope III)	噸二氧化碳當量 Tonnes of CO2 equivalent	0.000
溫室氣體排放總量 Total greenhouse gas emissions	噸二氧化碳當量 Tonnes of CO2 equivalent	2,204,252.831
溫室氣體排放密度 Greenhouse gas emissions density	噸二氧化碳當量/萬元收入 Tonnes of CO2 equivalent/ten thousand	0.0699

註1：統計範圍為省內生產單位，包括德興銅礦、永平銅礦、武山銅礦、城門山銅礦、貴溪冶煉廠、江西銅業銅材、東同礦業、銀山礦業、江銅耶茲銅箔、龍昌精密銅管、臺意特種電工材料、江西銅業集團(貴溪)物流有限公司。

註2：溫室氣體排放密度中採用的萬元收入取自公司2020年營業收入。

#### (III) CLIMATE CHANGE RESPONSE

Since the beginning of the 21st century, the impact of chronic climate change and extreme weather events has become increasingly significant, and the scale and scope of the gradual expansion and increasing frequency of climate change have brought enormous challenges to human society. In 2020, China announced that it would strive to achieve carbon peak by 2030 and carbon neutrality by 2060. As a responsible state-owned enterprise, the Company has an unshirkable responsibility for achieving the national "30.60" target, pays close attention to the physical risks arising from climate change issues, and takes active measures in response to greenhouse gas emissions and flooding. In addition, the Company is also aware of the transitional risks associated with regulatory changes, laws, technologies, markets and reputation, and adjusts its internal policies and climate response measures accordingly in a timely manner.

##### 1. Carbon footprint

In response to climate change, the Company has responded positively to relevant documents such as the UNFCCC, the Paris Agreement and the National Climate Change Adaptation Strategy of the PRC Government, through the optimisation of the energy structure, the improvement of energy use efficiency and the establishment of energy conservation assessment targets, etc. to reduce the impact of production operations on global climate change. In 2020, the Company managed to reduce its own greenhouse gas emissions through energy management, addressing the effects of climate change and achieving results.

The following table illustrates the greenhouse gas emissions from the Company's production activities in 2020:

Note 1: The statistical scope is the provincial production units, including Dexing Copper Mine, Yongping Copper Mine, Wushan Copper Mine, Chengmenshan Copper Mine, Guixi Smelter, Jiangxi Copper Products, Dongtong Mining, Yinshan Mining, Jiangxi Copper Yates Copper Foil, Jiangxi (Longchang) Precise Pipe, Taiyi Special Electrical Materials and Jiangxi Copper Group (Guixi) Logistics Co., Ltd.

Note 2: The ten thousand used in greenhouse gas emissions density is derived from the Company's operating income in 2020.



### (三) 應對氣候變化(續)

#### 2. 防洪防汛

公司的主要礦山集中分佈在省內上饒和九江地區，緊靠長江、鄱陽湖等水系，歷年來防汛任務繁重。由於全球氣候變化，極端天氣更加頻繁出現。洪澇災害對於礦業工作影響較大，因此，公司充分重視防洪工作，並要做好季節性極端惡劣天氣下的安全防範工作。

2020年，公司結合歷年抗洪搶險、戰高溫鬥酷暑的經驗，積極做好洪澇、颱風、雷電、雨雪冰凍、高溫等各類災害事故防範，按「做最壞的打算，做充分的準備」的原則部署完善工程和非工程措施。公司未雨綢繆，抓住晴好天氣及時修復水毀工程，完善排水設施，進一步提高極端天氣、自然災害的抵禦能力。公司還加強酸性廢水調節庫的日常運行管理，想方設法保證各酸性水庫長週期低水位運行，確保庫壩安全。除此以外，公司進一步完善應急預案，強化物資準備，加強應急演練，提高應對突發事故的應急處置能力。

### (III) CLIMATE CHANGE RESPONSE (continued)

#### 2. Flood prevention and control

The Company's main mines are concentrated in the Shangrao and Jiujiang areas in the province, and close to the Yangtze and Poyang Lake, with onerous task of flood prevention over the years. Extreme weather is more frequent due to global climate change. Flooding has a significant impact on the mining work. Therefore, the Company pays great attention to the flood prevention work and should carry out safety precaution under extreme weather conditions.

In 2020, the Company, with its experiences of flood disaster relief actions and fighting against the heat over the years, has been actively preparing for disasters such as floods, typhoons, lightning, snowing, continuously improves the construction of an emergency management system, and high temperature. The Company deployed perfect engineering and non-engineering measures in accordance with the principle of "prepare for the worst." The Company took precautionary measures, seize the fine weather and timely repaired the water damage projects, and improve drainage facilities to further improve the resilience of extreme weather and natural disasters. The Company also strengthened the daily operation management of the acid waste water regulating reservoirs, and sought to ensure the long-term low water level operation of each acid reservoir to ensure the safety of the dams. In addition, the Company further improved the contingency plans, strengthened the preparation of materials, enhanced emergency drills and improved emergency response capabilities in response to emergencies.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(三) 應對氣候變化(續)

2. 防洪防汛(續)

**案例：德興銅礦防洪度汛預案演練**

公司下屬二級單位德興銅礦為進一步強化防洪度汛應急預案保障措施的落實，提高應對防洪度汛安全生產事故和突發性事件的能力，教育員工能夠迅速、高效、有序處理突發事件，將人力不可抗拒的自然災害損失降到最低限度，於2020年5月15日開展了防洪度汛預案演練。結合歷年防洪度汛經驗教訓和現場實際情況，德興銅礦共選取了四個演練場景。



**防洪演練**

**Flood Prevention Drill**

防洪演習進一步增強了全體幹部職工的崗位意識，責任意識和防洪意識，檢驗了汛前防洪度汛的準備工作和備汛成果，提高了應急人員在緊急情況下妥善快速處置事故的能力，鍛煉了各個防汛搶險隊伍，增強了防汛實戰能力和團結協作精神，達到了預期目的。

The flood prevention drills further enhanced the post awareness, responsibility awareness and flood prevention awareness of all cadres and staff, examined the flood prevention preparation and achievements before the flood, improved the ability of emergency personnel to properly and quickly handle accidents in emergencies, trained all flood prevention and rescue teams, enhanced the practical ability of flood prevention and the spirit of unity and cooperation, and achieved the expected goal.

(III) CLIMATE CHANGE RESPONSE (continued)

2. Flood prevention and control (continued)

**Case: Drill of flood control plan of Dexing Copper Mine**

Dexing Copper Mine, a secondary unit of the Company, educated employees to deal with emergencies in a rapid, efficient and orderly manner and minimizes the losses caused by irresistible natural disasters in order to further strengthen the implementation of the guarantee measures of the emergency plan for flood prevention and control and improve the capability of responding to safety production accidents and emergencies in flood prevention and control. A flood prevention preplan drill was carried out on 15 May 2020. Based on the experience and lesson of flood control over the years and actual on-site conditions, Dexing Copper Mine selected four drill scenarios.



### (三) 應對氣候變化(續)

### (III) CLIMATE CHANGE RESPONSE (continued)

#### 2. 防洪防汛(續)

#### 2. Flood prevention and control (continued)

##### 案例：汛期防洪成效

2020年7月，由於連降暴雨，長江、鄱陽湖水系水情超歷史最高紀錄，公司也面臨了前所未有的挑戰。在2020年汛期前，公司就下發《關於做好2020年汛期安全生產工作的通知》，對防洪度汛工作進行了週密部署，並組織了有關專業人員以交叉檢查的方式對各生產單位汛期安全工作進行了重點檢查。由於公司及各單位準備充分、措施有力、響應及時，通過做好清污分流，合理調節露採坑內水位，充分發揮現有排洪設備設施的能力，加大對邊坡、排土場、尾礦庫的巡查力度，及時採取削坡卸載、開槽引流等措施有效降低各類風險，杜絕了汛期各類安全事件的發生，有力保障了生產的正常運行。

##### Case: Flood Control Effectiveness in Flood Season

In July 2020, due to continuous rainfall, the water conditions of the Yangtze River and Poyang Lake systems exceeded record highs, and the Company also faced unprecedented challenges. Before the flood season of 2020, the Company issued the Notice on Safe Production in Flood Season of 2020 to make careful arrangements for flood prevention and control. The Company also organized relevant professionals to focus on the safety work in flood season of each production unit by way of cross-examination. As the Company and all units were fully prepared, measures were effective and timely responses were made, the capacity of flood discharge equipment and facilities was fully utilized through diversion of clean and sewage and reasonable adjustment to the water level in open pit. The occurrence of various safety accidents in flood season was eliminated and the normal operation of production was guaranteed by way of strengthening inspection of slopes, dumps and tailing storage, and taking measures such as slope cutting and unloading, slotting and drainage in a timely manner to effectively reduce various risks.

### (四) 能源管理

### (IV) Energy management

公司始終堅持「提高能源利用效率，實現節能減排、保護環境、降本增效」的能源管理目標，不斷完善能源管理體系建設，致力於建立節約型企業。依據《中華人民共和國節約能源法》以及相關法律、法規，公司制定《江西銅業股份有限公司能源管理辦法》，明確支持節能技術改造項目，鼓勵各單位優化能源結構，積極採用清潔能源和高效用能的新技術、新工藝、新裝備來實現節能減排的目標，建立健全公司能源消耗台賬。除此以外，公司還制定了能源考核機制，按年度對各單位的節能指標完成情況進行考核。

The Company always adheres to the energy management objective of “improving energy utilization efficiency, achieving energy saving and emission reduction, environmental protection, cost reduction and efficiency enhancement”, continuously improves the construction of an energy management system, and is committed to building a resource-efficient enterprise. In accordance with the Energy Conservation Law of the People's Republic of China and relevant laws and regulations, the Company formulated the Energy Management Measures of Jiangxi Copper Company Limited, which was explicitly supported energy-conservation technological transformation projects, encouraged all units to optimize energy structure, actively adopted clean energy and new technologies, processes and equipment with high efficiency to achieve the goal of energy conservation and emission reduction, established and improved the energy consumption ledger of the Company. In addition, the Company has also established an energy assessment mechanism to assess the achievement of energy saving targets by each unit on an annual basis.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(四) 能源管理(續)

1. 能源消耗

2020年，公司總能耗為596,903.475噸標煤，產值能耗0.0935噸標煤／萬元，按可比價計算節能量約為2,596.76噸標煤，「十三五」(2016-2020年)累計完成節能量42,771.82噸標煤，完成省政府下達節能目標任務的151.14%。其中，銅冶煉綜合能耗154.85公斤標煤／t，處於世界先進水平。

2020年，公司能源結構如下所示：

能源種類 Type of energy	單位 Unit	數據 Data
電力 Electric power	百分比 Percentage	72.507
柴油 Diesel oil		13.49
汽油 Gasoline		0.086
天然氣 Natural gas		7.274
煤 Coal		0.083
重油 Heavy oil		2.880
蒸汽 Vapour		3.673

(IV) Energy management (continued)

1. Energy Consumption

In 2020, the total energy consumption of the Company was 596,903.475 tonnes of standard coals, and the energy consumption per unit was 0.0935 tonnes of standard coals/RMB ten thousand, the energy saving calculated based on comparable prices was approximately 2,596.76 tonnes of standard coals, The Company achieved an accumulated energy saving of 42,771.82 tonnes of standard coal during the “13th Five-Year Plan” (2016–2020), representing 151.14% of the energy saving targets assigned by the provincial government, of which, the overall energy consumption of copper smelting was 154.85 kilograms of standard coals per tonne and was at the world advanced level.

In 2020, the energy structure of the Company is listed in the table below:



(四) 能源管理(續)

1. 能源消耗(續)

2020年，公司能耗情況如下所示：

	能源種類 Type of energy	單位 Unit	消耗量 Consumption
<b>直接能耗</b> Direct energy consumption	汽油 Gasoline	噸 Tonnes	346.996
	柴油 Diesel oil	噸 Tonnes	55,289.350
	燃料油 Fuel oil	噸 Tonnes	16,529.650
	天然氣 Natural gas	立方米 Cubic meters	32,646,060.000
	煤 Coal	噸 Tonnes	694.680
	外購電力 Purchased electric power	兆瓦時 MWh	3,521,554.930
	蒸汽 Vapour	噸 Tonnes	238,495.880
<b>綜合能耗</b> Comprehensive energy consumption		噸標準煤 Tonnes of standard coal	596,903.475

註：統計範圍為省內生產單位，包括德興銅礦、永平銅礦、武山銅礦、城門山銅礦、貴溪冶煉廠、江西銅業銅材、東同礦業、銀山礦業、江銅耶茲銅箔、龍昌精密銅管、臺意特種電工材料、江西銅業集團(貴溪)物流有限公司。

1. Energy Consumption (continued)

In 2020, the energy consumption of the Company is listed in the table below:

Note: The statistical scope includes production units in the province, including Dexing Copper Mine, Yongping Copper Mine, Wushan Copper Mine, Chengmenshan Copper Mine, Guixi Smelter, Jiangxi Copper Products, Dongtong Mining, Yinshan Mining, JCC Yates Copper Foil, Longchang Precision Pipe, Taiyi Special Electrical Materials and JCC (Guixi) Logistics Company Limited.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(四) 能源管理(續)

2. 節能改造

2020年，公司繼續加快節能工藝、節能技術裝備升級換代，推動重點單位節能增效，取得顯著的節能效果。自2018年以來，公司完成節能改造相關的項目共有16項，如下表所示：

序號 No.	改造項目 Renovation project
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1	銅箔公司二期生箔機整流器銅排改造 Phase II copper bar renovation of crude foil engine rectifier of Foil Company
2	銅箔公司冷水機組改造 Renovation of chiller of Foil Company
3	江銅台意六台臥式高速拉絲漆包機節能改造 Renovation of six horizontal high-speed wire drawing paint charters for energy conservation of JCC Taiyi
4	德興銅礦新技術廠焙燒煙氣餘熱回收 Waste heat recovery of roasting flue gas in new technology plant of Dexing Copper Mine
5	銅材公司SCR3000工藝水泵節能改造 Energy saving renovation of SCR3000 process water pump of Copper Materials Company
6	江銅龍昌一車間高配無功功率補償改造 High distribution reactive power compensation renovation of No.1 workshop of JCC Longchang workshop of JCC
7	1#2#在線退火增加有源濾波裝置 Added active filter device for on-line annealing of 1 # 2 #
8	貴溪冶煉廠熔煉一系統閃速爐渣直排緩冷改造 Smelting system 1 flash furnace slag direct discharge slow cooling transformation of Guixi Smelter
9	貴溪冶煉廠硫酸一系統SO <sub>2</sub> 風機改造 Renovation of SO <sub>2</sub> wind turbines for sulphuric acid system of Guixi Smelter
10	德興銅礦大山220KV變電站擴容改造 Capacity expansion and reconstruction of Dashan 220KV transformer substation in Dexing Copper Mine
11	德興銅礦泗洲選礦廠高效節能碎磨工藝技術研究 Research on high-efficiency energy-saving crushing and grinding technology of Sizhou Dressing Plant of Dexing Copper Mine
12	磨機瓷球磨礦介質應用 Mill porcelain ball grinding medium application
13	二期清水泵站智能化改造 Phase II intellectualized reconstruction of clean water pump station
14	德興銅礦大山1#主變18MW變壓器的更新改造 Renovation and reconstruction of main transformer 18MW transformer of Dashan 1# of Dexing Copper Mine
15	武山銅礦N-610m泵站4#水泵改造 Renovation of 4# pump of N-610m pump station in Wushan Copper Mine
16	銅材有限公司連拉連退退火保護方式改進 Improvement of continuous drawing, continuous retirement annealing protection method for Copper Products Company Limited

(IV) Energy management (continued)

2. Energy Saving Transformation

In 2020, the Company continued to accelerate the upgrading and replacement of energy saving process, energy saving technologies and equipment, promoted energy saving and efficiency enhancement in key units and achieved significant energy saving results. Since 2018, the Company has completed a total of 16 energy-saving transformation-related projects, which are set out in the table below:



## (四) 能源管理(續)

## (IV) Energy management (continued)

## 2. 節能改造(續)

## 2. Energy Saving Transformation (continued)

**案例：SO<sub>2</sub>風機變頻技術改造項目**

2020年公司所屬二級單位貴溪冶煉廠針對制酸一系列現狀和存在的問題，實施了多個子項目對其進行技術改造，其中在「SO<sub>2</sub>風機變頻技術改造項目」中投入使用了3K離心風機，採用先進的變頻調速方式。利用變頻器控制風機轉速，節電效果明顯。尤其是在低負荷情況下，可以實現低轉速運轉，大幅改善硫酸系統的綜合能耗指標。

SO<sub>2</sub>風機改造後，2020年硫酸耗電量為16,205.85萬kWh，同比下降1.78%，節約電量361.52萬kWh。

**Case: SO<sub>2</sub> Wind Turbine Frequency Conversion Technological Renovation Project**

In 2020, Guixi Smelter, a secondary unit of the Company, implemented the technical renovation for a number of subprojects responding to a series of current situations and existing problems in acid production, of which, 3K centrifugal fans were put into use in "SO<sub>2</sub> wind turbine frequency conversion technology transformation project" and advanced frequency conversion speed regulation method was adopted. The use of frequency converters to control the speed of wind turbines resulted in remarkable power saving effect. In particular, under low load conditions, it can achieve low-speed operation and greatly improve the comprehensive energy consumption index of sulphuric acid system.

After SO<sub>2</sub> wind turbine renovation, the electricity consumption of sulphuric acid in 2020 was 162,058,500 kWh, representing a year-on-year decrease of 1.78%, saving 3,165,200 kWh of electric power.



**硫酸車間3K離心風機**  
**3k Centrifugal Fan of Sulphuric Acid Workshop**

## 3. 清潔能源

為提高能源清潔化水平，發展清潔能源，公司先後實施完成鍋爐煤改氣改造工程，永平銅礦利用廢石場建設20MWP光伏發電項目，貴溪冶煉廠實施智能工廠工程建設，建設了二系統極板智能化轉運及質檢系統，用智能化清潔電動轉運設備代替原先以柴油為能源的人工叉車及平板車，提高了能源利用效率及清潔化水平。

## 3. Clean Energy

In order to improve the level of clean energy and develop clean energy, the Company has successively completed the transformation project of replacing coal from boiler with gas. Yongping Copper Mine constructed a 20MWP photovoltaic power generation project by using waste rock site. Guixi Smelter implemented the intelligent plant project, built a two-system intelligent pole plate transfer and quality inspection system, and replaced the manual forklifts and flat-panel trucks originally powered by diesel and gasoline with intelligent clean electric transfer equipment, improving energy utilization efficiency and cleanliness level.

## 六. 環境與氣候變化(續)

### VI. Environment and Climate Change (continued)

#### (五) 循環經濟

循環經濟是實施資源戰略，促進資源永續利用，保障所在地經濟安全的重大戰略措施。2020年，為進一步促進循環經濟發展，提高資源利用效率，保護和改善環境，公司依據《中華人民共和國循環經濟促進法》等相關法律法規開展生產經營活動，積極開展資源循環相關技術的研發和實踐。

為推動循環經濟，公司意識到工業包裝的重大環境影響和潛在利用價值，積極採取行動對工業包裝品廢棄物進行回收利用，作為再生資源重新加工成材料。

公司主要工業產品包裝為木頭架和塑料製品包裝，採取相應的回收措施如下表所示：

產品包裝類型	單位	2020年度使用量	回收方式
Product packaging type	Unit	Consumption in 2020	Recovery methods
木頭架 Wood frame	噸 Tonne	13,338	70%以上由公司回收 Over 70% was recycled by the Company
塑料製品包裝 Packaging of plastic products			基本都進行回收，公司回收清洗粉碎後銷售 Almost all of them are recycled, and sale after was recycled, cleaned and pulverized by the Company

#### (V) Circular Economy

Circular economy is a major strategic measure for the implementation of a resource strategy, the promotion of sustainable use of resources and the protection of local economic security. In 2020, in order to further promote the development of circular economy, improve the utilization efficiency of resources, protect and improve the environment, the Company carried out production and operation activities and actively conducted R&D and practice of technologies related to resource recycling in accordance with the Circular Economy Promotion Law of the PRC.

In order to promote circular economy, the Company was aware of the significant environmental impact and potential utilization value of industrial packaging, and actively took actions to recycle industrial packaging waste as a renewable resource for reprocessing into materials.

The major industrial products of the Company are packed with wooden frames and plastic products. the corresponding recycling measures are as follows:



## (六) 生物多樣性

生物多樣性是地球生命的基礎，在維持氣候、保護水源、土壤和維護正常的生態學過程對整個人類作出的貢獻更加巨大。為保護礦山週邊地區生態環境，防治礦山開採對週邊水資源、植被、土壤等造成的影響，公司長期以來堅持礦山生態修復工作。公司在礦山生態修復工作中，針對性選擇受損生態系統，包括露天採場、塌陷區、矸石或渣土堆場、尾礦庫、選礦場等礦業活動場地，對破壞的生態環境要素進行識別，如土地與土壤、森林與濕地、地表水與地下水、大氣、動物棲息地、微生物群落等。公司不僅對關閉或廢棄礦山生態環境進行修復，也包括對在生產礦山中不再受礦業活動影響區塊的生態環境進行修復，如閉坑的礦段(採區)、露採礦山中結束開採的平台，閉庫的尾礦庫、堆場等，即「邊開採、邊修復」。

截至2020年底，公司所屬礦山企業生態復墾面積達847餘公頃，80%以上可復墾廢棄地都進行了生態恢復，冶煉企業空地基本實現100%綠化，生態恢復初見成效。

### 專題一：德興銅礦—打造生態礦場

礦區生態環境保護始終是公司的環保重點工作之一。公司所屬二級單位德興銅礦從1983年就開始進行生態修復試驗研究，先後與江西大學、中國科學院生態環境研究中心、環保部南京環科院、北京礦冶研究總院、澳大利亞昆士蘭大學等單位合作開展了大量的研究試驗工作，並取得積極成果。目前已復綠面積為505.9公頃(相當於708個標準足球場的面積)，礦區生態修復資金總額達15,535萬元。

## (VI) Bio-diversity

Biodiversity is the foundation of life on the planet, making greater contributions to the maintenance of climate, water and soil, and the maintenance of normal ecological processes. In order to protect the ecological environment around the mines and prevent and control the impact of mining on the surrounding water resources, vegetation and soil, the Company has long insisted on ecological restoration of mines. In mine ecological restoration, the Company selected damaged ecosystems specifically, including open-pit mines, subsidence areas, gangue or slag storage yards, tailing storage yards, ore dressing yards and other mining activity sites and identified the damaged ecological and environmental elements, such as land and soil, forests and wetlands, surface water and groundwater, the atmosphere, animal habitats and microbial communities. The Company not only repaired the ecological environment of closed or abandoned mines, but also repaired the ecological environment of the areas in production mines that were no longer affected by mining activities, such as, closed pit section(mining area), platform in open-pit mining mountains, tailing storage yard with closed pit and storage yard, namely, the "mining and repairing at the same time".

As at the end of 2020, the ecological reclamation area of the Company's mining enterprises reached over 847 hectares. Over 80% of the recyclable wastelands have been ecological restored and the vacant land of smelting enterprises has been basically realized 100% greening. Initial achievements were made in ecological restoration.

