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**Zijin Mining Group Co., Ltd.\***

**紫金礦業集團股份有限公司**

*(a joint stock limited company incorporated in the People's Republic of China with limited liability)*

**(Stock code: 2899)**

## **2016 Environmental, Social and Governance Report**

Attached herewith the 2016 Environmental, Social and Governance Report of Zijin Mining Group Co., Ltd.\* (the “Company”) for the period from 1 January 2016 to 31 December 2016.

**Investors and shareholders are advised by the board of directors to exercise caution when dealing in the shares of the Company.**

This report is written in both Chinese and English. In the case of any discrepancies, the Chinese version shall prevail over its English version.

As at the date of this announcement, the Board of Directors of the Company comprises Messrs. Chen Jinghe (Chairman), Lan Fusheng, Zou Laichang, Lin Hongfu, Fang Qixue, and Ms. Lin Hongying as executive directors, Mister. Li Jian as non-executive director, and Messrs. Lu Shihua, Zhu Guang, Sit Hoi Wah, Kenneth, and Cai Meifeng as independent non-executive directors.

By Order of the Board of Directors  
**Zijin Mining Group Co., Ltd.\***  
**Chen Jinghe**  
*Chairman*

26 July 2017, Fujian, the PRC

*\* The Company's English name is for identification purposes only*

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## Definition

A Share(s)	The domestic share(s) issued by the Company to domestic investors with a nominal value of RMB0.10 each, which are listed on the Shanghai Stock Exchange
Altynken	Altynken Limited Liability Company, a subsidiary of the Company
Ashele Copper, Xinjiang Ashele, Xinjiang Ashele Copper	Xinjiang Ashele Copper Company Limited, a subsidiary of the Company
Bayannaoer Zijin	Bayannaoer Zijin Non-ferrous Metals Company Limited, a subsidiary of the Company
Board, Board of Directors	The board of Directors of the Company
CSRC	China Securities Regulatory Commission
Director(s)	The director(s) of the Company
Fujian Jinyi Copper	Fujian Jinyi Copper Company Limited, a wholly-owned subsidiary of the Company
Gold Refinery Company	Zijin Mining Group Gold Refinery Company Limited, a wholly-owned subsidiary of the Company
Guizhou Zijin	Guizhou Zijin Mining Company Limited, a subsidiary of the Company
H Share(s)	The overseas-listed foreign invested share(s) in the Company's share capital, with a nominal value of RMB0.10 each, which are listed on the Hong Kong Stock Exchange
Hong Kong Stock Exchange	The Stock Exchange of Hong Kong Limited
Hunchun Zijin	Hunchun Zijin Mining Company Limited, a wholly-owned subsidiary of the Company
Longnan Zijin	Longnan Zijin Mining Company Limited, a subsidiary of the Company
Luoning Huatai	Luoning Huatai Mining Development Company Limited, a subsidiary of the Company
Luoning Zijin	Luoning Zijin Gold Refinery Company Limited, a subsidiary of the Company
Luoyang Kunyu	Luoyang Kunyu Mining Company Limited, a subsidiary of the Company
Luoyang Yinhui	Luoyang Zijin Yinhui Gold Refinery Company Limited, a subsidiary of the Company
PRC	The People's Republic of China but for the purpose of this report, excludes Hong Kong SAR, Macau SAR and Taiwan
Qinghai West Copper, Qinghai West	Qinghai West Copper Mining Company Limited, a wholly-owned subsidiary of the Company
Qinghai Zijin	Zijin Mining Group Qinghai Company Limited, a wholly-owned subsidiary of the Company
Shanxi Zijin	Shanxi Zijin Mining Company Limited, a wholly-owned subsidiary of the Company
Wulatehouqi Zijin	Wulatehouqi Zijin Mining Company Limited, a subsidiary of the Company
Wuping Zijin	Wuping Zijin Mining Company Limited, a subsidiary of the Company
Xinjiang Zijin Zinc	Xinjiang Zijin Zinc Industry Company Limited, a wholly-owned subsidiary of the Company
Xinyi Zijin	Xinyi Zijin Mining Company Limited, a wholly-owned subsidiary of the Company
Zijin Copper	Zijin Copper Company Limited, a wholly-owned subsidiary of the Company

## **Part I. 2016 Social Responsibility Report**

## Chairman's statement

In 2016, Zijin Mining extensively deepened reform in management, and advanced a new round of business development by focusing on internationalisation as the core target; it was not only a year of transition to a new term of the Board of Directors, the supervisory committee and the management of the Company, but also a crucial year marked by the Company's active performance of its social responsibility, which led to balanced development of the corporation, the employees and the society.



“Found business on mining, make contribution to the country and the people”

is upheld as the corporate tenet of Zijin Mining. The Company's strategic goals are: building a mega-size international mining group with advanced technology and efficiency, constantly creating value for the society and investors, and in the course of doing so, ensuring employees and other stakeholders of the corporation are also benefited. Zijin Mining regards the carrying out of corporate social responsibility as the right way for maximising a combination of economic, social and environmental values. It shall therefore insist on a good mix of reform and innovation with performance of social responsibility, and an organic integration of sustainable development with performance of social responsibility, to build an image of good corporate citizen.

Being a commercial organisation, a corporation shall prioritise creation of social value in its business operation. It is only with sustainable profitability and value creating capacity can a corporation perform its social responsibility well. In 2016, Zijin Mining thoroughly and pragmatically implemented the state's requirements of supply-side structural reform in the PRC, always held dear its original aspiration and took initiatives in various kinds of tasks, and closely adhered to the “clinging to reforms, maintaining growth and boosting development” main focuses of work. As a result, the Company's key metal products realised a rather considerable growth in production capacity and volume, with the output of gold, copper and zinc ranking top three in domestic market, and total operating income reaching RMB78.85 billion, representing 6.12% increase over the same period last year; net profit attributable to owners of the parent was RMB1.84 billion, representing 11.1% increase over the same period last year.

The Company's profitability continues to lead its peers in the industry.

Zijin Mining actively assumes responsibility for the building of ecological civilisation, insists on “protecting the green mountains and clear water while developing treasured mines”, and emphatically promotes the ideas of energy conservation, emission reduction, circular economy, green mines and clean production, with an aim of turning mines into parks, in the same way as transforming deserts into oases. Employees are the greatest assets of the Company. The Company highly treasures their lives and dignity, cares for their occupational health, protects their lawful rights and interests, proactively raises their earnings, improves their working and living conditions, and shares the fruit of corporate development with employees.

The Company aims to benefit as many people as possible during the course of its development. In 2016, the Company not only strived for better development, but also actively drove the economic development of the communities near its operations. For instance, Shanghang County, in which the Company's headquarters is based, vigorously strived for the realisation of a hundred-billion worth gold and copper business, with Zijin Mining as the key driving force. As a result, Shanghang County successfully rose to become one of the top ten county economies and one of the ten counties with the best economic development in Fujian Province.

Zijin Mining also actively participated in charity work to echo the state's direction on a thorough implementation of targeted poverty alleviation. The project of “Supporting the Elderly and Orphans in Shanghang County” has been implemented for 7 consecutive years, providing assistance to over 10,000 elderly persons every year, the aim is to ensure that the elderly persons could be properly cared for; the project of “Building Happy Homes for the Physically Challenged Members” in Shanghang County and Wuping County helped 235 households with disabled family members to move into new homes; the Company also enthusiastically participated in the project of “Contributing to New Countryside Development” which benefited over 100,000 people. In 2016, the Company's social contribution totalled RMB9.586 billion, the amount of donations reached RMB102 million. Moreover, Zijin Mining Charity Foundation received the honourable title of “Model Institution of Targeted Poverty Alleviation” on the World Charity Forum 2016.

In 2017, with the world's economy cloaked in greater uncertainty, enterprises will be confronted with more hardships in their operations under the new economic norm, mining industry will be bracing for more new difficulties and challenges. We will have strong faith in the Company's strategies, capabilities and culture, unswervingly take our own course of innovation and development, and stay focused on “clinging to reforms, maintaining growth and boosting development” as our main targets of work, to ensure various tasks and goals for 2017 will be fully accomplished.

We will continue to uphold our core value of “creating wealth in harmony, balancing development of the corporation, the employees and the society”, increase responsible contributions, enhance responsible management, motivate integration of responsibilities, and create shared values. Higher importance will be attached to safety, environmental protection and development of eco-mining, communication with stakeholders and development of responsible supply chain will be strengthened. Moreover, the Company will actively carry out charity work and activities relating to targeted poverty alleviation, and promote the prosperity of local economies and communities.

No difficulty is insurmountable when surmounting it is the Company’s responsibility. In 2017, we will raise the Company’s soft power and sustainability by setting our mind on higher targets. A more innovative and responsible Zijin Mining will make firm and unhesitating strides on the path towards internationalisation!



## About the report

This is the 9th corporate social responsibility report that the Company has published since 2008. It discloses the Company's policies, management, actions and performance in the aspects of sustainable development and performance of social responsibility.

### Reporting period

The reporting period is from 1 January 2016 to 31 December 2016. Certain descriptions and data are related to prior periods to enhance comparability.

### Publication interval

This report is published on a yearly basis.

### Reporting scope

The contents in this report cover the Company and its subsidiaries.

### Expression of the Company's name

"Zijin Mining Group Co., Ltd.\*" is referred to as "Zijin Mining", the "Group" and the "Company" in this report.

### Sources of data

The data used in this report is extracted from the Company's official documents and statistical reports.

### Basis for the compilation

- Shanghai Stock Exchange: Guideline for Environmental Information Disclosure of Listed Companies
- Hong Kong Stock Exchange: Environmental, Social and Governance Reporting Guide
- The Global Reporting Initiative: Sustainability Reporting Guidelines (G4)
- Guidance on Social Responsibility Reporting (GB/T 36001-2015)
- Chinese Corporate Social Responsibility Reporting Standard CASS-CSR3.0 – General Mining Industry issued by the Chinese Academy of Social Sciences

### Access to the report

This report is originally prepared in Chinese language. Its electronic version can be downloaded from the website of Shanghai Stock Exchange ([www.sse.com.cn](http://www.sse.com.cn)) and the Company's website (<http://www.zjky.cn/>).

## About us

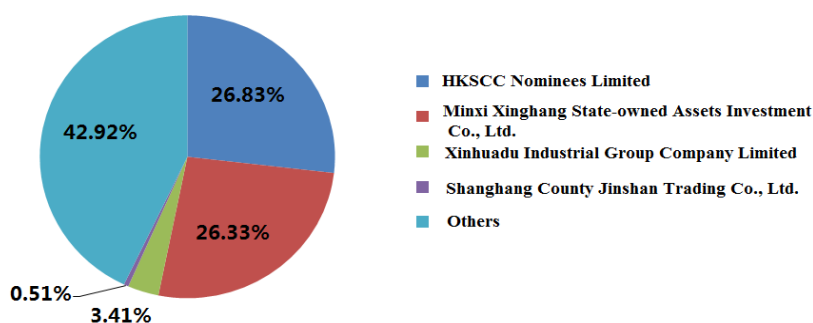
### Overview of the Company

Zijin Mining Group Co., Ltd\* and its predecessor was founded in 1986. Originated in Zijinshan gold mine, Fujian Province in 1993, the Company has become a sizeable mining group focusing on the exploration and development of gold, copper, zinc and other metal mineral resources after more than two decades of development. Its shares are dual-listed in Shanghai and Hong Kong (A+H shares). In 2016, it ranked the 1,175th place in “Forbes Global 2,000 Leading Companies” (among which it ranked the 13th place in non-ferrous metals corporations), the 3rd place in global gold corporations, and the 78th place in “Fortune’s 500 Leading Chinese Companies”.

Zijin Mining was transformed from a 100% state-owned enterprise into a limited liability company in December 1998. The transformation to a joint stock limited

company was completed in August 2000. In December 2003, the H Shares of the Company were listed in Hong Kong (stock code: 2899); in April 2008, the Company returned to the domestic market for listing its A Shares (stock code: 601899).

**Shareholding structure** (as at 30 December 2016)



The Company has formed a product portfolio substantially characterised by gold, copper and zinc (lead), etc. The Company has invested in more than 20 provinces in China and a range of overseas countries such as Australia, Papua New Guinea, Russia, Tajikistan,

Kyrgyzstan, the Democratic Republic of the Congo (the “DR Congo”) and Peru, etc. In the PRC, it is one of the largest producers of gold, copper and zinc, and a preminent tungsten and iron producer. It is one of the corporations having the best economic efficiency in Chinese gold and non-ferrous metals industry.

**The Company's Positions in Top Global Rankings in 2016**



## Corporate governance

In accordance with the Company Law of the PRC, the Securities Law of the PRC, Code of Corporate Governance for Listed Companies, Rules Governing the Listing of Stocks on Shanghai Stock Exchange, Rules Governing the Listing of Securities on Hong Kong Stock Exchange and other laws and regulations within and outside the PRC, the Company has established a relatively optimal corporate governance structure and corporate governance policies, regulated the processes of the Company's operation and management, strictly complied with its information disclosure obligations, and continuously raised the level of corporate governance. For three consecutive years, the Company has been granted the title of "Company of Outstanding Information Disclosure" by the Shanghai Stock Exchange.

**Respect shareholders' rights:** The Company convened shareholders' general meetings strictly in compliance with the provisions of the articles of association of the Company and the rules governing the procedures of the shareholders' general meeting of the Company, which ensured that all of the Company's shareholders, especially minority shareholders, could enjoy equal rights. The Company and its substantial shareholder are completely independent and separate in terms of assets, personnel, finance, institution and operation; the substantial shareholder of the Company strictly complies with the commitments made to the Company to avoid mutual competition within the same industry. In 2016, the substantial shareholder of the Company did not use its special status to occupy and prejudice the interests of the Company and other shareholders.

**Board of Directors and supervisory committee management:** On 30 December 2016, the Company convened the third extraordinary general meeting in 2016, at which the transition to a new term of the Board of Directors and supervisory committee was completed. The sixth term of the Board of Directors also appointed a new term of management. There are four specialised committees under the Board of Directors including the strategic committee, execution and investment committee, audit and internal control committee and nomination and remuneration committee to further enhance the decision-making mechanism of the Board of Directors of the Company. Under the supervisory committee, there is a supervisory and audit office which is mainly responsible for supervising the legal compliance and regulation of financial operation of the Company, etc.

**Information disclosure:** The Company strictly followed the listing rules of the PRC and Hong Kong, fulfilled information disclosure obligations in accordance with laws and complied with the principles of "fairness, impartiality, openness" to disclose relevant information such as the periodic reports and announcements of the Company truthfully, accurately, instantly and completely. The Company always adhered to a high standard for information disclosure. It took

the initiatives to disclose sensitive information in accordance with the requirements of regulatory authorities, effectively ensured a regulated operation of the Company.

**Management of insider registration:** The Company strictly followed the Management Policy of Inside Information and Insiders, worked well on the registrations, reporting and filings of insiders based on the development of the relevant significant events and the situations for which maintaining confidentiality was required. There was no unusual volatility of stock price attributable to leakage of inside information. The legal interests of the Company’s shareholders were practically protected.

## Social responsibility management

In December 2009, the Company established its Social Responsibility Department, under which there are a social responsibility division and community work division, which are staffed with professional personnel to organise and handle social responsibility related affairs. In September 2012, the Company, as a promoter, contributed RMB200 million to



**Social responsibility management module**

establish the Zijin Mining Charity Foundation. It is registered under and directly managed by the Ministry of Civil Affairs of the PRC, being an important nationwide charity platform of the domestic mining industry. In 2016, the Company’s Social Responsibility Work Policy was amended to align the Company’s social responsibility management work with the current requirements on mining industry’s development.

