



中国有色集团
CNMC

Together for
a Shared Dream

2022

SUSTAINABILITY REPORT



About This Report

Reporting period

This report covers the period from January 1 to December 31, 2022. Part of the content can date back to previous years or be extended to 2023.

Report scope

This report covers the sustainability management practices and performance of China Nonferrous Metal Mining (Group) Co., Ltd. and its subsidiaries.

Preparation basis

This report is prepared in accordance with the Guidelines to the Central State-owned Enterprises (SOEs) on Fulfilling Corporate Social Responsibilities; Guidelines to the State-owned Enterprises on Better Fulfilling Corporate Social Responsibilities; GRI Sustainability Reporting Standards by Global Sustainability Standards Board (GSSB); Ten Principles of the UN Global Compact; Guidance on Social Responsibility (ISO 26000:2010) issued by International Organization for Standardization; GB/T 36001 Guidance on Social Responsibility Reporting; The Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-ESG 5.0) issued by Chinese Academy of Social Sciences; Guidelines on Social Responsibility Management for China Industrial Enterprises (2015 Edition) by China Federation of Industrial Economics, and other standards.

Release cycle

This annual report is the 12th sustainability report issued consecutively by China Nonferrous Metal Mining (Group) Co., Ltd.

Data sources

The data cited herein are all from official documents, statistical reports and official website of the China Nonferrous Metal Mining (Group) Co., Ltd. The currency for the data involved in the report is yuan by default, and other currencies are indicated under special circumstances.

References

For the sake of presentation, "CNMC", "the Company" or "we" in the report refer to China Nonferrous Metal Mining (Group) Co., Ltd.

Commitment

China Nonferrous Metal Mining (Group) Co., Ltd. promises that this report is free from any false records, misleading statements or significant omissions, and is responsible for the authenticity, accuracy and completeness of its content.

Access to report

You can download the electronic version of this report on the website of CNMC.

Website: <http://www.cnmc.com.cn/>

If you need the paper version of the report or have suggestions and comments on this report, please contact our Corporate Culture Department.

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Message from the Chairman

In 2022, CNMC achieved another significant milestone in its development journey. Following important instructions by President Xi Jinping, who provided guidance to CNMC on three distinct occasions, we aligned with the stipulations of the State-owned Assets Supervision and Administration Commission (SASAC). Despite setbacks induced by lower copper prices and rising factor costs, we adeptly navigated the intricate landscape of COVID-19 response, production optimization, operation efficiency. This holistic approach ensured a dynamic momentum characterized by unwavering stability, consistent progress, and remarkable breakthroughs. As a result, we secured business performance higher than our expectations and better than the industry and market averages. Notably, CNMC was ranked among the A-level central State-owned Enterprises (SOEs) in the 2022 annual business performance assessment by the SASAC.

CNMC's reform and innovation showcase our underlying strengths. Taking the three-year action plan for SOE reform as an important driver to achieve high-quality development, we established an effective mechanism in which reform is regularly analyzed, supervised by main leaders, and advanced by subordinate leaders who perform two types of responsibilities. Through measures such as reform promotion meetings and the signing of the Reform and Sci-tech Innovation Pledge, we focused on solving the important and difficult issues and ensure the effectiveness of implementation. 243 reform measures in eight aspects had been fully implemented. We had 100% completion rate on targeted actions under the three-year action plan for SOE reform. Sci-tech reform demonstration subsidiaries, mixed reform subsidiaries and equity incentive subsidiaries achieved profits in a row. We completed the annual task. In 2022, the Company was rated A in the assessment of the three-year action of central SOE reform by SASAC.

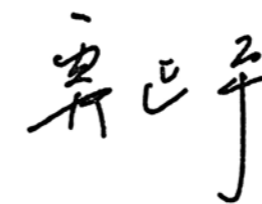
CNMC's lean management improves our quality. Adhering to the "1+4" development strategy, we incorporated the investment and benefits of key specialized tasks into our 14th Five-Year Plan (2021-2025) and prepared 17 special plans, effectively coordinating planning, budgeting, and assessments. We guaranteed that the board of directors was established at subsidiaries and fulfilled their functions, and continuously optimized the compliance management system and internal risk control system. Thus, there was no major business risk event in 2022. Our second talent conference was held and the *Human Resources Development Plan During the 14th Five-Year Plan Period* was released. We hired an academician as our technology consultant, a chief scientist, four chief experts, and one non-ferrous metal expert to accelerate the building of an innovation research institute. In 2022, the profits and the preservation and appreciation of CNMC's state-owned capital set new records.

CNMC's green development adds highlights to our sustainable efforts. Guided by Xi Jinping Thought on Ecological Civilization, we promoted green development and transformation. We had complied and implemented our *Green Development Plan During the 14th Five-Year Plan Period*, made stronger efforts to tackle pollution, save energy, reduce consumption, and promote clean production and green mines. CNMC formulated the *Action Plan for Carbon Emission Peaking* and pursued a green, low-carbon, and circular model for industrial development. We also addressed issues identified in environmental protection inspections by the government agency. By the end of 2022, 85.9% of problems were rectified, alleviating environmental problems restricting the development of the Company. Our actions were highly affirmed by regulators such as the SASAC.

CNMC's commitment to responsibility illustrates what we care. Putting people first, we maximized the protection of employees' safety and health. In 2022, we did not register any relatively big (or above) work safety accidents marking an unprecedented pinnacle in our work safety performance history. We contributed to the rural vitalization of Lianghe County in Yunnan Province by donating 11.57 million yuan. Our endeavors were recognized as the highest rating in the evaluation of the central SOE's targeted assistance programs. Serving the implementation of the nine programs in China-Africa cooperation, we promoted the initiative of "100 Companies in 1,000 Villages". We initiated the life improvement program worth 10 million yuan, and Zambia's President also attended the launching ceremony.

CNMC's outlook embraces a promising future. In 2023, upholding Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, we will further implement important instructions made by President Xi Jinping for CNMC and the new development philosophy. Besides, we will live up to the corporate spirit of innovation, pioneering spirit, win-win cooperation, social contribution. We will continue to serve as the main contributor to the security of national strategic resources and new non-ferrous metal materials, improve our capabilities on sustainability management, and create greater value for stakeholders. On our journey to a world-class enterprise, we will prevail over challenges and forge forward.

Chairman of CNMC
Xi Zhengping



About CNMC

Company profile

Founded in 1983, China Nonferrous Metal Mining (Group) Co., Ltd. (CNMC) is a large central state-owned enterprise(SOE) managed by the SASAC. CNMC's main business includes the development of non-ferrous metal and mineral resources, new materials, construction projects, and related trade and services.

CNMC, the pioneer of China's non-ferrous metal companies to go global. We are the company with the longest history in overseas copper development, the most complete industrial chain, and the largest number of projects. In particular, we have formed industrial clusters in central and southern Africa. In 2022, CNMC ranked 37th in the "Top 100 Chinese Multinational Companies", 83rd in the "China's Top 500 Manufacturing Companies", and 180th in the "Top 500 Chinese Enterprises".

As of the end of 2022, CNMC develops business in more than 40 countries and regions, owning nearly 20 million tons of heavy non-ferrous metal resources in over 40 varieties. Under CNMC are 201 subsidiaries at all levels, including 103 overseas ones and five listed ones. Several symbolic mining development projects have been put into operation in Zambia, Mongolia, Myanmar, Thailand, the Democratic Republic of the Congo, and other countries and regions.

Corporate culture



Group strategy

Led by innovation, enriching resources, specializing in materials, strengthening engineering, and excelling in trade. The core is to take innovation as the strategic support and power source to lead the high-quality development of the four main business pillars.

To become a globally competitive world-class enterprise.



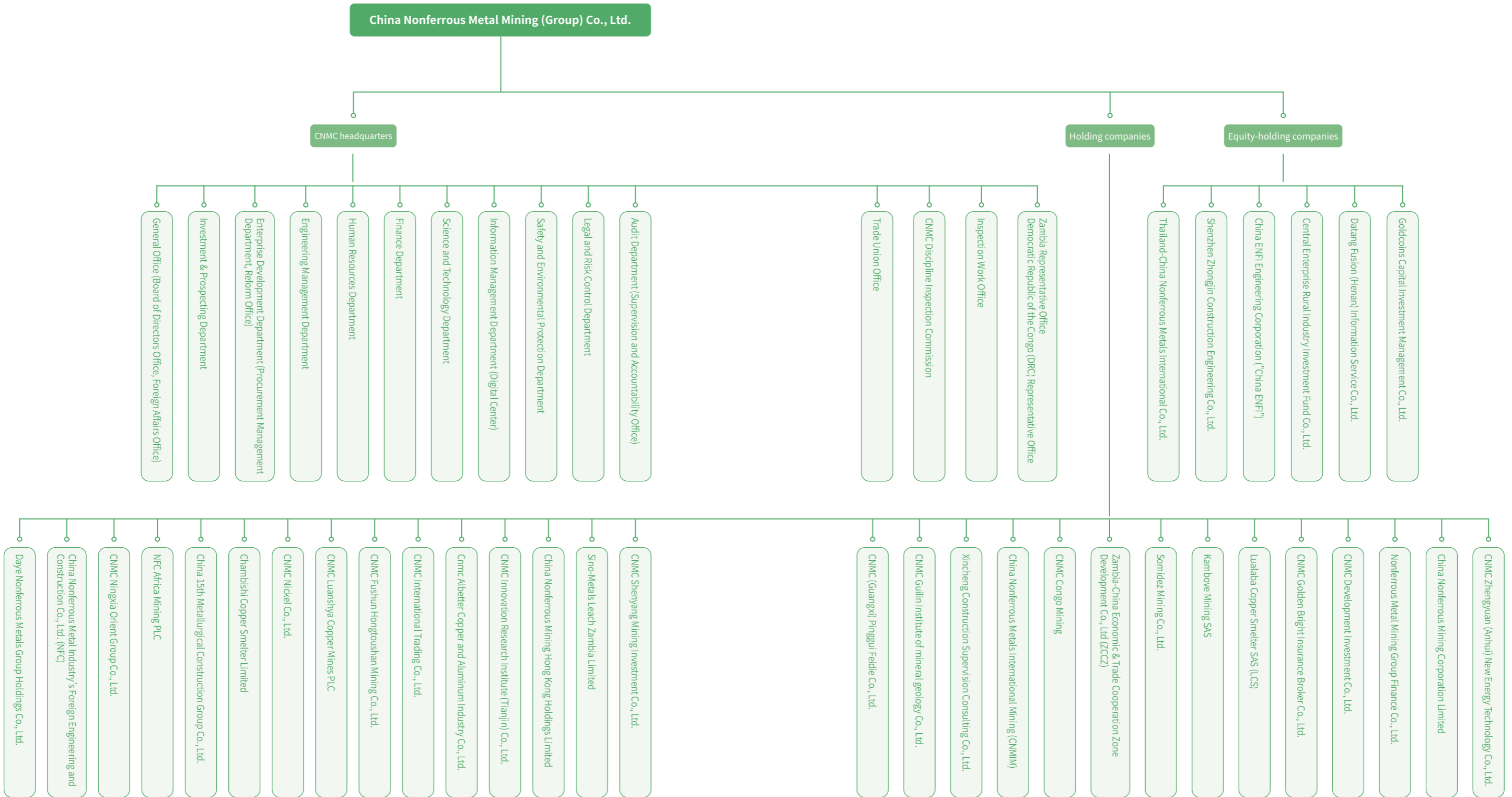
At the end of 14th Five-Year-Plan in 2025, major indicators including total profits, raw copper output, and copper smelted should double from those of 13th Five-Year-Plan in 2020.

A vital role in supporting the security of national strategic resources and new non-ferrous metal materials.

A "two-step" development strategy: management improvement (2021-2022) to consolidate the foundation and optimize existing business; leapfrog development (2023-2025) to enhance growth, expand business, and improve quality.

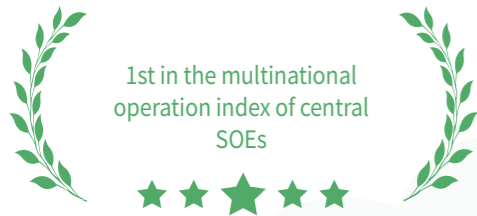
Four priorities: First is to implement key projects. Second is to carry out reform tasks. Third is to secure high-quality mineral resources. Fourth is to build a group of "little giant" high-tech enterprises.