### Topic 1: Dexing Copper Mine— building an ecological mine

Ecological environmental protection in mining areas has always been one of the Company's key environmental protection tasks. Dexing Copper Mine, a secondary unit of the Company, has been conducting ecological restoration trial research since 1983, which cooperated with Jiangxi University, Research Center for Ecoenvironmental Sciences, Chinese Academy of Sciences, the Nanjing Institute of Environmental Sciences, MEE, the Beijing General Research Institute of Mining and Metallurgy, the University of Queensland, Australia, etc., and achieved positive results. At present, the area has been re-greened to 505.9 hectares (equivalent to the area of 708 standard football fields), and the total fund for ecological restoration in the mining area amounted to RMB155.35 million.

## 六. 環境與氣候變化(續)

### VI. Environment and Climate Change (continued)

#### (六) 生物多樣性(續)

##### 專題一：德興銅礦－打造生態礦場(續)

#### 1. 積極開展礦區生態修復科研攻關

德興銅礦與北京礦冶研究總院及澳大利亞昆士蘭大學礦山土地修復中心合作開展國際科技合作項目—《金屬礦山堆場酸性污染綜合整治關鍵技術合作研究》，通過德興銅礦廢石場酸性和重金屬污染源頭協同控制技術研究，使治理重點轉移到源頭控制上來，而不是單一的末端治理，盡可能多的找到酸性廢水的防治對策，完善源頭控制技術，從而減少和降低酸性廢水的產生及有毒重金屬的釋出，實現德興銅礦廢石場產酸能力和重金屬總量協同消減，使礦區環境污染降至了最小程度，為解決同行業內有色金屬露天採礦廢石場酸性污染修復治理技術難題提供了「德興經驗」。

#### (VI) Bio-diversity (continued)

##### Topic 1: Dexing Copper Mine – building an ecological mine (continued)

#### 1. Actively carrying out scientific research on ecological restoration in mining areas (continued)

Dexing Copper Mine cooperated with B Beijing General Research Institute of Mining and Metallurgy and Mine Land Rehabilitation Center of University of Queensland, Australia to carry out an international scientific and technological cooperation project—“Cooperative Research on Key Technologies for Comprehensive Treatment of Acidic Pollution in Metal Mine Stockyards”. Through the research on collaborative control technology of acidic and heavy metal pollution sources in Dexing Copper Mine waste rock yard, the focus of treatment was shifted to source control instead of single end treatment, found prevention and control countermeasures for acidic wastewater as much as possible and improved the source control technology so as to reduce and reduce the generation of acidic wastewater and the release of toxic heavy metals, achieving the coordinated reduction of the acid production capacity and the total amount of heavy metals in the waste rock site of Dexing Copper Mine. The environmental pollution in the mining area has been minimized, and the “Experience of Detong Copper” has been provided to solve the technical problem of acid pollution remediation in the waste rock yard of nonferrous metal open-pit mining in the same industry.



生態修復科研項目計劃圖  
Planning Chart of Ecological Restoration Scientific Research Projects



國際科技合作礦山修復工程  
International Scientific and Technological Cooperation in Mine Restoration Projects



## (六) 生物多樣性(續)

### 專題一：德興銅礦－打造生態礦場(續)

#### 2. 生態修復與生物多樣性

德興銅礦在生態復墾的過程中將生物多樣性修復納入重點工作，並已經在生物多樣性修復中取得一定成果。2020年12月，德興銅礦委託第三方機構對德興銅礦富家塢觀禮台週邊、楊桃塢廢石場230標高以上坡面、富家塢500標高排土場部分邊坡三處生態恢復工程開展了生態恢復工程質量調查與效果評估工作。

根據第三方機構評估，德興銅礦通過原位整地、邊坡修整、溝谷處理、截排水措施、土壤改良、植被恢復等方式實施生態恢復，項目實施區域已形成多種植物匹配互長的生長態勢，生物多樣性高，且治理區內土壤中形成了微生物群落，植物品種具備生物多樣性和觀賞性，已記錄的植物品種超過25種，植被的整體覆蓋度平均在95%以上，形成了以草灌為主、喬木為輔的自然演替生態系統，主要植物品種如下表所示：

#### 植物科目 Plant

#### 物種識別 Species identification

草本植物 Herbs	(種植營養袋自育苗木) 苧麻；(種子播種) 狗牙根、寬葉雀稗、狗尾草、黑麥草、高羊茅、野菊花、金雞菊、硫華菊、波斯菊、油菜等 (Self-seedling growing wood with nutrition bags) Ramie; (seed sowing) Cynodon dactylon, Paspalum wettsteinii, Setaria, perennial ryegrass, Festuca arundinacea, wild chrysanthemum, golden wave, Cosmos sulphureus, coreopsis, rape, etc
灌木植物 Shrubs	(種植營養袋自育苗木) 刺槐、合歡、鹽膚木、紫穗槐、紅葉石楠、小葉女貞；(種子播種) 木豆、田菁、胡枝子等固氮植物等 (Self-seedling trees planted with nutrition bags) Robinia pseudoacacia, Albizzia julibrissin, rhus chinensis, Amorpha fruticosa, red leaf stone Th, Ligustrum quihoui; (seed sowing) Cajanus cajan, sesbania, Lespedeza and other nitrogen-fixing plants
喬木植物 Arbors	(種植營養袋自育苗木) 大葉女貞、構樹、臭椿、鬆樹、樟樹等 (Planting nutrition bags Self-seedling trees) Ligustrum lucidum, mulberry Halfree, Ailanthus altissima, pine and camphor tree paper mulberry, Ailanthus, pine, camphor tree, etc

## (VI) Bio-diversity (continued)

### Topic 1: Dexing Copper Mine – building an ecological mine (continued)

#### 2. Ecological Restoration and Biodiversity

Dexing Copper Mine has included the restoration of biological diversity in the process of ecological restoration and has achieved certain results in the restoration of biological diversity. In December 2020, Dexing Copper Mine entrusted a third party institution to conduct an inspection on three sites, such as Fujiawu spectator platform of Dexing Copper Mine, slope above elevation 230 of Yangtaowu waste rock yard and part of slope of the dump at elevation 500 of Fujiawu, the quality investigation and effect evaluation of ecological restoration projects were carried out.

According to the assessment by third party institutions, Dexing Copper Mine implemented ecological restoration through on-site land preparation, slope trimming, valley treatment, interception and drainage measures, soil improvement and vegetation restoration. In the implementation area of the project, a variety of plants have developed a growth trend matching each other with high biodiversity, and microbial communities have been formed in the soil in the treatment area, and plant varieties are of biological diversity and ornamental properties. Over 25 plant species have been recorded, with an average overall vegetation coverage of over 95%, forming a natural succession ecosystem dominated by herbs and shrubs and supplemented by arbors. the major plant species are shown in the following table:

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(六) 生物多樣性(續)

專題一：德興銅礦－打造生態礦場(續)

2. 生態修復與生物多樣性(續)



植物品種多樣性  
Diversity of plant species

可以預見，隨著後期植物的生長和不斷演替，整個生態修復區域的植物種類數目還會不斷增加，整個區域的植物群落結構也會越來越接近週邊區域內原生態山林，最終向森林生態系統轉變，帶動整個區域及週邊生態環境質量顯著提升。

(VI) Bio-diversity (continued)

Topic 1: Dexing Copper Mine – building an ecological mine (continued)

2. Ecological Restoration and Biodiversity (continued)

It is foreseeable that with the growth and succession of late plants, the number of plant species in the whole ecological restoration area will continue to increase and the plant community structure in the whole area will become closer to the original ecological mountain forest in the surrounding area. The ultimate transition to a forest ecosystem leads to a significant improvement in the quality of the entire region and its surrounding ecological environment.



(六) 生物多樣性(續)

(VI) Bio-diversity (continued)

專題一：德興銅礦－打造生態礦場(續)

Topic 1: Dexing Copper Mine – building an ecological mine (continued)

2. 生態修復與生物多樣性(續)

2. Ecological Restoration and Biodiversity (continued)

案例：楊桃塢230以上坡面局部生態恢復工程

Case: Local Ecological Restoration Project on the Slope above 230 in Yangtaowu

楊桃塢230以上坡面局部生態恢復工程於2019年2月進場施工，同年5月竣工，2020年6月項目整體通過一年期績效驗收，取得了顯著成效。

The local ecological restoration project on the slope above 230 of Yangtaowu commenced construction in February 2019 and was completed in May of the same year. In June 2020, the project passed the performance inspection for one year as a whole, and achieved remarkable results.

在環境管理方面，土壤情況顯著改善，酸化問題得到有效控制，土壤pH值從2.60左右上升至中性左右，銅、鎘的有效態系數分別顯著下降47%、43%；地表水的銅、鎘含量均顯著降低90%以上，重金屬含量明顯降低；C、N、P等各類營養元素含量顯著增加；植被恢復效果顯著，整體覆蓋度達到98%以上，形成了自維持、不退化的穩定植被系統；極大改善了礦區環境質量，有效地保障了礦區及週邊區域環境質量與人居安全；曾經堆滿廢石、草難生的不毛之地，建成花滿山頭的生態公園，成為了德興銅礦的綠色發展名片。

In terms of environmental management, soil conditions were significantly improved, acidification was effectively controlled, and soil pH increased from approximately 2.60 to approximately neutral. The effective state coefficients of copper and cadmium decreased significantly by 47% and 43%, respectively, while the copper and cadmium contents of surface water decreased significantly by more than 90%. The content of heavy metals significantly decreased, the content of various nutrient elements such as C, N and P significantly increased, and the vegetation restoration effect was remarkable with an overall coverage of over 98%, which formed a self-sustaining and non-degraded stable vegetation system, greatly improved the environmental quality of the mining area, and effectively guaranteed the environmental quality and human settlement safety of the mining area and surrounding areas. Once a barren land piled with waste rocks and poor grass growth was changed into an ecological park full of flowers and hills, becoming a business card for the green development of Dexing Copper Mine.



區域一生態修復對比

Comparison of Ecological Restoration in Area 1



區域二生態修復對比

Comparison of Ecological Restoration in Area 2

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(六) 生物多樣性(續)

專題一：德興銅礦－打造生態礦場(續)

2. 生態修復與生物多樣性(續)



楊桃塢230標高排土場部分邊坡生態恢復工程實施效果  
Implementation effect of ecological restoration project  
of partial slope of dump at elevation 230 of Yangtaowu

在社會效益方面，該項目先後得到全國人大、省自然資源廳等國家、省市部門的高度肯定，在行業內產生了極大反響，並被江西日報等權威媒體多次正面報道。2020年，由生態環境部主辦的「我是生態環境講解員」比賽，德興銅礦代表江西省以楊桃塢生態修復項目為題材獲得了一等獎。該項目為同行業開展礦山生態修復工作提供了可借鑒、可複製、可推廣的模式。

In terms of social benefits, the project has been highly recognized by the National People's Congress, the Provincial Department of Natural Resources and other national, provincial and municipal departments, has generated a great response within the industry, and has been positively reported by authoritative media such as Jiangxi Daily for multiple times. In 2020, Dexing Copper Mine, on behalf of Jiangxi Province, won the first prize with the theme of Yangtaowu ecological restoration project, in the "I Am an Ecological Commentator" competition hosted by the Ministry of Ecology and Environment. The project provides a model for mine ecological restoration in the same industry which can be used for reference, copy and promotion.



2020年「我是生態環境講解員」總決賽一等獎  
First prize of "I Am an Ecological Commentator" in 2020 Final



(六) 生物多樣性(續)

(VI) Bio-diversity (continued)

專題一：德興銅礦－打造生態礦場(續)

Topic 1: Dexing Copper Mine – building an ecological mine (continued)

2. 生態修復與生物多樣性(續)

2. Ecological Restoration and Biodiversity (continued)

**案例：富家塢採區500排土場西側邊坡生態復墾工程**

富家塢採區500排土場西側邊坡生態復墾項目治理面積135,000m<sup>2</sup>，於2019年10月28日開工，於2020年4月27日完工。項目綜合考慮現場的實際情況，因地制宜地選擇「底泥摻混基質改良+直接植被技術」針對性的解決方案，完成場地覆蓋底泥約3萬方；平整場地面積135,000m<sup>2</sup>；改良土壤面積135,000m<sup>2</sup>。

截至目前，種植存活的植物27萬餘株，涵蓋喬灌木三大類型植物，有苧麻、刺槐、合歡、鹽膚木、紫穗槐、紅葉石楠、小葉女貞、大葉女貞、構樹、臭椿、鬆樹、樟樹等10餘種，滿足了生物多樣性要求，植被覆蓋率達90%以上；項目區域土壤情況明顯得到改善，酸化現象得到較好控制，重金屬含量顯著降低，土壤有效銅含量下降了50%左右，各類營養元素含量顯著增加；項目實施效果改善了場地內的水土流失，邊坡穩定性得到進一步增強，充分保障了礦區的安全生產環境，獲得2020年省級綠色礦山稱號。

**Case: Ecological Reclamation Project on the West Side Slope of 500 Waste Dump in Fujiawu Mining Area**

The ecological reclamation project on the west side slope of 500 waste dump in Fujiawu Mining Area covered an area of 135,000 m<sup>2</sup>, the construction of which commenced on 28 October 2019 and was completed on 27 April 2020. The project comprehensively considered the actual situation on site, and selected a targeted solution based on local conditions, namely "bottom mud mixing substrate improvement + direct vegetation technology". The site covered about 30,000 cubic meters of sediment; the leveling site area was 135,000 m<sup>2</sup>; and the improved soil area was 135,000 m<sup>2</sup>.

Up to now, more than 270,000 surviving plants have been planted, covering three types of plants, namely, arbor, shrub and herbs. There are more than 10 species, including Ramie, Robinia pseudoacacia, Albizzia julibrissin, Rhus chinensis, Amorpha fruticosa, red leaf stone Th, Ligustrum quihoui, Ligustrum lucidum, paper mulberry, Ailanthus, pine and camphor tree, which meets the biodiversity requirements. Vegetation coverage is above 90%; soil conditions in the project area have been significantly improved. Acidification was well controlled, the content of heavy metals decreased significantly, the content of available copper in soil decreased by about 50%, and the content of various nutrient elements increased significantly. The implementation effect of the project has improved the soil and water loss in the site. The stability of slope was further enhanced, which fully guaranteed the safe production environment of the mining area, and was awarded the title of provincial green mine in 2020.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(六) 生物多樣性(續)

(VI) Bio-diversity (continued)

專題一：德興銅礦－打造生態礦場(續)

Topic 1: Dexing Copper Mine – building an ecological mine (continued)

2. 生態修復與生物多樣性(續)

2. Ecological Restoration and Biodiversity (continued)



場地平整  
Site formation



覆土  
Overburden



土壤改良  
Soil improvement



開挖種植條溝  
Excavation of planting strip trench



種植苗木  
Seedling planting



覆蓋草簾  
Covering grass curtains

富家塢500標高排土場部分邊坡生態恢復工程實施過程  
Implementation process of ecological restoration project of partial slope of waste dump at elevation 500 of Fujiawu



(六) 生物多樣性(續)

專題一：德興銅礦－打造生態礦場(續)

2. 生態修復與生物多樣性(續)

(VI) Bio-diversity (continued)

Topic 1: Dexing Copper Mine – building an ecological mine (continued)

2. Ecological Restoration and Biodiversity (continued)



位置一(實施前)  
Location 1 (before implementation)



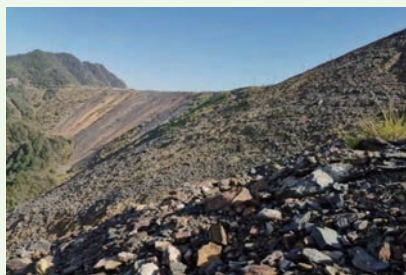
位置一(實施後)  
Location 1 (after implementation)



位置二(實施前)  
Location 2 (before implementation)



位置二(實施後)  
Location 2 (after implementation)



位置三(實施前)  
Location 3 (before implementation)



位置三(實施後)  
Location 3 (after implementation)

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(六) 生物多樣性(續)

專題一：德興銅礦－打造生態礦場(續)

2. 生態修復與生物多樣性(續)



富家場500標高排土場部分邊坡生態恢復工程實施效果  
Implementation effect of ecological restoration project of  
partial slope of waste dump at elevation 500 of Fujiawu



1#尾礦庫生態恢復工程實施效果  
Implementation effect of ecological restoration project of 1 # tailing pond



(六) 生物多樣性(續)

(VI) Bio-diversity (continued)

專題一：德興銅礦－打造生態礦場(續)

Topic 1: Dexing Copper Mine – building an ecological mine (continued)

3. 生態修復成果

3. Achievements of Ecological Restoration

過去五年，德興銅礦生態復綠成果顯著。「十三五」五年規劃復墾廢棄地70公頃，其中：露天採區邊坡復墾15公頃，廢石場復墾35公頃，尾礦庫復墾20公頃，總投資約7,000多萬元。

In the past five years, Dexing Copper Mine achieved remarkable results in ecological greening. According to the “13th Five-Year Plan”, 70 hectares of wasteland will be reclaimed, including 15 hectares of open-pit slope, 35 hectares of waste rock site and 20 hectares of tailing pond, with a total investment of more than RMB70 million.

德興銅礦近五年實際生態復綠情況統計表

Statistical Table of Actual Ecological Greening of Dexing Copper Mine in Recent Five Years

序號 No.	完成年份 Year of completion	項目名稱 Project name	面積 Area (公頃) (hectare)
1	2016	水龍山邊坡生態復綠 Ecological greening of Shuilongshan slope	4.8
2		楊桃塢排土場局部生態復綠 Local ecological restoration of waste dump of Yangtaowu	4
3		4#尾礦庫子壩(90m) 4 # dams of tailings ponds(90m)	2
4	2017	水龍山上部未復綠區域生態復綠 Ecological greening of ungreened area in the upper part of Shuilongshan	6.5
5	2018	楊桃塢排土場東側生態復綠 Ecological greening in the east of waste dump of Yangtaowu	1.5
6		廢石膠帶排土場道路生態復綠 Ecological greening of waste dump road of waste rock belt tape	1
7		南屏山320以上坡面生態復綠 Ecological greening of slope above 320 of Nanpingshan	4.2
8	2019	楊桃塢排土場230以上邊坡生態復綠 Ecological greening of waste dump above 230 of Yangtaowu	14.8
9		4#尾礦庫子壩(100m-120m) 4 # dams of tailings ponds(100m-120m)	4.3
10		百泰二廠坡面 Slope of Baitai No.2 Plant	0.4
11	2020	富家塢採區500排土場西側邊坡 Slope of west side of 500 waste dump in Fujiawu Mining Area	13.5
12		觀禮台週邊區域 Surrounding area of the spectator platform	2.4
13		官帽山530以上邊坡 Slope above 530 of Guanmaoshan	4.8
14	2018-2020	5#尾礦庫生態修復 Ecological restoration of 5 # tailing ponds	14.1
小計 Sub-total			78.3

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(六) 生物多樣性(續)

專題一：德興銅礦－打造生態礦場(續)

3. 生態修復成果(續)

此外，德興銅礦與中山大學合作開展了《重金屬礦業廢棄地生態修復的直接植被技術及應用》，該技術成功克服了傳統礦業廢棄地修復技術的眾多缺點，通過調控微生物群落抑制產酸，重建一個人工或半人工的植被生態系統，逐步恢復原生地地貌，讓因礦業開採可能引發的重金屬污染問題，從源頭上得到遏制。該技術獲2019年度廣東省科技進步一等獎。目前德興銅礦正在大規模推廣應用該技術。

(VI) Bio-diversity (continued)

Topic 1: Dexing Copper Mine – building an ecological mine (continued)

3. Achievements of Ecological Restoration (continued)

In addition, Dexing Copper Mine cooperated with Sun Yat-sen University in carrying out the “Direct Vegetation Technology and Application for Ecological Restoration of Heavy Metal Mining Wasteland”, which successfully overcame many disadvantages of traditional mining wasteland restoration technology. The technology inhibited acid production by regulating microbial community, rebuilt an artificial or semi-artificial vegetation ecosystem. The original ecological landform was gradually restored, so as to curb the potential heavy metal pollution caused by mining from the source. The technology won the Guangdong First Class Prize in Technological Advancement in 2019. At present, Dexing Copper Mine is promoting the application of the technology on a large scale.





## (七) 綠色辦公文化

除生產經營外，公司也將綠色環保理念融入企業運營的每個角落，包括員工的日常工作中。公司鼓勵員工從綠色生態邁向綠色企業文化，營造綠色辦公的企業氛圍。

### 1. 公用車改制

為減少公車使用，降低碳足跡，公司制定了《江西銅業集團公司所屬單位公務用車改革實施方案》，通過改革，合理有效配置公務用車資源，創新公務交通分類提供方式，建立符合公司管理實際的、廉潔、高效、節約型的新型公務用車制度，實現成本費用適度可控、車輛管理規範透明、監管問責科學有效。

### 2. 節約用水用電

公司大力倡導節約用水用電，號召廣大員工把厲行節約、反對浪費的理念貫穿於日常工作的各個方面，以實際行動開展節約用水用電活動。

為增強節約意識，切實將節水、節電措施融入日常工作生活中，公司於衛生間和茶水間等用水用電密集區域張貼節約用水用電標語，減少不必要資源消耗，樹立勤儉節約的美德。公司在《江西銅業股份有限公司能源管理辦法》中明確要求，辦公室、會議室等場所夏季室內空調溫度設置不低於26℃，冬季室內空調溫度設置不高於20℃；應及時關閉辦公用設備，減少待機能耗；優先使用綠色節能照明燈具，盡量使用自然光。除此以外，公司大力倡導「無紙化」辦公，減少辦公用紙的消耗，提高辦公效率。公司還專設線上視頻會議室，減少員工差旅里程數，利用數字化時代的便利降低辦公過程中產生的碳足跡，以達到節能減排的效果。

## (VII) Green office culture

In addition to production and operation, the Company has also integrated the concept of green and environmental protection into every corner of its operations, including the daily work of its employees. The Company encouraged its employees to shift from green ecology to green corporate culture and create a green office atmosphere.

### 1. Transformation of official vehicles

In order to reduce the use of public vehicles and reduce carbon footprint, the Company has formulated the Implementation Plan for the Reform of Official Vehicles of the Affiliated Entities of Jiangxi Copper Corporation to reasonably and effectively allocate official vehicle resources through the reform. The plan innovated the way of classified provision of official traffic, and established a clean, efficient and economical new official vehicle system which was in line with the actual management of the Company, achieving moderate controllable costs, standardized and transparent vehicle management, and scientific and effective regulatory accountability.

### 2. Water and electricity saving

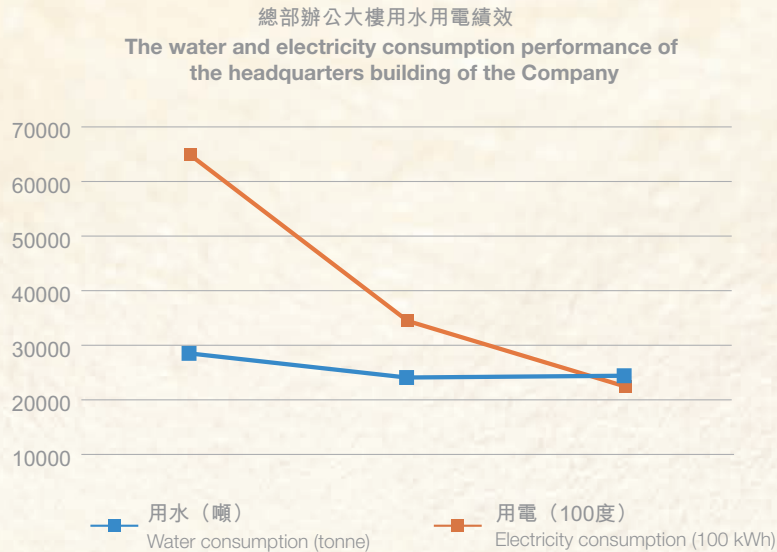
The Company vigorously advocated water and electricity saving and called on all employees to incorporate the concepts of strict economy and anti-waste into every aspect of daily work to carry out water and electricity saving activities with practical actions.