The Company incorporates its social responsibility beliefs of “acting proactively, fully discharging responsibilities, and balancing developments of the corporation, employees and the society” into the Group’s development strategies. In the course of discharging responsibilities, “sustainable mining, supplying responsible mineral products and promoting advancement of civilisation and economic development” are upheld as the missions of corporate responsibility, and “keeping harmonious relationship with the environment and stakeholders to become a

respectable mega-size international mining group with advanced technology and efficiency” is made the goal of corporate responsibility. Fulfillment of legal obligations is the primary requirement of work, and environmental safety is the most important social responsibility of the mining corporation. Employees are treated as the most vital stakeholders, and local communities are regarded as the most crucial relevant parties. Moreover, the Company regards making contribution to the country with betterment of the industry as its own responsibility. Not only does the Company lead the development of the industry but it also fulfills its economic responsibility to investors. By focusing on the missions and goals of corporate responsibility, the Company acts by the plans it makes in respect of corporate responsibility, and strives for improvement in the performance of corporate responsibility by better communications in the relevant aspects. The “six-in-one” areas of responsibility are highly integrated and synergise with one another.

#### **Social responsibility belief and system:**

**Missions of corporate responsibility:** sustainable mining, supplying responsible mineral products and promoting advancement of civilisation and economic development.

**Goals of corporate responsibility:** keeping harmonious relationship with the environment and stakeholders to become a respectable mega-size international mining group with advanced technology and efficiency.

#### **Contents of corporate responsibility:**

- Legal responsibility: legal responsibility is the most fundamental social responsibility of the Company. The Company shall comply with all applicable laws and regulations, conform to industrial standards, manage and operate its business in compliance with laws and regulations, and assume the duties of a corporate citizen.
- Environmental responsibility: environmental responsibility is the most important social responsibility of the Company. The Company shall respect the nature, protect the environment, minimise impacts of its operation on the environment, target to achieve “zero environmental incident”, and insist on being an advocate for eco-mining.
- Economic responsibility: the Company’s sustainable value is reflected by its profit creation ability and assumption of economic responsibility. The Company shall achieve innovation in technology and management, and enhance profitability and competitiveness as contribution to investors and the society.
- Responsibility to employees: employees are the Company’s most vital stakeholders. The Company shall respect human rights, comply with applicable labour conventions, provide safe and healthy working conditions to protect employees from physical and mental harms, and help them have a decent life.
- Responsibility to the industry: the Company shall make contribution to the country with

betterment of the industry, and go forward hand in hand with stakeholders. It shall implement responsible procurement and supply, and provide responsible and high-quality mineral products. It shall incorporate ethical, social and environmental standards into the upstream and the downstream cooperative arrangements, optimise the value chain of mining industry, and lead the scientific development of the industry.

- Responsibility to communities: the Company shall be an ethical mining citizen, respect local cultures, promote traditional virtues, implement community development schemes, carry out charitable activities, and promote harmonious development of the Company and the society.

#### **Awards received in respect of corporate responsibility:**

- In April 2016, at the conference and exhibition of Mines and Money Asia 2016, Zijin Mining received the “Best Asian Mining Company” award for its success in investment and acquisition, and its outstanding performance in Asian mining industry. The Company is the only Asian company on the list of awardees. The award is known for being the highest honour in Asia in recognition of mining investment excellence.
- In July 2016, in recognition of the excellent contribution which the Company made in performance of social responsibility in recent years, the Company was presented the “Outstanding Contribution to Social Responsibility Award” in the first “China Gold Industry Social Responsibility Award”, Zijinshan gold and copper mine received the award of “Best Performer in Eco- and Environmental Protection”, Hunchun Zijin received the award of “Outstanding Enterprise for Social Responsibility”, and Longnan Zijin received the award of “Best Performer in Contribution to Co-development with Ethnic Groups”.
- In September 2016, on the first “World Charity Forum” organised by Tsinghua University, Zijin Mining Charity Foundation (with Zijin Mining as the promoter) received the award of “Model Institution of Targeted Poverty Alleviation” for its significant long-term contribution to poverty alleviation.

#### **Stakeholder management**

The Company highly values the communication and exchange with stakeholders. Its social responsibility beliefs and practices are promoted through various channels. It also listens to the requests of the stakeholders and takes corresponding measures to meet the reasonable expectations and demands of the stakeholders. Details of the communication mechanism between the Company and its stakeholders are as follows:

Stakeholder category	Issue of concern	Communication channel/Feedback method	Frequency
<b>Employees</b>	Employment and employees, salaries and benefits, working and living environment	<ul style="list-style-type: none"> <li>- Employee performance appraisal and interview</li> <li>- Investigation and study, collecting opinions and suggestions</li> <li>- Make use of labour unions</li> </ul>	Irregular
<b>Shareholders /Investors</b>	Operating performance, ESG management belief	<ul style="list-style-type: none"> <li>- Shareholders' general meeting/ /extraordinary general meeting</li> <li>- Investor meeting</li> <li>- Results press conference</li> <li>- Press release /announcement</li> <li>- Field study, roadshow</li> </ul>	Year-end /interim
<b>Government departments</b>	Eco-production, compliance	<ul style="list-style-type: none"> <li>- Special work report</li> <li>- Field study</li> <li>- Meeting</li> </ul>	Monthly and irregular
<b>Suppliers</b>	Product responsibility, supply chain management, operating performance	<ul style="list-style-type: none"> <li>- Market research</li> <li>- Face-to-face communication</li> <li>- Meeting</li> </ul>	Irregular
<b>Community representatives /organisations /NGOs</b>	Eco-production, product responsibility	<ul style="list-style-type: none"> <li>- Field study</li> <li>- Communication and meeting</li> </ul>	Irregular

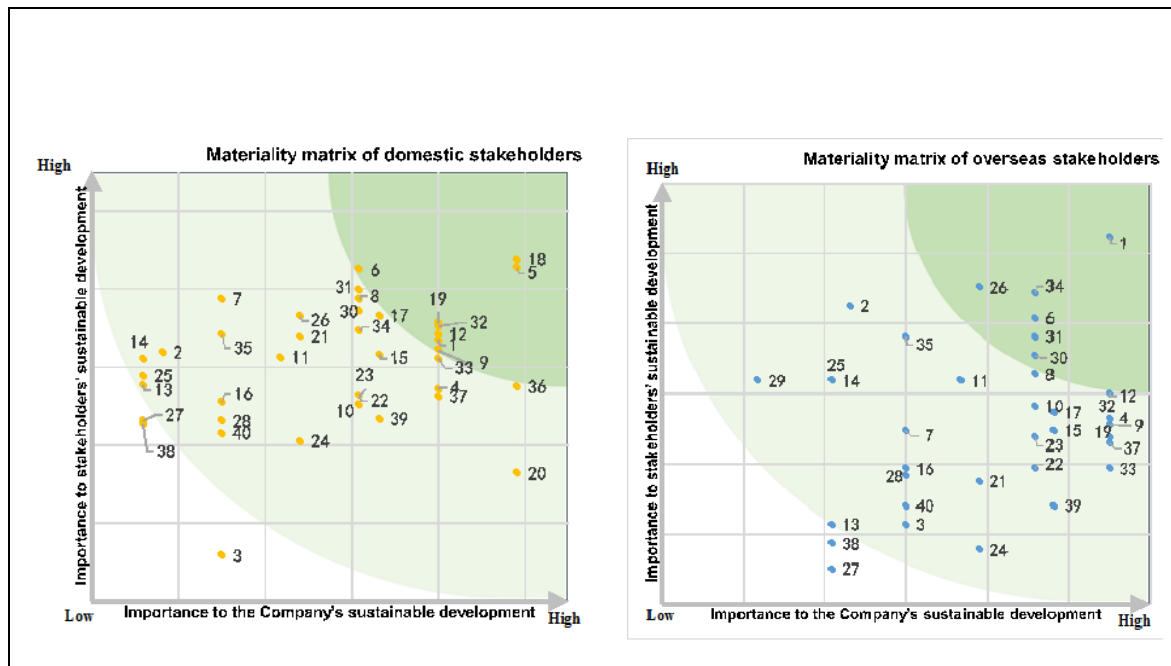
<b>Media</b>	Community investment, product responsibility	<ul style="list-style-type: none"> <li>- Press release /announcement</li> <li>- Meeting and communication</li> </ul>	Irregular
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### Identification of key issues

Being an international mining group which is dual-listed in Shanghai and Hong Kong, the Company attaches great importance to the expectations and demands of domestic and overseas stakeholders. The collection and analysis of different stakeholders' expectations of and demands on the Company ensure that the report yields broadly representative findings of corporate development issues and stakeholders' key issues of concern. As a mining company, we regard communities as the most important relevant parties and give high priority to issues relating to the balanced development of the communities which are proximate to the Company's mines. The Company values the importance of driving economic and social growth of local communities through its mining development, it is also highly concerned with environmental protection, endeavouring to minimise impacts of mining development on the environment. By enhancing the environment, a more beautiful ecological environment in the mining areas is made possible.

Procedure for identifying key issues		
	Sources of the issues	Screening criteria
	<ul style="list-style-type: none"> <li>- Suggestions made by the Company's management under the guidance of the enterprise's core values</li> <li>- Analysis and suggestions from in-house and external experts</li> <li>- Analysis on multi-media information</li> <li>- Benchmark study against domestic and overseas mining peers</li> <li>- Relevant social responsibility guidelines and standards</li> </ul>	<ul style="list-style-type: none"> <li>- Contribution to sustainable development</li> <li>- General concern among stakeholders</li> <li>- Key issues stated in social responsibility guidelines</li> <li>- The issues meeting the needs of the Company's strategic development</li> </ul>
Materiality matrix of stakeholders		





### Description about the issues:

Economic issues	Environmental issues		Social issues		
1. Business performance	5. Water resource management /protection of water resources	11. Soil remediation	17. Employees' salaries and benefits	25. Community environmental maintenance	33. Management of customers complaints
2. Industrial trend	6. Wastewater treatment	12. Impact of production activities on underground water	18. Employees' occupational safety and health	26. Compliance with related social regulations	34. Compliance with product and service related regulations
3. Impact on operation and income due to climate change	7. Air emission treatment	13. Noise management	19. Employees' vocational development and training	27. Charity	35. Compliance with marketing related regulations
4. Culture and business value	8. Solid waste disposal	14. Environmental and social management system	20. Diversity of employees	28. Impact of daily operation on communities	36. Assessment of suppliers' environmental performance

	9. Production site management	15. Emission reduction (including greenhouse gases)	21. Human rights protection, and prohibition of child labour and forced labour	29. Anti-corruption and promotion of integrity	37. Safety related trainings and upgrade for suppliers
	10. Land use	16. Protection of biodiversity	22. Community contribution	30. Maintenance of service quality	38. Assessment of suppliers' social performance
			23. Communication with communities and governments, and relationship maintenance	31. Strict fulfillment of contractual obligations	39. Assessment of suppliers' performance of labour code of practice
			24. Resettlement and employment of inhabitants	32. Protection of customer privacy	40. Assessment of suppliers' human rights performance

## Economic responsibility

### Operating performance

Item\Year	2016	2015	2014
<b>Profit before tax ( RMB billion )</b>	<b>2.126</b>	<b>2.086</b>	<b>3.324</b>
<b>Operating income ( RMB billion )</b>	<b>78.851</b>	<b>74.304</b>	<b>58.761</b>
<b>Total assets ( RMB billion )</b>	<b>89.218</b>	<b>83.914</b>	<b>75.160</b>
<b>Total tax expenses ( RMB billion )</b>	<b>3.602</b>	<b>3.861</b>	<b>4.646</b>
<b>Gold resource reserves ( t )</b>	<b>1,347.41</b>	<b>1,261</b>	<b>1,040</b>
<b>Copper resource reserves ( mt )</b>	<b>30.0638</b>	<b>23.46</b>	<b>12.41</b>
<b>Zinc resource reserves ( mt )</b>	<b>8.0087</b>	<b>8.3968</b>	<b>9.1668</b>
<b>Total social contribution ( RMB billion )</b>	<b>9.586</b>	<b>9.117</b>	<b>11.391</b>
<b>Social contribution per share ( RMB )</b>	<b>0.45</b>	<b>0.42</b>	<b>0.53</b>

### **Creditors' interests**

As at 31 December 2016, the Group's debt ratio stood at a reasonable level of 65.12%, offering secure protection to creditors' interests. Through the sales of gold and other metals, the Company maintained sufficient level of cash flows and strong repayment capacity for the settlement of short-, medium- and long-term debts.

The Company has built up strong ties with the four largest commercial banks in China and multiple local Chinese banks and financial institutions. It was given a credit rating of AAA by China Chengxin Securities Rating Co., Ltd. and China Chengxin International Credit Rating Co., Ltd. To offer full protection to creditors' interests and maintain a positive image and credit rating of the Company, the Company never resorts to defaulting on any credit facilities.

### **Return to investors**

The Company always places strong emphasis on investor relations management. Through sufficient information disclosure, roadshows and reverse roadshows, attending investors' meetings, on-site receptions of investors, teleconferences, etc., comprehensive communication and interactions with investors were carried out, which enable investors to have clearer understanding of the Company. In 2016, the Company received numerous groups of local and overseas investors, successfully organised reverse roadshow at Xinjiang Zijin Zinc, and multiple field trips to Zijinshan gold and copper mine. It also actively participated in the thematic activities organised by the Fujian Bureau of the CSRC, such as the Online Reception Day of Listed Companies.

Always attaching great importance to shareholders' return and protection of shareholders' interests, the Company formulated the "Profit Distribution and Return Plan for the Next Three Years (Year 2015-2017)". Up to the year-end of 2016, total dividend distribution amounted to RMB16.882 billion, various types of taxes paid to local administrative authorities amounted to RMB36.556 billion.

**Table on dividend distribution of Zijin Mining for the last four years**

<b>Item\Year</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
<b>Earnings per share (RMB)</b>	0.09	0.08	0.11	0.1
<b>Dividend per share (RMB)</b>	0	0.06	0.08	0.08
<b>Dividend payout ratio (%)</b>	0	78.06	73.59	81.48
<b>Total amount of dividend distribution (RMB billion)</b>	0	1.29244	1.72583	1.73167

Note: On 7 December 2016, the Issuance Review Committee of the CSRC reviewed and approved the application of the Company for non-public issuance of A Shares, but the CSRC's approval documents have not yet been received. According to Article 18 of the "Administrative Measures on Securities Issuance and Underwriting" of the CSRC, if listed companies with a plan for issuance of securities have any profit distribution proposal or conversion of capital reserve into share capital proposal which has not yet been submitted to shareholders' general meeting for voting, or when such proposal has been approved by the shareholders' general meeting but has not yet been implemented, the issuance of securities can only be proceeded after such proposal has been implemented. As the Company is currently carrying out the issuance of A Shares, in order to speed up the progress, the Board proposed that: no profit distribution will be carried out for the year of 2016 and there will be no conversion of capital reserve into share capital; an interim profit distribution will be proposed for 2017, for which the corresponding approval procedure shall be carried out in compliance with the articles of association of the Company and the relevant laws and regulations. The profit distribution proposal will be proposed to the 2016 annual general meeting for consideration. The independent directors of the Company have expressed independent opinion on the above matters.