Organizational structure



Figures in 2022

Honors in 2022



Business performance

In 2022

139.497 billion yuan
Revenue

7.628 billion yuan **10%**
Total profits Year-on-year increase

68.795 billion yuan **59.63%**
Total international business assets Percentage of international business assets in the Company's total assets

619 million yuan **17.42%**
Overseas investment Percentage of overseas investments in the Company's total investment

1.7689 million tons
Output of non-ferrous metal products

0.674 million tons
Output of overseas non-ferrous metal products

25.132 billion yuan
Value of newly signed engineering project contracts

14,942
Total number of suppliers

Nearly 20 million tons
Heavy non-ferrous metal resources

Social performance

In 2022

8.975 billion yuan
Total tax payment

43.0332 million yuan
The donations and for paired assistance and rural vitalization

433,538
Total training hours of staff

0.132 million
Participants of work safety training

By the end of 2022

45,738
Total employees

26.01%
Proportion of female managers

Environmental performance

In 2022

794.07 million yuan
Total investment in environmental protection

31
Units passed ISO 14001/ISO 24001 certification

Addressing issues identified in environmental protection inspections by the government agency
85.9% of problems were rectified

Comprehensive energy consumption per 10,000 yuan of output value (comparable price)

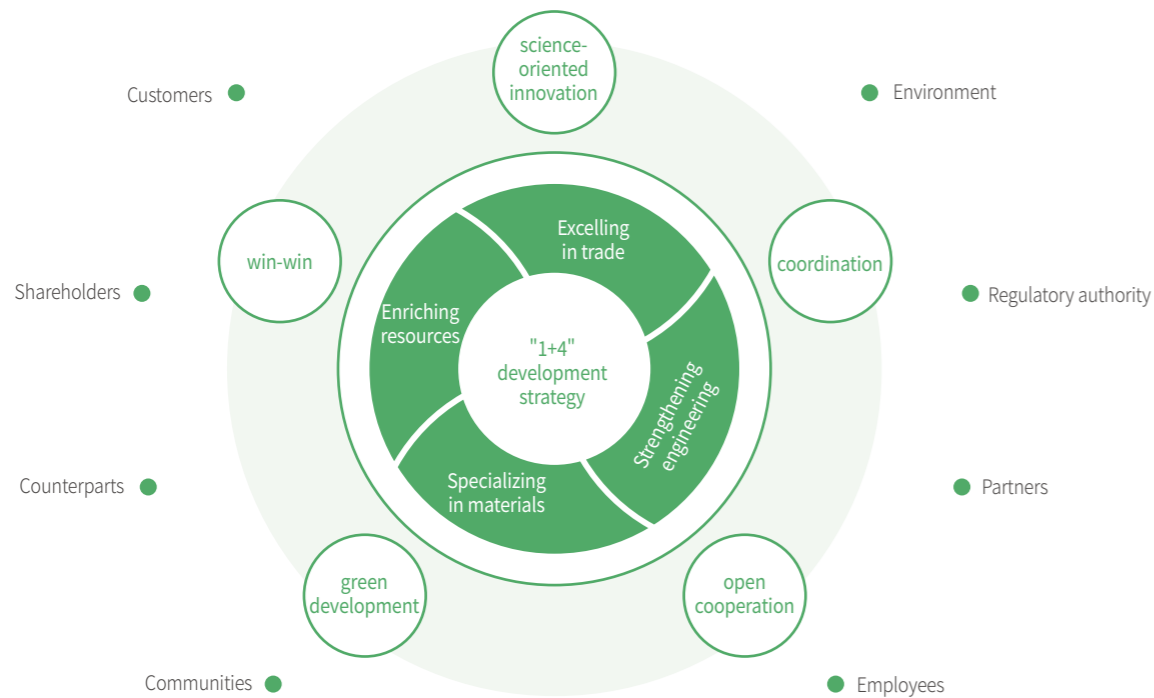
0.0266 ton of standard coal equivalent / 10,000 yuan

Greenhouse gas emission intensity
0.1134 tCO₂e per 10,000 yuan of output value (comparable price)

Sustainability Management

Concept

With the mission of "contributing to the country with resources, pursuing innovation-oriented development, giving back to society, and helping employees succeed", CNMC integrates the concept of sustainability into the development strategy and operation of the Company, sees it as an important strategy to foster core competitiveness through sustainability management, and constantly explores a new sustainability management model. In our journey to become a globally competitive world-class enterprise, we polish the image of a responsible CNMC and aim to be a new benchmark for CSR performance in the new era.



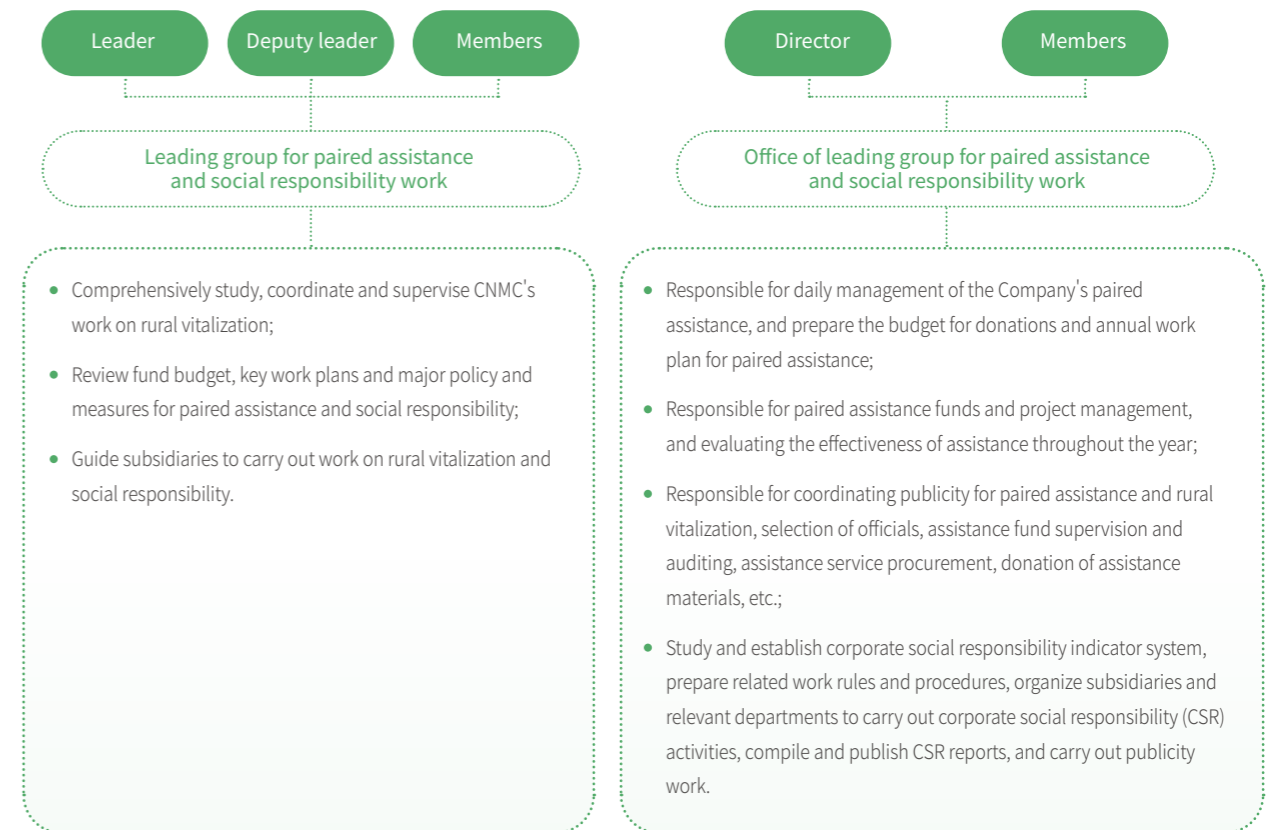
Management practice

Based on the building of a CSR culture, CNMC continues to improve the CSR system, strengthen CSR capacity building, integrate management practices, and roll out CSR activities to ensure high-quality CSR management and practice.

To promote CSR research and exchanges, the Company regularly discloses CSR management and practice in the form of sustainability reports. Written in Chinese, English, and French, these reports are available in both electronic and printed versions, and visual abstracts to communicate messages to a larger group of readers. We also guide subsidiaries to publish CSR reports and improve their operational transparency and communication capabilities to achieve effective communication with stakeholders.

CSR management

CNMC attaches great importance to sustainable development. We have established a leading group for paired assistance and social responsibility work. Headed by the chairman, the leading group guides the work of the Company and subsidiaries on social responsibility. The leading group set up an office. The members of the office (Corporate Culture Department) are heads of departments of the headquarters. Each subsidiary designates a liaison person for social responsibility to promote the implementation of relevant work.

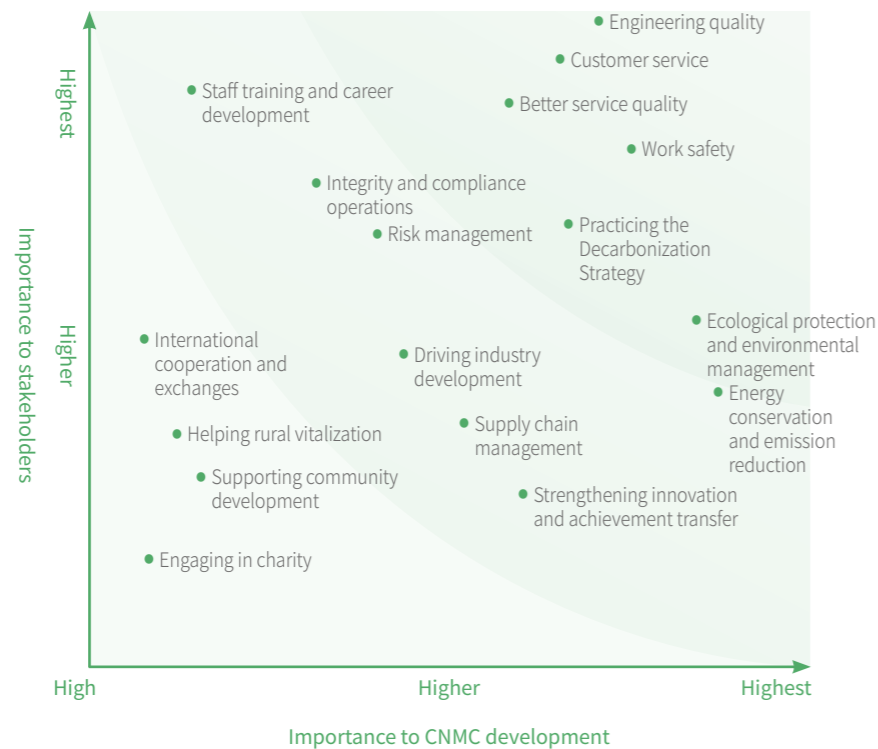
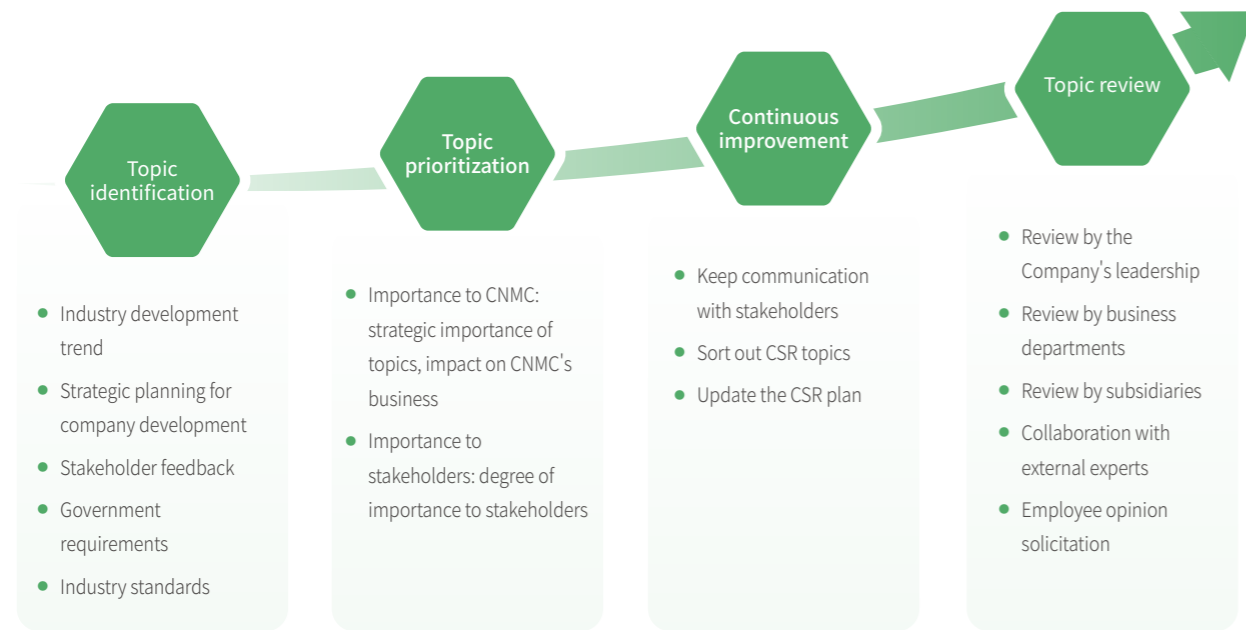


▲ CNMC organization chart for paired assistance and CSR work



Materiality analysis

CNMC actively participates in sustainable development affairs both domestically and internationally. In the face of increasingly complex external environments, we timely adjust our development strategy, evaluate our sustainable development capabilities, maximizes meeting the expectations and demands of various stakeholders, proactively identifies and analyzes substantive issues, and promotes the Company's sustainable development work to develop in depth.



Stakeholder communication

Starting from our operation and development practices, CNMC has created a new model of stakeholder interaction based on industry characteristics. We identify key CSR topics, respond to the expectations and demands of stakeholders, and continue to improve the sustainability framework to move forward together with stakeholders.

Stakeholders	Communication mechanism	Stakeholder appeals	Corporate responsibility practice
SASAC	Work report Report submission	Return on revenue Social responsibility	Complete performance appraisal Strengthen risk management Deepen enterprise reform Accept stationed supervision
Shareholders and investors	Board of Directors Daily communication	Continuous returns Protection of rights and interests Open and transparent information	Improve business performance Improve corporate governance Protect shareholders' rights and interests Improve information disclosure
Government	Policy guidelines Special meeting report	Response to national strategies Legal compliant operation Paying taxes according to law	Serve the national strategy Adhere to steady operation Comply with laws and regulations
Owners and customers	Customer service hotline Satisfaction survey Visit Company website	Strict contract fulfillment Good quality Providing satisfactory service	Ensure the contract fulfillment rate and delivery pass rate Strengthen quality management and technological innovation Improve the service system
Employees	Workers' Congress Daily communication Corporate cultural activities	Reasonable compensation and benefits Safe working environment Career development and training Employee care	Protect legitimate rights and interests Ensure occupational health Improve the training and promotion system Provide assistance to needy staff
Communities and the public	Community exchanges and visits Community-based charity activities	Engagement in community development Paying attention to special groups	Participate in community charity cause Promote localized procurement and employment Carry out charitable activities
Environment	Insight into domestic and international trends Mastering advanced technology Raising environmental awareness	Compliance with environmental regulations Reduction of pollution emissions Environment protection	Energy conservation, emission reduction and carbon reduction Increase investment in environmental protection Increase energy efficiency Build green projects
Industry	Joining in industry associations Participation in the formulation of industry standards Business exchange and cooperation	Fair competition Mutual benefit and win-win results Promoting industry progress	Participate in the formulation of industry standards Give full play to the advantages of the whole industrial chain to provide high-quality services for the industry Maintain a fair and orderly competitive environment for the industry

Feature One

Seeking High-quality Development and Shouldering New Responsibility

The year 2022 was critical for CNMC to deepen reform and promote high-quality development. Since the three-year action plan for SOE reform was launched, CNMC has deeply implemented the reform requirements of the State-owned Assets Supervision and Administration Commission (SASAC). We focus on the main logic of "sending pressure, strengthening governance, adjusting structure, adding momentum, stimulating vitality, and improving performance", realizing six major changes in the system, power and responsibility, structure, innovation, mechanism, and quality.