In order to enhance the awareness of saving and effectively integrate water and electricity saving measures into daily work and life, the Company posted slogans on saving water and electricity in toilets, tea rooms and other areas where water and electricity are intensive, in order to reduce unnecessary resource consumption, establish the virtues of diligence and thrift. In the Energy Management Measures of Jiangxi Copper Company Limited, the Company explicitly required that the indoor air-conditioning temperature of offices, conference rooms and other places shall not be lower than 26 °C in summer, while the indoor air-conditioning temperature shall not be higher than 20 °C in winter; office equipment shall be turned off in time to reduce standby energy consumption; green and energy-saving lighting shall be given priority and natural lighting shall be used as much as possible. Besides, the Company strongly advocated "paperless" office to reduce the consumption of office paper and improve office efficiency. The Company also set up online video conference rooms to reduce the travel miles of employees and reduce the carbon footprint generated in the office process with the convenience of the digital era to achieve energy saving and emission reduction.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(七) 綠色辦公文化(續)

2. 節約用水用電(續)



公司總部大樓近三年用水用電績效如下所示：

The water and electricity consumption performance of the headquarters building of the Company in recent three years is as follows:

	2018年	2019年	2020年
用水量(噸)	64,865	34,447	22,447
Water consumption (tonne)			
用電量(度)	2,837,287	2,394,579	2,427,045
Electricity consumption (kWh)			

3. 杜絕餐飲浪費

為了減少肉類食品等高碳排放的資源消耗，公司在餐飲管理中，加強過程控制，對每日就餐人數、用料明細等精準入賬，對廚房產生的垃圾及滄水專人記錄，並及時對數據進行統計分析，合理管控成本，保持餐廚垃圾量低位運行，目標是食堂餐廚垃圾總量下降10%以上。

3. Elimination of food and beverage waste

In order to reduce the resource consumption of high-carbon emissions such as meat products, the Company strengthened process control in catering management, accurately recorded the number of diners and ingredients used every day, and recorded specially-assigned personnel record the garbage and hogwash waste generated in the kitchen. The Company also conducted statistical analysis on the data in a timely manner to reasonably control costs and keep the amount of kitchen waste at a low level with the goal of reducing the total amount of kitchen waste at canteens by more than 10%.



## (八) 環保交流與榮譽

### 1. 環保交流

為加強對外交流，提升企業綠色形象，公司於2020年度參與了《重污染天氣分級管控指南》(徵求意見稿)、《江西省土壤污染防治條例(徵求意見稿)》、中國冶金礦山企業協會固廢資源綜合利用委員會、「2020年全國金屬礦山砂石骨料制備技術交流會」等活動。

2020年公司參與制定國際標準1項，主持制修訂國家、行業、團體標準13項。具體情況如下表所示：

序號 No.	標準類別 Standard category	標準名稱 Standard name	參與/主持 Participation/host
1	國際標準 International standards	首飾和貴金屬金錠一般要求 General requirements on jewellery and precious metals such as gold ingots	參與 Participation
2	國家標準外文版 National standards in foreign language version	陰極銅英文版 Copper cathode in English version	主持 Host
3	國家標準外文版 National standards in foreign language version	電工用銅線坯英文版 Copper wire blanks for electrical purposes in English version	主持 Host
4	有色行業標準 Industry standards for Nonferrous	硫精礦 Sulfur concentrate	主持 Host
5	有色行業標準 Industry standards for nonferrous	鉛冰銅 Lead matte	主持 Host
6	有色行業標準 Industry standards for nonferrous	銅冶煉副產品銻酸鈉 Sodium antimonate, by-product of copper smelting	主持 Host
7	有色團體標準 Standards for nonferrous group	冶煉副產品石膏 Gypsum, by-product of smelting	主持 Host
8	國家標準 National standards	金錠 Gold ingots	主持 Host
9	有色行業標準 Industry standards for nonferrous	有色金屬礦山企業能源管理技術中心技術規範 Technological Specification of Energy Management Technology Center for Nonferrous Metal Mining Enterprises	主持 Host
10	有色行業標準 Industry standards for nonferrous	鉬酸銨化學分析方法鉬含量的測定鉬酸鉛重量法 Gravimetric method for determination of lead molybdate by using ammonium molybdate chemical analysis on molybdenum content	主持 Host
11	有色行業標準 Industry standards for nonferrous	銅精礦單位產品能源消耗限額 Energy consumption quota per unit product of copper concentrate	主持 Host
12	有色團體標準 Standards for nonferrous group	綠色設計產品評價技術規範—金錠 Technical Specifications for Evaluation of Green Design Products – Gold ingots	主持 Host
13	有色團體標準 Standards for nonferrous group	綠色設計產品評價技術規範—銀錠 Technical Specifications for Evaluation of Green Design Products – Silver ingots	主持 Host
14	國家標準 National standards	有色重金屬冶煉產品能源消耗限額(銅冶煉部分) Energy consumption quota for nonferrous heavy metal smelting products (Copper smelting)	主持 Host

## (VIII) Exchange On Environment And Our Honour

### 1. Environmental protection communication

In order to strengthen external communication and enhance the green corporate image, in 2020, the Company participated in activities such as the Guidelines for Graded Management and Control of Heavy Polluted Weather (Exposure Draft), Regulations on Prevention and Control of Soil Pollution in Jiangxi Province (Exposure Draft), Solid Waste Resources Comprehensive Utilization Committee of China Metallurgical Mining Enterprise Association, "2020 National Technical Exchange Meeting for the Preparation of Sand, Stone and Aggregate in Metal Mines", etc.

In 2020, the Company participated in the formulation of 1 international standard, and presided over the formulation and revision of 13 national, industrial and group standards. Details are set out in the table below:

## 六. 環境與氣候變化(續)

## VI. Environment and Climate Change (continued)

### (八) 環保交流與榮譽(續)

#### 2. 環保榮譽

公司在環境保護方面的積極舉措被業內廣泛認可，榮獲各項榮譽。2020年，公司獲得中華人民共和國工業和信息化部頒發的「國家級綠色設計示範企業」名譽，同時，根據江西省發改委、科技廳、工信廳、自然資源廳聯合發佈的《江西省綠色技術名錄》，公司7項技術獲「綠色技術」的稱號，技術名稱信息如下表所示：

### (VIII) Exchange On Environment And Our Honour (continued)

#### 2. Environmental protection awards

The Company's positive initiatives in environmental protection were widely recognized in the industry and won various awards. In 2020, the Company was awarded the "National Green Design Demonstration Enterprise" by the Ministry of Industry and Information Technology of the People's Republic of China. In the meanwhile, according to the Green Technology Directory of Jiangxi Province which was jointly released by the Development and Reform Commission, the Department of Science and Technology, the Department of Industry and Information Technology and the Department of Natural Resources of Jiangxi Province, seven of the Company's technologies were awarded the title of "Green Technology", and the information on their names is set out in the table below:

序號	技術名稱	技術擁有單位	技術運用階段
No.	Technology name	Technology owner	Technology application stage
1	銅冶煉行業裝備自動化技術 Equipment automation technology for copper smelting industry	江西銅業集團(貴溪)冶金化工工程有限公司 JCC (Guixi) Metallurgical and Chemical Engineering Company Limited	產業化應用階段 Industrialization application stage
2	高能效內螺紋銅管 High energy efficiency internally threaded copper pipe	江銅龍昌精密銅管有限公司 Jiangxi Copper Longchang Precise Copper Pipe Company Limited	產業化應用階段 Industrialization application stage
3	立磨機磨礦介質瓷球替代鋼球 Replacing steel ball with porcelain ball in grinding medium of vertical mill	江西銅業集團銀山礦業有限責任公司 JCC Yinshan Mining Company Limited	產業化應用階段 Industrialization application stage
4	硫化銅礦伴生金屬鉬銻綜合回收新技術與產業化 New technology and industry for comprehensive recovery of associated metal molybdenum and rhenium of copper sulfide ore	江西銅業股份有限公司德興銅礦 Dexing Copper Mine of Jiangxi Copper Company Limited	產業化應用階段 Industrialization application stage
5	高品位硫精礦制酸直接產鐵精礦無廢生產技術 High-grade sulphuric concentrate acid production direct iron concentrate waste-free production technology	江西銅業股份有限公司德興銅礦 Dexing Copper Mine of Jiangxi Copper Company Limited	產業化應用階段 Industrialization application stage
6	銅陽極泥伴生稀貴金屬協同綠色提取關鍵技術 Collaborative green extraction of copper anode mud associated precious metals	江西銅業股份有限公司貴溪冶煉廠 Guixi Smelter of Jiangxi Copper Company Limited	產業化應用階段 Industrialization application stage
7	硫化銅礦酸性廢水底泥生態修復技術 Technology for Ecological Restoration of Acidic Waste Water of Copper Sulphide Ore	江西銅業股份有限公司德興銅礦/江西理工大學 Dexing Copper Mine of Jiangxi Copper Company Limited/Jiangxi University of Science and Technology	產業化應用階段 Industrialization application stage



(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山

近年來，公司以綠色礦山(工廠)創建為抓手，不斷推進綠色發展水平和生態文明建設。公司各單位在創建綠色礦山(工廠)的過程中，以務求實效的作風，實現公司資源利用集約(高效)化、生產潔淨化、廢物資源化、能源低碳化，將綠色發展作為企業求生存、謀發展，實現轉型升級的重要路徑。

截至2020年12月31日，公司累計共有3座礦山入選國家級綠色礦山，具體為江西銅業股份有限公司德興銅礦、江西銅業股份有限公司武山銅礦和江西銅業集團銀山礦業有限責任公司；公司累計共有6家工廠入選國家級綠色工廠，分別為江西省江銅耶茲銅箔有限公司、廣州江銅銅材有限公司、江西銅業股份有限公司貴溪冶煉廠、江西江銅龍昌精密銅管有限公司、江西銅業集團銅材有限公司和江西銅業銅材有限公司。

在山東德州召開的「全國綠色礦山年會」上，公司榮獲「2020年綠色礦山突出貢獻」單位稱號，德興銅礦榮獲「全國綠色高質量發展二十佳礦山」以表彰公司在綠色礦山建設和綠色礦業發展中的突出貢獻。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines

In recent years, the Company focused on the construction of green mines (factories) and continuously promoted the level of green development and the construction of ecological civilization. In the process of building green mines (factories), all units of the Company have, in a pragmatic manner, achieved intensive (efficient) use of resources, clean production, waste recycling and low-carbon energy and took green development as an important way for enterprises to survive, seek development and realize transformation and upgrading.

As of 31 December 2020, a total of three mines of the Company were selected as national-level green mines, namely Dexing Copper Mine of Jiangxi Copper Company Limited, Wushan Copper Mine of Jiangxi Copper Company Limited and JCC Yinshan Mining Company Limited. The total of six factories of the Company were selected as national-level green factories, namely Jiangxi JCC Yates Copper Foil Company Limited, Jiangxi Copper (Guangzhou) Copper Production Company Limited, Guixi Smelter of Jiangxi Copper Company Limited, Jiangxi Copper Longchang Precise Copper Pipe Company Limited, JCC Copper Products Company Limited and Jiangxi Copper Products Company Limited.

At the "National Green Mining Annual Meeting" held in Dezhou, Shandong Province, the Company was awarded the title of "Outstanding Contribution of Green Mines in 2020", Dexing Copper Mine was awarded the "National 20 Best Green and High-quality Mines for Green Development" in recognition of the Company's outstanding contributions to the construction of green mines and the development of green mining.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(八) 環保交流與榮譽(續)

(VIII) Exchange On Environment And Our Honour  
(continued)

3. 綠色工廠和綠色礦山(續)

3. Green factories and green mines (continued)



此外，公司員工劉方雲還獲得中關村綠色礦山產業聯盟特向其頒發的「綠色礦山突出貢獻獎個人獎」。

下一步，公司將以更強力度、更高要求規劃新的綠色發展項目，制定新的綠色投資計劃，加快推進資源開發、污染防治、生態修復、節能減排等重點項目，持續提升綠色發展水平。

In addition, Liu Fangyun, an employee of the Company, was also awarded the “Individual Award for Outstanding Contribution to Green Mines” by Zhongguancun Green Mine Industry Alliance.

In the next step, the Company will plan new green development projects with stronger efforts and higher requirements, formulate new green investment plans, and accelerate the promotion of key projects such as resource development, pollution prevention and control, ecological restoration, energy conservation and emission reduction to continue to enhance the level of green development.



## (八) 環保交流與榮譽(續)

### 3. 綠色工廠和綠色礦山(續)

#### 專題二：貴溪冶煉廠——建設花園工廠

貴溪冶煉廠位於江西鷹潭貴溪市美麗的信江河畔，是中國第一家採用世界先進閃速熔煉技術，高濃度二氧化硫轉化制酸技術，傾動爐、卡爾多爐雜銅冶煉技術和ISA(艾薩法)電解精煉技術的現代化煉銅工廠，閃速爐作業率、二氧化硫轉化率、銅、金、銀冶煉總回收率、總硫利用率、銅冶煉綜合能耗等主要技術經濟指標達到世界先進水平。貴溪冶煉廠通過一體化管理方針，即安全第一，珍愛環境；清潔生產，節能降耗；智慧冶煉，質量一流；全面建成世界最好現代化煉銅工廠，積極推進「綠色技術」採用和「綠色能源」應用，已形成綠色發展新常態。

建廠40多年來，貴溪冶煉廠始終肩負著「引領中國銅冶煉事業發展」的國家使命，也始終是「領頭羊」的責任擔當，積極踐行建設「資源節約型、環境友好型」企業理念。工廠先後榮獲「全國污染防治十佳企業」「全國環境保護先進企業」「全國部門造林綠化300佳單位」「有色系統環境優美工廠」「國家環境保護百佳工程」「全國綠化模範單位」「江西省清潔生產示範單位」「全省主要污染物總量減排先進企業」等40餘項重大環保榮譽稱號。

## (VIII) Exchange On Environment And Our Honour (continued)

### 3. Green factories and green mines (continued)

#### TOPIC 2: GUIXI SMELTER - BUILDING A GARDEN FACTORY

Located on the beautiful Xinjiang River of Guixi City, Yingtan, Jiangxi, Guixi Smelter is the first acid-making plant in China to adopt the world's advanced flash smelting technology and high-concentration SO<sub>2</sub> conversion technology, and a modern copper smelting plant with tilting furnace, Kaldor furnace miscellaneous copper smelting technology and ISA (ISA) electrolytic refining technology. Its major technical and economic indicators such as operation rate of flash furnace, conversion rate of SO<sub>2</sub>, total recovery rate of copper, gold and silver smelting, total sulfur utilization rate and comprehensive energy consumption of copper smelting have reached the world advanced level. Guixi Smelter has built the world's best modern smelter through its integrated management guidelines, namely safety first, cherishing the environment; clean production, energy saving and consumption reduction; intelligent smelting and first-class quality; establishment of the world's best modern copper smelting factory, so as to actively promote the adoption of "green technology" and the application of "green energy", which has formed a new normal of green development.

Since its establishment for more than 40 years, Guixi Smelter has always shouldered the national mission of "leading the development of copper smelting in China", and has always been a "leader" in the industry. Guixi Smelter actively practiced the "building a resource conserving and environment-friendly society" corporate concept. The factory was awarded more than 40 major environmental protection honorary titles such as "National Top 10 Enterprises for Pollution Prevention and Control", "National Advanced Enterprise in Environmental Protection", "National Top 300 Best Afforestation Units", "Nonferrous System Factory with Beautiful Environment" and "National Top 100 Environmental Protection Projects", "National Green Model Unit", "Clean Production Demonstration unit in Jiangxi Province", and "Advanced Enterprise in Total Emission Reduction of Major Pollutants in Jiangxi Province".

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

**專題二：貴溪冶煉廠——建設花園工廠(續)**



貴溪冶煉廠生產區  
Production area of Guixi Smelter

1. 綠色冶煉

2019年，貴溪冶煉廠一次性入選「國家級綠色工廠」，以「國家級綠色工廠」為新起點，全面推進生產清潔化、廢物資源化、能源低碳化，持續推進廢氣超低排放、工業廢水零排放工作，打造綠色冶煉典範，引領中國「有色」更「綠色」。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines (continued)

**TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)**

1. Green smelting

In 2019, Guixi Smelter was selected as the “National Green Factory” in one shot. Guixi Smelter, taking “National Green Factory” as a new starting point, comprehensively promoted clean production, recycling waste and low-carbon energy, continued to promote ultra-low emission of waste gas and zero emission of industrial wastewater to create a green smelting code, which led the “nonferrous” to become “greener” in China.



(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

**專題二：貴溪冶煉廠——建設花園工廠(續)**

1. 綠色冶煉(續)

廢水方面，在貴溪冶煉廠40多年發展歷程中，始終高度重視「人與自然和諧共生」的綠色發展理念，並創造了「深度節水減排」的歷史性跨越。貴溪冶煉廠持續推進工廠廢水深度減排減量工作，推進完成備料車間等主要工序的中水回用，對部分工藝的蒸汽冷凝水實行回收利用，降低廢水產生量；在硫酸二系列循環水系統安裝電化學除垢設備，研究推廣循環水近零排放；在主要排口新增在線分析儀、視頻監控設施等，提升實時監管水平；開展物料運輸管理、排水系統、廢水收集設施清理等專項檢查，從源頭控制排水質量；將循環水濃縮倍數、區域廢水排放質量等主要指標納入環境保護監管和考核機制，考核督導車間實現深度減排減量，廢水排放量較上年減少7.2%。

廢氣方面，貴溪冶煉廠完成硫酸一系列、傾動爐脫硫升級改造，進一步降低工廠SO<sub>2</sub>排放總量，較上年減少11.2%。加強精細化管理。優化生產節奏控制，提高SO<sub>2</sub>轉化率，避免集中作業對週邊環境造成影響；實施「轉爐密閉式環集煙罩研發」科研項目，完成8號轉爐對開煙罩改造，轉爐煙氣收集能力大幅提升；完善細化考核指標，將PM<sub>2.5</sub>等指標納入環保考核管理。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines (continued)

**TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)**

1. Green smelting (continued)

In terms of wastewater, Guixi Smelter has always attached great importance to the green development concept of “harmonious co-existence between human and nature” during the development process of more than 40 years, and created a historic leap of “in-depth water saving and emission reduction”. Guixi Smelter continued to promote the in-depth water saving and emission reduction in the factory, promoted the completion of the reuse of reclaimed water in major processes such as the material preparation workshop, and recycled the steam condensate water of some processes to reduce the amount of wastewater generated; installed electrochemical scale removal equipment in sulphuric acid plant II series circulating water system to research and promote nearly zero discharge of circulating water; added online analyzers and video monitoring facilities at the main discharge ports to enhance the level of real-time supervision; carried out special inspections on material transportation management, drainage system and cleaning of wastewater collection facilities to control drainage quality from the source; incorporated major indicators such as concentration multiple of circulating water and regional wastewater discharge quality into the environmental protection supervision and assessment mechanism, assessed and supervised workshops to achieve in-depth water saving and emission reduction. Wastewater discharge decreased by 7.2% as compared with last year.

In terms of waste gas, Guixi Smelter completed upgrading and transformation of sulphuric acid series and tilting furnace for desulphurization, which further reduced the total amount of SO<sub>2</sub> emission from the factory by 11.2% as compared with the previous year. Guixi Smelter strengthened refined management, optimized production rhythm control, improved SO<sub>2</sub> conversion rate so as to avoid impact of centralized operation on surrounding environment; implemented the scientific research project of “R&D of Converter Closed Loop Smoke Collector”, which completed the revamp of No.8 converter counter-opening fume hoods, resulting in a significant increase in converter flue gas collection capacity; and refined the assessment indicators, incorporating PM<sub>2.5</sub> and other indicators into the assessment and management of environmental protection.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

**專題二：貴溪冶煉廠——建設花園工廠(續)**

1. 綠色冶煉(續)

固體廢物方面，貴溪冶煉廠按照減量化、資源化、無害化處置原則，對生產過程產生的固體廢物實施綜合利用，推進落實「垃圾分類」和生活垃圾規範化處理，實現危險廢物出廠線上審批的智能平台操作應用，危險廢物出廠手續更加規範、高效。渣場工業垃圾處理量較上年減少21%，地區對工廠危險廢物規範化考核結果全部達標。

2. 綠色能源管理

2014年工廠全面啟動能源管理體系建設工作，2015年2月9日首次通過認證，能源管理體系符合標準GB/T23331-2012/ISO50001:2011RB/T117-2014。根據國家和集團公司要求，結合工廠實際，廠部每年不斷修訂、完善各項能源管理制度和考核制度。下屬各單位對工廠能源使用目標進行分解，制定年度節能考核目標，每月對車間能源消耗分解目標統計分析，出現異常使用情況，認真查找原因並及時解決，並將月度能源完成情況納入工廠經濟責任制考核。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines (continued)

**TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)**

1. Green smelting (continued)

In terms of solid waste, Guixi Smelter, in accordance with the principles of reduction, resource utilization and harmless disposal, comprehensively utilized the solid waste generated in the production process, and promoted the implementation of “garbage classification” and standardized treatment of domestic garbage, realizing the operation and application of the intelligent platform for online approval of hazardous waste ex-factory. The ex-factory procedures of hazardous waste were more standardized and efficient. The amount of industrial waste treatment in slag yard decreased by 21% as compared with the previous year, and the results of standardized assessment of hazardous waste in all factories reached the standards.

2. Green Energy Management

In 2014, the plant fully carried out the construction of the energy management system, which was first certified on February 9 2015. The energy management system was in compliance with the standard GB/T23331-2012/ISO50001: 2011RB/T117-2014. In accordance with the requirements of the State and the Group Company, the plant take the initiative based on the actual situation, and the plant department shall constantly revise and improve various energy management systems and assessment systems every year. Each of the subordinate units decomposes the energy usage target of the plant, formulates the annual energy saving assessment target, performs the statistical analysis on the decomposition target of energy consumption in workshop every month. In case of abnormal usage, the cause is carefully identified and resolved in a timely manner, and the monthly completion of the energy is included in the assessment of the plant economic responsibility system.