## **Integrity of operation**

The Company always insists in the operational philosophy of "earning respect with high-quality products, achieving mutual benefits and win-win situation". Based on integrity and compliant operation, the Company proactively establishes strategic partnership with customers and provides high-quality products and excellent marketing services to the customers, which contributed to the realisation of a stable, long-term and win-win cooperative relationship with customers and increases in customers' satisfaction, trust and loyalty.

## Product responsibility

The Company attaches great importance to the quality of ZIJIN brand products. The “Trademark Administrative Policy” and “Product Quality Administrative Policy” were formulated to regulate employees’ work on quality check, ensure strict quality control, and maintain stability in the quality of ZIJIN brand products. The Company also promulgated the “Administrative Policy on Product Quality Incidents”, which sets out the procedures for monitoring and responding to product quality incidents, and helps curb the negative impact arising from product quality related problems on users.



Certificate issued by London Bullion Market Association for “ZIJIN” brand gold bullion

Zijin Gold Refinery Company Limited has been awarded the title of “Outstanding Member Unit and Supplier of Standard Gold Bullion” by the Shanghai Gold Exchange for 10 consecutive years; “ZIJIN” brand zinc bullion and copper cathode were registered as brands for settlement at the Shanghai Metal Exchange; and “ZIJIN” brand gold bullion and silver bullion were registered as brand for settlement at the Shanghai Futures Exchange and the Shanghai Gold Exchange. The products for settlement and service quality earned high recognition from customers. Among which, “ZIJIN” brand gold bullion already passed the certification of the London Bullion Market Association (“LBMA”); Zijin Gold Refinery Company Limited has been included into the list of gold suppliers of LBMA, which enables the Company to sell the standard gold it produces worldwide; and the quality of “ZIJIN” brand grade-A copper obtained official and global recognition as it became a registered brand at London Metal Exchange (LME). In 2016, 100% of the traded products passed quality checks.

Over the years, the Company has participated in the formulation of 59 technical standards of non-ferrous metals and gold. In 2016, it participated in the drafting and formulation of 4 national standards, namely “Gold Bullion”, “Silver Bullion”, “Gold Ores” and “Assessment Index System of Clean Production for Gold Industry”, etc.

## Protection of customers’ intellectual property rights and satisfaction survey

To improve the Company’s market awareness and service quality, and protect third parties’ intellectual property rights and customers’ privacy, the Company formulated the “Detailed Implementation Rules on Selling and Trading”, and established a customer satisfaction surveying mechanism. Sales department conducts customer satisfaction survey, which usually takes the form of questionnaire, in the fourth quarter of every year. Based on the problems

reflected by the survey, the Company would formulate plans for improving satisfaction, follow up the progress and collect feedback. In 2016, customers' satisfaction for the Company's mineral products was 100%.

## Supply chain management

2016 was a year of reform in the Group's logistics operation. Based on the idea of mega logistics, the Group made full efforts to enhance the value-adding capacity of its logistics operation. The Company integrated the current procurement and sales enterprises, and established a group level procurement and sales centre. By utilising the shared platform and the Group's bargaining power, procurement and supply channels, as well as the brand of equipment were regulated, bulk purchase of materials and equipment also became possible.

In 2016, the Company issued the "Detailed Implementation Rules on Supply of Materials" to strengthen the admission assessment and management of suppliers. Suppliers' and contractors' performance of environmental responsibility, safety responsibility and commercial ethics were incorporated into the assessment system, and through a newly launched e-business platform, management on the whole process of supplier admission, information collection, assessment and maintenance were achieved. As at the end of 2016, there were 23,222 suppliers registered on the Company's e-business platform, among which 2,152 were newly registered suppliers.

## Anti-corruption

The Company strongly opposes to any form of commercial bribery, never seeks commercial benefits through bribery, and prohibits any members of the Company who are of power and authority to prejudice the Company's interests by taking bribes.

The Company vigorously enhanced the interconnected mechanism comprising disciplinary inspection committee, supervision, audit and internal control, under the lead of the supervisory committee. In 2016, reform and innovation on the supervisory system were carried out by focusing on "ensuring relative independence of supervisory work, enhancing effectiveness of supervisory work, and reinforcing appraisal and accountability of supervisory personnel". By formulating appraisal and accountability standards, strengthening and organising human resources management, and conducting education and training, the sense of responsibility and execution competence of supervisory personnel were improved.

The Company promulgated the "Administrative Policy on Whistle-blowing by Letters or Visits", and set up a mailbox and email address dedicated to supervision and internal audit to enhance the channel for whistle-blowing and feedback. The Company also carried out anti-corruption tasks proactively and effectively, and took full advantage of the deterrent effect of

conducting inspections. It carried out 7 audits on personnel resignation, 10 audits on economic responsibility and 3 special audits, raised 650 audit-related questions and carried out supervision and rectification accordingly. In 2016, no staff was involved in any corruption related criminal litigation which was referred to judicial authorities by the Company.

Supervisory system			
Amendment of policies	Team building	Anti-corruption education	Risk management
Organised and formulated the “Reform Policy for the Group’s Supervisory System” and “Administrative Policy for Whistle-blowing by Letters or Visits”, comprehensively amended the “Administrative Policy for Supervision”, and accordingly completed amendments to 7 policies relating to supervision, audit and internal control.	Improved the building of supervisory team by focusing on value creation. Made reasonable adjustments to the appointment of supervisory and audit officers and supervisors (either full-time or as a concurrent position) at the subsidiaries based on their work performance and assessment results.	Emphasised the importance of precaution by education. Selected classic cases of the Group and published articles in the theme of “Explaining disciplines by cases, seeking the truth by investigation”. Arranged employees in key positions to attend court hearing so that they could be deeply educated about anti-corruption from actual cases.	Focused on risk aversion to improve the quality of internal control assessment continuously. Motivated and guided 44 subsidiaries to carry out self-censorship for internal control. Fully incorporated all the operating enterprises into the scope of internal control assessment. Built up an initial mechanism of internal control for self-assessment and self-improvement among the subsidiaries.

## Environmental responsibility

The Company always upholds “environmental protection and development go together” and “protecting the green mountains and clear water while developing treasured mines”, as its environmental protection principles, and “zero environmental incident”, as the basic requirement, to constantly improve its environmental management system, strengthen environmental management and comprehensive utilisation of resources, foster stronger emergency response to environmental incidents, and advance the goals of eco-mining and sustainable development. No severe environmental incident occurred in the Company throughout the year of 2016. Zijin Copper received the title of “Water and Soil Conservation of Production and Construction Projects Reaching Ecologically Civilised Standard” from the Ministry of Water Resources of the PRC.

## Development of environmental management system



## Sustainable development of resources

The Company attached great importance to the use of technology to promote the corporation’s sustainability. It formulated the Administrative Policy on Scientific Research Projects and Implementation Rules on Scientific and Technology Incentives, and implemented exemption for liability on scientific research and encouraged staff to freely carry out technological innovation. The Company set up a batch of scientific research entities including the state enterprise technology centre, workstations for academicians’ scientific research, technology companies, design institutes and the one and only State Key Laboratory in gold industry for comprehensive utilisation of low-grade refractory gold resources, organised a professional scientific research team with more than 450 members, employed technical consultants (among



which 6 are academicians), owned more than 108 patented technologies, and maintained leading positions in China in the treatment of low-grade, refractory resources and large-scale engineering development.

In 2016, the Group invested RMB438 million in scientific research and obtained fruitful results. The Company achieved a significant breakthrough in the industrial project of hot-pressure pre-oxidation of refractory gold ores. Zijinshan gold and copper mine's key technological research project on control and forecast of complicated geotechnical accident obtained first class award in science and technology from the China Gold Association. The exploration project of Luoboling got the first class award for its exploration results of non-ferrous metals in China. Taror's key technique of gold extraction from oxidised copper and gold ores with ammonium cyanide and industrialisation study project obtained first class award in scientific and technological advancement in Fujian Province. 13 patents were granted to the Company in 2016.

**Case I: Industrial project of hot-pressure pre-oxidation of refractory gold ores obtained significant results**

In 2016, under the leadership of the Company's State Key Gold Laboratory, Guizhou Zijin, a subsidiary of the Company, carried out the industrial project of hot-pressure pre-oxidation of refractory gold ores. Production commenced successfully, the project also reached the designed capacity expediently. It is the first project in China which achieved industrialisation by applying the aforesaid technique and owns an independent intellectual property right. The technique was examined by the authoritative experts from China Nonferrous Metals Industry Association and recognised as reaching "internationally advanced level". Such technique increased the comprehensive recovery rate of gold by 30%, created new economic value for approximately 50 tonnes of gold-arsenic carbonaceous ores which were unusable previously. At the same time, harmless treatment was carried out on the harmful arsenic impurities in the ores. An additional economic value of about RMB10 billion was created.

**Case II: Development of demonstration site for comprehensive utilisation of copper, gold and non-ferrous metal resources at Zijinshan**

The development of demonstration site for comprehensive utilisation of copper, gold and non-ferrous metal resources at Zijinshan was jointly declared as a state-level development project by the Ministry of Land and Resources and Ministry of Finance of the PRC in 2011. Through development of the demonstration site, the scale of comprehensive utilisation of resources was expanded, the efficiency of utilisation of resources was increased, the ecological environment of the mine was improved, a harmonious relationship between the mine and local community was maintained, technological improvement in the relevant areas was promoted, the related technical standards were formulated, the targets of the plan were achieved, and significant results were attained in resources, environmental, social and economic aspects. The various

techniques used in the project for comprehensive utilisation of low-grade gold, copper ores and copper-containing acidic wastewater are at a leading position both domestically and globally. By developing the demonstration site, mining and development of geological park were carried out simultaneously at the mine. This not only sets a good example but also serves a significant promotional function.

### **Enhancing recovery rate in mining**

The Company strived to raise the efficiency in mining and processing. It organised seminars on paste filling mining technique and ore processing technology conferences, etc. to achieve technological transformation and innovation. The Company focused on the life cycle planning of mines and increase of reserves through resource exploration, arranged reasonable production plans to achieve stable production during the mines' life cycle and sustainable development of mineral resources. In 2016, the Company's mining entities significantly improved their recovery rate in mining by taking various steps, such as optimising mining methods, tightening the management of mining sites, limiting the scope of mining, etc.

#### **Case studies:**

<b>Subsidiary</b>	<b>Key measure</b>	<b>Outcome</b>
<b>Shanxi Zijin</b>	The original mining method was upgraded to short-hole shrinkage method.	Recovery rate was raised by 10%
<b>Luoyang Kunyu</b>	Adopted short-hole shrinkage method or a combination of short-hole and sublevel stoping method.	Recovery rate was raised by 5%
<b>Luoning Huatai</b>	Controlled the length of drill rods used at mining sites, and optimised blasting technique.	Recovery rate was raised by 5%
<b>Nanwenhe tungsten mine</b>	Optimised and categorised mining methods based on ore thickness.	Recovery rate was raised by 3.5%

### **Comprehensive utilisation of tailings, waste materials and wastewater**

To promote conservation and intensive use of resources, the tailings, waste materials and wastewater were collected and fully reused based on individual conditions of the mines owned by the Company's subsidiaries and characteristics of their tailings, to ensure sustainable development of mines.

**Case studies:**

Mine/subsidiary	Key measure	Outcome
<b>Zijinshan gold and copper mine</b>	Used biological heap leaching technique for comprehensive recovery of low-grade copper ores, and channeled copper-containing acidic water to the copper hydrometallurgical production facility for recovery of copper.	9.71 million m <sup>3</sup> of copper-containing acidic wastewater was recycled and utilised during the year, 6,000 tonnes of copper metal were recovered effectively.
<b>Shuguang gold and copper mine</b>	Built a mullock recovery facility of 10,000t/d to handle the mullock produced in mining process scientifically throughout the years, successfully turning waste into treasure.	4,300 tonnes of copper metal and 900kg of gold were recovered annually.
<b>Ashele copper mine, Shuiyindong gold mine, Yueyang silver mine and Dongping gold mine</b>	Adopted tailing-cementation filling technique in mining.	600,000 tonnes of tailings were consumed annually in the filling up of goaves, which also reduced the volume of tailings discharged and extended the service period of tailings pools.

**Energy conservation and emission reduction**

The Company continued to promote energy conservation and emission reduction. In 2016, it modified the “Energy Management Policy”, formulated incentive policies on energy conservation for subsidiaries, established energy consumption indicator database for the Group and conducted the analysis and benchmarking of energy consumption indicators. The subsidiaries focused on and carried out technological innovation on energy conservation, disposed of obsolete equipment, introduced large-scale energy conservation equipment and optimised mining, processing and refining techniques, including converting the frequency of and compensation of electricity, installation of LED lamps, generating electricity with surplus energy and heat, etc. The Company promoted an eco-friendly office, reduced business trips and energy consumption by holding remote conferences, etc., formulated energy conservation management standards for office area and carried out regular inspections and assessments.

The pollution control and management facilities of each of the Company's entities operated smoothly, the discharge of wastewater and air emission were kept in stable amount and within the regulatory standards. The aggregated discharge and emission volume met the prescribed controlling targets. General industrial solid waste and hazardous waste were handled safely or utilised comprehensively. Afforestation across the abandoned areas of mines also served as carbon sink and contributed to the reduction of greenhouse gas emission by approximately 15,000 tonnes of CO<sub>2</sub>e per year.

**Table 1: Statistics of the Company's industrial added value and energy consumption for production, unit: tce/RMB10,000**

Item	2016	2015	2014	Note
Energy consumption per RMB10,000 of industrial added value of the Company	0.229	0.444	0.374	All energy consumption, including the energy consumed by contractors engaged in mining, processing and refining procedures
Energy consumption per RMB10,000 of production value of the Company	0.167	0.03	0.048	Total energy consumption of gold and copper mine (energy consumption of contractors is excluded)
Weighted average energy consumption per RMB10,000 of production value of the Group	0.098	0.1027	0.109	28 mining entities of the Group, including smelter facilities

Description: In 2015, energy consumption per RMB10,000 of GDP of the whole country, Fujian Province and Longyan City were 0.662tce/RMB10,000, 0.531tce/RMB10,000 and

0.680tce/RMB10,000 respectively, energy consumption per RMB10,000 of industrial added value of Fujian Province and Longyan City were 0.722tce/RMB10,000 and 0.959tce/RMB10,000 respectively.

**Table 2: Comparison of energy consumption per unit of major refined products with limits under national standards, unit: kgce/t**

<b>Production entity and product</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>National standard limit tce/t</b>	<b>Advanced national standard limit tce/t</b>	<b>Comparison with the same period last year (positive=increase, negative=decrease) %</b>
Bayannaoer zinc refinery/zinc bullion	809.3	822.6	914	1,000	850	-1.6
Zijin Copper 300,000 tonnes/copper cathode	216.2	262	269	400	280	-17.5
Fujian Zijin Copper/tin-phosphor bronze belt	319.8	351	353	450	370	-8.9
Fujian Jinyi Copper/copper pipe	236.5	256	259	335	290	-7.6

## Circular economy

The Company built a circular economic system, strived to promote resource conservation and comprehensive utilisation of resources, maximised the use of resources, and enhanced comprehensive utilisation of resources.