The modern enterprise system with Chinese characteristics has been institutionalized in our subsidiaries. Major asset restructuring of CNMC Albetter Copper and Aluminum Industry Co., Ltd. and CNMC Development Investment Co., Ltd. has made breakthroughs, and reform demonstration tech subsidiaries, start-ups, and equity incentive subsidiaries have achieved profits in a row. At the end of 2022, all 243 tasks in the Company's three-year action plan for SOE reform had been completed, marking a victory in the reform action.

Formulating a reform roadmap

We have formulated the *Implementation Plan for the Three-year Action for SOE Reform*, established a mechanism of "systematic planning, record-keeping, in-depth supervision, and typical case promotion", and organized reform deployment and promotion meetings. Reform tasks are listed in sequence and assigned to the person in charge, with guidance provided to implement reform measures.



CNMC's three-year action plan for SOE reform summary and further reform deployment conference

Advancing asset restructuring to overcome development restrictions

With a focus on the asset restructuring, we guide the subsidiaries to deal with problems in investor negotiation, employee arrangement, and anti-monopoly investigation, and continue statistical analysis and follow-up supervision for key loss-making subsidiaries, which has made a series of progress in reform.

Key Performance in 2022

27

Loss-making subsidiaries, a drop of 2 subsidiaries year on year

459 million yuan

The decrease in the loss of loss-making subsidiaries, or a 20.44% year-on-year reduction



Implementing incentives to foster growth drivers

According to the principle that SOE reform should help state-owned assets to achieve value preservation and appreciate, improve economic competitiveness, and enhance the functions of state-owned assets, we have implemented 15 medium- and long-term incentives. The enterprises implementing medium- and long-term incentives have achieved a total net profit of 60 million yuan, a year-on-year increase of 42%, showing the remarkable effect of incentives.

Implementing the "three no less than" salary mechanism

- Cooperating closely with CNMC Ningxia Orient Group Co., Ltd. (CNMC Orient) to study and formulate the "three no less than" implementation plan, helping CNMC Orient to register profits for three consecutive years, which was the best performance in its 57 years of history.
- Guiding CNMC Guilin Institute of Mineral Geology Co., Ltd. to learn from the "three no less than" reform, making its net profit in 2022 to increase by 50 million yuan year on year.

Instructing subsidiary-specific equity incentives

- Implementing tech firm equity incentives for Ningxia Horizontal Titanium Industry Co., Ltd., helping it achieve profits for two consecutive years and get approved as a provincial specialized and innovative small- and medium-sized enterprise (SME).
- Approving Ningxia Orient Superconductor Technology Co., Ltd. to implement tech firm equity incentives. Its net profits have increased by 57.39% year on year.
- Encouraging employee shareholding of Guilin Tebon Superhand Material Co., Ltd. in mixed ownership reform, helping it increase its net profits in 2022 by more than 200% year on year and get approved as a national-level specialized and innovative "little giant" enterprise and a state-level enterprise with a strong intellectual property foundation.



CNMC Orient fully implements tenure-based and contract-based management of managers and selective appointment, evaluates the performance of all employees, and builds three teams of "technology, skills, and management".



CNMC Daye has been promoting special work of cutting non-core and less competitive business, handling inefficient and less effective assets, and managing losses. Within three years, the number of subsidiaries was reduced by 48%, overdue debts were down by 50%, and the number of loss-making subsidiaries was decreased by 53%.

CNMC Albetter

Promoting the "three-step" restructuring plan, realizing the transformation of Yunhe Thermal Power Holdings from a controlling shareholder to a participating shareholder, establishing a new company for the separation of the sheet and foil business, transferring the equity of Hailiang Albetter, and entering the stage for sound development.

China Nonferrous Metals Mining (Group) Tianjin Co., Ltd.

Putting idle assets to use and allowed employees to hold shares through establishment of new companies.

CNMC Development Investment Co., Ltd.

Holding more than 30 negotiations in four rounds to persuade private shareholders out of shareholding, and solving governance problems such as inefficient operations and losses.

Shenyang Shenyue Heavy Equipment Co., Ltd. (SHENYE)

We helped SMMC to introduce joint strategic investors such as Qinye, completed restructuring, and renamed SMMC as Shenyue Heavy Equipment, opening the chapter of mixed ownership reform.

Feature Two

Unfolding a New Chapter of Harmony in the Time-honored China-Africa Friendship

CNMCM resolutely implements the ideas of President Xi Jinping, on a China-Africa community with a shared future in the new era. In the past 24 years of doing business in Africa, CNMCM has been upholding a genuine and sincere attitude, serving the friendly cooperation between China and Africa, maximizing economic, social, and environmental benefits in project operation, and carrying out friendly cooperation with host countries to achieve common development.

Supporting industrial upgrading and consolidating the economic foundation

In Zambia, the Democratic Republic of the Congo (DRC), and other countries, CNMCM has invested in non-ferrous metal mines and smelters and set up overseas economic and trade cooperation zones. A complete value chain consisting of geological exploration, mining, smelting, design, construction, equipment, supervision, trade, logistics, and others has been established in central and southern Africa with a large non-ferrous metal industrial base, promoting local industrial upgrading and technical cooperation and injecting new momentum into Africa's industrialization.

Key Performance in the past 24 years in Africa



8
Copper mines developed

9
Copper smelters developed

1
Overseas economic and trade cooperation zone of China in Africa invested and run by CNMCM

Over USD **3 billion**
Cumulative investments

Over USD **400 million**
Taxes paid

Over **20**
Subsidiaries at all levels

82
Domestic and foreign companies introduced into the Zambia-China Economic & Trade Cooperation Zone

4
New companies signing the contract to enter the Zambia-China Economic & Trade Cooperation Zone in 2022

Nearly **10,000**
Jobs created in Zambia



▲ The Chambishi Southeast copper-cobalt mine in Zambia invested by CNMCM in Zambia is the first digital mine project in Africa.



▲ The arrival of the first group of vehicles under the "overseas warehouse" project between the Zambia-China Economic & Trade Cooperation Zone invested and built by CNMCM and Xiamen C&D Inc.

Engaging in the initiative of "100 Enterprises and 1,000 Villages" to safeguard China-Africa friendship

As the initiator of the Alliance of Chinese Business in Africa for Social Responsibilities and a member of the Action Promotion Committee, CNMCM responds to the Belt and Road Initiative and the major strategic decisions of African connectivity. Guided by the new tasks and requirements of a China-Africa community with a shared future in the new era, we serve the implementation of the nine programs in China-Africa cooperation and deepen the initiative of "100 Enterprises and 1,000 Villages" to promote sustainable development of the local economy, society, and culture.



▲ The Sino-Zam Vocational College of Science and Technology founded by CNMCM provides secondary and higher vocational education for Zambian high school graduates and skills training to employees of Chinese enterprises.



▲ Lualaba Copper Smelter and the DRC State Grid Corporation jointly build the southern Kolwezi Converter Station.



▲ Lualaba Copper Smelter has built a small river dam water storage and withdrawal project in DRC to create a demonstration area for eco-agriculture.



▲ The Masumbu School built with the help of Somidez.



▲ Sino-Metals Leach Zambia Limited assists in the construction and renovation of the Zambian Chambishi Secondary School.

Key Performance in 2022

The initiative of "100 Enterprises and 1,000 Villages" is launched in Zambia and the Democratic Republic of Congo:

59
Public welfare projects

10 million yuan
Earmarked for Zambia's education 1+N project and the livelihood improvement program in the DRC, benefiting 14 surrounding communities and villages

CNMCM Education 1+N Project is included in Zambia's national education development fund.

Shouldering responsibility and showing care

With a long-term vision, CNMC is enthusiastic about non-profit activities, serves as the president of the Chinese Chamber of Commerce in Zambia, and organizes various charitable activities to give back to African society and consolidate the cornerstone of long-term development.



◀ In November 2022, CNMC Luanshya Copper Mines Plc donated agricultural production materials worth 350,000 kwacha (about 148,000 yuan) to local poor farmers.



▶ CNMC Huachin Mabende has invested nearly USD 152,208 to build 11 wells and 6 solar-powered automatic water systems for 8 surrounding villages, benefiting nearly 6,000 villagers.



◀ Kambove Mining SAS donates sports equipment and other supplies and 2 million Congolese francs in cash to UKIMIA School.



▶ Chambishi Copper Smelter Limited donates to an orphanage in Zambia.

Promoting cultural integration and people-to-people exchanges

While respecting the religious beliefs and customs of African employees, CNMC creates an atmosphere of mutual respect, harmony, and friendship through the promotion of excellent traditional Chinese culture, language courses, and non-profit activities. We deepen cultural integration and contribute to a "China-Africa community with a shared future and cultural prosperity".

Case

The overseas excellent Chinese books promotion project of "That's China Bookshelf" in the Zambia-China Economic & Trade Cooperation Zone

In February 2022, the overseas excellent Chinese books promotion project "That's China Bookshelf" was unveiled in the Zambia-China Economic & Trade Cooperation Zone. More than 400 books opened a window for 11,000 people working in the cooperation zone and surrounding residents to understand China, forming a new bond between China and Zambia. CNMC will continue to bring the "That's China Bookshelf" to surrounding junior and senior high schools to help Zambian teenagers understand Chinese culture and its beauty.



▶ "That's China Bookshelf" program unveiling ceremony in Zambia

Case

Holding a retirement party for an important employee in Zambia

In May 2022, NFC Africa Mining PLC (NFCA) prepared a retirement party for 61-year-old Baldwin Tembo. The Deputy General Manager of NFCA delivered a speech on behalf of the company, thanking Baldwin Tembo for his 18 years of loyalty and responsibility and his contributions to the company. Colleagues also shared their memorable stories of working with Baldwin Tembo.

"I will always be a member of the NFCA and speak for it. I will tell everyone that NFCA is a great company!"

- Baldwin Tembo, a retired employee of NFCA



▶ Retirement party

01

A Cemented Foundation for Long-term Value

CNMC continues to improve the corporate governance system and governance capabilities, strengthen compliance management in key areas, and protect the rights and interests of investors. We build an innovation platform, promote innovative development models, and advance transformation through innovation to enhance the foundation for CNMC's development.

7.628 billion yuan
Total profits

Nearly 20 million tons
Heavy non-ferrous metal resources

2.304 billion yuan
R&D investment



Improving Corporate Governance

To build a world-class mining enterprise, CNMC improves modern corporate governance, formulates specific work plans, and optimizes the capital operation system. We ensure that the building and operation of the board of directors are standardized and effective, strengthen compliance management and rectification, and improve the risk prevention and control mechanism to modernize the corporate governance system and governance capabilities.

Strengthening the building of the board of directors

We have the board of directors established in subsidiaries and enable the board of directors to play its role. A total of 59 subsidiaries at all levels have established their boards in accordance with the law. We organize board evaluation and guide 19 key subsidiaries to formulate the board's position and authority plan and more than 150 supporting policies to institutionalize and standardize its operation.

We have revised the *Administrative Measures for the Dispatch of Directors and Supervisors* to make sure that full-time directors and supervisors can play their roles in subsidiaries. External directors are required to attend important meetings such as the Company office meetings and perform their duties on-site for no less than three months each year. This will help realize that the board of directors is established and directors are designated as required and the requirement of compliance and science-based performance is met. Subsidiaries' boards of directors are transformed from a mere mechanism in place to an effective body, marking that the modern enterprise system with Chinese characteristics has taken shape in subsidiaries.

Improving compliant operation

Given the operation and management of the Company, we continue to improve the compliance management system. In addition to optimizing the body in charge, we compile "three lists" and compliance guidelines for key areas, thoroughly identify compliance risks in operations, and enhance relevant systems and mechanisms. We carry out the "Compliance Improvement Year" campaign and the tasks of compliance risk investigation and rectification, laying a solid foundation for robust operation.

Optimizing leadership	Improving the compliance system	Deploying annual compliance work
<p>We have established the law-based governance, risk control, and compliance management committee to coordinate relevant work and ensured that 100% of second-level subsidiaries establish their compliance management committees.</p> <p>We have appointed a chief compliance officer who organizes and carries out compliance management.</p>	<p>We have issued the <i>Compliance Management Measures</i> and built a compliance management system with the basic compliance management system at the core, supplemented by compliance guidelines for key business areas and various operation lists.</p>	<p>We have issued the <i>Implementation Plan for the Compliance Improvement Year</i>, in which we specified 23 tasks and measures and arranged annual compliance work. All employees at home and abroad have signed the <i>Compliance Commitment</i> to foster a good atmosphere of compliance.</p>

Enhancing risk prevention and control

Key Performance in 2022 

100%
The rectification rate of issues related to internal control system effectiveness reported by the SASAC

0 New significant business risk events

CNMC attaches great importance to risk prevention and control. The board of directors regularly analyze risk management and control and review annual major risk assessment reports. We take a holistic approach to risk management and control, strengthen the internal control system, and improve the compliance risk identification mechanism. In addition to greater efforts in major risk monitoring and control, we highlight overseas risk prevention and control and advance supervision and rectification to solidify the bottom line.

Building the internal control system	Strengthening the monitoring and control of major risks	Enhancing overseas risk prevention and control
<ul style="list-style-type: none"> We have established problem lists to track rectification each month and improved 112 systems and 207 work processes. We have carried out the campaign of "strict financial discipline and compliance", specified the "7+1" special governance plan, and found 763 risks, 94.1% of which are rectified. 	<ul style="list-style-type: none"> We have formulated major risk assessment plans, established quarterly risk reporting mechanisms, and fully implemented major risk management and control. We have set up a rectification task force, held special meetings on key rectification projects, and delivered 85.9% of rectification measures required by the environmental protection inspectors. Problems of CNMC Daye Fengshan Copper Mine have all been rectified, which is spoken highly of by departments such as the SASAC. 	<ul style="list-style-type: none"> We have formulated the <i>CNMC Overseas Project Risk Prevention and Control Work Plan</i>, set up the 227 special work team, and maintained special risk investigation and response. We have established an overseas emergency command system to monitor and issue warnings of overseas security risks. We also established the country-specific joint defense and protection system and the overall guarantee mechanism for the prevention of safety risks for employees of central SOEs to ensure that small members are protected.

Case

A hedging risk management information system established

In recent years, global events have led to sharp and frequent fluctuations in commodity prices, weighing heavily on the Company's profitability. At the end of 2022, CNMC built a daily hedging risk management information system integrating spot and futures markets, putting the Company at the forefront of central SOEs in digitalized price risk control. As a key tool to enhance operational stability, the system can provide data for the Company to effectively strengthen price risk management, enhance supervision of the Company's futures business, and improve overall price risk control.