(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

**專題二：貴溪冶煉廠——建設花園工廠(續)**

2. 綠色能源管理(續)

2015年1月1日開始，貴溪冶煉廠主修訂的GB 21248-2014《銅冶煉企業單位產品能源消耗限額》在全國實施，成為銅冶煉企業能耗限額的唯一國家標準，並達到國際先進水平。GB 21248-2014《銅冶煉企業單位產品能源消耗限額》仍將銅冶煉產品能耗等級指標規定為三級：限定值、準入值和先進值，分別為420公斤標煤/噸、320公斤標煤/噸、280公斤標煤/噸，與原標準相比下降幅度最高達56%。

貴溪冶煉廠一直以來嚴格遵守國家、省、市相關節能法規，積極履行企業節能減排職責。

- 節約用電方面，工廠投入大量資金對用能設備進行變頻節能改造，並將金屬鹵化物燈改造成LED節能燈，以減少電能消耗。
- 傾動爐主風機變頻改造、硫酸SO<sub>2</sub>風機變頻改造、天然氣替代液化氣、煤和部分柴油、淘汰高耗能電機550台等都取得較好的節能效果，大大降低耗能成本。
- 工廠照明採用自然採光結合人工照明的方式，廠區和辦公區白天採用自然光照明為主，人工照明為輔，同時配置應急照明。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines (continued)

**TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)**

2. Green Energy Management (continued)

Since January 1 2015, the GB 21248-2014 "Energy Consumption Per Unit Products of Copper Metallurgical Enterprise", which was the major amendment of Guixi Smelter, has implemented nationwide, which has become the only national standard for the energy consumption limit of copper smelting enterprises and has reached the international advanced level. The GB 21248-2014 "Energy Consumption Per Unit Products of Copper Metallurgical Enterprise" still stipulates the energy consumption grade index for copper smelting products three levels: restriction value, entry value and advanced value, which are 420kg standard coal/ton, 320kg standard coal/ton and 280kg standard coal/ton respectively, with a decrease of up to 56% compared with the original standard.

Guixi Smelter has strictly complied with national, provincial and municipal energy saving regulations and has actively fulfilled its responsibility for energy conservation and emission reduction.

- In terms of energy saving, the factory has invested a large amount of capital in energy-conversion equipment for variable frequency energy-saving retrofit, and has retrofitted metal-halide lamps into LED energy-saving lamps to reduce power consumption.
- The measures have achieved a better effect of energy saving and greatly reduces the cost of energy consumption, including the transducer and transformation of main combustion fan of tilting furnace, the SO<sub>2</sub> sulphuric acid transducer and transformation of combustion fan, natural gas substituting LPG, coal and part of diesel and the elimination of 550 energy-consuming motors
- Factory lighting has adopted natural lighting combined with artificial lighting, while the factory area and office area are dominated by natural lighting during the day, supplemented by artificial lighting and emergency lighting.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

**專題二：貴溪冶煉廠——建設花園工廠(續)**

3. 循環經濟

貴溪冶煉廠始終堅持綠色冶煉的內涵發展，致力於「持續發掘資源價值，追求人與自然的和諧共生」，大力發展循環經濟。

稀散金屬回收方面，貴溪冶煉廠圍繞閃速熔煉核心技術，通過不斷的自主創新，對銅精礦中的金、銀、鉑、鈮等實現有效回收。2020年，生產黃金32.70噸、白銀332噸、海綿鉑55公斤、海綿鈮335公斤。通過自主研發，先後成功地從廢渣、廢液中回收多種稀散元素，其中年產二氧化硒340噸、碲55噸、銻酸銨1.8噸，產品產量和質量在全球處於領先地位，在為企業創造可觀經濟效益的同時，也實現了環保、效益雙豐收。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines (continued)

**TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)**

3. Circular Economy

The Guixi Smelter always adheres to the connotation of green smelting and strives to the mission of “devoting to continuously exploring the value of resources, pursuing the harmony and co-living between people and the nature” and vigorously develop the circular economy.

In terms of scattered metal recovery, the Guixi smelter is able to effectively recover gold, silver, platinum, palladium, etc. from copper concentrates through continuous innovation based on the core technologies of flash smelting. In 2020, 32.70 tonnes of gold, 332 tonnes of silver, 55 kilograms of sponge platinum and 335 kilograms of sponge palladium were produced. Through independent research and development, we have successfully recovered a variety of scattered elements from waste residue and waste water, including an annual output of 340 tonnes of selenium dioxide, 55 tonnes of tellurium and 1.8 tonnes of ammonium perrenate, which is in a leading position in the world in terms of output and quality. While the Company has created considerable economic benefits, it has achieved environmental benefits and benefits.



稀散金屬回收工藝  
Recovery process of scattered metal



(八) 環保交流與榮譽(續)

(VIII) Exchange On Environment And Our Honour  
(continued)

3. 綠色工廠和綠色礦山(續)

3. Green factories and green mines (continued)

**專題二：貴溪冶煉廠——建設花園工廠(續)**

**TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN  
FACTORY (continued)**

3. 循環經濟(續)

3. Circular Economy (continued)

廢渣資源化方面，貴溪冶煉廠渣選銅工程總投資4.3億元，2005年正式投入運行，每年可從廢棄渣中多回收銅金屬8,000多噸，相當於國內一個中型礦山的年產銅量，年增加銷售收入5億多元。年產出150餘萬噸選礦尾渣，其中含有可觀的鐵和硅，作為水泥生產的添加劑。煙氣制酸硫化工序每年產出7.3萬噸石膏，作為建材行業原料。

In terms of waste slag recycling, Guixi Smelter's slag copper separation project, with a total investment of RMB430 million, was officially put into operation in 2005. More than 8,000 tonnes of copper metal can be recovered from the waste slag every year, which is equivalent to the annual copper production of a medium-sized mine in China, and the annual sales revenue is increased by more than 500 million yuan. Annual output of more than 1.5 million tonnes of tailings, which contains considerable iron and silicon, as additives for cement production. The annual output of flue gas sulphuric acid process is 73,000 tonnes of gypsum, which is used as raw material for building materials industry.



渣選銅工藝  
Copper separation from slag

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

**專題二：貴溪冶煉廠——建設花園工廠(續)**

4. 責任工廠

安全環保管理上，貴溪冶煉廠始終堅持「安全第一、珍愛環境」安全環境方針，從建章立制著手，立規矩、定標準、提要求、理流程，不斷完善體制機制建設，促使工廠現場管理和環境保護管理水平提升。

工廠建立環境保護組織體系和生態環境保護責任制，明確廠級領導、職能部門及各車間的環境保護責任，實行環境保護目標責任制，廠部與車間簽訂環保目標責任狀，將環保控制指標層層分解落實到實處。同時，工廠制定環境污染物管理(包括廢水、廢氣和粉塵、噪聲、土壤、固體廢棄物等)、環保設施管理、環境監測和綠化管理等相關環境保護責任流程規範，通過責任到人的嚴格的環境管理制度，2018年以來各項環境保護監督監測數據全部達標，沒有發生廢水超標排放等環境污染事件，未收到環境違法行為處罰。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines (continued)

**TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)**

4. Responsible plant

In terms of safety and environmental protection management, Guixi Smelter always adheres to the safety and environmental protection policy of “safety first and cherish the environment”. Starting from the establishment of rules and regulations, Guixi Smelter sets rules, standards, requirements and procedures, and constantly improves the construction of system and mechanism, so as to promote the on-site management and environmental protection management level of the plant.

The plant establishes the environmental protection organization system and ecological environmental protection responsibility system, defines the environmental protection responsibility of the plant leaders, functional departments and workshops, implements the environmental protection target responsibility system, signs the environmental protection target responsibility certificate with the workshop, and decomposes and implements the environmental protection control index layer by layer. At the same time, the plant formulates relevant environmental protection responsibility process norms such as environmental pollutant Management (including waste water, waste gas and dust, noise, soil, solid waste, etc.), environmental protection facilities management, environmental monitoring and greening management. Through the strict environmental management system of responsibility to person, all the environmental protection monitoring data have reached the standard since 2018, no environmental pollution incidents such as excessive wastewater discharge have occurred, and no punishment for environmental violations has been received.



(八) 環保交流與榮譽(續)

(VIII) Exchange On Environment And Our Honour  
(continued)

3. 綠色工廠和綠色礦山(續)

3. Green factories and green mines (continued)

專題二：貴溪冶煉廠——建設花園工廠(續)

TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN  
FACTORY (continued)

4. 責任工廠(續)

4. Responsible plant (continued)

**案例：含砷物料泄漏應急救援演練活動**

為有效防範和控制三氧化二砷等劇毒類危險化學品發生泄漏、揚散事故，減少人員傷害、中毒，做好安全環保工作，使員工熟練掌握漿液泄漏時的組織與搶救方法，貴溪冶煉廠及時開展含砷物料泄漏應急救援演練活動。

為讓演練活動落到實處，工廠制定詳細的應急預案和演練計劃。整個演練按預定方案及救援相關程序合理地進行，通過此次應急演練活動，提高了員工迅速處理三氧化二砷泄漏處置的能力，同時，立足生產崗位開展演練活動，使員工瞭解和熟悉三氧化二砷的危險性質、基本防護、撤離方法、現場救護的實際操作的知識，為預防類似事故的發生，做到舉一反三，揚長避短，為下一次預案演練提供了更好的方法和措施。本次應急演練方案和措施得當，效果顯著，讓員工得到一次實實在在的安全培訓，有效提高了員工的安全意識和應急處理能力。

**Case: emergency rescue drill for arsenic-containing material leakage**

In order to effectively prevent and control the leakage and scattering accidents of highly toxic hazardous chemicals such as arsenic trioxide, reduce personal injury and poisoning, do a good job in safety and environmental protection, and enable employees to master the organization and rescue methods when slurry leakage, Guixi Smelter carried out the emergency rescue drill activities for arsenic-containing material leakage in time.

In order to implement the drill activities, the plant made a detailed emergency plan and drill plan. The whole drill was carried out reasonably according to the predetermined plan and rescue related procedures. Through this emergency drill, the staff's ability to quickly deal with arsenic trioxide leakage was improved. At the same time, the whole drill is based on the production post to carry out the drill activities, so that the staff can understand and be familiar with the dangerous nature of arsenic trioxide, basic protection, evacuation methods, and the actual operation knowledge of on-site rescue, so as to prevent the occurrence of similar accidents, draw inferences from one instance, develop strengths and avoid weaknesses, and provide better methods and measures for the next drill. The plan and measures of this emergency drill are appropriate, and the effect is remarkable, which enables employees to get a real safety training, and effectively improves their safety awareness and emergency handling ability.

## 六. 環境與氣候變化(續)

### VI. Environment and Climate Change (continued)

## (八) 環保交流與榮譽(續)

### 3. 綠色工廠和綠色礦山(續)

#### 專題二：貴溪冶煉廠——建設花園工廠(續)

#### 5. 智能化工廠

2016年6月，「銅冶煉智能工廠試點示範」項目通過國家工信部審核，正式開啓智能工廠建設大幕。截至2020年，智能工廠建設完成一期工程投資2.5億元，建成15個智能項目，構建了信息化集中集成平台，促進了智能裝備的工業化應用，產生了多項國內第一：建設了國內銅冶煉第一套集生產調度、供應鏈協同、設備能源、安全環保於一體的生產執行系統；第一個銅冶煉大數據平台；第一套10萬點實時數據庫PI系統；首套散料抓取無人行車系統；首套信息化控制網絡和視頻監控系統，為國內同行樹立了智能工廠建設新標桿，為全面開創智慧冶煉新模式奠定了良好的基礎。

通過信息技術、工業技術和管理技術的「三元」融合，實現工廠全要素的數字化感知、網絡化傳輸、大數據處理和智能化應用，構築起「現場識別自動化、信息處理即時化、問題研判協同化、管理決策智能化」的智慧冶煉新模式，將工廠打造成「智慧冶煉」的行業新樣板。

## (VIII) Exchange On Environment And Our Honour (continued)

### 3. Green factories and green mines (continued)

#### TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)

#### 5. Intelligent plant

In June 2016, the “Copper Smelting Intelligent Plant Pilot Demonstration” project was approved by the Ministry of Industry and Information Technology of the People’s Republic of China, officially starting the construction of intelligent plants. By 2020, the first phase of intelligent plant construction has been completed with an investment of 250 million yuan, 15 intelligent projects have been built, and an information centralized integration platform has been built, which has promoted the industrial application of intelligent equipment and produced a number of domestic first-class products: the first production execution system of copper smelting in China, which integrates production scheduling, supply chain collaboration, equipment energy, safety and environmental protection, has been built; The first copper smelting big data platform; The first 100,000 point real-time database PI system; The first set of unmanned driving system for bulk material grabbing; The first set of information control network and video monitoring system has set up a new benchmark for domestic counterparts in the construction of intelligent plants and laid a good foundation for comprehensively creating a new mode of intelligent smelting.

Through the “three elements” integration of information technology, industrial technology and management technology, we can realize the digital perception, network transmission, big data processing and intelligent application of all factors in the plant, and build a new intelligent smelting mode of “automatic on-site identification, instant information processing, collaborative problem research and judgment, and intelligent management decision”, to build the plant into a new model of “intelligent smelting” industry.



(八) 環保交流與榮譽(續)

(VIII) Exchange On Environment And Our Honour  
(continued)

3. 綠色工廠和綠色礦山(續)

3. Green factories and green mines (continued)

專題二：貴溪冶煉廠-建設花園工廠(續)

TOPIC 2: GUIXI SMELTER - BUILDING A GARDEN FACTORY (continued)

5. 智能化工廠(續)

5. Intelligent plant (continued)



貴溪冶煉廠生產指揮大廳  
Guixi smelter production command hall

案例：「深度優化節水減排」工程

貴溪冶煉廠坐落於信江中游，下游20公里為鷹潭市市區40萬人口的飲用水水源取水點，確保排水水質優於國家標準是企業的社會責任及重要使命。對於企業發展而言，在滿足監管要求的基礎上，貴溪冶煉廠繼續推動創標、引領行業最好發展水平為導向，不斷追求卓越、豐富發展內涵，持續推進「堅定綠色發展理念，打造綠色冶煉典範」的使命，推動實施了「深度優化節水減排」工程。

Case: “Deep Optimization of Water Conservation and Discharge Reduction” project

Guixi Smelter is located in the middle reaches of the Xinjiang River, 20 kilometers downstream of which is the drinking water source of 400,000 people in Yingtan City. It is the social responsibility and important mission of the enterprise to ensure that the drainage quality is better than the national standard. For the development of enterprises, on the basis of meeting the regulatory requirements, Guixi Smelter continues to promote the standard creation and lead the best development level of the industry as the guidance, continuously pursues excellence and enriches the development connotation, continuously promotes the mission of “strengthening the concept of green development and creating a green smelting model”, and promotes the implementation of the “Deep Optimization of Water Conservation and Discharge Reduction” project.



環保監控系統一體化集成開發平台  
Integrated development platform of environmental monitoring system

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

**專題二：貴溪冶煉廠-建設花園工廠(續)**

5. 智能化工廠(續)

通過「深度優化節水減排」工程，貴溪冶煉廠梳理完善廢水環境保護管理制度；搭建安全環保管控一體化信息平台，提升環保管理自動化、信息化水平，更好地控制廢水日常排放指標；開展標本兼治，解決源頭污染及確保排放可控；提高循環水濃縮倍數，減少工業廢水排放量；建立應急站科學收水模式和廢水專項應急預案，確保突發環境污染事件可控。

(1) 提高工業水復用率

截至2020年12月31日，工廠工業水復用率與2014年實施前指標比較，上升1.97%，累計減少淨化水使用量2,470萬m<sup>3</sup>。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines (continued)

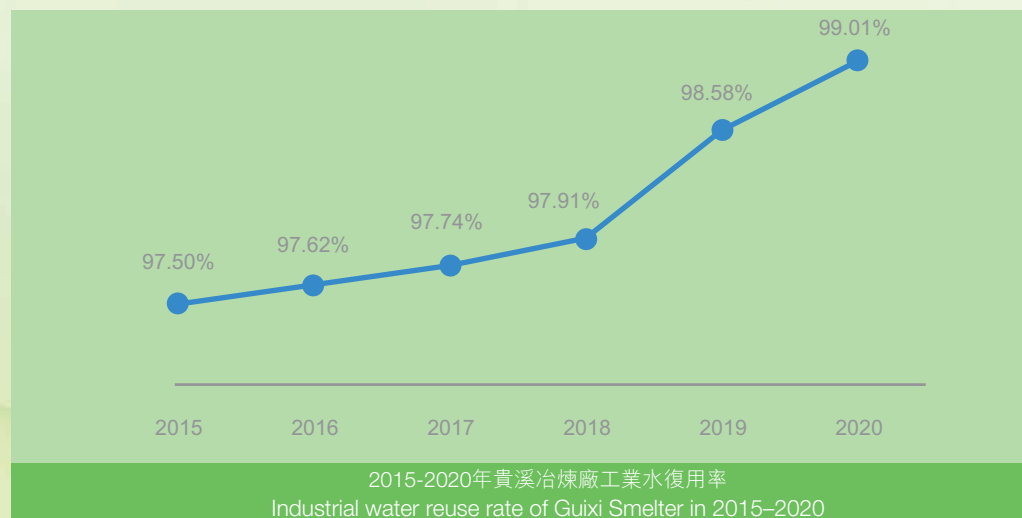
**TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)**

5. Intelligent plant (continued)

Through the “Deep Optimization of Water Conservation and Discharge Reduction” project, Guixi Smelter combed and improved the wastewater environmental protection management system; Build an integrated information platform for safety and environmental management and control, improve the automation and informatization level of environmental management, and better control the daily discharge indicators of wastewater; Address both the symptoms and root causes of pollution at the source and ensure that discharge are under control; Increase the concentration ratio of circulating water and reduce the discharge of industrial wastewater; Establish the scientific water collection mode of emergency stations and special emergency plan of wastewater to ensure that the sudden environmental pollution events are controllable.

(1) Improve the reuse rate of industrial water

As of December 31, 2020, the reuse rate of industrial water in the plant has increased by 1.97% compared with the indicators before the implementation of 2014, and a total of 24.7 million m<sup>3</sup> of purified water has been reduced.





(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

專題二：貴溪冶煉廠——建設花園工廠(續)

5. 智能化工廠(續)

- (2) 總排口各項污染物總量下降

貴溪冶煉廠廢水總排口污染物排放總量減排情況如下表所示：

時間 Time	銅 Copper	鉛 Lead	鎘 Cadmium	砷 Arsenic
2015	-32.95%	-16.53%	-16.67%	-50.00%
2016	-41.48%	-15.70%	-16.67%	-31.91%
2017	-53.22%	-18.18%	-16.67%	-56.38%
2018	-58.71%	-24.79%	-26.67%	-71.81%
2019	-74.24%	-49.59%	-50.00%	-71.81%
2020	-81.82%	-64.46%	-66.67%	-88.83%

與2014年實施前指標比較，工廠廢水總排口總銅排放量下降幅度達81.82%，總鉛排放量下降幅度達64.46%，總鎘排放量下降幅度達66.67%，總砷排放量下降幅度達88.83%。

(VIII) Exchange On Environment And Our Honour (continued)

3. Green factories and green mines (continued)

TOPIC 2: GUIXI SMELTER - BUILDING A GARDEN FACTORY (continued)

5. Intelligent plant (continued)

- (2) The total amount of pollutants from the total discharge outlet decreased

The total discharge reduction of pollutants from the total discharge outlet of Guixi Smelter is shown in the table below:

Compared with the indicators before the implementation in 2014, the total copper discharge of the total wastewater outlet of the plant decreased by 81.82%, the total lead discharge decreased by 64.46%, the total cadmium discharge decreased by 66.67%, and the total arsenic discharge decreased by 88.83%.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

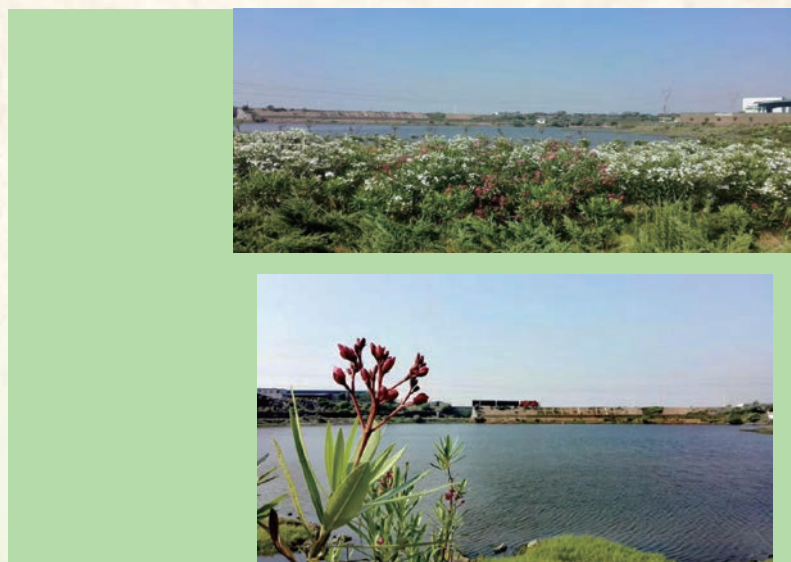
(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

**專題二：貴溪冶煉廠——建設花園工廠(續)**

5. 智能化工廠(續)

- (2) 總排口各項污染物總量下降(續)



貴溪冶煉廠總排口  
Main outlet of Guixi Smelter

- (3) 提高經濟效益

「深度優化節水減排」工程充分證實了節水減排和循環經濟等環保理念帶來的豐厚的經濟效益。在銅回收方面，項目實施後，應急站每年從應急處理站回收金屬量折算經濟價值為800.41萬元。在水資源利用方面，與項目實施前比較，累計節約淨化水取水量2,470萬噸，合計減少工廠成本消耗296.40萬元。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines (continued)

**TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)**

5. Intelligent plant (continued)

- (2) The total amount of pollutants from the total discharge outlet decreased (continued)

- (3) Improve economic efficiency

The project of “Deep Optimization of Water Conservation and Discharge Reduction” fully proves the rich economic benefits brought by environmental protection concepts such as water saving and discharge reduction and circular economy. In terms of copper recovery, after the implementation of the project, the annual economic value of the metal recovered from the emergency treatment station is 8.0041 million yuan. In terms of water resources utilization, compared with before the implementation of the project, a total of 24.7 million tonnes of purified water withdrawal has been saved, and the total cost of the plant has been reduced by 2.964 million yuan.



(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

專題二：貴溪冶煉廠-建設花園工廠(續)

5. 智能化工廠(續)

(3) 提高經濟效益(續)

2015-2020工廠節約  
水資源費情況如下表  
所示：

項目 Project	2015 2015	2016 2016	2017 2017	2018 2018	2019 2019	2020 2020	合計 Total
節約水量(噸) Water saving (ton) Saved water fee	2,506,396	2,165,353	2,151,555	3,157,694	6,425,908	8,293,299	24,700,205
節約水費(萬元) (ten thousand yuan)	30.08	25.98	25.82	37.89	77.11	99.52	296.40

經濟效益合計情況如  
下表所示：

項目 Project	金屬回收量 Metal recovery	水資源費 Charge for water resources
費用(萬元) Expenses (ten thousand yuan)	800.41	296.40
合計(萬元) Total (ten thousand yuan)		1,096.81

(4) 增加社會效益

通過項目實施，廢水  
總排口外排廢水中多  
項污染物排放指標優  
於國家排放標準，保  
證了信江下游飲用水  
水源質量，實現了工  
廠經濟效益與節能減  
排的良性循環，減少  
了安全隱患，對保證  
工廠環境安全、降低  
環境保護風險事故發  
生具有重大意義。

(VIII) Exchange On Environment And Our Honour  
(continued)

3. Green factories and green mines (continued)

TOPIC 2: GUIXI SMELTER - BUILDING A GARDEN  
FACTORY (continued)

5. Intelligent plant (continued)

(3) Improve economic efficiency (continued)

The water resource cost saving of the plant in  
2015-2020 is as follows:

The total economic benefits are as follows:

Through the implementation of the project, the discharge  
index of a number of pollutants in the wastewater  
discharged from the main outlet are better than the  
national discharge standard, which ensures the quality  
of drinking water source in the lower reaches of Xinjiang  
River, realizes the virtuous cycle of economic benefits  
and energy conservation and discharge reduction of the  
plant, and reduces the potential safety hazards, which is  
of great significance to ensure the environmental safety of  
the plant and reduce the risk of environmental protection  
accidents.