Subsidiary	Measure and outcome
<b>Zijin Copper</b>	The approach of “deploying the same bucket of water for multiple uses, segregated treatment, first-rain water retention and cascade use” was adopted in the use of water resources. As a result, 97.78% of the water used in production activities was reused, and the target of “zero discharge” of industrial wastewater was achieved.
<b>Shanxi Zijin</b>	After treatment, the water used in processing was redirected to processing plant for reuse. Zero discharge of wastewater was achieved. Sulfur and dust removers were installed in all heating furnaces. The residue was used for building houses and roads for villagers.
<b>Qinghai West</b>	Qinghai West strived to improve processing indicators. The grade of tailings reduced from 0.215% in 2015 to 0.208% in 2016, and copper recovery rate increased to 81.08%. Maximisation of the use of resources was achieved.

## Eco-management

The Company is highly committed to eco-mining. In the course of mining development, every subsidiary is required to follow the sequence of “development, maintenance and restoration”, and refrain from using the natural habitat of animals, wetland, forests and wildlife corridors. Bare areas of land such as tailings yards, waste retentions, tailings slopes, etc., underwent a gradual recovery of vegetation based on their own conditions. In 2016, approximately RMB81 million was used for water and ecological conservation. 214 hectares of vegetation were recovered. Xinjiang Zijin Zinc was selected as a “green mine pilot unit of the autonomous region”. Presently a total of 9 mining entities of the Company have received the honorable title of “national green mine pilot unit”.

## Promotional and educational campaigns for environmental protection

The one-month period running from 5 June 2016 to 4 July 2016 is the Company's sixth "Environmental Safety Month", during which the Company's headquarters launched a series of programmes under the theme of "keeping the environment in good order is everyone's responsibility", organised field studies at Zijinshan gold and copper mine for environmental protection inspectors, bred and released fish at the Ting River, and organised volunteers to clean up the garbage in the Ting River. Hunchun Zijin strived to build a civilised ecological environment in the mining areas and promote environmental protection. With better protection and improvement, the ecological environment of the mine attracted wildlife and precious species of birds to stay and live in the areas. According to multiple news reports of the media, traces of northeast tigers, which are endangered animals protected by the state, were observed in the protected forest area near the mine. In October 2016, a spectacular scene of thousands of wild migratory birds gathering and resting at Hunchun Zijin's tailings pool was observed.

## Social responsibility

### Responsibility to employees

The Company strictly followed the national laws, policies and requirements of local authorities to formulate and improve various corporate rules and policies, in order to ensure that the legal rights of employees were protected. The Company launched a series of activities focusing on "caring for the frontline workers and promoting reform and development", in which the Company visited the frontline workers, gave regular assistance to and cared for the staff who were in difficulties and improved the working and living conditions of staff. Staff's cohesion, loyalty and satisfaction were significantly raised, and their incentive and execution competence were strongly enhanced. Wulatehouqi Zijin's electrical and mechanical maintenance unit received the title of "Pioneer of Workers" from All-China Federation of Trade Unions.

#### Measures for protecting the rights and interests of employees



### **Fair employment and employment protection**

The Company insists on fair employment and firmly curbs child labour. Not only is a non-discriminatory labour policy upheld, but the practice of forced labour is also fully prohibited. Labour contract is entered into with every employee to ensure non-discriminatory employment for all workers irrespective of their race, gender, or other factors. Fair negotiation and mutual choices were promoted when recruiting new employees. 100% of the employees entered into employment contracts with the Company and were fully covered by social insurance. In 2016, the number of employees averaged 23,865 per month (including foreign employees employed by overseas subsidiaries), in which 2,631 employees were hired by the Group's headquarters. As many as 192 outstanding graduates were recruited from University of British Columbia, University of Queensland, University of Sydney, Peking University and so on.

### **Development and trainings for employees**

In 2016, the Group's headquarters organised three types of training programmes on a regular basis, including trainings for new staff, seminars and trainings on challenging mining techniques and innovations, English language training classes at headquarters, etc. The total number of participants was more than 150. At the headquarters, more than 19 theme-based trainings were held, which were attended for 2,285 times. In 2016, the staff used the Company's ELN platform to participate in trainings for more than 8,000 times. The subsidiaries also carried out various types of training based on their own situation. For the purpose of satisfying employees' need of reading, Zijin Copper equipped its reading room with an array of books, newspaper and periodicals. It was awarded the title of "Workers' Library" by All-China Federation of Trade Unions.

The Company has a fair talent recruitment scheme, a competitive recruitment policy which introduced strong motivation among employees, and a score-based duty assessment system which further expands the career prospect for employees. In 2016, 29 business units of the Group organised screening contests to recruit more than 300 staff, their profession ranged from mining, processing, refining, to administration, back-office support and so on. The goals of "hiring the competent, removing the non-productive employees, adding value to management and enhancing efficiency" were achieved, and an "incentivising job market for all with fair competition" was created.

## **Safety and health**

### **Management of production safety**

The Company always adheres to the principle of "safety first, focusing on taking precautions and adopting a comprehensive approach in rectification and management", and firmly follows the basic management requirement of "zero incident and zero tolerance". It strengthened the



implementation of production safety responsibility, and continued to improve standardised safety operation system. A dual-prevention system comprising stratified management and control of production safety risk, and identification, prevention and rectification of hidden dangers has been established. The Company also took extensive measures including benchmarking against safety standards for each position and production team, adopting a score-based system for safety assessment, a safety check system and providing safety related trainings and educational programmes, to ensure that the Company can consistently and steadily maintain production safety.

Measure for managing production safety	
<b>Improving production safety management system</b>	The Group further clarified, allocated and implemented responsibilities, perfected safety performance assessment, and strengthened assessment on the effectiveness of production safety management system.
<b>Establishing a prevention system comprising stratified management and control of risks, and the identification, prevention and rectification of hidden dangers</b>	The Group conducted safety risk identification and set up a database of enterprise safety risk. The management and control responsibilities were allocated to each enterprise, workplace, production team and position, which facilitated effective management and control of safety risk from the aspects of organisation, system, technology, emergency response, etc.
<b>Developing safety standards</b>	Subsidiaries of the Company continued to promote development of safety standards and ensured the enterprises comply with production safety standards in accordance with the national and local requirements on the relevant standards.
<b>Promoting production safety score-based system</b>	The Group formulated an administrative policy on production safety score-based system, and carried out pilot scheme among all the employees of Ashele Copper and Zijin Copper, to enhance production safety performance.
<b>Anti-“3-violations” campaign and</b>	The safety committee of the Group organised thorough safety inspections on a quarterly basis, issued 57 inspection notices and carried out 179 inspections on its enterprises in 2016. 1,810 hidden

<b>identification, prevention and rectification of hidden risks</b>	dangers were identified while the rectification rate of these hidden dangers reached 100%.
<b>Management of “two hazardous items”</b>	The Group carried out specific safety inspection, perfected the Group’s archive management for the “two hazardous items”. A platform for recording the volume of the “two hazardous items” used in production and laboratory and the online information enquiry system of the “two hazardous items” was improved.
<b>Safety management of tailings pools</b>	The Group established and perfected the operational and management platform of tailings pools and carried out specific safety inspections on the tailings pools.
<b>Using technology to ensure safety</b>	The Group launched a specific campaign of “replacing labour with machines and reducing headcounts by automation”, promoted the application of safe technology and equipment such as the “six key systems” for mine safety and risk avoidance, online monitoring system for tailings pools, monitoring and management system for the safe use of heavy lifting equipment, monitoring and control system for ground pressure and goaves, monitoring and alarm system for stability of high and steep slopes, dispatching system for mining vehicles, MES safety management system and so on. The Group made efforts to promote the application of techniques such as non-electric initiation, dry tailings discharge, tailings filling, comprehensive utilisation, etc.

### **Performance of production safety**

Building safety facilities and investment in safety are of high importance to the Company. In 2016, the Company’s investment in production safety amounted to RMB673 million, which was used for management and rectification of hidden dangers to prevent serious incidents, renovation of safety facilities, research and development on safe technology, safety promotion and training, development of emergency response, equipment upsizing, automation of controlling system, etc.

Safety education and training	Safety inspection and rectification	Safety standardisation achievement
<ul style="list-style-type: none"> <li>●100% implementation of safety education plan</li> <li>●100% of employees attended trainings</li> <li>●100% completion of the 3-level safety education</li> <li>●100% of employees in “3 positions” attended and passed the trainings for applying or renewing permits</li> <li>●100% of employees obtained the permits required for their positions</li> </ul>	<ul style="list-style-type: none"> <li>●Conducted safety inspection on a weekly basis</li> <li>●Inspected enterprises for 179 times</li> <li>●1,810 hidden dangers were identified and 100% of these hidden dangers were rectified</li> <li>●Issued 57 inspection notices</li> </ul>	<ul style="list-style-type: none"> <li>●75 subsidiaries passed safety standardisation authentication</li> <li>●Level of standards achieved: 5 of 1st level, 43 of 2nd level, 27 of 3rd level</li> <li>●Classification by system: 25 mines, 18 tailings pools, 15 mine processing systems, 10 refining systems for hazardous chemicals, 7 others</li> </ul>

### Occupational health

In 2016, the Company’s occupational health administrative function was enhanced to fully identify the occupational risk factors at workplace. Inspectors were arranged and measuring devices were installed at the workplaces which were exposed to dust or potentially exposed to hazardous gases, and inspections were carried out regularly. Effective preventive measures were taken immediately for any identified problem to ensure the volume and density of dusts and hazardous gases at the workplaces were in compliance with national standards. The Company also provided occupational medical examination for every worker before and during their employment and upon their resignation. The occupational health history of every worker was documented and well-maintained. In 2016, the control on occupational risk factors such as dust, poison and noise met the required standards at the rate of  $\geq 98\%$  and occupational medical examination for workers exposed to dusts, noise and other occupational risks were arranged at the rate of 100%.

To cope with the limited awareness of and weak management over workers’ occupational health among the Company’s contractors, the Company required all of its business divisions to pay close attention to contractors’ safety and occupational health issues, gradually incorporate such issues into their own management system, clearly define the supervisory responsibilities of each of the business division, in order to ensure occupational health across all of the Company’s work sites.

### Community engagement and development

“Integration with local people, contribution to the communities and co-development with various stakeholders” is the philosophy of the Company. In places where the Company’s projects operate, in the construction, procurement of supplies and co-development of the local communities, local workers were employed in priority under equal terms of benefits. The Company has also made positive contributions to the creation of numerous job opportunities, driving the prosperity of local economies and building more harmonious communities.

**Case studies:**

Mine/subsidiary	Supportive measure for the community
<b>Zijinshan gold and copper mine</b>	<ul style="list-style-type: none"> <li>● Insisted on hiring local workers, directly provided more than 300 job positions for the villages near the mine, and indirectly created more than 2,000 positions by supporting the development of infrastructure, logistics and agricultural companies at the local community.</li> <li>● Supported the livelihood of and provided assistance to the elderly during Chinese New Year, Chong Yang Festival and other traditional festivals, visited the elderly aged over 60 at Jingmei Village, Shizhen Village and Tongkang Village, which are near the Company's mine. More than 5,300 persons were benefited.</li> <li>● Alleviated poverty in education. The Company invested about RMB500,000 in the last 3 years to improve the infrastructure of schools in the villages near the mining area. More than 2,000 persons were benefited. It also subsidised and assisted impoverished undergraduates from the surrounding villages. More than 120 undergraduates were benefited.</li> </ul>
<b>Bayannaoer Zijin</b>	<ul style="list-style-type: none"> <li>● Supported the transportation business in Tuanjie Village, where Bayannaoer Zijin is based; outsourced some small projects to the local enterprises and created numerous job opportunities to local residents.</li> <li>● Provided firefighting assistance service to the local community. In 2016, the company joined the local fire service team to provide firefighting service in 3 fire accidents in Tuanjie Village.</li> </ul>
<b>Luoning Zijin</b>	<ul style="list-style-type: none"> <li>● Most of the food ingredients used in staff canteen were purchased from local farmers, who were given priority under the same selling price. This increased the earnings of local food-growers by more than RMB300,000.</li> <li>● Made donations to support renovation of Luonan Canal to facilitate irrigation for local farmers.</li> <li>● Recruited more than 30 local residents who lived in poverty.</li> </ul>

<b>Shanxi Zijin</b>	<ul style="list-style-type: none"> <li>● Small projects were outsourced in priority to local enterprises in Yixingzhai Village, where Shanxi Zijin is based. Local people were hired in priority. All of the saplings used for greening were purchased from the plant nursery of the village committee of Yixingzhai Village.</li> <li>● Provided free water, heating and electricity supply to the village committee and primary schools in Yixingzhai Village.</li> </ul>
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## Charity work

The Company is dedicated to charity work and proactively participated in charity activities, e.g., poverty alleviation, supporting the underprivileged, disaster relief, assistance to teaching and learning, environmental protection and so on. In 2016, public donations directly made by the Company reached RMB102 million and the public charity platform of Zijin Mining Charity Foundation donated RMB38 million. Additionally, key initiatives such as “Supporting the Elderly and Orphans in Shanghang County”, “Building Happy Homes for the Physically Challenged Members”, “Supporting the Impoverished Students”, “Charitable Educational Campaign for Geological Civilisation”, “Typhoon Disaster Relief and Rehabilitation Programme for Shizishan, Hunchun City”, etc., were carried out. The Company also organised volunteer teams and formulated related policies to support the participation of volunteers in afforestation and the breeding and releasing of fish.

### Examples of charity work in 2016

Name of the project	Outcome
<b>Supporting the Elderly and Orphans in Shanghang County</b>	Every year, each elderly person aged 80 or above and each school-aged orphan below 18 in Shanghang County are entitled to RMB100 of monthly old-aged allowance and RMB200 of monthly expense subsidies respectively. More than 10,000 elderly persons and orphans were benefited from the programme, total allowance distributed in 2016 was approximately RMB11.47 million.
<b>Building Happy Homes for the Physically Challenged Members</b>	Up to 2016, the Company cumulatively donated as much as RMB7.05 million to the project to build new homes for families with disabled family member which were either homeless or living in dangerous structures. The programme benefited 235 households or about 1,000 people in Shanghang County and Wuping County. The project was approved by the joint inspection of Fujian Province Disabled Persons

	Welfare Foundation.
<b>Supporting the Impoverished Students</b>	RMB4.6 million was donated to the campaign for carrying out an array of charitable activities, namely the “Assistance to Teaching and Learning of Fuzhou University Zijin Mining Institute”, “Supporting Programme for Impoverished Undergraduates from Shanghang County”, “Supporting Programme for Impoverished High-school Students from Shanghang County”, “Project Hope Student Supporting Programme: Let the Dreams Come True in Longyan City”, “Renovation Scheme for the Infrastructure of Schools at Remote Rural Areas of Shanghang County”, etc. More than 500 underprivileged students and over 10 schools were benefited from the campaign.
<b>Targeted Poverty Alleviation - Contributing to New Countryside Development</b>	<ul style="list-style-type: none"> <li>● The Group donated RMB8.75 million to the villages near Zijinshan gold and copper mine for new countryside development and poverty alleviation;</li> <li>● The Group donated RMB5 million to Habahe County, Xinjiang for new countryside development and poverty alleviation;</li> <li>● The Group donated RMB3.32 million to the surrounding impoverished villages in Laoshan, Malipo County, Yunnan Province for poverty alleviation;</li> <li>● The Group donated RMB1.3 million to Dongping Village, Chongli County, Hebei for assisting farmers and agricultural industry;</li> <li>● The Group donated RMB1 million to Wangsi Village, Luoba Town, Li County, Gansu for water diversion project;</li> <li>● The Group donated RMB0.9 million to Guoluo Prefecture, Qinghai for poverty alleviation and assistance to impoverished groups.</li> </ul>
<b>Charitable Educational Programme of Zijin Mining Institute</b>	In 2007, the Company cooperated with Fuzhou University to launch a charitable educational programme, and donated RMB150 million to set up a Zijin Mining teaching base. Every year, the Company also donated RMB3 million to sponsor scholarship for students, teaching awards and operational funding of the institute, and assigned professional personnel to participate in the teaching and management of the institute. Zijin Mining Institute adopted a “3+1”, double-lecturer teaching module. The “Zijin Model” of “enterprise supporting the development of education, participating in teaching and inspecting the

	results of teaching” was selected by the Ministry of Education of the PRC as one of the target projects for Development of Distinguished Engineers. Such model also received the Award of Excellence – Innovative and Classic Case for National Education Reform, and received positive response from wide spectrum of the society.
<b>Charitable Educational Campaign for Geological Civilisation</b>	On every World Earth Day (22 April) since 2014, educational programmes were held at schools by the Company’s volunteers to help children and youngsters learn more about geological prospecting and exploration of mineral resources, the latest trends in the relevant aspects, and the significance of developing mines in a scientific approach. It is important to educate children and youngsters about the importance of resource conservation and environmental protection, teaching them to be the Earth’s friend.