▲ The monitoring platform of hedging risk management information system

Excelling in Four Major Business Sectors

Under the "1+4" development strategy, CNMC continues to optimize the four major business sectors and plays a vital role in supporting the security of national strategic resources and new non-ferrous metal materials.

Key Performance in 2022



1.7689 million tons

The output of non-ferrous metal products

Nearly 20 million tons

Total heavy non-ferrous metal resources owned by CNMC

About 70 million yuan

The total investment in mineral exploration

About 300,000 tons

New metal resources identified

About 1.6 million tons

Metal resources upgraded and verified

442

New contracts signed in the engineering sector

25.132 billion yuan

New contract value of engineering sector

40%

Year-on-year increase



▲ Staff keep records of rock core at the Zambia Luanshya mine



Enriching resources

- New progress has been made in deep and marginal prospecting of the Samba copper mine, which belongs to Sino-Metals Leach Zambia Limited, with 4.6 million tons of new ore and 67,400 tons of copper metal added.
- CNMC Daye implemented the 2022 mining technology plan and completed horizontal drilling of 18,452.1 meters in 2022, with a total of 631,900 tons of new copper ore and 4,759.57 tons of copper metal.
- The hydrometallurgical copper leaching project of the main ore of Kambove Mining SAS has achieved the production target of 28,000 tons of copper cathode. The Kambove West ore holds about 9.3 million tons of ore. The Msesa Copper Mine holds 3.15 million tons of resources, bringing the total reserves of copper and cobalt to a new level.



Specializing in materials

- The export of tantalum powder and tantalum wire, the leading products of CNMC Orient, has registered the best record in a decade. CNMC Orient provides the core material for the world's largest and first "artificial sun", marking that China's beryllium manufacturing has reached the world-class level.
- CNMC Guilin Institute of Mineral Geology Co., Ltd. builds and runs the National Special Mineral Materials Engineering Technology Research Center. The silicon/carbon anode material project has made new progress, and a new sales contract of 30.4 tons of silicon carbide has been signed, with a 759% year-on-year increase in product sales.
- CNMC Zhengyuan (Anhui) New Energy Technology Co., Ltd. has been established, and the groundbreaking ceremony has been held for the "60,000-ton lithium battery cathode material precursor project", a key step for CNMC to extend the cobalt value chain and contribute to the "dual circulation" development pattern. Once completed and operated, the project is expected to greatly improve the scale and profitability of the Company's main business of new materials and support the Company's strategy of "specializing in materials".

Case

The 400,000-ton copper cathode clean production project completed and put into operation

In response to the call for central SOEs to cooperate with local areas and to support Hubei Province, CNMC signed a contract with the Hubei provincial government for a 400,000-ton copper cathode clean production project. With a total investment of 8.7 billion yuan, the project is the largest single investment project of CNMC in China. Once put into operation, the project will add 30 billion yuan of output and 1.5 billion yuan in profits and taxes. Adopting the world's cutting-edge "flash melting + flash blow refining" technology, the project owns an intelligent control center of more than 1,000 square meters for seamless production collaboration, with a per capita production capacity of 460 tons and an output of 35 million yuan. With the help of state-of-the-art environmental protection facilities and clean production, the project can capture 99.9% of sulfur, recycle 98% of water, reduces coal burned by 70,000 tons each year and carbon dioxide by 180,000 tons, generate 140 GWh of power from waste heat, and recover all gold, silver, selenium, tellurium, and platinum.



▲ The 400,000-ton copper cathode clean production project



Strengthening engineering

- NFC has signed new contracts worth a record high of 17.57 billion yuan.
- CNMC Guilin Institute of Mineral Geology Co., Ltd. has signed new contracts worth 360 million yuan, the best record in 5 years.
- 15MCC has signed new contracts amounting to 6.81 billion yuan, and the Yangxin Hongsheng project has produced high-purity copper cathode, realizing the company's goal of building "three good projects".
- Fully leveraging its strategic leading role, CNMC Xincheng continues to improve its business structure with new contracts signed worth over 100 million yuan, of which 62.264 million yuan is for project supervision, or 60.11% of the total.



Excelling in trade

- The Company has formulated the *Implementation Plan of CNMC to Improve Trade Quality and Address False Trade*, which specifies 17 key tasks in four major aspects.
- CNMC International Trading expands its influence in the equity product market while bringing in 16.341 billion yuan from selling non-equity products. CNMC International Trading continues to explore the upstream market in Central and Southern Africa, South America, Central Asia, and Southeast Asia, consolidating the position of "China's largest crude copper supplier" and "key electrolytic copper supplier". South America's copper trade has reached 20,000 tons, up 22% from the previous year, and South Africa's crude copper trade has amounted to 45,000 tons, an increase of 50% from the previous year.

Driving Development Through Innovation

CNMC strengthens the leading role of innovation and the reform of the technology system, implements the innovation-driven strategy, and stimulates the vitality for innovation, producing landmark technologies of major significance. Through self-dependent innovation and industry-university-research cooperation, we develop and commercialize new technologies, with breakthroughs achieved in resource exploration, efficient and safe mining, improved metallurgical recovery, new material R&D and commercialization, etc., laying a solid foundation for the innovative development during the "14th Five-Year Plan" period.

Key Performance in 2022



2.304 billion yuan
R&D investment, a year-on-year increase of **3.45%**

518 million yuan
R&D expenditure
Over 30 million yuan
Incomes generated by technology

6
National technology projects approved
28
State and industry standards compiled

162
Patents obtained
56
Utility patents obtained

As the foremost contributor granted awards at provincial and ministerial levels:
2
First prizes in science and technology
3
Second prizes in science and technology

Improving the technology system

- We have improved the institutional system, formulated the *Measures for Technology Management* and 60 Measures of Science and Technology, and deployed actions in six aspects for innovation.
- We innovate project management, clarify the project approval standards to standardize the launch of projects, strengthen process management, and strictly control project acceptance. In 2022, the number and value of technology projects broke the record.

Improving technology assessments

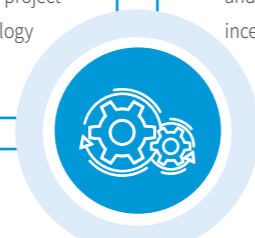
- Guided by the concept of "comprehensive coverage, differentiated assessment, and highlighted key points", we implement full-coverage technology assessments with a focus on improving the organizational system, technology investment, and project approval at the same level.
- We explore flexible incentive mechanisms, ramp up rewards and commendations, and implement medium and long-term incentives for nine enterprises, with a total of 297 individuals.

Strengthening platform building

- We have established the Innovation Research Institute based at the CNMC Innovation Institute (Tianjin) Co., Ltd. and laboratories in Zambia and the Democratic Republic of the Congo to provide technical support for local companies.
- We encourage the building of key R&D platforms in subsidiaries, strengthen the construction of state key laboratories and overseas laboratories, grant 10 million yuan of special funds every year to support the development of key research institutions, and advance reform to achieve progress in talent recruitment, incentives, and technology projects.

Advancing digitalization

- We have formulated the "361" digitalization development strategy and optimized the digitalization management system.
- We have formed the overall architecture of smart factories with "one cloud, one network, and one platform" to digitalize production and operation.
- We have implemented the special action on cybersecurity and have been recognized as an excellent unit of cyber and information security of the year by the Ministry of Public Security.



▲ In April 2022, CNMC held its fourth science and technology conference to arrange the technology agenda for the next stage.



▲ In August 2022, CNMC held an innovation seminar and signed a strategic cooperation agreement and a memorandum of understanding (MOU) on talent cooperation with Grimm Group and BGRIMM Technology Group to seek innovation and development.

Case

Focusing on technological bottlenecks and implementing the new open competition mechanism

In 2022, aware of problems that long restricted the production, operation, and development of the Company, CNMC organized the open competition mechanism by releasing a list of problems to be resolved to industry experts in China to tap into the intellectual potential of all sectors for open innovation. With the strong support of the SASAC's Bureau of Scientific and Technological Innovation, the State Administration of Science, Technology, and Industry for National Defense, and the China Non-Ferrous Metals Industry Association, CNMC carefully organized the open competition mechanism, which was well received by 132 research institutes, colleges and universities, and institutions. Finally, eight projects stood out, receiving a planned investment of 55 million yuan.

[The Open Competition Mechanism White Paper](#)



中色非洲矿业有限公司东南矿体

South East Orebody Analysis Center of NFC

检化中心
Africa Mining Plc



中国认可
国际互认
检测
TESTING
CNAS L17226

中国合格评定国家认可委员会
China National Accreditation Service for Conformity Assessment



The Zambia Laboratory of the International R&D Center of CNMC passed the expert review of the China National Accreditation Service for Conformity Assessment (CNAS). Obtaining CNAS certification marks that the laboratory's facilities, management, and testing capabilities have reached the world-class level, effectively improving the Company's influence in Africa.



02

Meticulous Operation for Business Success

Prioritizing quality and efficiency, CNMC integrates quality management into overall corporate operation and development, emphasizes quality and long-term value, and strengthens overall quality management and quality responsibilities to march toward the goal of building a world-class company.

97.1%
Product compliance rate in 2022

96.7%
Customer satisfaction

0
Major quality accidents and major customer complaints



Tightening Quality Management

Regarding stricter product quality control as an important part of high-quality development, CNMC improves quality management systems and processes and strengthens whole-process management of product quality and the quality training of cadres and employees to raise the overall quality of products and services.

Improving quality supervision and management

We emphasize the construction of quality systems and key technology research, improve and advance quality supervision and management on all fronts, and manage costs in all links of the whole process of production, operation, and management. By making the first attempts, we build up implementation standards, control systems, and typical cases to gradually improve quality management.

Key Performance in 2022



102
QC teams registered in the whole group

20
Industry association awards

2
QC group achievements receiving the second prize in the central SOE competition

26
Projects receiving the quality excellence award

2
Excellent engineering design awards

1
China patent excellence award

Setting the framework of quality management

We have issued the *2023-2025 Quality Development Plan*, which clarifies the quality objectives, policies, pathways, and key measures to build a company with a strong quality foundation, formulated specific goals and 23 key tasks for quality in the next three years, and formed the quality task list and roadmap.

We encourage the upgrading of the quality management system. In 2022, a total of 23 subsidiaries (including third-level subsidiaries) passed the quality management system evaluation as scheduled.

Upgrading the quality system

Carrying out activities to improve service quality

Aiming to improve quality, we organize subsidiaries to carry out activities to improve quality, evaluate quality performance, and optimize management. We also summarize quality management practices before promoting them within the whole group, strengthen collaboration between companies, and improve the influence of engineering service projects.

We improve the quality supervision mechanism, regularly investigate quality flaws and hidden dangers, and strengthen the quality risk control of key products. We also enhance process control and early warnings, optimize the quality inspection process, and analyze rectification progress to eliminate systematic risks of quality management.

Investigating and rectifying quality flaws and hidden dangers

Improving quality through innovation

With a problem-oriented mindset, we carry out research to explore new technologies or tackle technological bottlenecks for key system and product quality difficulties to improve important quality, technology, and business performance indicators.



- 1
- 2

1. CNMC Daye Smelter compiles the new version of *Smelter Product (Material) Quality Management Manual*
2. CNMC Luanshya Copper Mines Plc receives the certificate of conformity for its management system from the Zambia Bureau of Standards

Conducting quality training and education

During the "Quality Month" campaign, we roll out activities of quality improvement, quality research, quality competition, and QC team building, and promote effective quality management methods. We organize training in quality management system standards, enhance quality team building and training, and improve the comprehensive skills of frontline teams and quality inspection personnel, laying the foundation for standards to be implemented as required.

Case

Carrying out the "Quality Month" campaign to raise employees' awareness of quality management

From September to October 2022, Somidez Mining launched the "Quality Month" under the theme of "promoting quality reform and innovation and building a country with a strong quality foundation".

Quality promotion and competition activities: Extensive quality publicity and quality knowledge competitions improved the quality management awareness and ability of all employees.

Quality management team activities: QC group activities carried out by each department and factory strengthened the quality control of products and processes in the production process and improved product quality.

Quality inspection and supervision: Joint safety and quality inspections of the second-phase tailings ponds and the operations involving concentrated sulfuric acid were carried out according to safety and quality requirements.

Digitalization of quality management: Quality management activities were carried out to digitalize quality management and improve quality service efficiency.

Customer visits: Customer visits were carried out to elicit customers' feedback on product quality, based on which the on-site management of cobalt hydroxide product quality and packaging was strengthened.



▲ Joint safety and quality inspections

Offering Excellent Services

Putting customers first, CNMC provides convenient, efficient, and personalized services, makes timely responses to customer demands, and improves service quality and level. Customer privacy is protected and service processes are standardized and reasonable to improve customer experience and brand image for mutual benefits and win-win outcomes.

Somidez Mining's philosophy of business integrity

Adhering to the business philosophy of "integrity, innovation" and the principle of "customer first" to provide high-quality services.

Upholding the business philosophy of "good faith, mutual benefits, win-win cooperation" to sincerely cooperate with customers, new and old, for common development.

Committed to the business philosophy of "respecting contracts and keeping reputation" to seek more brilliance through unremitting efforts.

Strengthening the concept of business integrity, improving the Company's credit, promoting law-based operations, contributing to a whole-society credit system, and ensuring sustainable development of the Company.



Case

Carrying out customer visits with a better awareness of services

In November 2022, a team of CNMC Daye paid a visit to Chinalco Huazhong Copper Co., Ltd. (Chinalco Huazhong Copper) to get quality information. Representatives of Huazhong Copper introduced the application of CNMC Daye copper cathode on its high-end copper foils. The team also visited the production site of Huazhong Copper to have first-hand observations of the customer's demand for product specifications and quality. By understanding customer needs, CNMC Daye could improve the quality of products and services and polish its brand.

"CNMC Daye copper cathode has consistent performance and meets our expectations. We expect more cooperation in the future."

—Chen Jiangqiao, Chief Engineer of Chinalco Huazhong Copper



▲ CNMC Daye's team visits the production site of Chinalco Huazhong Copper to get quality information



▲ CNMC Daye is on the national product and brand value list

Sticking to the Safety Bottom Line

CNMC resolutely implements the 15 "hard measures" for work safety proposed by the Work Safety Commission of the State Council. The Company improves the safety management system and work safety policies, carries out special campaigns, ramps up safety input, and enhances education and training to standardize safety management. CNMC also strengthens safety protection education and continues to level up safety management to ensure that work safety goes hand in hand with production and operation.