六. 環境與氣候變化(續)  
VI. Environment and Climate Change (continued)

(八) 環保交流與榮譽(續)

3. 綠色工廠和綠色礦山(續)

專題二：貴溪冶煉廠-建設花園工廠(續)

5. 智能化工廠(續)

(4) 增加社會效益(續)

長期以來，工廠在產品產量不斷攀升、環保排放指標持續優化的前提下，實施的「深度優化節水減排」工程，充分彰顯了「既要金山銀山，更要綠水青山」的「綠色冶煉」發展觀，體現了負責任企業的擔當，符合了國家總體發展觀要求。工廠堅定走生產發展、生態良好的「綠色冶煉」之路，貫徹執行國家正在推行的最為嚴格的生態環境保護制度，當好行業綠色發展樣板，保持了工廠高質量、跨越式發展，實現了企業與社會、環保與經濟的和諧發展。

(VIII) Exchange On Environment And Our Honour (continued)

3. Green factories and green mines (continued)

TOPIC 2: GUIXI SMELTER – BUILDING A GARDEN FACTORY (continued)

5. Intelligent plant (continued)

(4) Increase social benefits (continued)

For a long time, under the premise of continuous increase of product output and continuous optimization of environmental protection emission index, the “Deep Optimization of Water Conservation and Discharge Reduction” project implemented by the plant has fully demonstrated the “Green Smelting” development concept of “lucid waters and lush mountains are invaluable assets”, reflected the responsibility of responsible enterprises, and met the requirements of the national overall development concept. The plant firmly adheres to the philosophy of “Green Smelting” with production development and good ecology, implements the most stringent ecological environmental protection system being implemented by the state, serves as a good example for green development of the industry. It has maintained the high quality and leap-forward development of the plant, and realized the harmonious development of the enterprise and society, environmental protection and economy.



「深度優化節水減排」工程獲2020年全國國企管理創新成果二等獎  
“Deep Optimization of Water Conservation and Discharge Reduction” project was awarded the second prize of 2020 National State-owned Enterprise Management Innovation Achievement



## 七. 社會責任

### VII. Social Responsibility

公司秉承「履行社會責任，做優秀企業公民」的理念，積極投身社會公益事業，熱心各項公益活動，紮實開展脫貧攻堅、扶貧濟困工作，充分發揮自身優勢，踐行企業責任擔當。

#### (一) 社區參與

##### 1. 履行境外項目社會責任——哈薩克斯坦巴庫塔鎢礦項目

公司控股股東江銅集團與(香港)恒兆國際有限公司合作，投資哈薩克斯坦傑特蘇鎢業公司，共同開發巴庫塔特大型露天鎢礦項目。2020年11月，哈薩克斯坦巴庫塔鎢礦項目早期工程正式開工。

在海外項目投資中，公司和江銅集團尤其關注項目的環境、社會及管治風險，對不同國家文化差異可能帶來的環境、社會及管治問題予以高度重視，並聘請了第三方機構對哈薩克斯坦巴庫塔鎢礦項目的環境、社會及管治情況進行全面評估，例如在環境方面考量到建設地區環境現狀(氣候環境、地形地貌和土壤、生物多樣性等)、項目環境影響分析、主要污染源污染物的治理措施、綠化和復墾、環境管理與監測、環保措施、水土保持等；在社會方面考量到安全、消防、職業衛生與健康等。

Adhering to the concept of “performing social responsibility and being an excellent corporate citizen”, the Company actively participates in social public welfare undertakings, enthusiastically participates in various public welfare activities, solidly carries out poverty alleviation and poverty alleviation work, and makes full use of its own advantages to practice corporate responsibility.

#### (1) Social Engagement

##### 1. Perform social responsibility of overseas projects – Bakuta Tungsten Mine Project in Kazakhstan

The Company's controlling shareholder, Jiangxi Copper Group, cooperates with (Hong Kong) Hengzhao International Co., Ltd. to invest in Kazakhstan Jietesu Tungsten Co., Ltd. to jointly develop Bakutat large-scale open-pit tungsten mine project. In November 2020, the early stage of Bakuta Tungsten Mine Project in Kazakhstan officially started.

In overseas project investment, the Company and Jiangxi Copper pay special attention to the environmental, social and governance risks of the project, attach great importance to the environmental, social and governance issues that may be brought about by cultural differences in different countries, and employ a third-party organization to conduct a comprehensive assessment of the environmental, social and governance situation of Bakuta Tungsten Mine Project in Kazakhstan, for example, in terms of environment, the environmental status of the construction area (climate environment, topography and soil, biodiversity, etc.), environmental impact analysis of the project, treatment measures of main pollution sources and pollutants, greening and reclamation, environmental management and monitoring, environmental protection measures, soil and water conservation, etc. are considered; In the social aspect, safety, fire protection, occupational hygiene and health are considered.



哈薩克斯坦巴庫塔鎢礦項目早期工程開工  
Early stage of Bakuta Tungsten Mine Project in Kazakhstan started

七. 社會責任(續)  
VII. Social Responsibility (continued)

(一) 社區參與(續)

1. 履行境外項目社會責任——哈薩克斯坦巴庫塔鎢礦項目(續)

(1) 環境保護

在哈薩克斯坦鎢礦項目中，公司對當地物種多樣性進行充分識別，以更好的識別項目的環境影響，保護建設地區生態環境。

考慮到對生態環境可能產生的負面影響，如造成尾礦庫區內動植物棲息地喪失，可能造成尾礦庫區週圍的山坡土壤失穩，可能污染當地地下水等，公司在工程建設中採取生態優先的原則，即礦區水土流失的防治，要充分考慮當地的自然條件和經濟條件，做到生態與經濟效益兼顧，開發和保護兼顧，切合實際，技術可行。通過工程措施與生物措施的綜合配置，有效地減少工程造成的植物破壞和水土流失，恢復和改善施工區的生態環境，並且根據當地氣候條件進行綠化和土地復墾，以最大程度實現當地生態與社區的可持續發展。

(1) Social Engagement (continued)

1. Perform social responsibility of overseas projects – Bakuta Tungsten Mine Project in Kazakhstan (continued)

(1) Environmental protection

In Kazakhstan tungsten mine project, the Company fully identifies the local species diversity to better identify the environmental impact of the project and protect the ecological environment of the construction area.

Considering the possible negative impacts on the ecological environment, such as the loss of animal and plant habitats in the tailings reservoir area, the instability of hillside soil around the tailings reservoir area, and the possible pollution of local groundwater, etc, the company adopts the principle of ecological priority in the project construction, that is, the prevention and control of soil erosion in the mining area should fully consider the local natural and economic conditions, so as to give consideration to both ecological and economic benefits, development and protection, and be practical and technically feasible. Through the comprehensive configuration of engineering measures and biological measures, the plant damage and soil erosion caused by the project can be effectively reduced, the ecological environment of the construction area can be restored and improved, and the greening and land reclamation can be carried out according to the local climate conditions, so as to realize the sustainable development of local ecology and community to the greatest extent.



(一) 社區參與(續)

1. 履行境外項目社會責任——哈薩克斯坦巴庫塔鎢礦項目(續)

(2) 安全生產

公司在哈薩克斯坦巴庫塔鎢礦項目中依據相關安全生產及勞動相關法律法規，以及相關專業設計依據中有關安全技術的規範，全面分析潛在隱患，設計了安全、消防、職業衛生與健康管理體系，建立、健全安全生產責任制度，制訂各項勞動安全衛生生產規章制度和操作規程。

在勞動安全衛生機構設置及人員配備上，該項目設立相應的安全衛生機構，並配備專職與兼職的安全衛生設施維修、保養、日常監測檢驗人員與監督管理人員，並對其定期進行安全培訓、教育和考核。在職業衛生防護方面，設立醫務室，解決職工常見病的醫治和工傷事故的臨時處置，並成立指揮部、後勤保障、現場救援等部門，編製救援預案，並按預案要求配備，各相應部門及各相應專業的應急救援人員。與此同時，廠區與救援中心醫院建立聯繫，並簽署救援協議。為了使救援工作落到實處，每年進行一次事故應急訓練和演練。

此外，在消防設施方面，採選廠區及生活區設室外消防栓系統和建築滅火器，並對油庫、炸藥庫等重點區域設置室內外專用供水管道和滅火裝置。

(1) Social Engagement (continued)

1. Perform social responsibility of overseas projects – Bakuta Tungsten Mine Project in Kazakhstan (continued)

(2) Safety in production

In Kazakhstan Bakuta Tungsten Mine Project, according to relevant laws and regulations on safety production and labor, as well as relevant safety technology specifications in relevant professional design basis, the Company has comprehensively analyzed potential hazards, designed safety, fire protection, occupational hygiene and health management system, established and improved safety production responsibility system, and formulated various labor safety and health production rules and regulations and operating procedures.

In terms of the establishment and staffing of labor safety and health institutions, the Company has set up corresponding safety and health institutions for the project, equipped with full-time and part-time safety and health facilities repair, maintenance, daily monitoring and inspection personnel and supervision and management personnel, and conducted safety training, education and assessment for them on a regular basis. In terms of occupational health protection, the Company has set up a clinic to solve the treatment of common diseases and the temporary disposal of industrial accidents, established the headquarters, logistics support, on-site rescue and other departments, and prepared the rescue plan. And according to the requirements of the plan, the Company is equipped with the corresponding departments and the corresponding professional emergency rescue personnel. At the same time, the plant established contact with the rescue center hospital and signed the rescue agreement. In order to implement the rescue work, accident emergency training and drill are carried out once a year.

In addition, in terms of fire protection facilities, the Company has set up outdoor fire hydrant systems and building fire extinguishers in the selected factory and living areas, as well as special indoor and outdoor water supply pipes and fire extinguishing devices in key areas such as oil depots and explosive depots.

七. 社會責任(續)  
VII. Social Responsibility (continued)

(一) 社區參與(續)

2. 社區關懷

2020年，公司及江銅集團繼續開展「三供一業」維修改造工作，通過供水、供電、供氣及社區物業管理和公用設施維修改造，以及通過建設社區活動場所、健身器材、因地制宜引進特色社區服務，有效提升和改善社區居民居住環境、出行便捷及生活體驗。

(1) 德銅五大社區——美化、綠化、亮化



德銅五大社區建設

The Construction of the top five communities in Detong

德銅五大社區的20多個職工小區，使用年限從50年到10年不等，存在不同程度設施陳舊老損現象。公司利用「三供一業」移交社區環境改造機會，對其進行了徹底修整。在基礎設施建設和環境改善方面，社區內新設照明系統亮化道路共計9萬多平方米，增設停車位1,359個，改造排水排污系統15,000米，新增健身器材、休閒桌椅150套，休閒庭廊15座，綠化面積新增後達35,000平方米。同時，公司還針對附近農貿市場、菜市場、早餐點進行工程佈局，改造門店攤位供水、排水、照明系統，新增路燈613盞。

(1) Social Engagement (continued)

2. Community Care

In 2020, the Company and JCC continued to carry out “Three Supplies and One Property” maintenance and renovation work, through the provision of water supply, electricity supply, gas supply and community property management and maintenance and renovation of public facilities, and through the construction of community venues, fitness equipment, and tailor-made community services, which effectively enhanced the living environment, travel convenience and life experience of community residents.

(1) The top five communities in Detong- beautification, greening, lighting

More than 20 staff quarters in the top five communities of Detong, which have service life ranging from 50 to 10 years with obsolete facilities in varying degrees. The Company took advantage of the “Three Supplies and One Property” to hand over the opportunity of community environmental renovation and completely renovated it. In terms of infrastructure construction and improvement of the environment, a total of more than 90,000 square meters of brightening for roads have been set up in the community, 1,359 additional parking spaces have been set up, 15,000 meters of drainage and sewerage system have been renovated, 150 sets of fitness equipment and leisure tables and chairs have been added, 15 leisure verandas have been installed, and the green area has increased by 35,000 square meters. At the same time, the Company also carried out engineering layout for nearby farmers' markets, markets and breakfast shops, transformed the water supply, drainage and lighting systems of store stalls, and added 613 street lamps.



(一) 社區參與(續)

2. 社區關懷(續)

(2) 永銅社區——生活的美化升級



永銅社區綠化

The Greening of Yongtong Community

公司從多個維度及生活細節美化升級，提升和豐富了永銅社區居民生活體驗。2020年2月，公司在永銅社區投資四千餘萬元的水電改造已全部完工，投資760萬元的供氣維修改造已完成主體施工並開始陸續供氣。在道路建設方面，新建瀝青混凝土路面63,844平方米，鋪設透水磚路面37,828平方米，鋪設花崗岩路面10,828平方米。此外，公司還在社區內增設健身器材、兒童遊樂設施，新建散步長廊，鋪設草皮22,198平方米。更多的社區娛樂設施、更多活動場所，為社區居民提供了互動和聯結的機會。

The Company has enhanced and enriched the life experiences of residents of YongCu community by landscaping and upgrading from various dimensions and life details. In February 2020, the Company's hydropower transformation, which invested more than RMB40 million in Yongtong Community, was fully completed, and the gas supply maintenance and transformation with an investment of RMB7.6 million has completed the main construction and started to supply gas. In terms of road construction, 63,844 square meters of newly constructed asphalt concrete pavement, 37,828 square meters of permeable brick paved with 10,828 square meters of granite pavement were built. In addition, the Company has also added fitness equipment, children's amusement facilities, newly-built promenade, as well as a turf of 22,198 square meters. More community entertainment facilities and more venues for activities provide opportunities for community residents to interact and connect with each other.

七. 社會責任 (續)  
VII. Social Responsibility (continued)

(一) 社區參與(續)

2. 社區關懷(續)

(3) 東銅社區——優美宜居



東銅社區生活環境

The Living Environment of Dongtong Community

公司針對東銅社區進行了持續不斷的美化亮化建設，從社區道路修葺完善，修整社區停車位到完善健身器材不等。2020年，公司還特別為社區居民引進和落地「一站式」、「日間照料」、「養老服務模式」等養老服務模式。「一站式」養老服務集衣食住行及健身於一體。在社區養老服務中不僅解除了子女們為父母居家生活的顧慮，更為老年朋友提供了細緻入微的周到服務的同時提供了社交互動的場所，讓社區老年朋友感受到生活的多樣和賓至如歸。

(1) Social Engagement (continued)

2. Community Care (continued)

(3) Dongtong Community- Graceful Living



The Company has carried out continuous landscaping and lighting construction for Dongtong community, ranging from the renovation of community roads and community parking spaces to the improvement of fitness equipment. In 2020, the Company also introduced and implemented “one-stop”, “day care” and “age care service” models for community residents. “One-stop” elderly care services integrate clothing, food, housing, transportation and fitness. In the community In the community care service, we have not only lifted our children’s concerns about their parents’ home life, but also provided a place for social interactions while providing meticulous and considerate services for elderly friends in the community, allowing our elderly friends in the community to feel the diversity of their lives and feel at home.



## (二) 精準扶貧

2020年度，公司與江銅集團繼續紮實開展脫貧攻堅、扶貧濟困工作，彰顯江銅責任，體現出對社會的關懷與回饋。截至2020年底共計投入1,670萬餘元，其中在2020年度共計完成扶貧資金投入627萬元，較2019年繼續增長48萬元。通過產業扶貧、金融扶貧、消費扶貧等多路徑結合的方式成功幫扶井岡山市東上鄉曲江村、宜春市銅鼓縣雙紅村和德興市李宅鄉宗儒村實現脫貧摘帽。

同時，公司與江銅集團日常經營中也積極響應消費扶貧理念，通過充分利用單位食堂以及員工福利採購的方式定向採購扶貧產品共計482萬元，較2019年增加投入87.82%。

## (ii) Targeted Poverty Alleviation

In 2020, the Company and JCC continued to carry out poverty alleviation work demonstrating the responsibility of JCC and reflecting the concern and feedback towards the society. By the end of 2020, a total of more than RMB16.7 million was invested, of which total investment in poverty alleviation was RMB6.27 million in 2020, representing a further increase of RMB0.48 million from 2019. We have successfully assisted in removing poverty by taking advantage of a combination of industrial poverty alleviation, financial poverty alleviation and consumption alleviation and multipath approaches to achieve poverty alleviation and helping Qujiang Village, Dongshang Town, Jinggangshan City, Shuanghong Village, Tonggu County, Yichun City, and Zongru Village in Lizhai Township, Dexing City, to get rid of poverty.

At the same time, the Company and JCC were also actively responding to the concept of poverty alleviation in the daily operation by making full use of the unit canteen and employee welfare procurement, totaling RMB4.82 million, an increase of 87.82% over 2019

### 案例：深入調研，定點開展產業扶貧、教育扶貧

2020年5月，公司領導深入井岡山市東上鄉曲江村、銅鼓縣大垵鎮雙紅村兩個公司定點幫扶村，調研精準扶貧工作。

### Case: in-depth research and designated poverty alleviation through industry and education

In May 2020, the Company's management went to Qujiang Village in Dongshang Township, Jinggangshan City and, Shuanghong Village in Tonggu County, Yichun City, to investigate the accurate poverty alleviation work.



深入調研貧困村現場  
The scene of In-depth investigation of poor villages

七. 社會責任(續)  
VII. Social Responsibility (continued)

(二) 精準扶貧(續)

(ii) Targeted Poverty Alleviation (continued)

- **深入調研，瞭解民眾切實需求。**實地考察公司援建的養蜂基地發展與經營情況，還深入養蜂專業戶家中進一步瞭解他們的生活及需求。走訪慰問貧困戶，在考察村民實際困難的同時，著重瞭解了當地貧困學生的資助情況和教育扶貧的覆蓋率，為後期公司如何更具針對性提升地方學生教育覆蓋率和教育質量作前置準備。

- **In-depth research to understand the real needs of the people on poor villages.** We have also visited the professional households of beekeepers, which is assisted by the Company, to further understand their lives and needs. Visiting poor families and paying attention to the practical difficulties of the villagers, while focusing on understanding the financial assistance and poverty alleviation coverage of impoverished students in the locality, so as to prepare the Company for more targeted improvement of local education coverage and education quality.



走訪慰問貧困戶

Visit and sympathize with the poor families



(二) 精準扶貧(續)

(ii) Targeted Poverty Alleviation (continued)

- **產業扶貧，創造就業，脫貧攻堅「樣板工程」。**雙紅村擁有近5萬畝天然竹林資源，竹筍產業前景良好，但技術和經驗基礎條件差，脫貧任務仍然艱巨。公司積極以產業扶貧援建竹筍加工廠的方式予以地方支持，已對援建雙紅筍廠投入二期項目，預計投產後將新增30個就業崗位，實現常年用工，常年生產。

- **Industry Poverty Alleviation, Job Creation, Poverty Alleviation "Sample Project".** Shuanghong Village has nearly 50,000 mu of natural bamboo resources, and the bamboo shoots industry has good prospects, but the technical and experience base conditions are poor, and the task of poverty alleviation remains arduous. The Company proactively supported the local bamboo shoots processing factory with the aid of industrial poverty alleviation, and has already invested in the second phase of the project, and it is expected that 30 new jobs will be created after the commencement of production.



實地瞭解竹筍加工廠項目落實情況

On-The-Spot Understanding Of The Implementation Of The Bamboo Shoot Processing Factory Project

七. 社會責任(續)  
VII. Social Responsibility (continued)

(二) 精準扶貧(續)

(ii) Targeted Poverty Alleviation (continued)

案例：全國脫貧攻堅先進個人

Case: National Poverty Alleviation Advanced Individual



葉維祝人民大會堂前獲獎照

Ye Weizhu, took an award photo in front of the Great Hall of the people.



葉維祝組織曲江村村民發展養蜂產業

Ye Weizhu organized the villagers of Qujiang Village to develop beekeeping industry.



## (二) 精準扶貧(續)

## (ii) Targeted Poverty Alleviation (continued)



葉維祝獲全國脫貧攻堅先進個人

Ye Weizhu won the National Poverty Alleviation Advanced Individual

江銅駐曲江村工作隊隊長兼井岡山市東上鄉曲江村第一書記葉維祝，在人民大會堂參加會議上榮獲2020年「全國脫貧攻堅先進個人」稱號。葉維祝自2015年被任命為扶貧幹部以來極盡自己的能力和背靠的江銅力量，曲江村不僅早已幫助34戶貧困戶139人全部脫貧，集體經濟收入更是從早年地區排名末位提升至連續三年位列井岡山市第一。

Ye Weizhu, the leader of Qujiang Village in JCC and the first secretary of Qujiang Village in Dongshang Village, Jinggangshan City, awarded the title of "2020 National Poverty Alleviation Advanced Individual" at the meeting in the Great Hall of the people. Ye Weizhu has done his best and relied on JCC since he was appointed as a poverty alleviation cadre in 2015. Qujiang Village has not only helped 139 people from 34 poor households out of poverty, but also ranked first in Jinggangshan City for three consecutive years from the bottom of the regional ranking in the early years.

- **扶貧基礎設施建設。**葉維祝自2015年被任命為扶貧幹部以來極盡自己的能力和背靠的江銅力量，大力開展基礎設施建設，整治水渠1,500米，新修入戶路1.025公里，修建連組橋1座，建設灌溉水渠1,800米，硬化道路1,200米，新建排水溝1,200米，新修飲水工程2處，還推動主幹道綠化、小型停車場、村民心景園、河道整治建設，新建村文化活動室和休閒健身廣場，解決村民基本生產生活中的困境。

- **Infrastructure construction for poverty alleviation.** Ye Weizhu has done his best to help the poor since he was appointed as a poverty alleviation cadre in 2015. He has made great efforts to carry out infrastructure construction, renovated 1,500 meters of canals, built 1.025 kilometers of new roads, built a connecting bridge, built 1,800 meters of irrigation canals, 1,200 meters of hardened roads, built 1,200 meters of new drainage ditches, built two new drinking water projects, and promoted the greening of main roads, small parking lots, villagers' s Xinjing Garden, and river course construction. The cultural activity room and leisure fitness square of the new village can solve the difficulties in the basic production and life of the villagers.