## Social responsibility in overseas regions

Under the guidance of the “One Belt, One Road” national policy, the Company not only expands its overseas presence actively, but also strives to prioritise social responsibilities in its overseas projects, with the aims of creating higher social and

economic value for the local communities, ensuring full compliance with local laws and regulations, respecting local cultures, localising the workforce, protecting the environment, participating in charity work, and promoting the prosperity of local communities from various aspects. The Company specifically set up the Overseas Business Department for managing the investment, construction, operation, environmental protection and work safety of overseas projects. The Overseas Business Department is staffed with professionals specialising in environmental protection, who are responsible for carrying out assessment on environmental protection and work safety of overseas projects, and engaging professional third-party



- Total volume of metal resources controlled by overseas projects: gold>50%, copper>60%, zinc>10%;
- Overseas projects produced about 40% and one-third of the Group’s total mine-produced gold and mine-produced zinc respectively;
- Overseas projects account for more than 50% of the Group’s profit before tax.



institutions to provide technical services in accordance with the laws and regulations of the countries in which the projects operate. Reporting mechanism of environmental and safety incidents of overseas projects was established to obtain instant updates of and maintain effective control on overseas projects.

By the end of 2016, the Company has a diversity of investments across 8 overseas countries or regions, namely Australia, South Africa, the DR Congo, Papua New Guinea, Peru, Tajikistan, Kyrgyzstan and Russia. Overseas enterprises of the Group employed a total of 7,736 workers, in which 7,339 were foreign employees. The localisation level of staff at overseas enterprises reached as high as 95%.

**Case studies on community contribution and environmental protection of the Company's overseas entities:**

Overseas entity	Community contribution	Environmental protection
<b>Norton Gold Fields Ltd. (Australia)</b>	Organised field trips for students from Western Australian School of Mines, provided trainings for future mining professionals.  Sponsored local charity programmes for children in Goldfields region, launched “The Norton Saturday Morning Club” campaign, which organised learning and development activities for 15 to 20 disabled children.	Collected underground water data quarterly, conducted annual assessment on the health of vegetation and tailings pool audit, collected data of air emission and energy efficiency, etc.  Completed basic environmental studies at various mining sites, the subject of the studies ranged from vegetation, animals, monument and heritage, to geochemistry, underground water, etc.
<b>Russia Longxing Co., Ltd. (Tuva, Russia)</b>	Efforts were made to promote the social and economic development of local area by investing in local public transport, supporting deer breeding funds, assisting local cultural business, establishing the first Genghis Khan martial	A sound system for inspection and supervision on environmental protection is in place to carry out regular checking on the performance of environmental protection. Moreover, to foster a civilised culture in production, measures



	art school in the country and so on.	for environmental protection were thoroughly implemented, vegetation was under good care, construction waste was properly treated and pollution generated in production process was reduced.
<b>Altynken Limited Liability Company (Kyrgyzstan)</b>	The company and the government of Kemin District jointly established the “Kemin Development Fund”. US\$7.5 is contributed to the fund to match every ounce of gold output, for the purpose of supporting poverty alleviation in Kemin District and the surrounding rural areas. As at the end of 2016, the company had contributed US\$500,000 to the fund.	“Respect life, safety first” is the company’s core policy on safety. The enterprise’s survival and further development are dependent on the two cornerstones of safety and environmental protection. Therefore, in accordance with the relevant standards in Kyrgyzstan, the company has established a sound management system for environmental protection and safety, stepped up investments and enhanced management in the relevant aspects.
<b>JV Zeravshan LLC (Tajikistan)</b>	The company provided supports to the impoverished workers, elderly persons, schools, hospitals, surrounding villages and so on in the community. Financial assistance to public services was also provided. Moreover, the company contributed US\$4.96 million to build kindergartens locally.	A well-sustained environmental management system is in place. Key initiatives include reusing the wastewater generated in production process, formulating policies to promote economical use of land resources, and rehabilitating the land used in production in a timely manner.
<b>Barrick (Niugini) Limited (Papua New Guinea)</b>	In 2016, the company’s social responsibility expenses totalled US\$95 million. Various plans were formulated for supporting the SMEs in the	Tailings management of the Porgera mine is always an area of concern among investors. The mine has developed a sound environmental protection,

	<p>community, promoting local procurement and localisation of workforce. Sustainable long-term relations were established with local SMEs, and efforts were made to improve local people's livelihood and health, support local economic development and promote employment of women.</p>	<p>monitoring and controlling system which has been approved and is strictly monitored by the government of Papua New Guinea. In which, the tailings from processing and refinery are comprehensively used as backfilling materials for underground mining, reducing the total volume of tailings discharge by 12%. The tailings, after a comprehensive treatment of cyanide destruction, neutralisation and precipitation, meet the standards set by the International Cyanide Management Institute. For the water quality at the downstream of the river where tailings are discharged, the volume of heavy metals and the ecology of the river are fully inspected and tracked to ensure that the environmental and ecological conditions meet the international standards.</p>
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## Outlook for 2017

In 2017, the world's economy will be confronted with greater uncertainty. In particular, profound impacts on global politics and economy are anticipated, as the new administration of the United States will be introducing an array of new policies in economic and political aspects. On the other hand, the Chinese government will transit to a new term in 2018. Being the most important force driving the global economic growth, the Chinese economy is likely to maintain a medium to high speed of growth. China is currently in a critical stage of reform, a deeper supply-side structural reform will be carried out this year. As such, Zijin Mining will continue to uphold its core value of "creating wealth in harmony, balancing development of the corporation, the employees and the society", have higher regard to the enterprise's social responsibility, attach greater importance to safety and environmental protection, emphasise eco-

development of mines, promote integration of corporate responsibilities, enhance communication and co-ordination with stakeholders, improve community investment and policies for assistance, and drive economic and social development of local communities; the Company will also actively carry out charity work and activities for targeted poverty alleviation; build up the image of a responsible global corporation, and fully enhance the Company's soft power and sustainability by setting goals on higher targets.

24 March 2017

## Opinion and feedback

Thank you for reading this report. To improve the Company's work for social responsibility and enhance our performance of social responsibilities, we wish to hear your opinion and suggestions. Please spare some time to complete an evaluation of the report for our further improvement. It would be appreciated if you could answer the questions in the list below and send your feedback to us:

1. What is your overall rating on this report?
2. What is your opinion on the quality of information disclosed in this report?
3. Which part(s) of the report interest(s) you most?
4. What other information do you think should be included in this report?
5. Do you have any suggestion on our future work for social responsibility and the publication of social responsibility reports?

### Your information

Name/company name/job title:

Telephone number/email address:

### Please send us your opinion and feedback to:

Social Responsibility Department, Zijin Mining Group Co., Ltd.\*

Address: Room 1410, Zijin Building, 1 Zijin Road, Shanghang County, Fujian Province, the PRC

Telephone number: 0597-3998038

Postal code: 364200

Email: zjky@zjky.cn

## **Part II. 2016 Environmental Report**

## 1 Chairman's statement



Since the 18th National Congress of the Communist Party of China, the Central Committee of the Communist Party of China and the State Council of the PRC have placed greater strategic significance on the development of ecological civilisation, and included it into their “Five in One” general roadmap. The General Secretary, Mr. Xi Jinping, repeatedly stressed the ideas of “the environment means well-being, green mountains mean beauty, and blue sky represents happiness”, “to strictly follow the basic state strategy of resource conservation and environmental protection” and “to foster eco-development and eco-lifestyle”. The Premier, Mr. Li Keqiang, reiterated that we must strengthen comprehensive environmental management, improve ecological civilisation, promote eco-development and determinedly seek win-win solutions for economic development and environmental improvement. In an active response to the state’s strategic requirement, Zijin Mining Group Co., Ltd.\* (“Zijin Mining” or the “Company”) relentlessly pursues the beliefs of “life comes first, give priority to environmental protection” and “protecting the green mountains and clear water while developing treasured mines” in the development of ecological civilisation; the Company considers environmental protection and the ecology as cornerstones for the enterprise’s survival and further development, resolves the conflicts between development and environmental protection, continues to increase contribution to environmental protection and ecological conservation, enhances environmental protection management, and achieves sustainability.

The year of 2016 marks the beginning of the “Thirteenth Five-year Plan”. In order to raise the overall management of environmental protection, the Company promoted transformation of its environmental management by ensuring strict conformity to environmental order, formalised and standardised management of the enterprise, and emphatically corrected environmental

practices and introduced benchmarking management. As a result, a brand new corporate image was established, and the awareness of keeping orders, paying attention to details and focusing on management was deeply rooted among our staff.

The Company attached high importance to “eco-development” and incorporated the idea of “eco-mining” into every aspect of mine management. It speeded up the recovery of vegetation at mines, developed green mines, and promoted and created favourable conditions for eco-development. As at the end of 2016, a total of 9 mining entities of the Group have received the honourable title of “National Green Mine Pilot Unit”. Xinjiang Zijin Zinc was selected as the “Green Mine Pilot Unit of the Autonomous Region”. The Zijinshan gold and copper mine in Fujian Province and the Xinjiang Ashele copper mine were included in the list of “National Industrial Tourism Demonstration Sites”. Zijinshan gold and copper mine, being within the first batch of “National Mining Park”, commenced operation.

One should always aim high in his pursuit. The Company will continue to learn more advanced environmental protection ideas during the “Thirteenth Five-year Plan”, strengthen “red-line awareness”, use innovative green technology to guide ecological and environmental management, strengthen management at the sources, keep using advanced environmental protection and management technologies, strengthen the team of personnel specialising in environmental protection, and improve environmental protection, to realise highly efficient conversion and utilisation of energy and resources, and achieve the strategic goals of a win-win situation between the corporation and the environment, and eco-development of the corporation.

## 2 Overview of the Company



### 2.1 Information of the Company

Registered address: 1 Zijin Road, Shanghang County, Fujian Province, the PRC

Business registration number: 91350000157987632G

Authorised representative: Chen Jinghe

Industry: Mining and processing of mineral products

Office address: 1 Zijin Road, Shanghang County, Fujian Province, the PRC; Tower B, Zhonghang Zijin Plaza, No. 1811 Huandao Road East, Siming District, Xiamen City, Fujian Province, the PRC

Business scope: Mainly engaged in the exploration and mining of gold, copper, zinc and other mineral resources, supplemented by refining, processing and sales of related products. Exploitation of gold, copper and zinc mineral resources is the core component of the Company's business, and other metals, such as tungsten and iron, are developed as supplementary products. The Company also covers refining and processing businesses to a moderate extent, as well as other mining-related businesses such as research and development, construction, trade and finance, etc.

Originated in Zijinshan gold mine, Fujian Province in 1993, the Company has become a sizeable mining group focusing on the exploration and development of gold and other metal mineral resources after more than two decades of development. Its shares are dual-listed in Shanghai and Hong Kong (A+H shares). In 2016, it ranked the 1,175th place in "Forbes Global



2,000 Leading Companies”, the 9th place in global metal mining corporations, the 3rd place in global gold corporations, the 78th place in “Fortune’s 500 Leading Chinese Companies” and the 13th place in PwC’s “40 Largest Mining Companies in the World”. It was also honoured as the “Best Mining Company in Asia” by a league of authoritative global mining magazines in April 2016.

The Company has formed a product portfolio substantially characterised by gold, copper and zinc (lead). Presently, the Company has invested in more than 20 provinces in China and a range of overseas regions such as Australia, Papua New Guinea, Russia, Tajikistan, Kyrgyzstan, the DR Congo and Peru, etc. In the PRC, it is one of the largest producers of gold, copper and zinc, and a preeminent tungsten and iron producer. It is one of the corporations having the best economic efficiency in Chinese gold and non-ferrous metals industry. In 2016, the Company realised operating income of RMB78.851 billion, representing an increase of 6.12% over the same period last year; net profit attributable to owners of the parent was RMB1.840 billion, representing an increase of 11.12% over the same period last year.

The Company insists on using technology to guide its development. It possesses leading positions in China in the aspects of geological exploration, hydrometallurgy, technological research on the processing and refining of low-grade, refractory gold and copper ores and large-scale development and utilisation, etc. Innovation in science and technology has become the core competitiveness to support the Company’s development. The Company owns high-level research and development platforms and scientific research and design units including State Key Laboratory, national-level enterprise technology centre, workstations for academicians’ scientific research, workstations for post-doctors’ scientific research, technology companies and design companies, etc. The Company possesses a batch of self-developed intellectual property rights and technology which are dedicated to its own mines, being highly applicable and effective. The Company was responsible for several national and provincial science and technology development plans, such as National Technology Supporting Scheme, 863 Project, 973 Project, and Innovation Development Scheme.

Zijin Mining upholds the corporate value of “creating wealth in harmony, balancing development of the corporation, the employees and the society” and actively carries out our social responsibility. The Company founded Zijin Mining Charity Foundation with a capital contribution of RMB200 million. The Company received the award of “Outstanding Contribution in Corporate Social Responsibility” for its outstanding performance in carrying out corporate social responsibility.