Maintaining work safety management

CNMC continues to improve the safety management system. We have formulated the 2023-2025 Safety and Environmental Protection Development Plan to ensure that safety and environmental protection are deployed and advanced together with production and operation. We have also written or revised eight work safety regulations such as the Work Safety Management Measures to ensure that the main responsibility for work safety is implemented. The Work Plan for Implementing the Important Work Safety Measures Required by the State Council Work Safety Committee and the 15 measures for mine work safety have been released, together with over 10 special actions to investigate and rectify potential safety hazards on a large scale. CNMC has compiled the work safety inspection list, thoroughly investigated and addressed hidden risks, carried safety production enhancement year activity, and sought improvements in five aspects of work safety awareness, responsibility implementation, special rectification, management ability, and intrinsic safety.

Key Performance in 2022



0

Work safety accidents of major or above degrees

43.2%

A significant year-on-year decrease in accidents causing injuries

Raising awareness of safe development



We implement decisions made at governmental meetings and important documents in a timely manner. In 2022, more than 10 study sessions were held on the implementation of the new Law of People's Republic of China on Work Safety and 15 hard measures for work safety. We organize risk prevention and enhance the bottom-line awareness of safety and environmental protection.

Enhancing work safety accountability



We urge the people in charge of subsidiaries to perform responsibilities and have safety and environmental protection responsibility letters signed and annual performance evaluated. We revise the Regulations on the Safety and Environmental Protection Responsibility System of the Headquarters, urge subsidiaries at all levels to improve the responsibility system for all employees, and implement quarterly and annual performance evaluation of safety directors. A system for rewarding the reporting of major hidden dangers and misconduct at all levels is established with all employees shouldering their work safety responsibilities.

Establishing a daily inspection and reporting mechanism for major safety risks



To effectively prevent and resolve major safety risks, we follow the principle of "full coverage, classification and summary, priorities, inspections, convenient reporting, efficiency" to build a daily inspection and reporting mechanism for major safety risks. In 2022, there was no work safety accident of ordinary and above degrees and the Company's work safety was improved.

Strengthening special work safety supervision



We carry out on-site safety and environmental protection inspections of key subsidiaries. The executives organize the "comprehensive management and safety and environmental protection special video conference" while the department of safety and environmental protection is responsible for both on-site and online inspections. A safety and environmental protection supervision team is established to conduct full-coverage inspection tours by entering key subsidiaries in China one by one to address difficulties in safety and environmental protection and hidden dangers.

Organizing safety education and training

We give work safety lectures for middle and senior managers of subsidiaries at all levels, conduct online training on mining and safety technology and fire safety for overseas Chinese-funded enterprises, and release the *Collection of Work Safety Accident Cases*. Safety education is strengthened to see that employees can learn from typical cases more effectively and raise the safety awareness of all employees.



Under the theme of "abiding by the law on work safety and being the primary person in charge", "Work Safety Month" for publicity and education purposes was carried out in a variety of forms.

On June 1, 2022, subsidiaries at home and abroad simultaneously held 214 kickoff ceremonies for Work Safety Month, attracting 13,000 participants.

A total of 2,670 safety slogans, banners, and posters were put up, 138 safety advertisements and other publicity materials were broadcast, and more than 200 Work Safety Month articles were released on the Company's website and WeChat public account to foster a strong atmosphere.

Given the reality, more than 800 safety publicity activities were carried out at subsidiaries or communities, such as the June 16 Safety Consultation Day, safety cartoon exhibition, safety letters to families, accident warnings, and work safety knowledge competitions, benefiting more than 30,000 people.

CNMC studies President Xi Jinping's important remarks on work safety.



CNMC Daye holds the 2022 work safety knowledge training course for middle and senior managers.



CNMC Albetter employees sign the safety commitment letter.



CNMC Nickel holds the launching ceremony of the "Work Safety Month".



Improving emergency response

We carefully analyze the safety risks in our industry and regions. Given work safety during the flood season and the reality of the Company, we have organized more than 700 emergency drills such as hazardous chemical leakage, mine collapses, poisoning, fire, flood control, etc., for 20,000 participants, effectively improving the on-site rapid response and coordination to deal with safety emergencies. These drills have achieved the goal of testing plans and mechanisms as well as training teams and employees.



Hongsheng Copper carries out comprehensive inspections of safety, fire protection, and facilities.



CNMC Daye emergency rescue team carries out a flood rescue drill.



Lualaba Copper Smelter conducts a fire drill.



CNMC Baiyinnuoer Mining carries out emergency drills for flood control and discharge of tailings ponds.



Chambishi Copper Smelter Limited carries out a first aid competition.



NFCA holds a first-aid skills competition for Zambian employees.



03

Green Development in a Low-carbon Transition

Committed to the concept of green and low-carbon development, CNMC promotes innovation, upgrades management, advances the low-carbon transition, and optimizes the resource and energy structure. We have fostered an environmental protection atmosphere that engages all employees, taken multiple measures to protect the environment, and pursued sustainable and low-carbon development.

13
Enlarged meetings of the safety and environmental protection committee and video conferences on safety and environmental protection

0
Environmental emergency incidents

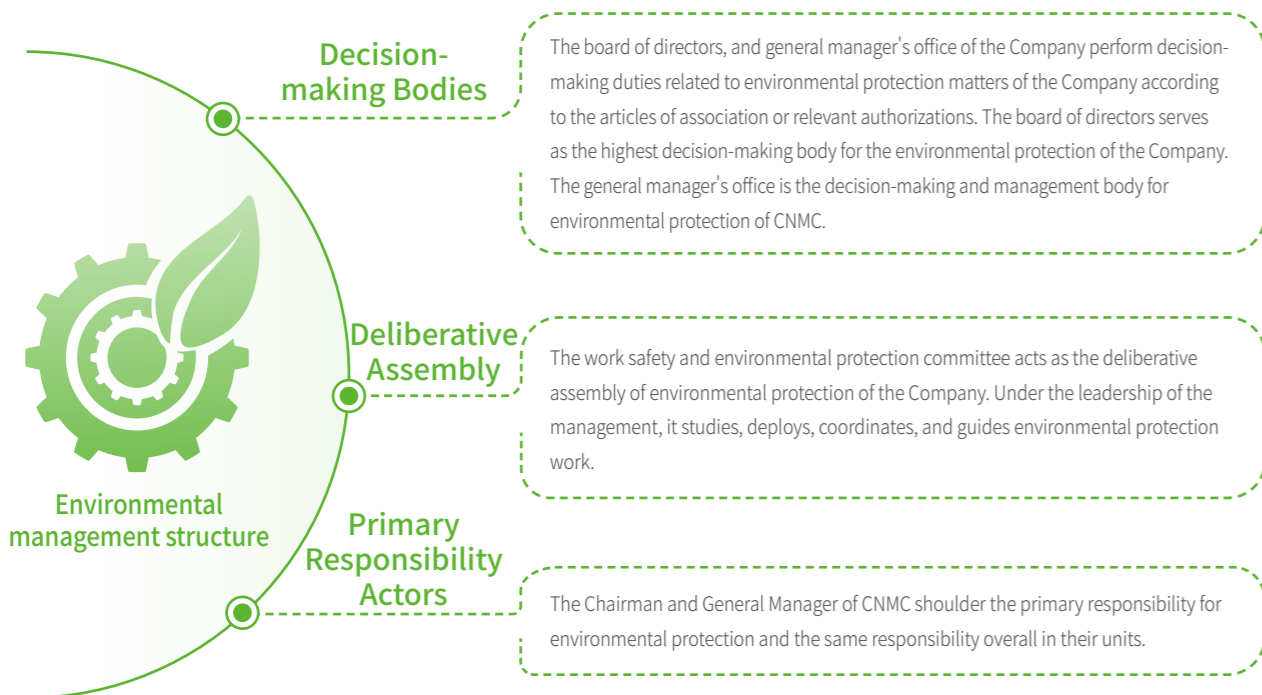


Strengthening Environmental Management

Informed by the feedback from the environmental protection inspectors to address issues, CNMC promotes upgraded energy conservation and environmental protection projects and improves environmental protection level to stimulate the vitality for active and intrinsic environmental protection and green development. A long-term mechanism for environmental protection is built to support the green and high-quality development of the Company.

Environmental management structure

We have established an environmental management structure consisting of the decision-making body, the deliberative assembly, and the person shouldering primary responsibilities. We strengthen environmental publicity, promote green production, and implement energy conservation and carbon reduction. Responsibilities at all levels are delivered and the leading role of technology is leveraged to improve our environmental protection capabilities and practice the concept of sustainable development.



CNMC holds special training on environmental protection.

Long-term environmental management mechanism

Guided by the Xi Jinping Thought on Ecological Civilization, we have built a long-term mechanism for environmental protection on all fronts and implemented China's 30·60 Decarbonization Goal requirements by the SASAC. While addressing prominent environmental issues faster, we raise awareness of environmental protection among cadres and employees at all levels to see that environmental protection is integrated into production and operation. CNMC also steadily contributes to China's action plan to peak carbon dioxide emissions before 2030.

Strengthening carbon peak and carbon neutrality publicity and education
Based on an in-depth understanding of the speeches made by President Xi Jinping and documents issued by the State Council, and SASAC on carbon peak and carbon neutrality, we strengthen publicity and education in the whole Company to improve employees' duty performance.

Making overall coordination and leadership arrangements
We have established a carbon peak and carbon neutrality team to lead and coordinate the related agenda.

Requiring responsibilities to be delivered at each level
We tighten target implementation, incorporate carbon emission indicators into the annual safety and environmental protection performance evaluation of subsidiaries, and delegate carbon peaking responsibilities to each production entity.

Strengthening capability building on supervision
We build a centralized management and control platform for safety, environmental protection, and energy, improve supervision covering key areas, indicators, tasks, etc., entourage information integration and instant sharing, and improve the long-term working mechanism.

Case

Establishing an online environmental protection data monitoring and early warning platform to monitor emission information

To monitor emission information for early warning, CNMC (Guangxi) Pigma has established an online environmental protection data monitoring and early warning platform. The safety and environmental protection department closely follows the use of the early warning platform given the actual situation of each unit to ensure that relevant leaders, environmental protection management personnel, and operators adopt the early warning platform in a timely manner. The environmental protection department instructs relevant personnel to log into the platform using their WeChat accounts to prevent excessive discharge, ensure stability in the environmental protection data, and give early warnings.

CNMC (Guangxi) Pigma online data monitoring and early warning platform



Advancing Energy Conservation and Emission Reduction

Committed to green development, CNMC explores ways to save energy and reduce emissions, improves corresponding management and equipment utilization, and upgrades production processes. We also promote the use of clean energy and optimize logistics and transportation to reduce energy consumption and emissions and contribute to China's 30·60 Decarbonization Goal.

Reducing energy consumption

We have established an equipment and energy management body to strengthen supervision of 30·60 Goal progress, energy, and equipment. In pursuit of a green and low-consumption development path, we eliminate energy-intensive mechanical and electrical equipment and promote more eco-friendly and sustainable production methods based on the Company's energy and equipment use and our targets.



CNMC Zinc's energy management system certified for its higher level of energy conservation management

For the energy management system certification, CNMC Zinc standardizes its energy conservation and improves the level of energy conservation management, laying the foundation for energy conservation and carbon reduction. CNMC Zinc purchased high calorific value lignite in 2022, saving 45,000 tons of lignite and reducing carbon emissions by about 53,000 tons when normal production was guaranteed.

CNMC Zinc's energy management system certification

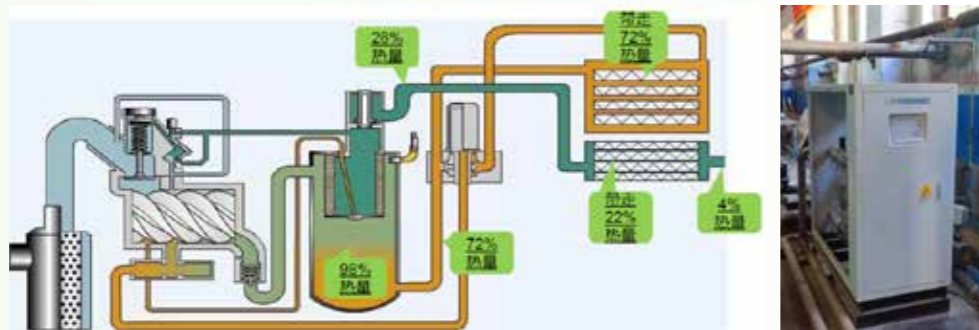


Utilizing waste heat of air compressors CNMC Hongtoushan copper-zinc mine, a new approach to save energy, reduce consumption, and create new technologies

CNMC Hongtoushan copper-zinc mine is equipped with four air compressors, which waste lots of heat when producing high-pressure air. In 2022, the copper-zinc mine upgraded the heat exchanger unit to make use of the waste heat of the 2# and 3# air compressors. Water heated by the 2# air compressor is sent to the heating pipes to heat the drying room, while the 3# air compressor provides hot bathing water for the copper-zinc mine employees. Waste heat from the air compressors was fully recovered, providing new ideas for energy conservation, consumption reduction, and technological innovation.

1 2

1. Process of waste heat utilization of the CNMC Hongtoushan copper-zinc mine air compressor
2. Installed heat exchanger unit



Promoting clean production

Coinciding with environmental protection inspections by the government agency, we develop key technologies for clean production and low-carbon transition for smelters, adopt clean energy, efficient smelting technology, and digital technology, and seek breakthroughs in key areas such as the efficient recycling of non-ferrous metals for to reduce pollution.



CNMC Luanshya Copper Mines Plc creates new low-carbon technology with the installation of a floating automatic water quality monitoring device

In October 2022, the Baluba copper mine and the beneficiation plant of CNMC Luanshya Copper Mines Plc installed a power compensation device and a floating automatic water quality monitoring device to monitor five indicators: temperature, PH value, total suspended solids, total dissolved solids, and flow. After the device was put into use, due to its low costs, mobility, complete functions, reliability, and online monitoring of water quality and early warning, it was recognized unanimously by the Zambia Environmental Management Agency and the Mines Safety Department.