## 七. 社會責任(續)

### VII. Social Responsibility (continued)

#### (二) 精準扶貧(續)

#### (ii) Targeted Poverty Alleviation (continued)

- **產業扶貧，從末尾到領先的蛻變。** 2016年，曲江村在公司與江銅集團的資助下投資30萬元組建了農機合作社，購置了一台耕作機、兩台收割機。在2018年，公司與江銅集團繼續以資金資助20萬為引導，村民小部分出資及土地流轉等方式入股，創新「合作社+貧困戶+農戶」的產業結構模式，共建白蓮合作社，以盡最大可能為村民創收。從2018年開始，曲江村集體經濟收入連續三年在井岡山市排名第一，其中2019年曲江村產業銷售收入突破了140萬元，集體經濟突破50萬元，村民人均收入由2015年的4,600元提高到2020年的9,000元，實現了翻番。

- **Industrial poverty alleviation, a transformation from the end to the lead.** In 2016, Qujiang Village invested RMB0.3 million to set up an agricultural machinery cooperative with the financial support of the Company and JCC, and purchased a farming machine and two harvesters. In 2018, the Company and JCC continued to invest in shares by means of capital assistance of RMB0.2 million, a small part of the villagers' contribution and land transfer, and innovated the industrial structure model of "cooperatives + poor households + farmers" to jointly build white lotus cooperatives to generate income for the villagers as much as possible. Since 2018, the collective economic income of Qujiang Village has ranked first in Jinggangshan City for three consecutive years, of which the industrial sales income of Qujiang Village has exceeded RMB1.4 million in 2019, and the collective economy has exceeded RMB500,000. The per capita income of villagers has doubled from RMB4,600 in 2015 to RMB9,000 in 2020.



貧困戶到合作社採摘蓮子

Poor household pick lotus seeds from cooperatives

- **打通銷路，文化輸出。**在產業扶貧步入正軌，感受成果帶來的喜悅後不久，江銅駐曲江村工作隊隊長葉維祝繼續為曲江村產品大跨步走出去盡心盡力。葉維祝帶著農產品樣品前往浙江、福建等地，跑遍江銅每一個單位，為深山裡的農產品終是跑出了暢銷路。曲江村出產的白蓮、蜂蜜等土特產不僅有定期穩定的輸出渠道，年終時還被擺上年貨展台，在向千家萬戶輸出品質的同時，推動輸出「井岡山」文化。

- **Open up the market and export culture.** Shortly after the industrial poverty alleviation was on the right track and felt the joy brought by the results, Ye Weizhu, leader of Jiangzhu's team in Qujiang Village, continued to do his best for Qujiang Village's products to stride out. Ye Weizhu took samples of agricultural products to Zhejiang, Fujian and other places, went to every unit in Jiangtong, and finally found a best-selling market for agricultural products in the mountains. The white lotus, honey and other native products produced in Qujiang Village not only have regular and stable export channels, but also have the New year goods booth at the end of the year, which not only exports quality to thousands of households, but also promotes the export of "Jinggangshan" culture.



(二) 精準扶貧(續)

主題三：抗擊疫情行動

2020年新冠肺炎疫情期間，公司積極應對新冠肺炎疫情，迅速啟動應急響應，成立疫情防控工作領導小組，實行24小時防疫值班制，並深入生產一線督導疫情防控和生產安全。通過嚴格執行「外防輸入、內防擴散」工作要求，抓嚴抓實抓細疫情防控各項任務，十萬餘員工家屬確診及疑似病例保持為零。

為進一步支持新冠肺炎疫情防控，助力打贏疫情防控阻擊戰，彰顯公司守望相助，共克時艱的大愛情懷，公司向所屬單位下發《關於對新冠肺炎疫情防控一線員工和患病員工開展關心關愛活動的通知》等相關文件，積極開展相關公益活動。公司及江銅集團累計向疫情一線捐款近1,750萬元。同時，為支持中小企業復工復產，公司共通過產品消費資助378萬元、減免中小企業租金146萬元；積極助力穩就業，累計提供300餘個省內新增就業崗位。此外，公司員工饒鵬程在主動請纓踴躍參與新冠肺炎疫情醫療支援的工作中榮獲「全國抗擊新冠疫情先進個人」稱號。

(ii) Targeted Poverty Alleviation (continued)

Topic 3: Anti-Epidemic Actions

During the COVID-19 epidemic in 2020, the Company actively responded to the COVID-19 's epidemic situation, promptly initiated emergency response, set up a leading group for epidemic prevention and control, implemented a 24-hour epidemic prevention duty system, and went deep into the production front line to supervise epidemic prevention and control and production safety work. By strictly implementing the work requirements of "external defense input, internal prevention and non-proliferation" work, we have made efforts to crack down on various tasks of prevention and control of epidemic prevention, and the confirmed and suspected cases of our family of 100,000 employees remained at zero.

In order to further support the prevention and control of COVID-19, to help win the epidemic prevention and control war, and to demonstrate the great desire of the Company of helping each other to overcome difficulties, the Company has issued the Notice on Carrying out Care Activities for Front-line Staff and Sick Staff of COVID-19 Prevention and Control and other relevant documents to its subordinate units to actively carry out relevant public welfare activities. The Company and JCC have donated nearly RMB17.5 million to the front line of the epidemic. At the same time, in order to support the resumption of production of small and medium-sized enterprises, the Company has financed a total of RMB3.78 million through the consumption of products, reduced the rental of SMEs by RMB1.46 million, actively assisted in securing employment, and provided more than 300 new jobs in the province. In addition, Rao Pengcheng, an employee of the Company, was awarded the title of "National Advanced Individual for Fighting the New Epidemic Situation" for his active participation in the medical support of COVID-19.



公司新冠疫情防控措施

Prevention and control measures of COVID-19 epidemic situation in the Company

## 七. 社會責任 (續) VII. Social Responsibility (continued)

### (二) 精準扶貧 (續)

#### 主題三：抗擊疫情行動 (續)

公司的主要行動包括：

- 率先全面復工復產，第一時間推進日產30萬隻口罩生產線建設，加急生產急需一次性醫用口罩等物資。
- 員工主動請纓、踴躍參加新冠肺炎醫療支援工作，永平銅礦職工醫院饒鵬程支援湖北隨州的疫情防控，德興銅礦職工醫院護士吳倩香和張慧芬支援了江西鄱陽的疫情防控。
- 公司上下為抗擊疫情捐助近1,750萬元，支持中小企業復工復產，產品消費378萬元、減免中小企業租金146萬元，積極助力穩就業，累計提供300餘個省內新增就業崗位。

疫情期間，公司獲得以下榮譽：

- 2020年新冠肺炎疫情防控愛心捐贈榜樣集體
- 中智合作抗擊疫情特別貢獻企業
- 2020年「慈善一日捐」愛心單位

### (ii) Targeted Poverty Alleviation (continued)

#### Topic 3: Anti-Epidemic Actions (continued)

The principal actions of the Company include:

- Took the lead in the full resumption of work and production, the Company immediately promoted the construction of a daily production line of 300,000 face masks, and urgently needed disposable medical masks and other materials.
- The employees volunteered and enthusiastically participated in COVID-19's medical support work. Rao Pengcheng, who has been working in Staff Hospital of Mine in Yongping supported the prevention and control of the epidemic situation in Suizhou, Hubei Province. Wu Qianxiang and Zhang Huifen, nurses of Staff Hospital of Mine in Dexing, supported the prevention and control of the epidemic in Poyang, Jiangxi Province.
- The Company has donated nearly RMB17.5 million to combat the epidemic, supported the resumption of production of small and medium-sized enterprises, consumed RMB3.78 million in products, reduced or waived rents for small and medium-sized enterprises by RMB1.46 million, actively helped to stabilize employment, and provided a total of more than 300 new jobs in the province.

During the epidemic, the Company received the following honors:

- COVID-19's model group for the prevention and control of the epidemic in 2020
- Special contribution enterprises for cooperation between China and Chile to combat the epidemic
- The Caring unit of "Charity Donation Day" in 2020



公司應對新冠疫情榮譽

The company is honored to combat the epidemic situation



(二) 精準扶貧(續)

(ii) Targeted Poverty Alleviation (continued)

主題三：抗擊疫情行動(續)

Topic 3: Anti-Epidemic Actions (continued)

案例：支援湖北 最美逆行

2020年2月11日，公司控股股東江銅集團子公司江西銅業集團(鉛山)醫院黨支部書記、副主任醫師饒鵬程作為江西省對口支援隨州第二批醫療隊隊員正式出征，帶著江西銅業全體員工的殷殷囑托前往抗疫一線，成為「最美逆行者」中的一員。2020年9月8日，饒鵬程書記被評為「全國抗擊新冠肺炎疫情先進個人」。

Case: Supporting The Most Beautiful Retrograde In Hubei

On February 11, 2020, Rao Pengcheng, the controlling shareholder of the Company, the party secretary and deputy chief physician of Jiangxi Copper Corporation Limited (Qianshan) Hospital, a subsidiary of JCC, officially went out as a member of the second batch of medical teams supported by Jiangxi Province. With the earnest advice of all the staff of JCC, he went to the front line of anti-epidemic and became one of the "most beautiful retrograde fighter". On September 8, 2020, Rao Pengcheng, the secretary, was accredited as the "National Advanced Individual for the Fight against the epidemic of COVID-19."



江西銅業集團(鉛山)醫院援鄂醫療隊出征

Jiangxi Copper Corporation Limited (Qianshan) Hospital Hubei Medical team



江西銅業集團(鉛山)醫院援鄂醫療隊現場工作照

Photo of on-site work of Hubei Medical team of Jiangxi Copper Corporation Limited (Qianshan) Hospital

七. 社會責任 (續)  
VII. Social Responsibility (continued)

(二) 精準扶貧 (續)

主題三：抗擊疫情行動 (續)

案例：捐款捐物 共克時艱

為進一步支持新冠肺炎疫情防控一線，助力打贏疫情防控阻擊戰，彰顯公司守望相助、共克時艱的大愛情懷，2020年2月1日，公司號召公司上下通過江西省紅十字會、江西省紅十字基金會積極向抗疫一線捐款捐物。倡議發出後，得到公司全體幹部員工的積極響應，僅一天時間，公司就有16,310名幹部員工通過江西省紅十字會、江西省紅十字基金會向抗疫一線捐款，捐款總額達到2,102,413.41元。另有部分員工通過武漢紅十字會、江西省青少年發展基金會、北京韓紅愛心基金會、北京春苗慈善基金會、北京新陽光慈善基金會等慈善機構積極捐助物品，貢獻自己的一份力量。

(ii) Targeted Poverty Alleviation (continued)

Topic 3: Anti-Epidemic Actions (continued)

Case: donations and overcoming difficulties

In order to further support the front line of COVID-19 epidemic prevention and control, to help win the fight against epidemic prevention and control, and highlighting the great love of the Company and overcoming difficulties together, February 1, 2020, the Company called on the members to actively donate materials to the anti-epidemic front line through the Jiangxi Red Cross and Jiangxi Red Cross Foundation. After the launch of the initiative, all the cadres and workers of the Company responded positively. In just one day, the Company had donated donations from the Jiangxi Provincial Red Cross Society and the Jiangxi Red Cross Foundation to the anti-epidemic front through a total of 16,310 cadres, totaling RMB2,102,413.41. Other employees have contributed their strengths through charitable organizations such as Wuhan Red Cross, Jiangxi Youth Development Foundation, Beijing Han Hong Aixin Foundation, Beijing Chunmiao Charitable Foundation and Beijing Sunshine Charity Foundation.



(二) 精準扶貧(續)

(ii) Targeted Poverty Alleviation (continued)

主題三：抗擊疫情行動(續)

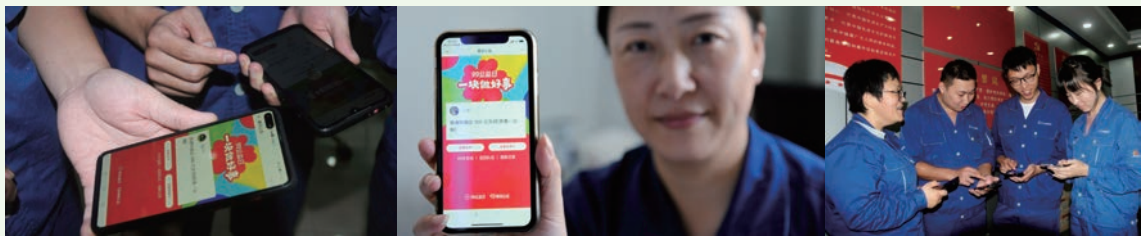
Topic 3: Anti-Epidemic Actions (continued)

案例：慈善一日捐活動

2020年，公司積極響應江西省民政廳、江西省慈善總會於9月5日在全省開展的「慈善一日捐」活動，聚焦貧困地區困難群眾和受災群眾，以決戰決勝之勢打贏脫貧攻堅戰，組織動員廣大幹部職工為「慈善一日捐」獻愛心，全公司共有26個單位16,538人次參與捐款，金額達1,538,024.52元，佔全省「慈善一日捐」線上籌款總數的57.6%。活動開展強化了全體員工的慈善意識，弘揚了社會公德，營造了奉獻愛心、共築和諧的濃厚氛圍，彰顯了江銅奉獻社會、幫困扶貧的責任擔當，以及公司上下助力全省脫貧攻堅，落實精準扶貧、精準脫貧戰略的決心，充分展示了江銅廣大幹部職工樂善好施、守望相助的精神風貌。

Case: One-day charity donation activity

In 2020, the Company actively responded to the “one-day charity donation” activity launched by Jiangxi Provincial Department of Civil Affairs and Jiangxi Provincial Charity Federation in 5 September over the province, which focused on the people in need and disaster-stricken people in poverty-stricken areas, won the battle against poverty with a decisive victory, and organized the mobilization of cadres and employees to give love for the “one-day charity donation”. A total of 16,538 people from 26 units throughout the Company participated in donations, amounting to RMB1,538,024.52, accounting for 57.6% of the total online fundraising of the province’s “one-day charity donation”. The activity has strengthened the charity awareness of all employees, promoted social ethics, and created a strong atmosphere of dedication, love and harmony, and it demonstrates the responsibility of JCC to contribute to society and help the poor, as well as the Company’s determination to help the province to overcome poverty and implement targeted poverty alleviation and targeted poverty alleviation strategies, so as to fully demonstrate the spirit of charity and mutual assistance among the cadres and employees of JCC



幹部職工們捐款現場

Photo of Cadres and staff donation

七. 社會責任 (續)  
VII. Social Responsibility (continued)

(二) 精準扶貧 (續)

(ii) Targeted Poverty Alleviation (continued)

主題三：抗擊疫情行動 (續)

Topic 3: Anti-Epidemic Actions (continued)

案例：國內外協同一心，支援抗疫一線

- **點對點定向支援與捐助。**在此次疫情防控戰中，公司切實發揮社會責任。除了此次在全體員工中發動的愛心捐款以外，公司子公司山東恒邦冶煉股份有限公司為煙台市牟平區抗擊疫情捐款200萬元。
- **援助海外新冠疫情防控。**隨著新冠肺炎疫情在海外蔓延，不少地區和國家防護物資緊缺。公司在中國產業海外發展協會的組織協調，以及中國國際商會駐哈薩克斯坦代表處的大力協助下，由江銅集團、公司子公司香港佳鑫國際資源投資有限責任公司及哈薩克斯坦傑特蘇鎢業有限責任公司等企業聯手捐贈的總價值約為70餘萬人民幣的22.88萬隻醫用口罩，於4月12日正式移交哈薩克斯坦紅新月會，用於支持哈方抗疫之需。

Case: Cooperation at domestic and abroad to support the front line of anti-epidemic

- **Provide peer-to-peer targeted support and donations.** In this epidemic prevention and control campaign, the Company has effectively fulfilled its social responsibilities. In addition to the charitable donations made by all employees, Shandong Humon Smelting Co., Ltd., a subsidiary of the Company, donated RMB2 million for the fight against the epidemic in Zhangping District, Yantai City.
- **assistance in the prevention and control of COVID-19 in overseas countries.** As the COVID-19 epidemic spreads overseas, many regions and countries are in short supply of protective materials. With the organization and coordination of the China Industry overseas Development Association and the strong assistance of the representative office of the China International Chamber of Commerce in Kazakhstan, 228,800 medical masks with a total value of more than 700,000 yuan were jointly donated by Jiang Copper Group, the company's subsidiary Hong Kong Jiaxin International Resources Investment Co., Ltd., and Kazakhstan Jetsu Tungsten Industry Co., Ltd. It was officially handed over to the Kazakh Red Crescent Society on April 12 to support Kazakhstan's anti-epidemic needs.



(二) 精準扶貧(續)

(ii) Targeted Poverty Alleviation (continued)

主題三：抗擊疫情行動(續)

Topic 3: Anti-Epidemic Actions (continued)

案例：助力困難企業復工復產

2020年四季度，公司積極響應省總工會倡議，協助省總工會定點服務企業解決疫情期間產品滯銷困難，公司帶頭掀起了助力企業復工復產的購鞋熱潮，共購買休閒運動鞋16,419雙，總計378萬元。為了將好事辦好，公司各級工會組織專人對接該項採購服務活動，通過實地瞭解企業情況、主動聯繫洽談採購方案、精選鞋型供會員試穿、傾聽廣大會員意見和建議等方式，落實採購方案，確保既能夠為廣大會員提供質量過硬、舒適美觀的休閒運動鞋，又能夠對企業起到有效助力作用。

Case: helping enterprises with difficulties to resume work and production

In the fourth quarter of 2020, the Company actively responded to the proposal of the Provincial Federation of Trade unions and assisted the designated service enterprises of the Provincial Federation of Trade unions to solve the difficulties of unsalable products during the epidemic. The Company took the lead in setting off an upsurge of shoes to help enterprises resume work and production, buying a total of 16,419 pairs of leisure sports shoes, totaling RMB3.78 million. In order to do a good job, the trade unions at all levels of the Company organize a dedicated person to connect with such procurement service activities, and implement such activities through on-site understanding of the enterprise, active contact and negotiation of purchase plan, selection of shoes for members to try on, listening to the opinions and suggestions of the general membership, etc. The procurement plan ensures that the Group can provide casual sports shoes of high quality, comfortable and beautiful for the general members, and can effectively assist the enterprises.



助力企業復工復產採購現場  
Photo of Assisting Enterprises to Resume Work and Production

七. 社會責任(續)  
VII. Social Responsibility (continued)

(二) 精準扶貧(續)

(ii) Targeted Poverty Alleviation (continued)

主題三：抗擊疫情行動(續)

Topic 3: Anti-Epidemic Actions (continued)



員工們收到商品的喜悅  
The joy of the employees receiving the goods



## 附錄一、數據指標表

### Appendix I: Data Index Table

#### 環境績效

#### Environmental performance

類型	types	指標	index	單位	unit	2020年
水資源消耗與利用	Consumption and utilization of water resources	總用水量	Total water consumption	萬噸	10,000 tonnes	83,713
		新水使用量	New water consumption			5,026
		總排水量	Total displacement			5,427
		水循環利用率	Water recycling efficiency	%	%	95.67
廢水排放 <sup>1</sup>	Wastewater discharge <sup>1</sup>	用水密度	Intensity of water consumption	噸/萬元收入	tonne/RMB10,000	26.28
		COD	COD	噸	tonne	1,404.77
		氨氮	Ammonia nitrogen	噸	tonne	133.68
		銅	copper	噸	tonne	1.45
廢氣排放 <sup>2</sup>	Exhaust emission <sup>2</sup>	鋅	zinc	噸	tonne	2.42
		鉛	lead	噸	tonne	1.97
		氮氧化物	nitrogen oxide	噸	tonne	42.54
		二氧化硫	sulfur dioxide	噸	tonne	1,453.50
有害廢棄物	hazardous waste	煙塵	smoke	噸	tonne	209.75
		尾礦處置量	Tailings disposal capacity	萬噸	10,000 tonnes	4,990.45
		尾礦綜合利用量	Comprehensive utilization of tailings	萬噸	10,000 tonnes	698.46
		礦山廢礦物油	Mine waste mineral oil	萬噸	10,000 tonnes	0.06
無害廢棄物	Harmless waste	冶煉產生的危險廢棄物	Hazardous waste from smelting	萬噸	10,000 tonnes	3.68
		汽油	gasoline	噸	tonne	346.996
		柴油	diesel oil	噸	tonne	55,289.350
		燃料油	fuel oil	噸	tonne	16,529.650
直接能耗 <sup>3</sup>	Direct energy consumption <sup>3</sup>	天然氣	natural gas	立方米	cubic metre	32,646,060.000
		煤	coal	噸	tonne	694.680
		外購電力	Purchased electricity	兆瓦時	Megawatt hour	3,521,554.930
		蒸汽	steam	噸	tonnes	238,495.880
綜合能耗	Comprehensive energy consumption			噸標準煤	Tonne of standard coal	596,903.475
				噸標準煤/萬元	Tonne of standard coal/RMB10,000	0.0935
產值能耗	Energy consumption per unit			噸標準煤	Tonne of standard coal	2,596.760
按可比價計算節能量	Energy saving calculated based on comparable prices			噸標準煤	Tonne of standard coal	

<sup>1</sup>註：統計範圍為城門山、德銅、德銅化工、貴冶、銅箔、龍昌、武山、銀山、東同、清遠、永銅、瓮福十二個二級單位。

<sup>2</sup>註：統計範圍為德銅化工、貴冶、清遠、永銅、瓮福五個二級單位。

<sup>3</sup>註：統計範圍為省內生產單位，包括德興銅礦、永平銅礦、武山銅礦、城門山銅礦、貴溪冶煉廠、江西銅業銅材、東同礦業、銀山礦業、江銅耶茲銅箔、龍昌精密銅管、台意特種電工材料、江西銅業集團(貴溪)物流有限公司。

<sup>1</sup> Note: the statistical scope covers 12 secondary units, namely Chengmenshan, Decong, Decong chemical, Guiye, Tongye, Longchang, Wushan, Yinshan, Dongtong, Qingyuan, Yongtong and Wengfu.

<sup>2</sup> Note: the scope of statistics includes five secondary units, namely, Decong chemical industry, Guiye, Qingyuan, Yongtong and Wengfu.

<sup>3</sup> Note: the statistical scope includes Dexing Copper Mine, Yongping Copper Mine, Wushan Copper Mine, Chengmenshan Copper Mine, Guixi Smelter, JCC Copper Products, Dongtong Mining, Yinshan Mining, Jiangxi Copper Yates Copper Foil, Jiangxi Copper (Longchang) Precise Pipe, Jiangxi Copper Taiyi Special Electrical Materials, Jiangxi Copper Group (Guixi) Logistics Co., Ltd.