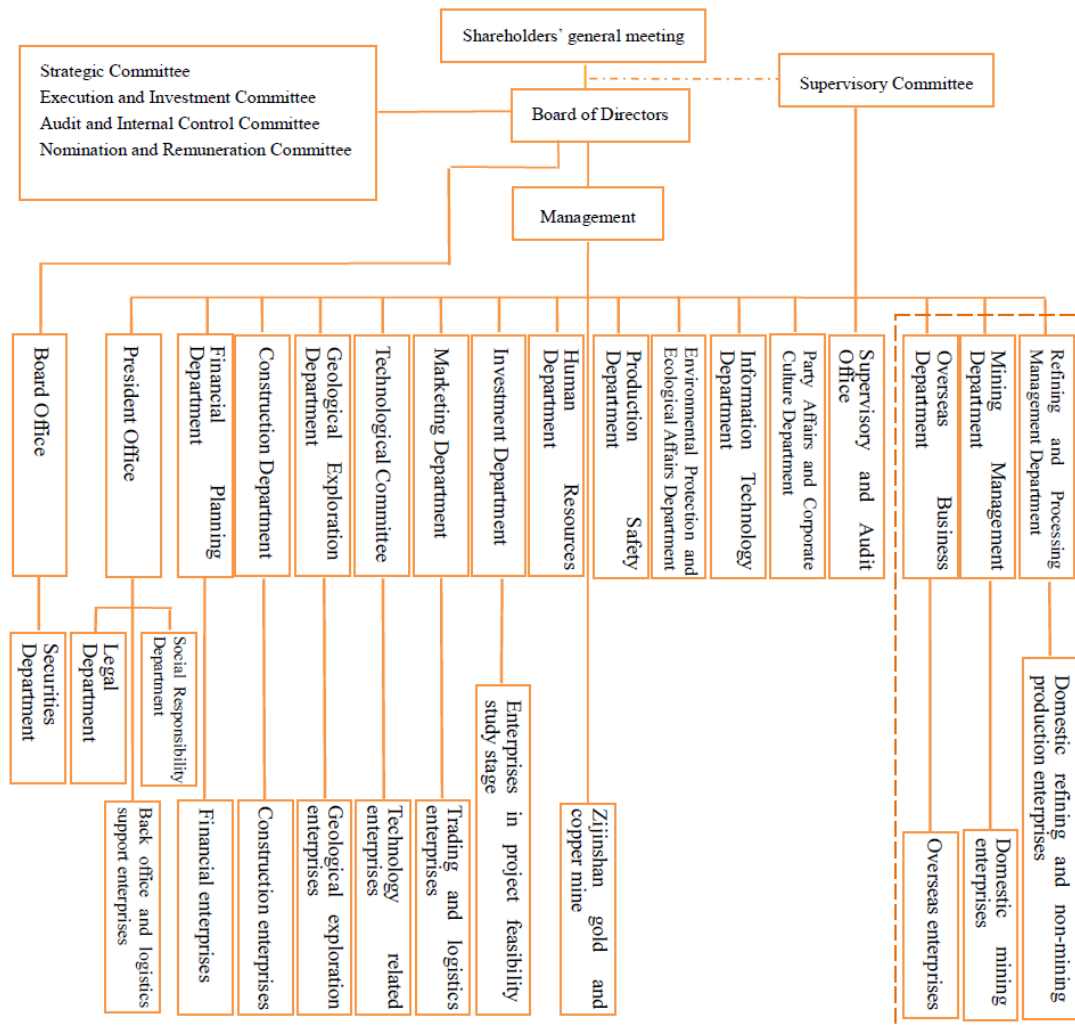
## **2.2 Corporate culture**

- Corporate tenet: found business on mining, make contribution to the country and the people

- Mission: assist the economic growth of China and the world by providing high-quality mineral resources and become an important force in the global metal mining industry
- Vision: become a globally important gold and metals producer, gain broad recognition from mining counterparts, stakeholders and employees worldwide
- Strategic goals: build a mega-size international mining corporation with advanced technology and efficiency, constantly create value for the society and investors, and benefit our employees and stakeholders at the same time
- Value: create wealth in harmony, balance development of the corporation, the employees and the society
- Corporate spirit: found the business by overcoming hardships with exploratory and innovative spirits
- Operational philosophy: earn respect with high-quality products, achieve mutual benefits and win-win situation
- Operational belief: people orientation, strive for excellence
- Rules for employees: integrity, diligence, collaboration, and friendship
- Policy on environmental protection and safety: life comes first, give priority to environmental protection

### **2.3 The Company's organisational structure**

The organisational chart of Zijin Mining is as below.



**Organisational chart of Zijin Mining Group Co., Ltd.\***

The information disclosed in this report covers 27 operational or production-type branch companies (subsidiaries) of the Company, which are engaged in metallurgy and mining of mineral products. Their company names, locations, principal business and other information are set out in the table below.

**Table on production status of enterprises**

No.	Company name	Nature of operation and principal business	Company address
1	Zijinshan gold and copper mine of Zijin Mining Group Company Limited*	Gold mine: ore processing capacity of 115,000t/d Copper mine: ore processing capacity of 63,000t/d	Shanghang County, Longyan City, Fujian Province

No.	Company name	Nature of operation and principal business	Company address
2	Zijin Mining Group Gold Refinery Company Limited	Electrowinning of gold with desorption of gold-loaded carbon: 19t/a Purification and extraction capacity: 40t/a Bullion casting capacity: 100t/a	Shanghang County, Longyan City, Fujian Province
3	Zijin Copper Company Limited	Copper refinery: 280,000t/a	Shanghang County, Longyan City, Fujian Province
4	Fujian Zijin Copper Company Limited	Copper processing, high-concentration copperplate: 20,000t/a High-quality refrigeration copper pipe: 30,000t/a	Shanghang County, Longyan City, Fujian Province
5	Wuping Zijin Mining Company Limited	Mining and processing of gold and silver ores: ore processing capacity of 3,000t/d	Wuping County, Longyan City, Fujian Province
6	Fujian Jinshan Wearproof Materials Company Limited	Steel grinding balls: 4,000t/a	Wuping County, Longyan City, Fujian Province
7	Fujian Zijin Mineral Processing Chemicals Company Limited	Chemicals for copper extraction: 300t/a	Shanghang County, Longyan City, Fujian Province
8	Bayannaoer Zijin Non-ferrous Metals Company Limited	Zinc refinery: 200,000t/a Self-owned power plant: 2×50 MW	Wulatehouqi, Bayannaoer City, Inner Mongolia
9	Wulatehouqi Zijin Mining Company Limited	Mining and processing of lead and zinc at Dongshengmiao: 630,000t/a Mining and processing of lead and zinc at Sanguikou: 3.3 million t/a	Wulatehouqi, Bayannaoer City, Inner Mongolia
10	Inner Mongolia Jinzhong Mining Company Limited	Mining and processing of gold ores: 2.5 million t/a	Sunitezuoqi, Xilinguole League, Inner Mongolia
11	Chongli Zijin Mining Company Limited	Mining and processing of gold ores: 2,500t/d	Chongli County, Zhangjiakou City, Hebei Province

No.	Company name	Nature of operation and principal business	Company address
12	Luoning Huatai Mining Development Company Limited	Mining and processing of gold ores: 400t/d + 480t/d	Luoning County, Luoyang City, Henan Province
13	Luoning Zijin Gold Refinery Company Limited	Gold refinery: concentrates of 200t/d	Luoning County, Luoyang City, Henan Province
14	Luoyang Zijin Yinhui Gold Refinery Company Limited	High-purity gold refining: 30t/a	Luoyang City, Henan Province
15	Luoyang Kunyu Mining Company Limited	Mining and processing of gold ores: 250t/d+480t/d+450t/d	Luoning County, Luoyang City, Henan Province
16	Shanxi Zijin Mining Company Limited	Mining and processing of gold ores: 650t/d (gold ores, zinc ores)	Fanshi County, Xinzhou City, Shanxi Province
17	Longnan Zijin Mining Company Limited	Mining and processing of gold ores (current capacity): 450t/d Flotation processing of tailings: 6,000t/d	Li County, Longnan City, Gansu Province
18	Heilongjiang Duobaoshan Copper Company Limited	Mining and processing of copper (molybdenum): 25,000t/d (copper concentrates, molybdenum concentrates)	Nenjiang County, Heihe City, Heilongjiang Province
19	Hunchun Zijin Mining Company Limited	Mining and processing of gold and copper ores: 15,000t/d (gold concentrates, copper concentrates) Copper refinery: 100,000t/d	Hunchun City, Jilin Province
20	Xinjiang Ashele Copper Company Limited	Mining and processing of copper ores: 4,500t/d + 1,500t/d	Habahe County, Aletai Region, Xinjiang
21	Xinjiang Jinbao Mining Company Limited	Mining and processing of iron ores: 2.4 million t/a + 3 million t/a	Fuyun County, Aletai Region, Xinjiang
22	Xinjiang Zijin Zinc Industry Company Limited	Mining and processing of lead and zinc: 10,000t/d	Wuqia County, Kashgar City, Xinjiang
23	Qinghai West Copper Mining Company Limited	Mining and processing of copper: 2.4 million t/a	Maqin County, Guoluo Prefecture, Qinghai Province

No.	Company name	Nature of operation and principal business	Company address
24	Zijin Mining Group Qinghai Company Limited	Treatment capacity of cinders generated from acid-making procedures: 500,000t/a Vitriol products: 400,000t/a	Xining City, Qinghai Province
25	Wenshan Malipo Zijin Tungsten Group Company Limited	Mining and processing of tungsten ores: 2,000t/d	Malipo County, Wenshan City, Yunnan Province
26	Yuanyang Huaxi Gold Company Limited	Mining and processing of gold ores: 200t/d + 450t/d	Yuanyang County, Honghe Prefecture, Yunnan Province
27	Guizhou Zijin Mining Company Limited	Processing capacity of gold ores: 66,000t/a	Zhenfeng County, Qianxinan Prefecture, Guizhou Province



**Zijinshan gold and copper mine**



**Bayannaoer Zijin Non-ferrous Metals**

**Hunchun Zijin Mining Company Limited**

**Company Limited**



**Xinjiang Ashele Copper Company  
Limited**



**Xinjiang Jinbao Mining Company  
Limited**

## **2.4 Zijin's products**

The Company is a multi-business member of the Shanghai Gold Exchange as well as a member of the Shanghai Futures Exchange. Our products earn good reputation and high recognition in the industry. The Company's "ZIJIN" brand gold bullion, "ZIJIN" brand silver bullion and "ZIJIN" brand copper cathodes received the title of "Famous Brand Product of Fujian Province". The technical parameters of the qualities of gold bullion, silver bullion and copper cathodes all meet and exceed the technical indicators of national standards GB/T4134-2015 (gold bullion), GB/T4135-2002 (silver bullion) and GB/T467-2010 (copper cathode). 100% of the gold bullion, silver bullion and copper cathodes delivered by the Company to the Shanghai Gold Exchange and Shanghai Futures Exchange for settlement purpose reached the passing grade. All of the technical indicators of "ZIJIN" brand zinc bullion meet the national standard GB/T470-2008. "ZIJIN" brand zinc bullion received the title of "Famous Brand Product of Inner Mongolia", and was registered as a brand for settlement on the Shanghai Futures Exchange and London International Financial Futures and Options Exchange. Throughout the years it has received numerous positive feedbacks from the downstream customers.

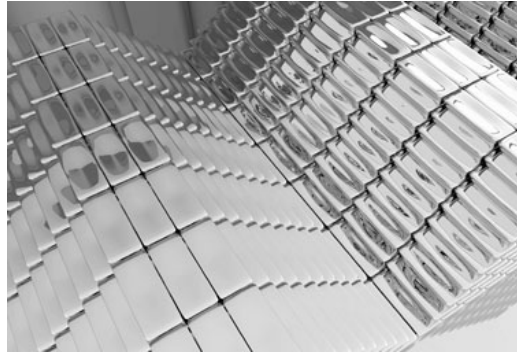
On 15 February 2016, Zijin Copper received a confirmation letter issued by the Copper Committee of London Metal Exchange (LME), pursuant to which "ZIJIN" brand grade-A copper produced by Zijin Copper officially became a registered brand for settlement on the LME. The successful registration means that the copper cathodes produced by Zijin Copper gain recognition from international authoritative institution and access to the global market.

In September 2016, the "ZiJin" brand silver bullion produced by Zijin Copper was successfully registered on the Shanghai Futures Exchange. After the successful registration, the silver bullion produced by Zijin Copper can be used for settlement for the standard contracts under the Shanghai Futures Exchange. This further expands the product's sales channel and promotes corporate brand name.





**Gold bullion**



**Silver bullion**



**Zinc bullion**



**Copperplates**

## **2.5 Significant events of the Company in 2016**

### **(1) The Company explored further extension into the business chain of environmental protection**



On 29 April 2016, Zijin Mining Group Capital Investment Company Limited entered into a



contract with Changsha Science Environmental Technology Co., Ltd. (“Changsha Science”) in Xiamen. Focusing on the mining and refining industries and the capital market within and outside China, the parties will integrate resources and complement each other’s strengths to enhance the management and study on heavy metal pollution and achieve a powerful alliance.

The signing of the contract signified that the Company took one important step forward to explore and extend its business from mining and refining to environmental protection. It is a necessary path for the Company to fulfill its social and ecological responsibility, turn waste into treasure and raise competitiveness in the course of internationalisation. The cooperation between the Company and Changsha Science will vitalise the Company’s environmental protection technologies and provide a broader platform for industrial application of the Company’s environmental protection technologies.

## **(2) Conclusion of technological innovation project of Altynken in Kyrgyzstan**



On 20 May 2016, the Company’s subsidiary, Altynken, completed the technological innovation project for its tailings pool and copper-sulfur separation technique. They were inspected and approved by the authorities responsible for ecological and technological safety in Kyrgyzstan.

## **(3) Zijinshan copper mine commenced large-scale development, the copper business of Zijin Mining is poised to take off**

On 7 October 2016, Zijinshan completed its 25,000 tonnes/day copper processing project and commenced production, signifying the beginning of large-scale development of the Zijinshan copper mine. The project’s completion and commencement will significantly raise the production capacity and promote sustainable development of the mine. In terms of environmental protection technique, since the project is characterised as low-grade gold and copper associated with other resources, the flotation processing technique is applied, as such

technique can enable a higher recovery rate and comprehensive recovery of associated elements, such as gold, silver and sulfur. This will not only enhance the comprehensive utilisation of resources, but will also resolve the environmental protection issues and reduce the production costs. The project will set a new example for the use of low-grade resources in China. At the same time, the commencement of the project has become a milestone indicating the rise of the Company's copper business, which is one of the Company's three major business segments.

**(4) Guizhou Zijin's high-pressure pre-oxidation system successfully conducted pilot run with materials loaded in the process**



On 15 November 2016, Guizhou Zijin's hot-pressure pre-oxidation project, with a designated processing capacity of 450t/d and being the first high-pressure pre-oxidation system for gold in China, completed pilot run with materials loaded in the process. 18kg of gold was successfully produced. This indicated that the Company has broken the long-standing monopoly of high-pressure pre-oxidation technology for refractory gold ores by Western companies. Such technology not only increased the comprehensive recovery rate of gold by 30%, but also created new economic value for approximately 50 tonnes of gold resources which were unusable previously. Moreover, since the industrial application of the project was originated from an eco-friendly environmental protection technique, emission of hazardous gases can be effectively prevented, wastewater generated from the production process can be reused and waste materials can be disposed of and retained securely. This is a breakthrough of the Company in its transition from traditional mining to a more sophisticated and eco-friendly type of mining, setting a new example for domestic mining industry in the aspect of ecological and environmental protection, and drives an overall technological advancement within the gold mining industry.

#### **(5) Rio Blanco project in Peru entered a new stage of development**



On 20 November 2016, the Ministry of Energy and Mines of Peru entered into an agreement with the Company for promoting the development of mining and refining activities to advance the progress of the Rio Blanco project, showing the support of the Peruvian government to the Rio Blanco project. The Rio Blanco project has already made significant achievements in the aspects of efficiency enhancement, cost control, safety, environmental protection and maintenance of community relationship, etc.

### **3 Environmental management**

#### **3.1 Environmental protection beliefs**

Environmental protection belief: protecting the green mountains and clear water while developing treasured mines.

Policy on environmental protection and safety: life comes first, give priority to environmental protection.