▲ CNMC Luanshya Copper Mines Plc's low-carbon technology innovation (floating automatic water quality monitoring device)

LCS adopts the oxygen-enriched smelting process to reduce carbon emissions

LCS adopts the oxygen-enriched smelting process, with an oxygen-enriched concentration of 75%. It reduces the emission of nitrogen oxides and carbon compared with the 53% oxygen-enriched smelting process of the ISASMELT process. LCS uses sulfur as fuel to reduce CO₂ emissions. Sulfur is added to the smelter to ensure enough heat for the process and the need to produce sulfuric acid while reducing the emission of CO₂.

Stepping up recycling efforts

Prioritizing the environment and green development, we formulate low-carbon development plans, strengthen comprehensive utilization of resources and delicacy management, and protect the environment to build a resource-saving and eco-friendly enterprise.



Adopting reusable vacuum-formed trays to reduce packaging carbon emissions

CNMC New Material Technology, an enterprise affiliated with the CNMC Innovation Institute (Tianjin) Co., Ltd., produces JHK-464, 494, 503, and other water jacket products. For example, the 464 products weigh 7.25kg with a length of 201.5mm. The wooden tray plus cardboard could hold 48 sets of products. Given an annual production of 200,000 products, 4170 sets of trays would be used. To save packaging and reduce carbon emissions, the company purchased vacuum-formed trays that could be recycled for three years, reducing the consumption of wooden trays and cardboard.



◀ CNMC New Material Technology, an enterprise affiliated with the CNMC Innovation Institute (Tianjin) Co., Ltd. adopts reusable vacuum-formed trays.

Protecting the Ecological Environment

CNMC improves the environment of mines through better environmental protection measures and stronger capabilities, implements environmental protection responsibilities, and practices the concept of "green, circular, and low-carbon development" for environmental protection.

Improving the environment of mines

We are committed to improving the environment. For example, environmental protection facilities are built and land, water, and other environmental factors around mines are monitored. We also carry out landscaping to increase plant coverage, restore land, and conserve biodiversity around mining areas.

CNMC has 7 mines in China that have been classified as green mines:

No.	Subsidiaries	Mines	Green mine category	Included on
1	CNMC Daye	Tonglv Mountain Mine	State-level	January 11, 2021
2	NFC	Baiyinnuoer lead-zinc mine of Chifeng CNMC Baiyinnuoer Mining Co., Ltd.	Provincial-level	May 19, 2020
3	CNMC (Guangxi) Pigma	Shanhu mine of Guangxi Guihuacheng Co., Ltd.	State-level	January 8, 2020
4	CNMC Daye	Tongshankou copper mine	State-level	January 2020
5	CNMC Hongtoushan	Hongtoushan copper mine	State-level	January 2020
6	CNMC Shenyang Mining Investment Co., Ltd.	Chifeng Dajingzi Mining Co., Ltd.	State-level	January 2020
7	CNMC Daye	Sareke copper mine of Xinjiang Huixiang Yongjin Mining Industry Co., Ltd., Ulugqat County, Xinjiang Uyghur Autonomous Region	State-level	2019

Case

The Muliashi tailings pond of CNMC Luanshya Copper Mines Plc builds a green benchmark of tailings ponds in Zambia

In April 2022, CNMC Luanshya Copper Mines Plc started to build the dam of the Muliashi tailings pond using waste stone, and the south dam was completed, stretching 1250 meters. Built on a relatively flat surface, Muliashi tailings pond could be stabilized with the dam project while less land would be occupied to store waste stone, and less environmental pollution would be produced. This laid the condition for sustainable, green, and high-quality development of the company.



▲ The Muliashi tailings pond of CNMC Luanshya Copper Mines Plc

Case

Simultaneous mining and landscaping of CNMC Nickel Co., Ltd.

According to the principle of simultaneous mining and landscaping, CNMC Nickel Co., Ltd. landscapes goafs including dumping yards and restores plants. Trees and grass are planted in living and office areas to improve the environment and reduce dust and negative impact on the ecosystem, with a plant coverage rate of about 98%. CNMC Nickel Co., Ltd. also cleans 72 sedimentation tanks during dry seasons and drainage ditches for 1,200 meters. Measures such as building multi-level sedimentation tanks, setting culverts at outlets, landscaping, and building dams and fences to prevent soil erosion.



▲ Layered slope in the dumping yard of CNMC Nickel Co., Ltd.



▲ Mine landscaping by CNMC Nickel Co., Ltd. to create a garden-style mine

Conducting Non-profit Activities for Green and Low-carbon Development

We have established an environmental protection training system and carried out World Environment Day, Energy Conservation Publicity Week, and Low Carbon Day activities to heighten the awareness and abilities of all employees to protect the environment and save energy. Starting from small things, we foster an atmosphere of "green and low-carbon development, energy conservation first" to safeguard clean and beautiful communities.



Before cleaning



After cleaning

▲ Sino-Metals Leach Zambia Limited spends about 40,000 yuan to help clean up 1.2 kilometers of the Lulamba River near a village.



▲ CNMC Hongtoushan launches an energy-saving publicity week activity.

04

Win-win Cooperation for Shared Prosperity

Based on the vision of building a community with a shared future for mankind, CNMC deepens open cooperation with stakeholders, works together on a broader consensus, and shares development benefits for a win-win result future.

6
Companies such as BGRIMM Technology Group and GRINM Group with which CNMC signed MOUs on strategic cooperation and talent cooperation

100%
Employee social insurance coverage

10.5
Days of paid annual leave for each employee



Performing Social Responsibility Overseas

Under the Belt and Road Initiative and the Company's "1+4" development strategy, CNMC urges overseas subsidiaries to fulfill social responsibilities and contributes to the prosperity and development of host countries on all fronts by bolstering economic growth, recruiting local employees, promoting cultural integration, and giving back to local communities.

Stimulating economic growth for local prosperity together

Putting localized operations high on the corporate agenda, we hire local employees, strengthen the training of local talent, create more job opportunities, and ensure equal employment. These efforts drive local development and share the benefits of the Belt and Road Initiative.



Advancing economic growth and talent training for robust China-Myanmar relations

Since entering the Myanmar market, CNMC Nickel Co., Ltd. has integrated into the local community and worked with the local government for harmony and win-win results, demonstrating the responsibility of a Chinese enterprise investing in Myanmar. As of 2022, CNMC Nickel Co., Ltd. had paid taxes and fees amounting to USD 243.9 million to the Myanmar government through the export of nickel-iron products. Each year, CNMC Nickel Co., Ltd. purchases about 1.2 million gallons of diesel and about 150,000 tons of coal from Myanmar worth over USD 15 million. These deals increase tax revenue and promote the development of Myanmar's coal, transportation, and other related industries.

By the end of 2022, CNMC Nickel Co., Ltd. had 1,418 employees, including 1,225 Myanmar staff, or 86% of the total. Myanmar employees held five deputy factory director positions, seven assistants, 31 general management positions, 66 chief and deputy operation directors, and 159 chief and deputy team leaders. In 2022, CNMC Nickel Co., Ltd. held a meeting attended by representatives working as Myanmar operation directors and above, who provided suggestions on 38 issues in six aspects such as the company's reform, development, workplace environment, etc. These issues were included in a list and assigned to special personnel to handle before the deadline. All of the 38 issues had been resolved by the end of 2022, making local employees feel satisfied.



▲ CNMC Nickel Co., Ltd. holds a meeting attended by Myanmar employees

Connecting different cultures to build a bridge of communication

We fully respect local traditions and cultures. Given the needs of stakeholders with cultural backgrounds in different regions, we promote people-to-people exchanges and cultural integration for mutual benefits and win-win results.



"Chinese + vocational training" to build a harmonious company-community relationship

In May 2022, the 18-week Chinese training course held by Dairi Prima Mineral in Indonesia owned by CNMC in partnership with an institution from China came to an end. Launched at the end of 2021, the course engaged more than 40 Indonesian employees of Dairi Prima Mineral and 22 teachers and students from SMK N1 vocational high school in Dairi County. Dairi Prima Mineral created a new way of enriched people-to-people exchanges to promote mutual trust and understanding between Chinese and Indonesian employees and achieve notable progress in team cohesion.



▲ An employee taking Chinese courses

China Nonferrous Metals International Mining holds a special lecture on cross-cultural communication between China and Tajikistan

In July 2022, China Nonferrous Metals International Mining held a special online lecture on cross-cultural communication for all Chinese and Tajik employees. The lecture was delivered by a professor with Xinjiang Normal University who supervises graduate students and with the Confucius Institute at the Tajik National University. Through special study sessions and discussions, Chinese and Tajik employees had a greater understanding of the importance of cross-cultural communication between China and Tajikistan. They wanted to create a good environment for production and operation through the soft power of culture to promote the sustainable and healthy development of the company.



▲ Smelter employees listening to the lecture on cross-cultural communication between China and Tajikistan

Promoting philanthropy to show our care

When doing business globally, we practice corporate social responsibility and give help to others by carrying out non-profit activities overseas and volunteer services, empowering others with love in serving the Belt and Road Initiative.



Case

Carrying out non-profit activities to build a harmonious community

Given the needs of local communities and residents in Indonesia, Dairi Prima Mineral conducted non-profit activities to resolve the issues faced by local communities and contribute to local culture, education, healthcare, and community harmony. Since school facilities in the nearby community required urgent improvements, starting from August 2022, Dairi Prima Mineral repaired libraries for the Lokkotan primary school, Paud Grace kindergarten, and Paud Kasah kindergarten and equipped them with desks, chairs, bookshelves, teaching items, and more than 400 books.



◀ Children love the books in the school library

Donating money to build infrastructure to share development benefits with communities

Putting corporate development into the context of CSR performance, Tsairt Mineral Co., Ltd. localized operation and management and communicated with local communities to understand their living conditions. Having signed a three-year cooperation agreement with the government in Mongolia, Tsairt Mineral Co., Ltd. donated money to build local infrastructure that supports the development of education, healthcare, and culture. These efforts benefited locals, shared development benefits with communities, and drove economic growth. From 2005 to the end of 2022, Tsairt Mineral Co., Ltd. created nearly 600 jobs and donated about USD 8 million, establishing a good image as a responsible company.

Building a Responsible Supply Chain

To integrate upstream and downstream resources in the supply chain, CNMC builds sincere, transparent, and trustworthy business relationships with partners, maintains mutually beneficial and win-win cooperation, and improves the supplier management system. We promote centralized and responsible procurement and establish long-term partnerships for sustainable development.

Following the principle of "strict access, classification, dynamic assessment, merit-based cooperation", we implement the two-level supplier management system specifying that those procuring products should take responsibilities and get evaluated and managed, and establish a mechanism for supplier sourcing, access, selection, evaluation, reward or punishment, and elimination to form a stable and competitive supplier team qualified to meet the needs of the Company.

In 2022, we got rid of some suppliers while adding new ones, and 38 suppliers with bad behavior were blacklisted.

We apply the procurement and tendering e-commerce platform. All procurement announcements and results are released in the China tendering and bidding public service platform and Chinabidding.com to ensure open and transparent procurement at all levels of subsidiaries.

Promoting the e-commerce platform

According to CNMC's revised *Supplier Management Measures*, all subsidiaries have formulated more detailed *Supplier Management Measures* or implementation rules according to CNMC's policies and their business characteristics.

Preparing and revising management measures

In addition to monthly supplier review, we dynamically evaluate supplier procurement behavior, contract performance, after-sales service, etc. According to the results of monthly assessments, we conduct annual supplier evaluations, based on which suppliers are graded. The grading is applied to subsequent procurement activities.

Evaluating suppliers



Case

CNMC holds the 5th Import Procurement Signing Ceremony

In November 2022, the fifth China International Import Expo was opened, in which CNMC had participated for five consecutive years. Subsidiaries of CNMC such as CNMC Daye, NFC, and CNMC International Trading signed 12 import procurement contracts with foreign companies worth over USD 1.583 billion, further consolidating the partnerships between CNMC and suppliers.



▲ The 5th CNMC Import Procurement Signing Ceremony

Seeking Win-win Strategic Cooperation

CNMC seeks strategic cooperation with governments, companies, research institutions, and other partners to pool the strengths of multiple parties, integrate resources, and achieve complementarity and high-quality development.

Key Performance in 2022



- 6 Companies such as BGRIMM Technology Group and GRINM Group with which we signed MOUs on strategic cooperation and talent cooperation.
- Established a joint venture, CNMC Zhengyuan, with Xiamen Tungsten Co., Ltd. to support the development of new energy.
- Established an innovation research institute with the Tianjin Municipal Government to support the development of strategic emerging industries in Tianjin.
- Signed a strategic cooperation agreement with Beijing University of Technology, Central South University, and Zhengzhou University to create a joint training base offering master's and doctoral degree programs.



Case

CNMC joins hands with GRINM Group and BGRIMM Technology Group to strengthen the supply of original technology

In August 2022, the CNMC Technology Innovation Seminar, also the signing ceremony of strategic cooperation among CNMC, GRINM Group, and BGRIMM Technology Group, was held in Beijing. CNMC would build a new platform and mechanism for three-party cooperation in green and intelligent mines, solid waste utilization, energy conservation and environmental protection, new materials, talent cooperation, and BRI. Given national strategies and the need for high-quality development, the three companies would strengthen the supply of original technology and make breakthroughs in key technology which is dominated by foreign owners. This would make CNMC better control key non-ferrous metal resources and links, support China's equipment manufacturing, technology, standards, and services to go global, and reinforce CNMC's position in the industry globally.



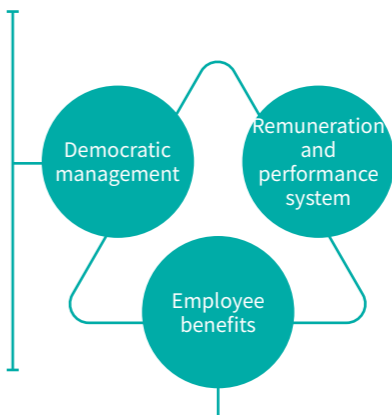
▲ CNMC Technology Innovation Seminar, also the signing ceremony of strategic cooperation.

Increasing Employees' Versatility

Safeguarding the rights and interests of employees

We comply with universal practices related to human rights and labor use and relevant laws and policies in host countries. Committed to the principle of equal employment, we recruit employees of different nationalities, races, genders, religious beliefs, and cultural backgrounds with labor contracts signed as required by laws to protect the rights and interests of employees, and eliminate the use of child labor and forced labor.