附錄一、數據指標表(續)

Appendix I: Data Index Table (continued)

類型	types	指標	index	單位	unit	2020年
溫室氣體排放 <sup>4</sup>	Greenhouse gas emissions <sup>4</sup>	溫室氣體排放(範圍一)	Greenhouse gas emissions (scope 1)	噸二氧化碳當量	Tonnes of CO <sub>2</sub> equivalent	282,245.451
		溫室氣體排放(範圍二)	Greenhouse gas emissions (scope 2)	噸二氧化碳當量	Tonnes of CO <sub>2</sub> equivalent	1,922,007.380
		溫室氣體排放(範圍三)	Greenhouse gas emissions (scope 3)	噸二氧化碳當量	Tonnes of CO <sub>2</sub> equivalent	0.000
		溫室氣體排放總量	Total greenhouse gas emissions	噸二氧化碳當量	Tonnes of CO <sub>2</sub> equivalent	2,204,252.831
		溫室氣體排放密度	Greenhouse gas emission density	噸二氧化碳當量 / 萬元收入	Tonnes of CO <sub>2</sub> equivalent / RMB 10,000 income	0.069
包裝材料使用	Use of packaging materials	木頭架使用量	Consumption of wood frames	噸	Tonne	13,338
		木頭架回收率	Recovery rate of wood frame	%	%	70
		塑膠製品包裝回收方式	Packaging and recycling of plastic products	公司回收清洗粉碎後銷售	sales after recycling, cleaning and crushing	

僱傭情況

Employment

指標	index	單位	unit	2020年
員工人數	Number of employees	人	person	24,831
女性員工比例	Proportion of female employees	%	%	14.89
員工勞動合同簽署率	Labor contract signing rate	%	%	100
員工社會保險覆蓋率	Employee social insurance coverage	%	%	100
參加工會員工比例	Proportion of employees joining trade union	%	%	100%
企業年金收益率	Enterprise annuity rate of return	%	%	10.43

<sup>4</sup>註：統計範圍為省內生產單位，包括德興銅礦、永平銅礦、武山銅礦、城門山銅礦、貴溪冶煉廠、江西銅業銅材、東同礦業、銀山礦業、江銅耶茲銅箔、龍昌精密銅管、台意特種電工材料、江西銅業集團(貴溪)物流有限公司。

<sup>4</sup> Note: the statistical scope includes Dexing Copper Mine, Yongping Copper Mine, Wushan Copper Mine, Chengmenshan Copper Mine, Guixi Smelter, Jiangxi Copper Products, Dongtong Mining, Yinshan Mining, Jiangxi Copper Yates Copper Foil, Jiangxi Copper (Longchang) Precise Pipe, Jiangxi Copper Taiyi Special Electrical Materials, Jiangxi Copper Group (Guixi) Logistics Co., Ltd.

員工人數

指標	index	2020年度數據		
		Data in 2020		
		員工人數(人)	員工流失數(人)	
		Number of employees (person)	Loss of employees (person)	
性別	Gender	男	Male	21,133
		女	Female	3,698
				1,421
				388



附錄一、數據指標表(續)  
Appendix I: Data Index Table (continued)

指標	index	2020年度數據	
		員工人數(人)	員工流失數(人)
		Number of employees (person)	Loss of employees (person)
僱傭類型	Employment Type		
		兼職	Part-time
		全職	Full-time
年齡	Age	25歲及以下	25 and below
		26歲至35歲	26-35
		36歲至45歲	36-45
		46歲至55歲	46-55
		56歲及以上	56 and above
學歷	Education background	博士研究生	Doctoral degree
		碩士研究生	Master's degree
		大學本科	Bachelor's degree
		大學專科	Diploma
		中專	Technical secondary school
		高中及以下	High school and below
地區劃分	Division by region	江西省內	Within Jiangxi Province
		江西省外	Outside Jiangxi Province
合計	Total	24,831	1,809

Occupational health and safety

職業健康安全

指標	index	單位	unit	2020年
安全生產投入	Safety production invest	億元	100 million	3.92
百萬工時損工事故率(LTIF)	Loss time and injury frequency rate per a million working hours (LTIF)	%	%	0.38
月均千人負傷率	Monthly average injury rate of 1000 people	%	‰	0.06
工亡率	Death rate of workers	%	%	0.003
新增安全生產標準化證書	New safety production standardization certificate	個		2
與省尾礦庫在線監測平台聯網尾礦庫	Networking with provincial tailings online monitoring platform	座		11
開展公司級安全大檢查	Carry out company-level safety inspection	次		5
安全培訓	Safety training	場		193
安全培訓人次	Person time of safety training	人次	Person-time	8,859

Personnel training

人才培養

指標	index	單位	unit	2020年
受訓總人數	Total number of trainees	人	person	18,443
總平均受訓時數	Total average training hours	小時	hour	40.7
高級管理層受訓人數	Number of senior management trainees	人	person	10
高級管理層受訓平均時數	Average training hours of senior management	小時	hour	239.1
一般員工受訓人數	Number of trainees of general staff	人	person	18,303
一般員工受訓平均時數	Average training hours of general staff	小時	hour	39.7
各單位發佈自主管理成果	Released self-management achievements of all units	項	term	1,877
全國有色金屬行業技術能手	Technical experts of national nonferrous metal industry	人	person	6
江西省五一勞動獎章	Jiangxi May 1st Labor Medal	人	person	1
江西省技術能手	Technical experts in Jiangxi Province	人	person	18
江西省「五一巾幗標兵」	“May 1st Women's Model” in Jiangxi Province	人	person	1

附錄一、數據指標表(續)

Appendix I: Data Index Table (continued)

Charity and poverty alleviation

慈善與扶貧

指標	index	單位	unit	2020年
扶貧投入金額*	Amount of poverty alleviation investment *	萬元	10,000	627.072
全國脫貧攻堅先進個人	National advanced individuals in poverty alleviation	人	person	1
全國抗擊新冠肺炎疫情先進個人	National advanced individual of anti-COVID-19	人	person	1
「兩節」期間發放困難補助和慰問金*	Grant assistance and consolation during the "two festivals" period*	萬元	10,000	173.55

\*註：統計口徑為公司及控股股東江銅集團共同投入金額

\* Note: the statistical caliber is the amount jointly invested by the company and its controlling shareholder, Jiangxi Copper Group

研發投入

R & D investment

指標	index	單位	unit	2020年
年度研發投入金額	Annual R & D investment	億元	100 million	39.59
產研項目(包含結項和階段性成果)	Production and research projects (including project conclusion and phased achievements)	個	item	111
其中：綠色相關的研發創新項目	Among them: Green related R & D and innovation projects	個	item	19
累計獲得授權專利	Accumulated authorized patents	項	item	95
其中：發明專利	Including: invention patent	項	item	9



## 附錄二、索引表

### Appendix II Index Table

#### 1. 香港聯交所《環境、社會及管治報告指引》內容索引

#### 1 CONTENT INDEX OF THE ENVIRONMENTAL, SOCIAL AND GOVERNANCE REPORTING GUIDE OF THE HONG KONG STOCK EXCHANGE

主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
<b>A. 環境</b> <b>A. Environmental</b>		
<b>層面A1：</b> <b>排放物</b> <b>Aspect A1:</b> <b>Emissions</b>	一般披露 General Disclosure  有關廢氣及溫室氣體排放、向水及土地的排污、有害及無害廢棄物的產生等的 Information on:  (a) 政策；及 (a) the policies; and  (b) 遵守對發行人有重大影響的相關法律及規例的資料。 (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.	P90-91, P93, P95-97
關鍵績效指標A1.1 KPI A1.1	排放物種類及相關排放數據。 The types of emissions and respective emissions data.	P91, P94, P96
關鍵績效指標A1.2 KPI A1.2	直接(範圍1)及能源間接(範圍2)溫室氣體總排放量(以噸計算)及(如適用)密度(如以每產量單位、每項設施計算)。 Direct (range 1) and energy indirect (range 2) Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	P98

附錄二、索引表 (續)  
Appendix II Index Tab (continued)

主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
關鍵績效指標A1.3	所產生有害廢棄物總量(以噸計算)及(如適用)密度(如以每產量單位、每項設施計算)。	P96
KPI A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	
關鍵績效指標A1.4	所產生無害廢棄物總量(以噸計算)及(如適用)密度(如以每產量單位、每項設施計算)。	P96
KPI A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	
關鍵績效指標A1.5	描述所訂立的排放量目標及為達到這些目標所採取的步驟。	P90-91, P93, P127
KPI A1.5	Description the settled waste reduction goals and the steps for achieving the goal.	
關鍵績效指標A1.6	描述處理有害及無害廢棄物的方法，及描述所訂立的減廢目標及為達到這些目標所採取的步驟。	P95, P128
KPI A1.6	Description of how hazardous and non-hazardous wastes are handled, and description the settled waste reduction goals and the steps for achieving the goal.	



主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
<b>層面A2：</b> <b>資源使用</b> <b>Aspect A2:</b> <b>Use of Resources</b>	一般披露 General Disclosure	P90-91, P101, P106
	有效使用資源(包括能源、水及其他原材料)的政策。 Policies on the efficient use of resources, including energy, water and other raw materials.	
	關鍵績效指標A2.1 按類型劃分的直接及／或間接能源(如電、氣或油)總耗量(以千個千瓦時計算)及密度(如以每產量單位、每項設施計算)。	P103
	KPI 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).	
	關鍵績效指標A2.2 總耗水量及密度(如以每產量單位、每項設施計算)。	P91
	KPI A2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility).	
	關鍵績效指標A2.3 描述所訂立的能源使用效益目標及為達到這些目標所採取的步驟。	P102
	KPI A2.3 Description the settled energy efficiency goals and the steps for achieving the goal.	
	關鍵績效指標A2.4 描述求取適用水源上可有任何問題，以及所訂立的用水效益目標及為達到這些目標所採取的步驟。	P91, P97, P119-120, P135-139
	KPI A2.4 Description of whether there is any issue in sourcing water and the settled water use efficiency targets and the steps for achieving the goal.	
	關鍵績效指標A2.5 製成品所用包裝材料的總量(以噸計算)及(如適用)每生產單位佔量。	P106
	KPI A2.5 Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	

附錄二、索引表(續)  
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主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators			對應披露內容索引 Corresponding disclosure index
<b>層面A3：</b> <b>環境及天然資源</b> <b>Aspect A3:</b> <b>The Environment and Natural Resources</b>	一般披露 General Disclosure		P86, P88, P98
	減低發行人對環境及天然資源造成重大影響的政策。 Policies on minimising the issuer's significant impact on the environment and natural resources.		
	關鍵績效指標A3.1 KPI A3.1	描述業務活動對環境及天然資源的重大影響及已採取管理有關影響的行動。 Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	P86-89, P107-118
<b>層面A4：</b> <b>氣候變化</b> <b>Aspect A4:</b> <b>climate change</b>	一般披露 General Disclosure		P98-101
	識別及應對已經及可能會對發行人產生影響的重大氣候相關事宜的政策。 Policies to identify and respond to significant climate related issues that have and may have an impact on the		
	關鍵績效指標A4.1 KPI A4.1	描述已經及可能對發行人產生影響的重大氣候相關事宜，及應對行動。 Description of the major climate related issues that have and may have an impact on the issuer, and the response actions.	



主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
<b>B. 社會</b> <b>B. Social</b>		
層面B1： 僱傭 Aspect B1: Employment	一般披露 General Disclosure  有關薪酬及解僱、招聘及晉陞、工作時數、假期、平等機會、多元化、反歧視以及其他待遇及福利的： Information on:  (a) 政策；及 (a) the policies; and  (b) 遵守對發行人有重大影響的相關法律及規例的資料。 (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to remuneration and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	P60, P62, P65, P75
關鍵績效指標B1.1 KPI B1.1	按性別、僱傭類型(如全職或兼職)、年齡組別及地區劃分的僱員總數。 Total workforce by gender, employment type (part-time or full-time), age group and geographical region.	P61
關鍵績效指標B1.2 KPI B1.2	按性別、年齡組別及地區劃分的僱員流失比率。 Employee turnover rate by gender, age group and geographical region.	P162-163

附錄二、索引表 (續)  
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主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
<b>層面B2：</b> <b>健康與安全</b> <b>Aspect B2:</b> <b>Health and Safety</b>	一般披露 General Disclosure	P76-77
	有關提供安全工作環境及保障僱員避免職業性危害的： Information on:	
	(a) 政策；及 (a) the policies; and	
	(b) 遵守對發行人有重大影響的相關法律及規例的資料。 (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.	
	關鍵績效指標B2.1 KPI B2.1	過去三年(包括匯報年度)每年因工亡故的人數及比率。 The number and rate of work-related deaths in each of the past three years (including the reporting year). P76
	關鍵績效指標B2.2 KPI B2.2	因工傷損失工作日數。 Lost days due to work injury. P76
		註：公司統計口徑為月均千人負傷率，2020年公司月均千人負傷率為0.06%。 Note: Statistics of the Company is the average monthly injury rate per 1,000 persons, and the average monthly injury rate per 1,000 persons of the Company was 0.06 %.
	關鍵績效指標B2.3 KPI B2.3	描述所採納的職業健康與安全措施，以及相關執行及監察方法。 Description of occupational health and safety measures adopted, how they are implemented and monitored. P76-85



主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
<b>層面B3：</b> <b>發展及培訓</b> <b>Aspect B3:</b> <b>Development and Training</b>	一般披露 General Disclosure	P62-71
	有關提升僱員履行工作職責的知識及技能的政策。 Policies on improving employees' knowledge and skills for discharging duties at work.	
	描述培訓活動。 Description of training activities.	
	關鍵績效指標B3.1    按性別及僱員類別(如高級管理層、中級管理層)劃分的受訓僱員百分比。 KPI B3.1              The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	P68
	關鍵績效指標B3.2    按性別及僱員類別劃分，每名僱員完成受訓的平均時數。 KPI B3.2              The average training hours completed per employee by gender and employee category.	

附錄二、索引表(續)  
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主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
層面B4： 勞工準則 Aspect B4: Labour Standard	一般披露 General Disclosure  有關防止童工或強制勞工的： Information on:  (a) 政策；及 (a) the policies; and  (b) 遵守對發行人有重大影響的相關法律及規例的資料。 (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	P60
關鍵績效指標B4.1 KPI B4.1	描述檢討招聘慣例的措施以避免童工及強制勞工。	P61
關鍵績效指標B4.2 KPI B4.2	描述在發現違規情況時消除有關情況所採取的步驟。  Description of steps taken to eliminate such practices when discovered.	P60  註：公司嚴格遵守相關法律法規，不存在違規情況。 Note: The Company strictly complies with relevant laws and regulations and there was no non-compliance.



主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators			對應披露內容索引 Corresponding disclosure index
層面B5： 供應鏈管理 Aspect B5: Supply Chain Management	一般披露 General Disclosure		P42-43
	管理供應鏈的環境及社會風險政策。 Policies on managing environmental and social risks of the supply chain.		
	關鍵績效指標B5.1	按地區劃分的供應商數目。	P42
			註： 供應商數目涉及公司商業機密，公司材料設備採購中有97.23%的資金投入到中國本土供應商，53.89%的資金投入到江西省區域內的供應商。 Note: The number of suppliers relates to the Company's trade secrets, among which 97.23% of the Company's funds for the procurement of materials and equipment were invested in domestic suppliers in the PRC and 53.89% were invested in suppliers in the Jiangxi Province region.
	KPI B5.1	Number of suppliers by geographical region.	
	關鍵績效指標B5.2	描述有關聘用供應商的慣例，向其執行有關慣例的供應商數目，以及相關執行及監察方法。	P42-46
	KPI B5.2	Description of engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	
	關鍵績效指標B5.3	描述有關識別供應鏈每個環節的環境及社會風險的慣例，以及相關執行及監察方法。	
	KPI B5.3	Description of identifying suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	
	關鍵績效指標B5.4	描述在揀選供應商時促使多用環保產品及服務的慣例，以及相關執行及監察方法。	
	KPI B5.4	Description of selecting suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	

主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
<b>層面B6：</b> <b>產品責任</b> <b>Aspect B6:</b> <b>Product Responsibility</b>	一般披露 General Disclosure	P49-50
	有關所提供產品和服務的健康與安全、廣告、標籤、私隱事宜以及補救方法的： Information on:	註：2020年度內公司未發生有關所提供產品和服務的健康與安全、廣告、標籤、私隱事宜以及補救方法的違規事件。  Note: In 2020, the Company did not have any non-compliance incidents relating to health and safety, advertising, label, privacy matters and methods of redress of products and services provided.
	(a) 政策；及 (a) the policies; and	
	(b) 遵守對發行人有重大影響的相關法律及規例的資料。 (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	
	關鍵績效指標B6.1	已售或已運送產品總數中因安全與健康理由而須回收的百分比。 0%
	KPI B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons. Note: There was no return of products due to safety and health reasons in 2020.
	關鍵績效指標B6.2	接獲關於產品及服務的投訴數目以及應對方法。 P55-56
	KPI B6.2	Number of products and service related complaints received and how they are dealt with. Note: There was no return of products due to safety and health reasons in 2020.
	關鍵績效指標B6.3 KPI B6.3	描述與維護及保障知識產權有關的慣例。 Description of practices relating to observing and protecting intellectual property rights. P28-30
	關鍵績效指標B6.4 KPI B6.4	描述質量檢定過程及產品回收程序。 Description of quality assurance process and recall procedures. P50, P55-56
	關鍵績效指標B6.5 KPI B6.5	描述消費者資料保障及私隱政策，以及相關執行及監察方法。 Description of consumer information protection and privacy policies, how they are implemented and monitored. P39-41



主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
<b>層面B7：反貪污</b> <b>Aspect B7:</b> <b>Anti-corruption</b>	一般披露 General Disclosure	P24
	有關防止賄賂、勒索、欺詐及洗黑錢的： Information on:	
	(a) 政策；及 (a) the policies; and	
	(b) 遵守對發行人有重大影響的相關法律及規例的資料。 (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.	
	關鍵績效指標B7.1 KPI B7.1	於匯報期內對發行人或其僱員提出並已審結的貪污訴訟案件的數目及訴訟結果。 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.
	關鍵績效指標B7.2 KPI B7.2	描述防範措施及舉報程序，以及相關執行及監察方法。 Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.
	關鍵績效指標B7.3 KPI B7.3	描述向董事及員工提供的反貪污培訓。 Description of anti-corruption training provided to directors and employees.

註：2020年度公司不存在貪污訴訟案件。  
Note: In 2020, the Company did not have any corruption lawsuits.

附錄二、索引表 (續)  
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主要範疇、層面、一般披露及關鍵績效指標 Main Scope, Aspect, General Disclosure and Key Performance Indicators		對應披露內容索引 Corresponding disclosure index
<b>層面B8：社區投資</b> <b>Aspect B8:</b> <b>Community Investment</b>	一般披露 General Disclosure	P141-143, P153
	有關以社區參與來了解營運所在社區需要和確保其業務活動會考慮社區利益的政策。 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.	
	關鍵績效指標B8.1 KPI B8.1	專注貢獻範疇(如教育、環境事宜、勞工需求、健康、文化、體育)。 Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport). P144-160
	關鍵績效指標B8.2 KPI B8.2	在專注範疇所動用資源(如金錢或時間)。 Resources contributed (e.g. money or time) to the focus area. P144-160



2. 全球報告倡議組織《可持續發展報告標準(GRI)》內容索引

2. CONTENT INDEX OF GRI STANDARDS ISSUED BY GLOBAL REPORTING INITIATIVE

GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
GRI 100系列：通用標準			
GRI 100 Series: General Standards			
一般披露			
General Disclosure			
GRI 102： 一般披露	1. 組織簡介		
	1. Organizational Profile		
GRI 102： General Disclosure	G102-1	組織名稱 Name of the organisation	P6-7
	G102-2	活動、品牌、產品、服務 Activities, brands, products and services	
	G102-3	總部地址 Location of headquarters	
	G102-4	事業所地址 Location of operations	
	G102-5	所有形態及法人資格 All forms and legal personality	
	G102-6	進駐市場 Entering the market	
	G102-7	組織規模 Organization scale	
	G102-8	員工及其他勞動者相關信息 Information on employees and other workers	P67-68
	G102-9	供應鏈 Supply chain	P6-7
	G102-10	組織及其供應鏈相關重大變化 Significant changes to the organisation and its supply chain	
	G102-11	預防原則或預防性探討 Preventive principle or preventive discussion	
	G102-12	外部主導權 External dominance	
	G102-13	團體會員資格 Group membership	
	2. 戰略		
	2. Strategy		
	G102-14	上層決策者聲明 Statement from senior decision-maker	P4-5
	G102-15	重要的影響、風險和機遇 Important impacts, risks and opportunities	P4

附錄二、索引表 (續)  
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GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
	<b>3. 道德與誠信</b>		
	<b>3. Ethics and Integrity</b>		
	G102-16	價值觀、理念、行為準則和規範 Values, ideas, codes of conduct and norms	P8-9
	G102-17	道德相關建議與因憂慮而存在的制度 Moral related suggestions and the system due to worry	
	<b>4. 治理</b>		
	<b>4. Governance</b>		
	G102-18	治理結構 Governance structure	P19-20
	G102-19	授權 Authorization	P20-22
	G102-20	有關經濟、環境、社會項目的高管責任 Executives' responsibility for economic, environmental and social projects	P19-23
	G102-21	有關經濟、環境、社會項目的與利益相關方的協商 Consultation with stakeholders on economic, environmental and social projects	
	G102-22	最高治理機構及其委員會的結構 The structure of the highest governing body and its committees	
	G102-23	最高治理機構主席 Chairman of the highest governing body	
	G102-24	最高治理機構的指定和選出 Designation and selection of the highest governing body	
	G102-25	利益衝突 Conflict of interest	
	G102-26	最高治理機構在目的、價值觀、戰略設定中的職責 The responsibilities of the highest governance body in the setting of goals, values and Strategies	
	G102-27	最高治理機構的集體智慧 Collective wisdom of the highest governing body	
	G102-28	最高治理機構的績效考評 The performance appraisal of the highest governing body	
	G102-29	對經濟、環境、社會影響的確定和管理 Determination and management of economic, environmental and social impacts	



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
	G102-30	風險管理過程的有效性 Effectiveness of risk management process	P34-37
	G102-31	經濟、環境、社會項目的評審 Review of economic, environmental and social projects	P19-21
	G102-32	最高治理機構在可持續發展報告中的職責 The role of the senior governance body in the sustainability report	
	G102-33	重大憂慮事項的傳達 Communication of major concerns	/
	G102-34	傳達重大憂慮事項的性質和總數 Nature and total number of major concerns communicated	
	G102-35	報酬方針 Remuneration policy	
	G102-36	報酬的決定過程 The decision process of remuneration	
	G102-37	有關報酬的利益相關方的參與 Stakeholder participation in remuneration	
	G102-38	年報酬總額的比例 Proportion of total annual remuneration	
	G102-39	年報酬總額比例的增加率 Rate of increase in the proportion of total annual remuneration	
	<b>5. 利益相關方參與</b>		
	<b>5. Stakeholder Engagement</b>		
	G102-40	利益相關方和團體名單 List of stakeholders and groups	P12-13
	G102-41	集體談判協定 Collective negotiating agreement	P14-15
	G102-42	利益相關方的確定及選定 Determination and selection of stakeholders	
	G102-43	促進利益相關方參與的方法 Ways to promote stakeholder participation	
	G102-44	提出的重要項目及憂慮 Important items and concerns raised	P15

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GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
	<b>6. 報告實務</b>		
	<b>6. Report Practice</b>		
	G102-45	合併財務報表的對象事業體 Objects of consolidated financial statements	P6
	G102-46	報告書內容及項目適用範圍的確定 The content of the report and the determination of the scope of application of the project	P3
	G102-47	重要課題項目列表 List of important projects	P161-163
	G102-48	信息再陳述 Information restatement	
	G102-49	報告的變更 Changes in reports	P3
	G102-50	報告期限 Reporting period	
	G102-51	上次發佈報告書的日期 Date of last report	
	G102-52	報告週期 Reporting period	
	G102-53	報告書相關答疑窗口 Report related Q & a window	P199-200
	G102-54	報告符合標準的聲明 Statement of reporting compliance	P3
	G102-55	內容索引 Content index	P16-18, P165-198
	G102-56	外部保證 External assurance	/