Concepts of environmental protection and development: never pursue economic development at the expense of the environment.

Concepts of environmental protection and sustainability: environmental safety is the inviolable bottom line of the enterprise.

Concepts of environmental protection and production: utilise natural resources in a reasonable manner and develop circular economy emphatically.

#### **3.2 Environmental management hierarchy**

The Company gives top priority to environmental protection. It has developed and perfected its environmental protection management system comprising the headquarters of the Group,

subsidiaries (branch companies), production lines (factories) and work teams, in accordance with the requirements of the national laws and regulations, technical specification, technical standards and policies in respect of environmental protection. To achieve a more professional management, the Company established the Environmental Protection and Ecological Affairs Department, which has a number of subordinate offices, namely the Environmental Monitoring Office, Ecology and Water Conservation Office and General Office. These offices are responsible for the ordinary affairs relating to environmental protection and ecological management. Each branch company (subsidiary) has set up its own environmental protection management function to manage the specific affairs relating to environmental protection. All production plants of each branch company (subsidiary) are staffed with environmental protection supervisors, who are responsible for managing environmental protection of the production plants. There are environmental protection personnel for each production section.

Each branch company (subsidiary) is governed by a two-level hierarchy for supervision, statistical data collection and assessment. They also entrust local environmental monitoring stations in the cities and counties in which their operations are based to monitor major pollutants and special types of pollutants regularly according to their own monitoring scheme.

### **3.3 Certification of environmental management system and development of circular economy**

#### **3.3.1 Certification of environmental management system**

The Company actively applies for ISO14001 certification for its environmental management systems. By strengthening “6S” management of working sites, maintaining good environmental order and improving conditions of work sites, employees are able to carry out their work in an eco-friendly manner. The Company’s subsidiaries, namely the gold refinery, Zijinshan gold and copper mine, Zijin Copper Company Limited, Bayannaoer Zijin Non-ferrous Metals Company Limited, Hunchun Zijin Mining Company Limited, Fujian Zijin Copper Company Limited, Xinjiang Ashele Copper Company Limited and Qinghai West Copper Mining Company Limited, etc. have obtained certification for their environmental management systems.

#### **3.3.2 Development of circular economy**

The Company attaches great importance to the building of circular economy. Through independent research and development, and cooperation with scientific research institutes, the Company leveraged on scientific research and technological innovation and obtained positive outcomes in the utilisation of low-grade ores, ores with associated materials, refractory ores, tailings, waste materials from refinery and other resources. The Company also promoted comprehensive recovery of various kinds of valuable elements from raw materials, established effective systems for reusing resources, and raised the comprehensive recovery rate of resources.

For example, in 2016, Zijinshan gold and copper mine's programme for comprehensive reuse of its copper-containing acidic wastewater successfully reused 7.54 million m<sup>3</sup> of high-concentration copper-containing acidic wastewater and effectively recovered 5,721.37t of copper metal, and it also reused 2.17 million m<sup>3</sup> of medium-concentration copper-containing acidic wastewater and recovered 450t of copper metal. A special approach characterised by “deploying the same bucket of water for multiple uses, segregated treatment, first-rain water retention and cascade use” was adopted by Zijin Copper in the use of water resources. As a result, 97.78% of the water used in production activities was reused.

### **3.4 Response to climate change**

The Company highly concerns about the impact of climate change caused by greenhouse effect on the Earth. It proactively and thoroughly followed the carbon emission guidelines and policies promulgated by the relevant state authorities, incorporated the idea of low carbon emission into the Company's production and operation, and carried out technological innovation on energy conservation, disposed of obsolete equipment, introduced large-scale energy conservation equipment and optimised mining, processing and refining techniques. Examples of the steps taken include conversion of the frequency of electricity, management and compensation of the harmonics of electricity, installation of new Y-series electric generators and S7 transformers, generating electricity with surplus energy and heat, installation of LED lamps, etc. Vegetation was also recovered at the mines, the use of afforestation as carbon sink contributed to the reduction of CO<sub>2</sub>e emission by approximately 15,000 tonnes per year.

### **3.5 Conservation of biodiversity**

Throughout its production and operation, the Company pays close attention to the conservation of wildlife near its production sites. It required all branch companies (subsidiaries) to carry out publicity and educational activities on wildlife protection, and prohibited staff from trading, killing and eating wild animals. Additionally, the Company required each branch company (subsidiary) to refrain from occupying the natural habitat of animals, wetland, forests and wildlife corridors in the development of mines. They were also required to recover vegetation at bare areas, carry out afforestation, greening and reclamation, etc., following the sequence of “maintenance and rehabilitation”. In 2016, the local branch companies (subsidiaries) invested a total of RMB81.3546 million for water and ecological conservation. 214.4 hectares of vegetation were recovered. Up to the present, RMB1.364 billion was used for water conservation and recovery of vegetation. 1,730.4 hectares of vegetation were recovered, and 3,836,000 trees of various kinds were planted.





A billboard for wildlife conservation publicity and educational activities being displayed by Xinjiang Zijin Zinc



A signature campaign in the theme of “protecting the wildlife, building harmonious homes together” being launched by Hunchun Zijin



**A greening activity being organised by Zijin Copper at the vacant land in its plant**



**A winter tree-planting activity being organised by Xinjiang Ashele Copper**





**The natural habitat of Zijinshan**



### **3.6 Environmental protection training and information disclosure**

#### **3.6.1 Training on environmental protection**



On 16 and 17 June 2016, the Company organised training sections relating to environmental protection management at its headquarters. Approximately 450 personnel specialised in environmental protection management attended the training. Experts from China National Environmental Monitoring Centre, University of Toronto, Beijing Lark World, etc., were invited to give presentations on environmental monitoring and management, soil remediation, water conservation and ecological management, emission control for small-sized furnaces, water discharge of underground mines, case study on emergency response to outbreak of the typical environmental incident in 2015, as well as the latest environmental protection policies such as Action Plan for Prevention and Control of Soil Pollution, Action Plan for Prevention and Control of Air Pollution, and the newest technology used in environmental protection management for construction projects, environmental protection post-activity assessment, etc.

#### **3.6.2 Information disclosure on environmental protection**

Ever since the Company became publicly listed, it has strictly complied with the Guidelines for Environmental Information Disclosure of Listed Companies (Consultation Paper), Administrative Policy on Disclosure of Environmental Information (Tentative) and Policy on Disclosure of Environmental Information by Enterprises and Public Institutions (Bu Ling No. 31) issued by the Ministry of Environmental Protection of the People's Republic of China and the CSRC, in the formulation of its corporate environmental information disclosure policy. Environmental information of the enterprise are disclosed regularly on the Company's website to enable a stronger supervision by the public on the enterprise's environmental practices, and raise the environmental protection awareness of investors and shareholders. The Company

releases its social responsibility report annually, in which specific sections on environmental protection would contain information relating to the Company's environment protection beliefs, relevant measures, eco-mining, sustainable development, energy consumption management, etc. It also releases environmental report annually, the content of which covers the Company's basic information, overview of the Company's environmental management, compliance with environmental protection laws and regulations, etc.

## **4 Compliance with environmental protection laws and regulations**

### **4.1 Environmental impact assessment and implementation progress of the “three simultaneous” policy**

In 2016, Zijin Mining continued to strengthen supervision over the environmental impact assessments and inspections at the conclusion stage of its new renovation or expansion projects. The branch companies (subsidiaries) were required to strictly comply with the “Environmental Impact Assessment Law of the People's Republic of China” to carry out environmental impact assessment tasks of their construction projects. In the project design, construction and operation process, the “three simultaneous” policy was implemented to ensure smooth development of engineering projects. During the reporting period, a range of projects including Zijinshan copper mine's technological innovation project for comprehensive resource utilisation, Zijin Copper's unleashing potential and raising efficiency project for copper refining business, Xinjiang Ashele's mining and processing project, Hunchun Zijin's multi-metal comprehensive recovery of complex gold concentrates project, and Luoning Huatai's construction project for a 480t/d gold processing plant and a 400t/d silver and multi-metal processing plant passed environmental inspection successfully at their conclusion; Luoyang Kunyu's expansion project for the 450t/d processing plant at its Wulong gold mine, its tailings pool construction project at Cilenggou (a replacement pool for Chenpogou), and Zijin Copper's capacity expansion project for comprehensive recovery of end materials in production obtained environmental assessment approval; Guizhou Zijin Shuiyindong gold mine's 450t/d exploration and utilisation project for low-grade gold resources and Xinyi Zijin Dongkeng gold mine's water and soil conservation facilities, etc., passed water conservation inspection successfully at their conclusion; and Zijinshan Caikeng tailings pool's proposal for water and soil conservation obtained approval of water conservation authorities.

**Implementation progress of environmental impact assessment and “three simultaneous” policy among different branch companies (subsidiaries) in 2016**

No.	Name of entity	Name of construction project	Details of environmental impact assessment			Environmental protection inspection at project conclusion		
			Date of approval	Authority granting the approval	No. of approval document	Date of approval	Authority granting the approval	No. of approval document
1	Zijinshan gold and copper mine	Comprehensive utilisation of copper resources and technological innovation project	7 July 2009	Department of Environmental Protection of Fujian Province	Minhuanbaojian [2009] No. 54	29 April 2016	Longyan Environmental Protection Bureau	Longhuanshen [2016] No. 29
2	Zijin Copper	Unleashing potential and raising efficiency project of the 200kt/a copper refining facility	17 April 2015	Longyan Environmental Protection Bureau	Longhuanweihangzi [2015] No. 01	25 May 2016	Longyan Environmental Protection Bureau	Longhuanweihangzi [2016] No. 1
		Capacity expansion project for comprehensive recovery of end materials in production	5 August 2016	Shanghang County Environmental Protection Bureau	Hanghuanping [2016] No. 73	Under construction		
3	Xinjiang Ashele	Mining and processing project	17 March 2000	Ministry of Environmental Protection of the PRC	Huanhan [2000] No. 113	25 January 2006	Ministry of Environmental Protection of the PRC	Huanyan [2006] No. 015

		110kV power conversion and transmission project	13 March 2013	Aletai Region Environmental Protection Bureau	Adihuanjianhan [2013] No. 34	14 February 2016	Aletai Region Environmental Protection Bureau	Adihuanhan [2016] No. 44
4	Luoning Huatai	400t/d silver and multi-metal processing plant	7 January 2016	Department of Environmental Protection of Henan Province	Yuhuanshen [2016] No. 20	28 December 2016	Luoyang Environmental Protection Bureau	Luohuanranyan [2016] No. 9
		480t/d gold processing plant	5 January 2016	Department of Environmental Protection of Henan Province	Yuhuanshen [2016] No. 17	28 December 2016	Luoyang Environmental Protection Bureau	Luohuanranyan [2016] No. 10
5	Hunchun Zijin	Comprehensive recovery of multi-metals and complex gold concentrates project	20 September 2011	Department of Environmental Protection of Jilin Province	Jihuanshenzi [2011] No. 311	19 December 2016	Department of Environmental Protection of Jilin Province	Jihuanshenyanzi [2016] No. 306
6	Luoyang Kunyu	Expansion project of 450t/d processing plant at Wulong gold mine	5 January 2016	Department of Environmental Protection of Henan Province	Yuhuanshen [2016] No. 16	Under construction		
		Tailings pool construction project at Cilenggou (a replacement pool for Chenpogou)	5 January 2016	Department of Environmental Protection of Henan Province	Yuhuanshen [2016] No. 19	Under construction		

#### 4.2 Compliance with pollutant discharge standards

In 2016, according to the data from supervisory monitoring reports about the sources of pollution issued by the local environmental protection supervisory authorities and the enterprise's regular monitoring results, all of the wastewater, air emission and noise at plant boundary produced by the branch companies (subsidiaries) of Zijin Mining were regulated and managed, and targets were met consistently.

In order to reduce the generation of wastewater and ensure discharge in compliance with regulatory standards, the Company required every branch company (subsidiary) to “control from the source, monitor the process and apply treatment at the final stage” – generation of wastewater was reduced from the source by separating clean water and rainwater from dirty water; at the final stage, extensive treatment of wastewater was carried out to enable collection and reuse of most of the treated wastewater for industrial purpose. The residual was discharged within the regulatory limit.

On treatment of air emission, the branch companies (subsidiaries) actively explored new handling methods and techniques to reduce air emission through recycling and removal. For instance, Zijin Copper used active coke desulfurisation technique together with a wet scrubber for purifying and removing dust. The sulfur dioxide collected could be used for producing acid, which would be supplied to the downstream enterprises. Only low-concentration pollutants were discharged.

**Key pollutants discharged by the Company in 2016**

Type of pollutant	Pollutant emission factor	Discharge/emission volume
Wastewater	COD (t)	858
	Ammonia nitrogen (t)	37
	Zinc in total (t)	1.3
	Copper in total (t)	1.2
	Cyanide in total (t)	0.03
Air emission	Sulfur dioxide (t)	2,098
	Nitrogen oxides (t)	1,082

#### 4.3 Payment of sewage charges

In 2016, the branch companies (subsidiaries) strictly complied with the reporting and registration policies for discharge of sewage, and paid the sewage charges in accordance with the stipulations of the law and the relevant requirements of the sewage discharge payment

notices, sewage discharge approval notices, sewage discharge approval and review decision notices, etc. issued by the local environmental protection administrative departments.

#### **4.4 Standardisation of discharge outlets and automatic monitoring**

##### **4.4.1 Standardisation of discharge outlets**

Signboards indicating the name of pollutant discharging entity, type of the outlets, reference number of the outlets, key pollutants discharged from the outlets, etc., were placed near the gas and wastewater discharge outlets, major sources of noise and storage of hazardous waste of the branch companies (subsidiaries).

##### **4.4.2 Automatic monitoring of discharge outlets**

The Company required its branch companies (subsidiaries) to strictly carry out online monitoring and supervision. Professional independent institutions were engaged for operating and maintaining major online monitoring instruments for gas and wastewater discharge outlets to ensure their stable operation.

#### **4.5 Treatment and disposal of general industrial solid waste and hazardous waste**

Waste disposal management forms an important part of the Company's production and operation. The Company required its branch companies (subsidiaries) to select and use the kinds of materials which produce minimal harm, toxin and waste to reduce impact at the source; in terms of production techniques, design, operating condition and work process were improved to enhance conversion rate of feedstock and output ratio of products; at the final stage, resources were collected and reused to the fullest extent to reduce the amount of waste. The waste generated was managed in strict compliance with the Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste to minimise the impact of waste on the environment. For hazardous waste, the Company required its branch companies (subsidiaries) to identify and manage such waste in strict compliance with the latest version of National Catalogue of Hazardous Waste, and properly handle the temporary retention, transfer and safe disposal of hazardous waste in accordance with the Standard for Pollution Control on Hazardous Waste Storage (GB18597-2001) and Multi-copy Receipt-based Administrative Policy on Hazardous Waste Movement. In 2016, the branch companies (subsidiaries) of the Company safely disposed of or comprehensively utilised general industrial solid waste and hazardous waste at the treatment rate of 100%.

The major kinds of industrial solid waste generated from mining and processing were mullock and tailings. Mullock was used in underground filling or disposed of to mullock yards, and tailings were transported to tailings pools or used in underground filling. The tailings, cinders and other general industrial solid waste generated by the Company's 4 refining entities (namely

Zijin Copper, Luoning Zijin, Bayannaoer Zijin and Qinghai Zijin) and 2 entities with refining operations (namely Zijinshan gold and copper mine and Duobaoshan Copper) were either discarded at authorised waste dumps or utilised comprehensively; arsenic filter cake, lead filter cake and other hazardous waste were given priority to be comprehensively utilised in the Company's production sites; idle hazardous waste, used motor oil and other hazardous waste were properly disposed of by the qualified institutions engaged by the Company.