We implement the democratic management system mainly reflected in the staff representative congress and factory affairs disclosure, and revise the *Management Measures for the Staff Representative Congress of CNMC*. Major corporate decisions, reform plans, and matters involving the vital interests of employees are deliberated by the staff representative congress. The general manager is required to report to the staff representative congress and cadres are evaluated in a democratic process, which ensures that the staff representative congress fully plays its role.



We improve policies such as *Salary Management Measures* and *Performance Evaluation Management Measures*. According to the Company's development strategy, competitiveness, and profitability, we make accurate salary strategies and improve basic systems such as the salary management system and performance management system. According to the principle of "linking salaries to profitability", we guarantee that total salaries rise or fall in tandem with profits.

All subsidiaries contribute to employees' endowment insurance, medical insurance, unemployment insurance, employment injury insurance, maternity insurance, and housing fund in full and on time in strict accordance with the national regulations, add commercial insurance for employees if necessary, and offer holiday benefits. For employees working at overseas subsidiaries, annual leave for family visits, free air tickets, and overseas subsidies are provided to support employees working outside China.

Key Performance in 2022



45,738

The total number of employees

100%

Employment contract signing rate

100%

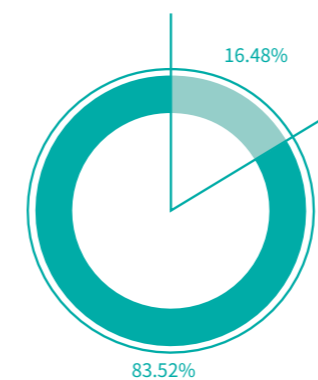
Social insurance coverage

10.5

The number of paid annual leave for each employee

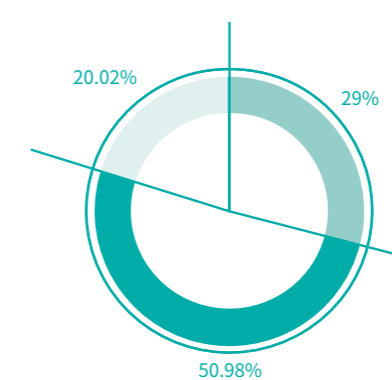
26.01%

The proportion of female managers



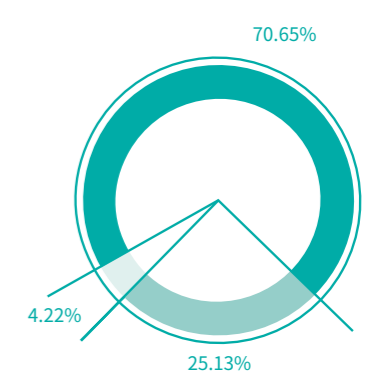
● Male ● Female

Employees by Gender



● 36-50 ● ≤ 35 ● ≥ 51

Employees by Age Group



● Junior College or Lower ● Bachelor's Degree ● Master's Degree or Higher

Employees by Educational Background

Unblocking career path

Dedicated to the concept that talent is the primary resource, we integrate talent development into the big picture of strengthening the main business and achieving high-quality development and set three career development paths of design management, technology, and skills. In each path and job grade, we clarify the rules for horizontal mobility, which is aligned with vertical promotion. We also improve supporting assessment and salary incentive policies, form a complete position and job grade system, and foster a favorable environment that unleashes the potential of outstanding talent.

We invest money in employee training, implement categorized talent training, and carry out targeted training for cadres and talent and on the corporate system, and qualifications to improve the effectiveness of training.

Key Performance in 2022



1,126

Employee training sessions

433,538

Hours of staff training

100%

Staff training coverage



Case

Kambove Mining SAS's outstanding DRC employee commendation under the topic of "following examples and growing together"

On July 20 and December 24, 2022, Kambove Mining SAS held the open day event to commend half-yearly and annual outstanding DRC employees on the theme of "following examples and growing together". A total of 179 monthly, quarterly, half-yearly, and annual outstanding employees were recognized in 2022. In the half-yearly outstanding employee commendation on July 20, 18 excellent DRC employees were acclaimed after competitive selection. In the annual outstanding employee commendation on December 24, 30 DRC employees received their honors with their families witnessing the glorious moment together.



▲ Prizes awarded to outstanding employees



▲ Outstanding employees and their families take photos in the office building to keep their joyful moments

Caring about employees wholeheartedly

Putting people first, we care about employees, listen to their demands and suggestions through seminars, meetings with executives, and face-to-face talks, and help solve their urgent and distressing problems. Programs such as helping employees in difficulty, sending warmth, student subsidiaries, and medical mutual aid are normalized with services for overseas employees and care for female employees strengthened. We try to enrich employee activities outside of work to enhance employees' sense of happiness, gain, and belonging.



Honor

CNMC Zinc is awarded the national honor of "National Model Enterprise for Harmonious Labor Relations".



▲ Sending care to staff in difficulty



▲ Sending care to employees of host countries in difficulty



▲ Sending gifts to employees battling with high temperatures



▲ Holding meetings for the families of Chinese employees working overseas under the theme of "Caring for the Families of Overseas Employees"



▲ Celebrating International Women's Day



▲ DRC employees participate in the tug-of-war competition



▲ Holding a basketball competition



▲ Carrying out employee healthcare activities

05

Responsibility Inheritance for Social Harmony

Taking people's aspiration to live a better life as our goal, we contribute to rural vitalization and voluntary services, help build communities, and engage in non-profit projects to share the outcomes of development with the public for social progress.

Earmarked **43.0332** million yuan as donations and for paired assistance and rural vitalization

Won the highest rating of "good" in the assessment of central SOEs' rural vitalization efforts



Building Harmonious Communities with Shared Prosperity

While building projects, CNMC contributes to community development by setting unhindered communication channels with local communities, swiftly addressing problems in project construction, and organizing non-profit activities to give back to society in a positive manner.



Case

Holding science lectures on campus to kindle the passion for science

In May 2022, on the National Day of Science and Technology Workers, CNMC Guilin Institute of Mineral Geology Co., Ltd. together with Guangxi Nonferrous Metals Society, carried out the "Science Lectures into Campus" activity by inviting a professor-level senior engineer with the Institute of Mineral Resources and Geology to give a lecture at Longyin Primary School in Guilin. Under the theme of "Let's explore the world", the lecture touched upon the earth's structure, rock and mineral formation, and the classification, exploration, development, and utilization of mineral resources. Rigorous research, vivid narration, colorful mineral photos, and exciting prospecting stories led students to a new world and gave them a basic understanding of mineral resources.



▲ Students carefully examine the ore samples and listen to the explanations about the knowledge and use of ore minerals



▲ CNMC Baiyinnuoer Mining donated a sanitation vehicle to Yaoeryagacha



▲ The Youth League Committee of China 15th Metallurgical Construction Group Co., Ltd. carries out a voluntary tree-planting activity



Case

Reinvigorating community football activities to deepen the friendship between China and Zambia

While going all out to promote development and profitability, CNMC Luanshya Copper Mines Plc sees CSR performance as an important pillar to sharpen core competitiveness. The company clarifies the role and significance of CSR performance in shaping China's global image, promoting local development, deepening the friendship between Chinese and Zambian peoples, and serving the pilot implementation of BRI in Africa.

Over the 13 years since its establishment, CNMC Luanshya Copper Mines Plc has provided 16,799,088.73 yuan in sponsorship to Roan United Football Club. Thanks to the company's unwavering support, Roan United Football Club has achieved a proven track record in Zambia Super League for the past 13 years. In the 2022-2023 season, it topped the list of the Super League, winning honors on behalf of the people of Luanshya.



▲ Roan United Football Club in competition



▲ The Kambove Mining SAS community activity of "lasting friendship for a shared future"



▲ Somidez Mining holds an open day



Offering Voluntary Services in a New Era

Upholding the volunteer spirit of dedication, friendship, mutual help, and progress, we normalize volunteer services, encourage employees to participate in non-profit activities, and engage in rescue and disaster relief to contribute to social harmony.



Case

CNMC (Guangxi) Pigma cultural union carries out a voluntary activity at the Daming Primary School

In May 2022, on the 9th China Literary and Art Volunteer Service Day, CNMC (Guangxi) Pigma cultural union, together with Guangxi Hezhou Literary and Art Association, jointly held the Hezhou "Red Literary and Art Cavalry" volunteer service activity at the Daming Primary School in Daming Village of Etang Town, to which CNMC (Guangxi) Pigma offered paired assistance, and sent supplies to the teachers and students of the school.

Literary and art professionals from the Hezhou Literary and Art Association taught students of Tuyao ethnicity at Daming Primary School music, dance, and recitation skills, and guided students to perform art in the school playground, bringing a new artistic experience to the students and arousing their curiosity to art. The event was organized in an orderly manner by CNMC (Guangxi) Pigma volunteers. Aiming to improve students' aesthetic skills and literary and art education, the activity empowered students to chase their dreams. Volunteers also sent supplies such as sports equipment, stationery, and milk to teachers and students to express their support for rural education.



▲ "Red Literary and Art Cavalry" volunteer service activity at the Daming Primary School



Case

Promoting the spirit of Lei Feng with a community-level voluntary repair activity

In March 2022, before the "Lei Feng Day (a role model in China for his selfless service to the people)", the activity of "promoting the spirit of Lei Feng with a community-level voluntary repair activity" hosted by CNMC Orient Youth League Committee at the project area was held with the support of subsidiaries. Repair personnel carefully checked and repaired home appliances such as electric heaters, pots, electric cake pans, and foot baths for community residents and even visited households to check their lights, door locks, and doorbells. The activity received all positive comments from residents.



▲ "Free Repair at Community" volunteer service activity by Ningxia Orient Tantalum Industry Co., Ltd.



▲ "Small Household Appliance Repair for Villagers" volunteer service activity by Northwest Rare Metal Materials Research Institute Ningxia Co., Ltd.

Making CNMC's Contributions to Rural Vitalization

We consolidate what has been achieved in poverty alleviation, serve the rural vitalization strategy, and focus on the five aspects of rural vitalization to bolster economic, social, and industrial development in the counties to which we offer paired assistance.

Key Performance in 2022



11.57 million yuan

Assistance funds donated by CNMC

Won the highest rating in the evaluation of the central SOE's targeted assistance efforts

871,900 yuan

CNMC-assisted agricultural product sale revenues from counties to which CNMC offers paired assistance and areas lifted out of poverty

614 person-time

Primary-level cadres trained

119 person-time

Leaders in rural vitalization trained

439 person-time

Technical professionals trained

899,200 yuan

Agricultural products purchased from counties to which CNMC offers paired assistance and areas lifted out of poverty



Organization and leadership

- **Studying and arranging paired assistance:** We study how to deploy paired assistance, review the annual paired assistance plan, and learn from President Xi Jinping's important remarks on issues related to agriculture, rural areas, and farmers. We also hold special meetings involving the team in charge, put forward the principle of "timeliness, accuracy, practical actions, and effectiveness", convene meetings to advance the agenda in rural vitalization, and step up assistance efforts.
- **Inspecting counties under paired assistance:** We take seven visits to paired assistance counties for inspection, during which they offered one guidance session, identified two major problems, and produced two inspection reports. In July 2022, Xi Zhengping, Chairman of CNMC, led a team to inspect Lianghe County.
- **Managing and supervising cadres on temporary stints:** We care about and support cadres on temporary stints and make paired assistance programs an important platform to improve the abilities of cadres. We ensure quarterly communication among the office of the team in charge, cadres on temporary stints, and the Lianghe County Rural Vitalization Bureau to strengthen the overall coordination and supervision of paired assistance.
- **Planning and innovating paired assistance:** Together with Lianghe County, we compiled the 2023-2025 paired assistance plan. The two sides will foster sustainable industries, consolidate conventional industries such as planting, breeding, and processing of agricultural products, and explore rural vitalization projects such as hot spring resource development and wellness tourism.



CNMC and Lianghe County paired assistance meeting



Inspecting the Lianghe Huilong tea industry



Industrial vitalization

- Introducing a private company selling metal materials, new-type metallic functional materials, non-metallic minerals and products to Lianghe County with an investment of 1 million yuan
- Investing 3 million yuan to build a rural vitalization demonstration site in Bingsai Village around the Lianghe County hot spring resort, developing tourism products such as village- or hot-spring-based wellness tourism to help build the brand of "a new wellness destination-Lianghe, a village of cucurbit flutes"
- Helping 96 people lifted out of poverty to get reemployed through two paired assistance workshops and hiring five people from households lifted out of poverty in paired assistance villages in subsidiaries



Talent vitalization

- Training 733 staff assigned to villages, village cadres, and rural vitalization talent to improve village leadership to drive rural development and governance capabilities
- Training 87 culture and tourism practitioners, strengthening the protection and making good use of cultural heritage, and promoting the development of the culture and tourism industry in Lianghe County
- Offering 352 training opportunities to rural medical personnel and health emergency teams to improve rural healthcare, promoting health education and publicity, and enhancing the prevention and control of infectious diseases
- Training 150 steel workers and electricians to meet the needs of CNMC in using labor and improving the quality of reemployment for people lifted out of poverty



Cultural vitalization

- Helping Pingyi Village build a villagers' activity center, a cultural square, and a village history museum. By shoring up weaknesses in infrastructure, improving cultural and sports venues, and enhancing the functions of local organizations, we enrich the life of villagers, support the cohesion and harmony of the village, and solidify spiritual support for relocated villagers
- At the villagers' activity center, holding the "Colorful Holiday" non-profit activity to show our care for left-behind children
 - At the cultural building and square, establishing the cucurbit flute art team and dance team of Pingyi Village to extend the cucurbit flute value chain



Ecological vitalization

- Channeling a donation of 1.7 million yuan by CNMC and other donors to build cultural squares and clinics in two administrative villages in Lianghe County. Helping resolve challenging problems of public services in resettlement areas, providing better medical, cultural, and sports infrastructure for 6,492 residents of 1,560 households in more than ten villages, continuously improving the rural living environment



Case

Concentrating on cultural development for a beautiful and livable rural environment

CNMC continued to support the resettled Pingyi Village, to which the Company offered paired assistance for poverty alleviation. From 2021 to 2022, CNMC built a villagers' activity center, a culture square, and a village history museum at Pingyi Village, gradually improving public services of the resettlement site. The infrastructure built laid the foundation for the cultural and sports activities for the relocated residents and shaped a basic framework of a modernized village, helping villagers to lead a good life. The 870-m² villagers' activity center, including meeting space, basketball courts, and kitchen equipment, creates a good environment for the village committee and villagers to hold meetings as well as cultural and sports activities. The 800-m² cultural building and square integrates the public service center, space for recreational activities and sports, women's center, and elderly room. Together with the cucurbit flute paired assistance workshop, the cultural building and square display Lianghe's image as a county of cucurbit flutes. The village history museum, which includes a village history exhibition hall, a new-era civilization center, and a rural library, demonstrates the process of several villages getting rid of poverty to make emotional connections with relocated villagers and improve the cohesion of the new village.