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>GRI 200系列：經濟披露</b> <b>GRI 200 Series: Economic Disclosure</b>			
<b>經濟績效</b> <b>Economic Performance</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P10-11
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 201：</b> <b>經濟績效</b> <b>GRI 201：</b> <b>Economic Performance</b>	G201-1	產出和分配的直接經濟價值 Direct economic value of output and distribution	P10
	G201-2	氣候變化對財務的影響、其他風險和機遇 Financial impact, other risks and opportunities of climate change	P98
	G201-3	確定給付型年金制度的負擔及其他退職金制度 Determining the burden of payment annuity system and other pension system	P75
	G201-4	享受的政府資金援助 Government financial assistance	/
<b>市場表現</b> <b>Market Performance</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	/
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 202：</b> <b>市場表現</b> <b>GRI 202：</b> <b>Market Performance</b>	G202-1	標準新人工資與地方最低工資之比(男女) The ratio of standard wage to local minimum wage (male and female)	
	G202-2	從地方社區錄用高級管理人員的比例 Proportion of senior managers recruited from local communities	

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GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
間接經濟影響			
Indirect Economic Impact			
GRI 103 : 管理方法 GRI 103 : Management	G103-1	重要課題項目 及其適用範圍的說明 Description of important projects and their application scope	P147-152
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 203 : 間接經濟影響 GRI 203: Indirect Economic Impact	G203-1	基礎設施投資及支持服務 Infrastructure investment and support services	P144-152
	G203-2	顯著的間接經濟影響 Significant indirect economic impact	
採購慣例			
Purchasing Practice			
GRI 103 : 管理方法 GRI 103 : Management	G103-1	重要課題項目 及其適用範圍的說明 Description of important projects and their application scope	P42-46
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 204 : 採購慣例 GRI 204: Purchasing Practice	G204-1	對當地供應商的支出比例 Proportion of expenditure to local suppliers	P42



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
反腐敗 Anti-corruption			
GRI 103： 管理方法 GRI 103： Management	G103-1	重要課題項目 及其適用範圍的說明 Description of important projects and their application scope	P24
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 205： 反腐敗 GRI 205: Anti-corruption	G205-1	開展腐敗相關風險評價的事業所 Research Institute for corruption related risk assessment	P24-26
	G205-2	反腐敗方針和程序相關溝通和培訓 Communication and training related to anti-corruption policies and procedures	
	G205-3	確定的腐敗案例及採取的措施 Identified corruption cases and measures taken	
反競爭行為 Anti-competitive Behavior			
GRI 103： 管理方法 GRI 103： Management	G103-1	重要課題項目 及其適用範圍的說明 Description of important projects and their application scope	P27
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 206： 反競爭行為 GRI 206: Anti-competitive behavior	G206-1	由於反競爭行為、反托拉斯、壟斷慣例而被採取的法律措施 Legal measures taken as a result of anti competitive behavior, antitrust and monopoly practices	

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GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
稅務 Taxation			
GRI 103 : 管理方法 GRI 103 : Management	G103-1	重要課題項目 及其適用範圍的說明 Description of important projects and their application scope	P30
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 207 : 稅務 GRI 207: Taxation	G207-1	稅務方法 Tax method	
	G207-2	治理、管理及風險管理 Governance, management and risk management	
	G207-3	對有關稅務的利益相關方參與和憂慮的應對措施 Measures to deal with the participation and concerns of tax related stakeholders	
	G207-4	各國報告 Reports of countries	
GRI 300系列：環境披露 GRI 300 Series: Environmental Disclosure			
原材料 Raw Material			
GRI 103 : 管理方法 GRI 103 : Management	G103-1	重要課題項目 及其適用範圍的說明 Description of important projects and their application scope	P106
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 301 : 原材料 GRI 301: Raw Material	G301-1	使用原材料的重量或體積 The weight or volume of raw materials used	
	G301-2	使用的循環再生材料 Recycled materials used	
	G301-3	再生利用的產品和包材 Recycled products and packaging materials	



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>能源</b> <b>Energy</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P101
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 302 : 能源 GRI 302: Energy</b>	G302-1	組織內部的能源消耗量 Energy consumption within the organization	P103
	G302-2	組織外部的能源消耗量 Energy consumption outside the organization	
	G302-3	能源單耗 Unit energy consumption	
	G302-4	削減能源消耗量 Reducing energy consumption	P102
	G302-5	削減產品及服務中的能源需要量 Reducing energy demand in products and services	P103-105
<b>水</b> <b>Water</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P90-91
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 303 : 水 GRI 303: Water</b>	G303-1	各水源的取水量 Water intake of each water source	/
	G303-2	因取水而受到顯著影響的水源 Water sources significantly affected by water intake	2020年度公司嚴格遵守相關法律法規，不存在相關問題。 The Company has strictly complied with the relevant laws and regulations in 2020 and there are no relevant issues.
	G303-3	循環再生和重複使用的水 Recycled and reused water	P90-92

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GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>生物多樣性</b> <b>Bio-diversity</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P107-109
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 304 : 生物多樣性 GRI 304: Bio-diversity</b>	G304-1	在保護地區及雖非保護地區但有高生物多樣性價值的地區或其相鄰地區所有、租借、管理的事業據點 A business base owned, leased or managed by biodiversity in a protected area or an area with high biodiversity value that is not a protected area or its adjacent areas	P108-110, P116-118
	G304-2	活動、產品、服務對生物多樣性的顯著影響 Significant impacts of activities, products and services on Biodiversity	
	G304-3	棲息地的保護和恢復 Habitat protection and restoration	P108-109
	G304-4	在事業影響地區棲息且在IUCN紅色名錄及日本國內保護物種名錄之列的生物物種 Biological species inhabiting in the area affected by the enterprise and listed in IUCN Red List and Japan domestic protected species list	



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>對大氣的排放</b> <b>Emissions to the Atmosphere</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P93, P98
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 305：</b> <b>對大氣的排放</b> <b>GRI 305:</b> <b>Emissions to the Atmosphere</b>	G305-1	直接溫室效應氣體(GHG)排放量(範圍1) Direct greenhouse gas (GHG) emissions (scope 1)	P98
	G305-2	間接溫室效應氣體(GHG)排放量(範圍2) Direct greenhouse gas (GHG) emissions (scope 2)	
	G305-3	其他間接溫室效應氣體(GHG)排放量(範圍3) Other indirect greenhouse gas (GHG) emissions (range 3)	
	G305-4	溫室效應氣體(GHG)排放單耗 Unit consumption of greenhouse gas emission(GHG)	
	G305-5	削減溫室效應氣體(GHG)排放量 Reducing greenhouse gas (GHG) emissions	P84
	G305-6	臭氧層破壞物質(ODS)的排放量 Emissions of ozone depleting substances (ODS)	
	G305-7	氮氧化物(NOx)、硫氧化物(SOx)及其他主要的大氣排放物 Nitrogen oxides (NOx), sulfur oxides (SOx) and other major atmospheric emissions	

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GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
廢水及廢棄物			
Wastewater and Waste			
GRI 103 : 管理方法 GRI 103 : Management	G103-1	重要課題項目 及其適用範圍的說明 Description of important projects and their application scope	P90-91
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 306 : 廢水及廢棄物 GRI 306: Wastewater and Waste	G306-1	廢水的水質及排放去向 Water quality and discharge direction of wastewater	P91-92
	G306-2	不同種類及處理方式的廢棄物 Waste of different types and treatment methods	
	G306-3	重大泄漏 Major leakage	
	G306-4	有害廢棄物的運輸 Transportation of hazardous waste	
	G306-5	受廢水和表面流水影響的水域 Water area affected by wastewater and surface water	
環境合規			
Environmental Compliance			
GRI 103 : 管理方法 GRI 103 : Management	G103-1	重要課題項目 及其適用範圍的說明 Description of important projects and their application scope	P86-89
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 307 : 環境合規 GRI 307: Environmental Compliance	G307-1	違反環境法規 Violation of environmental regulations	



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>供應商環境評估</b> <b>Supplier Environmental Assessment</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P42-46
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 308：</b> <b>供應商環境評估</b> <b>GRI 308:</b> <b>Supplier</b> <b>Environmental</b> <b>Assessment</b>	G308-1	根據環境標準選定的新供應商 New suppliers selected according to environmental standards	P42-44
	G308-2	供應鏈中的環境負面影響及採取的措施 Negative environmental impact in supply chain and measures taken	P42-46
<b>GRI 400系列：社會披露</b> <b>GRI 400 Series: Social Disclosure</b>			
<b>僱用</b> <b>Employment</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P61
	G103-2	管理手法及其要素 Management technique and its elements	P62-66
	G103-3	管理手法評價 Evaluation of management practices	P66
<b>GRI 401：</b> <b>僱用</b> <b>GRI 401:</b> <b>Employment</b>	G401-1	員工的新錄用和離職 New recruitment and resignation of employees	P61
	G401-2	對正式職員支付、對非正式職員不予支付的補貼 Subsidies paid to regular staff and not paid to informal staff	P74-75
	G401-3	育兒假 Parental leave	P75

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GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>勞資關係</b> <b>Relations Between Labor and Capital</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P75
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI402 : 勞資關係 GRI402: Relations Between Labor and Capital</b>	G402-1	事業變更相關的最低通知期限 Minimum notice period related to business change	/
<b>勞動安全衛生</b> <b>Labor Safety and Health</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P76-77
	G103-2	管理手法及其要素 Management technique and its elements	P76-85
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 403 : 勞動安全衛生 GRI 403: Labor Safety and Health</b>	G403-1	職業安全衛生管理體系 Occupational safety and health management system	P78-82
	G403-2	危險性識別、風險評價、事故調查 Risk identification, risk assessment and accident investigation	
	G403-3	職業衛生服務 Occupational health services	P83-84
	G403-4	職業安全衛生中的勞動者參與、協商、溝通 The participation, consultation and communication of workers in occupational safety and health	P76-79, P83
	G403-5	職業安全衛生相關勞動者培訓 Training of workers related to occupational safety and health	P83-84
	G403-6	增進勞動者健康 Improving the health of workers	P84
	G403-7	與業務有直接關係的職業安全衛生影響的防止和緩解	P76-78, P80-81



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
	G403-8	Prevention and mitigation of occupational safety and health impact directly related to business 職業安全衛生管理體系的對象勞動者 The target workers of occupational safety and health management system	P80-81
	G403-9	工傷 Injury on-the-Job	P76 註：公司統計口徑為月均千人負傷率，2020年公司月均千人負傷率為0.06% Note: the statistical caliber of the Company is the monthly average injury rate of 1,000 persons, and the average monthly injury rate of 1,000 persons of the Company in 2020 is 0.06 %.
	G403-10	職業病和職業健康危害 Occupational diseases and occupational health hazards	P79
	<b>培訓教育</b> <b>Training and Education</b>		
	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P67-70
<b>GRI 103 : 管理方法</b> <b>GRI 103 : Management</b>	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
	G404-1	每位員工的年平均培訓時間 Average annual training time per employee	P68
	G404-2	員工技能提升方案及此後的支持方案 Employee skill improvement plan and after support plan	P65-66
<b>GRI 404 : 培訓教育</b> <b>GRI 404: Training and Education</b>	G404-3	接受業績與職業規劃定期評審的員工比例 Proportion of employees who receive regular review of performance and career planning	/
		<b>多樣性與機會均等</b> <b>Diversity and Equal Opportunity</b>	
<b>GRI 103 : 管理方法</b> <b>GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P60
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 405 : 多樣性與機會均等</b> <b>GRI 405: Diversity and Equal Opportunity</b>	G405-1	治理機構及員工多樣性 Diversity of governance institutions and employees	P61
	G405-2	基本工資和報酬總額的男女比 Sex ratio of basic wage and total remuneration	/

附錄二、索引表 (續)  
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GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>非歧視</b> <b>Non-discrimination</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P60
	G103-2	管理手法及其要素 Management technique and its elements	/
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 406 : 非歧視 GRI 406: Non-discrimination</b>	G406-1	歧視案例和採取的補救措施 Discrimination cases and remedies taken	公司嚴格遵守相關法律法規和尊重利益相關者，不存在歧視案例。 The Company strictly abided by relevant laws and regulations and respects stakeholders, and there was no case of discrimination.
<b>結社自由和集體談判</b> <b>Freedom of Association and Collective Negotiating</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	/
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 407 : 結社自由和 集體談判 GRI 407: Freedom of Association and Collective Negotiating</b>	G407-1	結社自由和集體談判權利可能存在風險的事業所及供應商 Enterprises and suppliers where freedom of association and collective bargaining rights may be at risk	



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>童工</b> <b>Child Labourer</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P60
	G103-2	管理手法及其要素 Management technique and its elements	／
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 408：</b> <b>童工</b> <b>GRI 408:</b> <b>Child Labourer</b>	G408-1	存在童工案例相關重大風險的事業所及供應商 Enterprises and suppliers with significant risks related to child labor cases	公司嚴格遵守相關法律法規，不存在違規情況。 The Company strictly complied with relevant laws and regulations and there was no non-compliance.
<b>強迫勞動</b> <b>Compulsory Labor</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P60
	G103-2	管理手法及其要素 Management technique and its elements	／
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 409：</b> <b>強迫勞動</b> <b>GRI 409:</b> <b>Compulsory Labor</b>	G409-1	存在強迫勞動案例相關重大風險的事業所及供應商 Enterprises and suppliers with significant risks related to forced labor cases	公司嚴格遵守相關法律法規，不存在違規情況。 The Company strictly complied with relevant laws and regulations and there was no non-compliance.
<b>保安慣例</b> <b>Security Practices</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	／
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 410：</b> <b>保安慣例</b> <b>GRI 410:</b> <b>Security Practices</b>	G410-1	接受人權方針和程序相關培訓的保安人員 Security personnel trained in human rights policies and procedures	

附錄二、索引表 (續)  
Appendix II Index Tab (continued)

GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>原住民族權利</b> <b>Rights of Indigenous Peoples</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P60, P141-143
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 411 : 原住民族權利 GRI 411: Rights of Indigenous Peoples</b>	G411-1	侵害原住民族權利的案例 Cases of infringement on the rights of indigenous peoples	公司嚴格遵守相關法律法規，不存在侵害原住民族權利事件。 The Company strictly abided by relevant laws and regulations, and there was no infringement on the rights of indigenous peoples.
<b>人權評估</b> <b>Human Rights Assessment</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P60
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practice	
<b>GRI 412 : 人權評估 GRI 412: Human Rights Assessment</b>	G412-1	人權評審和影響評價的對象事業所 The object of human rights assessment and impact assessment	／
	G412-2	人權方針和程序相關員工培訓 Staff training related to human rights policies and procedures	
	G412-3	含人權條款或經過人權審查的重要投資協定與合同 Important investment agreements and contracts with human rights provisions or subject to human rights	



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
地方社區 Local Community			
GRI 103： 管理方法 GRI 103： Management	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P144, P147, P153
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 413： 地方社區 GRI 413: Local Community	G413-1	參與地方社區、實施影響評價和開發方案的事業所 Institutions involved in local communities, implementation of impact assessment and development	P144-147
	G413-2	對地方社區有嚴重負面影響(顯在、潛在)的事業所  Enterprises with serious negative impact (obvious and potential) on local communities	公司嚴格遵守有相關法律法規，不存在對社區造成負面影響事件。  The Company strictly abided by the relevant laws and regulations, and there was no incident that might cause negative impact on the community.
供應商社會層面的評估 Social Evaluation of Suppliers			
GRI 103： 管理方法 GRI 103： Management	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P42-46
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
GRI 414： 供應商社會層面的評估 GRI 414: Social Evaluation of Suppliers	G414-1	按照社會標準選定的新供應商 New suppliers selected according to social standards	P42-46
	G414-2	供應鏈中的社會負面影響及採取的措施 The negative social influence in the supply chain and the measures taken	公司嚴格遵守相關法律法規，不存在類似違規事件。 The Company strictly abided by the relevant laws and regulations and there was no similar non-compliance incident.

附錄二、索引表 (續)  
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GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>公共政策</b> <b>Public Policy</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	/
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 415 : 公共政策 GRI 415 : Public Policy</b>	G415-1	政治獻金 Political contributions	
<b>顧客安全衛生</b> <b>Customer Safety and Health</b>			
<b>GRI 103 : 管理方法 GRI 103 : Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P49-52, P55
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>G103GRI 416 : 顧客安全衛生 G103GRI 416 : Customer Safety and Health</b>	G416-1	對產品及服務類別的安全衛生影響評價 Safety and health impact assessment on products and service categories	P49-52
	G416-2	產品及服務的安全衛生影響相關違規案例 Cases of violations related to the safety and health impact of products and services	
			2020年度公司不存在因安全與健康理由被投訴的情況。 In 2020, the Company was not subject to any complaints due to safety and health reasons.



GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>營銷和貼標</b> <b>Marketing and Labeling</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P28-30
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 417：</b> <b>營銷和貼標</b> <b>GRI 417：</b> <b>Marketing and Labeling</b>	G417-1	產品及服務的信息和貼標相關要求事項 Relevant requirements of product and service information and labelling	P28
	G417-2	產品及服務的信息和貼標相關違規案例 Non-compliance in relation to product and service information and labelling	公司嚴格遵守相關法律法規，不存在違規情況。 The Company strictly complied with relevant laws and regulations and there was no non-compliance.
	G417-3	營銷與溝通相關的違規案例 Non-compliance in relation to marketing and communications	
<b>客戶隱私</b> <b>Customer Privacy</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	P39-40
	G103-2	管理手法及其要素 Management technique and its elements	P39-41
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 418：</b> <b>客戶隱私</b> <b>GRI 418：</b> <b>Customer Privacy</b>	G418-1	關於侵害客戶隱私及丟失客戶數據的具體申訴 Specific complaints in relation to infringement of customer privacy and loss of customer data	公司嚴格遵守相關法律法規，不存在侵害事件。 The Company strictly complied with relevant laws and regulations and there was no infringement.

附錄二、索引表(續)  
Appendix II Index Tab (continued)

GRI項目	披露事項編號	披露事項內容	對應披露內容索引
GRI Project	Disclosure No.	Contents of Disclosure	Index of Corresponding Disclosure Content
<b>社會經濟層面的合規</b> <b>Compliance on Social and Economic Level</b>			
<b>GRI 103：</b> <b>管理方法</b> <b>GRI 103：</b> <b>Management</b>	G103-1	重要課題項目及其適用範圍的說明 Description of important projects and their application scope	公司嚴格遵守相關法律法規，不存在違反社會經濟領域的違規。  The Company strictly abided by relevant laws and regulations, and there was no violation in the social and economic field.
	G103-2	管理手法及其要素 Management technique and its elements	
	G103-3	管理手法評價 Evaluation of management practices	
<b>GRI 419：</b> <b>社會經濟</b> <b>層面的合規</b> <b>GRI 419：</b> <b>Compliance</b> <b>on Social and</b> <b>Economic Level</b>	G419-1	違反社會經濟領域的法規 Violation of laws and regulations in the social and economic field	



## 附錄三、意見反饋表

### Appendix III: Feedback Form

感謝您閱讀《江西銅業股份有限公司2020年度環境、社會及管治報告》，為加強與利益相關方的溝通和交流，進一步提高公司履行社會責任的能力和水平，我們期望您通過填寫反饋表，向我們提出寶貴的意見及建議，並選擇以下任意方式將評論反饋給我們。

地址：中華人民共和國江西省南昌市  
高新開發區昌東大道7666號  
電話：0791-82710112  
傳真：0791-82710114  
郵箱：jccl@jxcc.com

1. 您屬於以下哪種利益相關方：

- |   |  |
|---|--|
| <input type="checkbox"/> 政府<br>Government | <input type="checkbox"/> 監管機構<br>Regulator |
| <input type="checkbox"/> 供應商<br>Supplier  | <input type="checkbox"/> 合作夥伴<br>Partner   |

2. 您的所在地：

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> 中國內地<br>The mainland of China | <input type="checkbox"/> 中國港澳台地區<br>Hong Kong, Macao and Taiwan of China | <input type="checkbox"/> 海外<br>Overseas |
|--|--|---|

3. 您對本報告的總體評價：

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> 不好<br>Poor | <input type="checkbox"/> 一般<br>Average |
|-------------------------------------|--|

4. 您對江西銅業在環境保護方面實踐的評價：

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> 不好<br>Poor | <input type="checkbox"/> 一般<br>Average |
|-------------------------------------|--|

5. 您對江西銅業在社會責任方面實踐的評價：

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> 不好<br>Poor | <input type="checkbox"/> 一般<br>Average |
|-------------------------------------|--|

6. 您對江西銅業在公司治理方面實踐的評價：

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> 不好<br>Poor | <input type="checkbox"/> 一般<br>Average |
|-------------------------------------|--|

Thank you for reading 2020 Environmental, Social and Governance Report of Jiangxi Copper Company Limited. In order to promote communication between the Bank and its stakeholders and enhance the Bank's capability to perform its social responsibilities, we hope that you can evaluate this report and provide valuable comments and suggestions. Please fill out the feedback form below. You may send us your feedback using any of the following methods.

Address: 7666 Changdong Avenue, High-tech Development Zone,  
Nanchang, Jiangxi Province, PRC  
Tel: 0791-82710112  
Fax: 0791-82710114  
E-mail: jccl@jxcc.com

1. Please choose the stakeholder category that you belong to:

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> 股東<br>Shareholder | <input type="checkbox"/> 客戶<br>Customer    | <input type="checkbox"/> 員工<br>Employee |
| <input type="checkbox"/> 社區<br>Community   | <input type="checkbox"/> 環境<br>Environment | <input type="checkbox"/> 其他<br>Others   |

2. Your location:

3. Your general evaluation of this report:

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> 較好<br>Good | <input type="checkbox"/> 很好<br>Excellent |
|-------------------------------------|--|

4. Your evaluation of JCC's performance of social responsibilities from an environmental protection perspective:

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> 較好<br>Good | <input type="checkbox"/> 很好<br>Excellent |
|-------------------------------------|--|

5. Your evaluation of JCC's performance of social responsibilities from a social perspective:

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> 較好<br>Good | <input type="checkbox"/> 很好<br>Excellent |
|-------------------------------------|--|

6. Your evaluation of JCC's practice in Corporate Governance perspective:

- |                                     |  |
|-------------------------------------|--|
| <input type="checkbox"/> 較好<br>Good | <input type="checkbox"/> 很好<br>Excellent |
|-------------------------------------|--|

附錄三、意見反饋表(續)  
Appendix III: Feedback Form (continued)

7. 您認為本報告披露的信息是否準確：

☐ 否  
No

☐ 一般  
Average

☐ 是  
Yes

8. 您認為本報告披露的信息是否完整：

☐ 否  
No

☐ 一般  
Average

☐ 是  
Yes

9. 您認為本報告內容和版式是否清晰易懂：

☐ 否  
No

☐ 一般  
Average

☐ 是  
Yes

10. 您認為本報告是否能滿足您的閱讀需求：

☐ 否  
No

☐ 一般  
Average

☐ 是  
Yes

11. 您對改善和提高江西銅業踐行ESG發展理念和本報告的其他意見和建議：

---

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7. Do you think the information disclosed in this report is accurate:

☐ 是  
Yes

8. Do you think the information disclosed in this report is complete:

☐ 是  
Yes

9. Do you think the content and typography is clear and suitable for reading:

☐ 是  
Yes

10. Do you think this report can meet your reading needs:

☐ 是  
Yes

11. Do you have any other comments or suggestions on the report or on how JCC can improve the way it performs its ESG

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江西銅業股份有限公司  
Jiangxi Copper Company Limited