**Type and quantity of major waste**

<b>Nature of waste</b>	<b>Type of waste</b>	<b>Volume generated (t)</b>	<b>Treatment rate (%)</b>
<b>General solid waste</b>	Mullock	117,977,682	100
	Tailings	37,775,803	100
	Cinder	128,145	100
	Domestic refuse	5,110	100
<b>Hazardous waste</b>	White dust	5,876	100
	Arsenic filter cake	5,284	100
	Used motor oil	348	100
	Lead filter cake	133	100
	Spent catalyst	129	100

#### **4.6 Management of hazardous chemicals**

No output of or raw and auxiliary materials used by Zijin Mining's branch companies (subsidiaries) were classified as prohibited substance under national laws, regulations and international conventions. Major hazardous chemicals involved in production and operation were sodium cyanide, sulfuric acid, liquid ammonia, hydrochloric acid and sodium sulfide, which were stored in designated containers or warehouses, equipped with retention pools to guard against leakage, and managed by specific personnel, in accordance with the requirements of Regulation on the Safety Management of Hazardous Chemicals.

#### **4.7 Implementation of clean production**

In compliance with the Law of the People's Republic of China on Promoting Clean Production, Zijin Mining's branch companies (subsidiaries) strived to achieve the objectives of reducing energy consumption and emission, energy conservation and efficiency enhancement, by actively carrying out clean production and combining clean production belief with production, management and operation, in accordance with the requirements of local administrative authorities for environmental protection.

In March 2016, the Department of Environmental Protection of Guizhou Province approved the inspection results of the first two rounds of review over Guizhou Zijin's clean production (Qianhuanhan [2016] No. 99). In May 2016, the second round of review was carried out on

Luoyang Yinhui's clean production. In September 2016, the report on the third round of review over Zijinshan gold and copper mine's clean production passed official assessment, it is expected that the third round of inspection for the review over clean production will be conducted in 2017.

#### **4.8 Formulation and implementation of environmental risk management policy**

In accordance with the relevant requirements stipulated by Notice on Tentative Administrative Policy on Preparation of Emergency Plan in Response to Environmental Incidents and State Emergency Plan in Response to Outbreak of Environmental Incidents issued by the Ministry of Environmental Protection of the People's Republic of China, Zijin Mining's branch companies (subsidiaries) formulated their respective emergency plans for environmental incidents according to their production techniques, pollution-intensive production stages and environmental risks. The emergency plans were reported and filed to the local environmental administrative authorities. Moreover, the branch companies (subsidiaries) had set up command offices for emergency relief, and the necessary facilities and sufficient materials were equipped to guard against the occurrence of environmental incidents. Emergency drills were conducted on a regular basis, emergency alarm and measures for emergency response were also implemented. These steps ensured that the whole process was under close control, effectively guarded against the outbreak of environmental incidents and lowered environmental risks.



**Emergency and relief drill at the tailings pool of Zijinshan gold and copper mine**



**Emergency drill against oleum leakage at Zijin Copper**





**Emergency drill against flooding at  
Wuping Zijin**



**Emergency drill against sulfur dioxide  
leakage at Qinghai Zijin**

#### **4.9 Awards received for environmental protection**

##### **4.9.1 Zijin Mining's technological research and application project on vegetation recovery and ecological rehabilitation of large-scale waste dump for gold mines**

In June 2016, Zijin Mining's technological research and application project on vegetation recovery and ecological rehabilitation of large-scale waste dump for gold mines received Technological Advancement Third Class Award in Fujian Province.

To improve vegetation recovery and ecological rehabilitation, the Company cooperated with scientific research institutions and universities to carry out long-term technological studies on ecological rehabilitation and management for mines, identify and practise the basic pattern for recovering vegetation at Zijinshan gold mine, analyse the outcomes of ecological rehabilitation by applying different management methods, and select the vegetation recovery method on the tailings dumps of Zijinshan gold mine that is the most suitable for ecological rehabilitation and recovery of natural landscape, and establish a demonstration site for vegetation recovery on the abandoned land of mines. The implication of such achievements is important to ecological rehabilitation in the development of similar mines, which also provides scientific basis for the mining industry in the development of technological standards relating to reclamation and the formulation of ecological compensation policies.

##### **4.9.2 Luoning Zijin's technique for reusing industrial wastewater received Technological Advancement Second Class Award in Luoyang City**

In July 2016, Luoning Zijin's technique for reusing industrial wastewater received the 2016 Technological Advancement Second Class Award in Luoyang City.

Luoning Zijin carried out multiple technological analysis and experiments on the quality of reused water after standard treatment. After extensive treatment of wastewater, its quality was

further improved, lower volume of impurity was observed in the water. All of the treated wastewater was redirected to and reused in the system for conservation of water resources. The project was selected as a crucial technological project of Henan Province in 2014. After almost 2 years of experiment, study and constant improvement, the industrial application of the project yielded good results and created significant environmental and economic value. The project was recognised by experts as having reached advanced standard in China, and is applicable to similar gold refining enterprises for treatment of wastewater. It has high applicability and potential for extensive use.

#### **4.9.3 Gold Refinery Company's key technique and equipment for gold refining and clean production received China Non-ferrous Metals Industry Scientific Technology Second Class Award**

Gold Refinery Company targeted on the weakness of traditional refining techniques and began the study on “Key Integrated Technology and Equipment for Gold Refining and Clean Production”. From which, it has developed a number of new techniques, namely the technique and equipment for cyanide-free desorption with gold-bearing carbon under high temperature and high pressure - vertical electrolysis - regeneration of activated carbon, fully automatic facility for rapid casting of gold bullion, collection of wastewater generated from gold refining and segregation by nature – comprehensive purifying – integrated treatment of salt and water separation; it has also developed the largest production line for cyanide-free desorption under high temperature and high pressure, and automatic production line for gold casting in China, which enabled comprehensive recovery of valuable metals and overcame the difficulties of recovering gold from immersion residues; at the same time, the key technique for extensive industrial application of using gold-bearing carbon and low-purity gold as raw materials for producing high-purity gold was developed, which became a model project, achieved leaping development in the production technique of high-purity gold, and promoted the technological advancement of gold refining industry. The key technique and equipment developed by the project contributed significantly to the advancement of gold refining technology and promotion of clean production in China.

#### **4.9.4 Xinjiang Zijin Zinc being selected as a “green mine pilot unit of the autonomous region”**

In August 2016, Xinjiang Zijin Zinc's zinc mine on the south of Wulagen, Wuqia was included in the latest batch of green mine pilot units of Xinjiang Uyghur Autonomous Region.

Situated at Southern Xinjiang near the Gobi desert area, Xinjiang Zijin Zinc has been operating under harsh condition. Nevertheless, through proactive planning and constant improvement, the company has achieved fundamental improvement and enhancement in the aspects of formalisation of management, comprehensive utilisation of resources, technological innovation,

energy conservation and emission reduction, environmental protection, reclamation and so on. It has fulfilled the application requirements for becoming a “green mine”.

#### **4.9.5 Zijin Copper being selected as a model enterprise for “reaching required standard and realising advancement” in the formalisation of hazardous waste management**

In December 2016, Zijin Copper was heralded by the Environmental Inspection and Management Centre for Solid (Hazardous) Waste in Longyan City as a model enterprise for “reaching required standard and realising advancement” in the formalisation of hazardous waste management.

In recent years, Zijin Copper has constantly strengthened and improved hazardous waste management, and actively organised professional learning programmes for solid waste management. Moreover, taking into account the actual condition of the enterprise, Zijin Copper adopted a series of effective measures to extensively enhance on-site facilities, record-keeping and archiving, supervision on transportation, emergency response and the performance of other areas relating to hazardous waste management, earning recognition from the superior regulatory authorities and the society.

### **4.10 Public environmental contributions**

#### **4.10.1 Zijin Mining and local courts jointly launched a “Co-development of Law and Mining” campaign**

On 6 April 2016, Zijin Mining and local courts jointly launched a voluntary tree-planting activity, which was an important part of the co-development of law and mining campaign.

#### **4.10.2 Zijin Mining was determined as a “connecting point for implementing legal practices in respect of environmental resources”**

In May 2016, Zijin Mining was determined by local intermediate people’s court as a “connecting point for implementing legal practices in respect of environmental resources”. The “connecting points for implementing legal practices in respect of environmental resources” aim at fostering more interaction between courts and the enterprises which are engaged in conservation, development and utilisation of environmental resources, and providing pragmatic and strong support to the legal measures that protect innovation of and improvement in ecological resources.

#### 4.10.3 Zijin Mining launched the “Environmental Safety Month” campaign in 2016



**Breeding and releasing of fish activity**



**Cleaning garbage along the Ting River**



### **Riddle game for promoting phrases and expressions relating to environmental protection**

In celebration of the “5 June” World Environment Day, the Company launched the sixth “Environmental Safety Month” campaign. The campaign, spanning from 5 June to 4 July, was themed “keeping the environment in good order is everyone’s responsibility”.

During the campaign, the Company not only organised publicity and educational programmes and trainings in the aspects of environmental protection, maintenance of environmental order, and identification, prevention and rectification of hidden dangers relating to safety and environmental protection within the group, but also launched a series of public charitable activities, such as breeding and releasing of fish to protect the Mother River – Ting River, garbage collection activities to clean up Ting River, and riddle game to promote the legal knowledge for environmental and ecological protection. These activities attracted the participation of many local residents, successfully showcased and demonstrated the Company’s environmental protection beliefs and achievements.



**4.10.4 The Youth League Committee of Zijin Mining launched charitable activities in the theme of caring the “Mother River” for promoting environmental protection**



**A signature campaign for “Preserving the Ecological Balance of Ting River, and Fighting against Electrofishing, Fishing with Drugs and Explosives”**

The Youth League Committee of the Company launched charitable activities for promoting environmental protection along the Ting River in the theme of “Preserving the Ecological Balance of Ting River, and Fighting against Electrofishing, Fishing with Drugs and Explosives” to care the “Mother River”. Handheld fans printed with the message of “Preserving the Ecological Balance of Ting River, Maintaining Harmonious Relationship between Human and Nature” were distributed to the pedestrians, and the harmful impacts of electrofishing, fishing with drugs and explosives on the ecological environment of Ting River were explained to the public. These activities gained popular support from the community.

**4.10.5 Qinghai West Copper cooperated with Mayu Rijin Lizhong Environmental Protection Association to pragmatically carry out environmental protection activities**



In June, in a cooperation with Mayu Rijin Lizhong Environmental Protection Association, Qinghai West Copper organised 40 staff and 20 local herders to walk and collect garbage around the hills near Deerni mining area, the roadsides of the highway leading from Dawu to the inside of Deerni copper mine, and the riverbanks of Deerni River. Qinghai West Copper took action to promote the maintenance of good environmental order in the mining area, advance Zijin's environmental protection beliefs, and protect the ecological civilisation of the plateau region.



Being one of the sizeable industrial enterprises situated at the heart of Qinghai - Tibet Plateau, Qinghai West Copper always attaches great importance to the ecological conservation of the area. In the last 3 years, Qinghai West Copper carried out voluntary garbage collecting activities alone or together with local herders for more than 10 times. Such activities were participated by more than 500 employees, with more than 10 tonnes of garbage collected.

#### **4.10.6 The Green Mine Promotion Committee of China Mining Association carried out field study at Zijinshan**

In October, an investigation and study team of the Green Mine Promotion Committee of China Mining Association visited Zijinshan to inspect its development progress as a national green mine pilot unit. The team fully recognised the achievements of Zijinshan gold and copper mine in the development of green mine and comprehensive utilisation of resources, encouraged the Company to continue its efforts in the development of eco-mining, and supported the Company to apply for the title of “National Eco-mining Demonstration Site”.

#### **4.10.7 Zijin Copper promoted environmental protection beliefs to the neighbourhood**



**Notepads and handheld fans printed with environmental protection related messages  
being distributed to villagers**

Zijin Copper distributed notepads and handheld fans carrying environmental protection related messages to the nearby villages and towns, with the aims of promoting the Company’s environmental protection beliefs, and enhancing the dialogue between the neighbourhood and the enterprise. This enabled the villagers to have a deeper understanding about the Company’s endeavour in environmental protection, and facilitated the development of an eco-friendly industrial zone which is the result of harmonious cooperation between the neighbourhood and the enterprise.



#### **4.10.8 Xinjiang Ashele Copper organised activities to clean the Haba River**



**Voluntary garbage collecting activities being carried out to clean the Haba River**

To further enhance employees' awareness on the importance of ecological conservation and environmental protection, and continue to improve the local ecological environment, Ashele Copper organised its employees to participate in the voluntary garbage collecting activities for cleaning the Haba River. A signing ceremony was also held for "Improving the Quality of the Environment, Promoting Eco-development and Protecting the Haba River".

## **5 About the report**

### **5.1 Branch companies and subsidiaries of the Company covered in the 2016 Environmental Report**

The information disclosed in this report covers 27 operational or production-type branch companies (subsidiaries) of the Company, which are engaged in mining, processing and refining businesses.

### **5.2 Time period of the data provided in the 2016 Environmental Report**

The key data contained in this report were collected and produced between 1 January 2016 and 31 December 2016.

### **5.3 Review and approval of the 2016 Environmental Report**

In order to assure the reporting quality, this report was prepared in accordance with the requirements of the Guideline for Environmental Information Disclosure of Listed Companies

and Guideline for Preparation of Corporate Environmental Report (HJ617-2011). After multiple reviews, the updated version of the report was submitted to the technical review committee organised by the Company for further revision. The report was amended based on the committee's professional advice before it was submitted to the Board of Directors for approval and public disclosure.

#### **5.4 Warranty and commitment to enhance the accuracy and reliability of the 2016 Environmental Report**

Zijin Mining hereby warrants that the information disclosed in this report are truthful, accurate and reliable.

#### **5.5 Opinion and feedback channels**

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## **6 Conclusion**

In 2017, the Action Plan for Prevention and Control of Air Pollution promulgated by the state reached the final stage of implementation, the rules for sewage discharge permission were also enacted extensively. Summarising on past experience and lessons learnt from environmental protection, Zijin Mining will study and grasp the new trends identified and new targets emphasised in the “Thirteenth Five-year Plan” for environmental protection, conform to the strictest standards for environmental protection, and strive for more excellent achievements in the Company's environmental protection efforts.

“The day will come when we brave the wind, cleave the waves, and set our sail fearlessly across the vast ocean to reach our dreamt destination”. In 2017, Zijin Mining will exhibit the corporate spirit of “found the business by overcoming hardships with exploratory and innovative spirits”, continue to achieve the work targets of “clinging to reforms, maintaining growth and boosting development” by following the guidance of value creation principles and market standards, and promote innovative development with all-out effort. Moreover, Zijin Mining will further enhance environmental information disclosure, provide more expeditious channels for public participation in environmental protection, build a link with the public which is founded on

mutual understanding, mutual support and joint participation for collaborative promotion of eco-friendliness, join hands with the community to protect our clear water and green mountains, advance eco-development, and contribute our wisdom and power to the building of a more beautiful world.

28 April 2017