▲ The village history museum at Pingyi Village, Lianghe County under paired assistance



▲ Culture square at Pingyi Village, Lianghe County under paired assistance

Implementing four projects in rural vitalization

CNMC Daye continued to ramp up support for Wenyuhe Village, a paired poverty alleviation village. Given the reality that rural assistance was multi-faceted with different needs, CNMC Daye adopted targeted measures and implemented the four projects of infrastructure upgrading, industrial support, education for a hopeful future, and life improvement. CNMC Daye helped Wenyuhe Village build a village primary school, water supply facilities, and a culture square with lighting equipment installed, greatly improving the living conditions of villagers. The company also assisted Wenyuhe Village in shaping an industrial development pattern with tea production at the core and supplemented by konjac, edible fungi, and mountain organic vegetables, helping villagers secure job opportunities and improve their incomes. Wenyuhe Village also advanced the digital village initiative with a village online office platform, an online industry development and product display platform, and a rural governance and safety platform put in place. Thus, Wenyuhe Village was rated as the 2022 demonstration digital village in Desheng Town, Zhushan County.



Agricultural experts are invited to Wenyuhe Village to teach tea planting skills



A new image of Wenyuhe Village under paired assistance

Outlook in 2023

In 2023, guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, CNMC will further implement important instructions made by President Xi Jinping for CNMC three times. We will strive to meet the business targets required by SASAC in total profit, liabilities to assets (L/A) ratio, cash flow-to-revenue ratio, return on equity (ROE), R&D investment intensity, total labor productivity and the SASAC's requirements of "increasing total profits, stabilizing L/A ratio, and improving cash flow-to-revenue ratio, ROE, R&D investment intensity, total labor productivity". Following world-class benchmarks to create values, we will focus on the special action to enhance efficiency in output, technology, reform, management, policy, and investment, deepen the campaign of "study, integration, and improvement", and unswervingly promote high-quality development toward a world-class enterprise at a faster pace.

We will deepen corporate reform to seek breakthroughs in our system with high-quality transformation.

Sticking to market-oriented reform, we will explore new reform ideas and measures under the "1+4" development strategy and think out of the box. We will optimize our structure, improve the market-oriented mechanism, and apply the "three no less than" incentives to deepen reform at a new starting point.

We will advance innovation to create new opportunities for industrial development with high-quality mechanism.

Following the principle that scientific and technological development must target the global science frontiers, serve the main economic battlefield, strive to fulfill the significant needs of the country, and benefit people's lives and health, we will implement the 60 measures of technology to make innovation more efficient. In particular, we will improve the Company's innovation system, analyze the establishment of a scientific and technology committee, and optimize the assessment system. With more efficient sci-tech investments, we will train sci-tech leaders and improve the benefit-sharing mechanism for the technology commercialization to ensure that innovation propels high-quality development.

We will promote green development and foster new competitive edges in the low-carbon transition with high-quality measures.

Guided by Xi Jinping Thought on Ecological Civilization, we will serve China's 30·60 Decarbonization Goal and practice ESG concepts for sustainable development. Environmental pollution will be controlled while carbon emission peaking and carbon neutrality will be steadily advanced. We will contribute to building a localized ESG system that complies with international standards. We will also improve ESG capabilities to pioneer ecological civilization.

We will shoulder social responsibility and demonstrate our new responsibility as a central SOE with high-quality engagement.

We will continue to compile and publish sustainability reports and implement the three-year plan for targeted assistance with year-on-year increases of no less than 5% in different indicators. CNMC will strengthen friendly exchanges and cooperation with local governments, partners, industry organizations, and communities, participate in non-profit activities, and carry out the initiative of "100 Companies in 1,000 Villages" to support livelihood and work together for a harmonious and better future.

ESG Special Actions

As the one of the earliest vanguard of China's nonferrous metal industry to go global, CNMC complies with international rules and standards, implements SASAC's three-year action plan of deepening reform and the listed company quality improvement plan, and emphasizes environmental protection, CSR performance, and governance improvement. In 2022, China Nonferrous Mining Corporation Limited was selected as a constituent of the Hang Seng Composite Index and won the Best Shareholder Relations Award in the 6th China Annual IR Awards (2022-2023).

Better governance capabilities: We have revised the *Administrative Measures for Listed Companies* to standardize the operation and efficiency of the shareholders' meeting, board of directors, and board of supervisors of listed subsidiaries. We also guide A-share listed subsidiaries to establish restricted stock unit plans and a benefit and risk sharing mechanism between shareholders and business and operation managers to unleash the potential and creativity of the core management and business teams of listed subsidiaries.

Enhanced investor communication: Holding listed subsidiaries have carried out a wide range of investor communication activities. Ningxia Orient Tantalum Industry Co., Ltd., China Nonferrous Mining Corporation Limited, and NFC held the 2021 annual performance briefings in March, April, and May respectively. On these occasions, leaders and senior executives of each listed subsidiary illustrated issues that concerned investors, such as development strategies, production and operation efficiency, financial status, and dividends, and answered investors' questions in detail.

Proactive information disclosure: We publish sustainability reports every year. Each of our listed subsidiaries also releases their annual social responsibility or ESG reports to ensure that key information is published promptly for public scrutiny. China Nonferrous Mining Corporation Limited integrates ESG reports into its financial statements and releases to stakeholders. It also incorporates ESG risk management into the company's risk management system and hires external professional institutions to independently evaluate ESG management and operation to ensure the effectiveness of ESG risk management and the internal supervision and control system.



▲ NFC 2022 Social Responsibility Report



▲ Ningxia Orient Tantalum Industry Co., Ltd. 2022 Environmental, Social, and Governance Report



▲ China Nonferrous Mining Corporation Limited integrates ESG reports into its financial statements for disclosure

Tightened implementation of environmental responsibility: We improve the implementation path and main indicators related to carbon dioxide peaking and carbon neutrality management, ensuring that by 2024, carbon dioxide emissions per unit of output will be reduced by more than 21% from the end of the 13th Five-Year Plan Period (2016-2020). We strengthen environmental supervision and inspection and investigate general environmental problems, tailings pond pollution, mine restoration, and hazardous and solid waste. Publicity activities such as Environment Day and Energy Conservation Week are held to heighten the sense of environmental responsibility of all employees. Subsidiaries such as Chambishi Copper Smelter Limited, CNMC Daye Tonglvshan Mine, and Tieling Flotation Reagent Co., Ltd. welcome residents from nearby communities to visit their companies to enable them to observe environmental protection outcomes.

Emphasized social contributions: Starting with construction projects as the main business and copper as the primary resource, we have gradually established a "going global" complete business ecosystem including major non-ferrous metal varieties such as copper, cobalt, lead, zinc, nickel, and tin with a set of technologies and support services. When running business overseas, we serve China's Belt and Road Initiative and the "1+4" development strategy of CNMC and urge overseas subsidiaries to implement CNMC's requirements on social responsibility. We contribute to the prosperity and development of host countries on all fronts by boosting the local economy, recruiting local employees, promoting cultural integration, and giving back to communities.

NFC ESG Action Report

NFC adheres to the principle of "corporate development, employee care, CSR performance, new values for shareholders, and harmony among employees, NFC, society, and the environment", and maintains ESG management and value creation with a strong sense of responsibility.

E: Low carbon and environmental protection

Seeing zero environmental pollution accidents as the highest goal, NFC is committed to building a "resource-saving and eco-friendly" enterprise. In 2022, NFC spent 87.7265 million yuan on environmental protection and energy conservation and organized three environmental protection education and training sessions. Its subsidiaries carried out more than 30 training sessions for more than 10,000 participants.

NFC improves the environmental management structure and policy system and establishes an environmental protection management organization to effectively supervise and manage energy conservation and environmental protection. NFC also steps up efforts to identify and rectify potential environmental hazards and carry out environmental protection supervision, special inspections, and review to get a full picture of hidden dangers while responsibilities are assigned. Green production and resource conservation are promoted. Through new projects and equipment upgrading, NFC saves resources and reduces waste water, waste gas, and solid waste to improve green development. In addition, NFC coordinates the work on carbon dioxide peaking and carbon neutrality with a task force established and a carbon dioxide peaking action plan aligned with the actions of CNMC. NFC simultaneously investigates carbon emissions of units at home and abroad to collect data for carbon emission records.

S: Social contribution

Harmonious labor relations: NFC builds a unified salary distribution system and reinforces positive incentives. The requirements of evaluating the performance of all employees are implemented and the evaluation results are applied. NFC issues the *Job Grade Management Measures* with a mechanism of vertical promotion, horizontal mobility, and demotion or dismissal to ensure two parallel career paths of management and technology respectively for unhindered career development.

Occupational health and safety: NFC establishes a body to manage and organize work safety and continues to improve the occupational health and safety management system. NFC maintains financial input for work safety and improves safety management as well as work safety conditions. Based on risk identification and evaluation, NFC formulates control measures, assigns tasks, and informs risks with training given. In 2022, there was no work safety accident leading to death or more serious consequences and no occupational disease.

High-quality projects: NFC improves the quality management system of products and services and gets the quality systems of processing and manufacturing as well as construction services certified. NFC extends the quality management system to other stakeholders, strictly screens suppliers based on their qualifications, capabilities, and performance, tightens quality supervision and project acceptance during contract performance, and regularly evaluates qualified suppliers. Quality training and publicity are customized with different forms of quality training and activities targeting employees at different levels.

Benefit sharing with communities: NFC donated 100,000 yuan to the People's Government of Lianghe County for the 2022 vocational skills training (urban class) project. NFC also repairs nearby damaged roads, removes garbage, builds dams, and supports causes in culture, sports, and education. The company offers job opportunities overseas, donates money to build infrastructure in host countries, and contributes to education, healthcare, and cultural projects.

G: Corporate governance

NFC improves its corporate governance structure as well as internal control and management. With the *Information Disclosure Management System* in place, NFC released 89 regular and interim reports in 2022, disclosing accurate, complete, and timely production and operation information. The company has formulated the *Investor Relations Management System* and hired investor relations specialist to maintain communication and exchanges with institutional, individual, or potential investors through receptions, hotline services, or the Hudongyi (easy interaction) platform of Shenzhen Stock Exchange.

Ningxia Orient Tantalum Industry Co., Ltd. ESG Action Report

Unswervingly pursuing technological progress, green and harmonious development, Ningxia Orient Tantalum Industry Co., Ltd. (Orient Tantalum) is committed to social sustainability by pooling strengths together for continuous innovation, win-win cooperation, and synergistic economic, social, and environmental benefits.

E: Low carbon and environmental protection

Emissions management: Orient Tantalum upgrades the technology addressing waste water, waste gas, and solid waste, manages pollution both at the source and throughout the process, and guarantees that the discharge of pollutants must comply with standards. In 2022, pollution prevention and control facilities such as denitrification devices, spray systems, and dust removal devices were installed to ensure that the pollutants discharged did not violate standards.

Resources and energy: Orient Tantalum formulates internal management procedures and systems such as the *Resource and Energy Management Procedure*, sets up an energy management team in charge, and optimizes the management of energy, water resources, raw materials, packaging materials, and others to guarantee the efficient use and recycling of resources and energy.

Climate change response: Having set the target of reducing carbon dioxide emissions per 10,000 yuan of output by 18% at the end of the 14th Five-Year Plan Period (2021-2025) from 2020, Orient Tantalum continues energy-saving and carbon-reduction management, upgrades equipment and processes to be less carbon- and energy-intensive, transforms its business structure to go green and low carbon, and explores a practical way toward carbon reduction.

S: Social contribution

Product quality and service: Orient Tantalum revises the *Quality Objective Management System*, *Quality Plan Control Procedure*, as well as other systems and procedural documents, and urges all units to sign and implement the *Quality Objective Responsibility System*. Orient Tantalum also improves the *Return and Exchange Management System* and strictly handles defective products as specified.

Responsible procurement: Orient Tantalum standardizes the management responsibilities and processes related to supplier classification, access, evaluation, and elimination and implements supplier hierarchical management. Based on the comprehensive strength and evaluation results of suppliers, they are divided into four groups: potential suppliers, qualified suppliers, strategic suppliers, and blacklisted suppliers.

Employee rights, interests, and benefits: Orient Tantalum formulates the *Salary Management System and Performance Management System* to ensure a fair and feasible salary system with 100% of employees entitled to endowment insurance, medical insurance, unemployment insurance, employment injury insurance, maternity insurance, and housing fund. The company cares about retired employees and employees in difficulty and offers a variety of recreational activities for staff. It emphasizes employee communication to improve employee satisfaction. In 2022, the labor union of Orient Tantalum resolved 100% of issues reported.

Employee safety and health: Orient Tantalum continues to establish and improve the management system and organizational structure of occupational health as well as the work safety management system. Safety risks are predicted and controlled with a three-level management process. In 2022, a total of 3.8325 million yuan was invested in work safety and 15 hidden danger inspections were carried out, removing 422 potential safety hazards.

Employee training and growth: Orient Tantalum has established a proven evaluation mechanism for employee promotion, which is determined by annual performance evaluation scores. The company builds a system for official selection and appointment with a multi-path training mechanism. With a sound staff training system, Orient Tantalum regularly conducts training for employees at different levels according to the *Training Management System*.

Public services: Highly valuing rural vitalization, Orient Tantalum assigns three employees to Wangqing Village of Pingfeng Town at Xiji County in Guyuan City, Ningxia Hui Autonomous Region for in-depth paired assistance. From 2020 to 2022, the company donated wheeled excavators, tractors, and agricultural equipment to the village under paired assistance to bolster rural collective economies.

G: Corporate governance

Orient Tantalum has established an organizational structure consisting of the general meeting of shareholders, the board of directors, the board of supervisors, and the management, with four specialized committees under the board of directors: the strategy committee, the audit committee, the nomination committee, and the remuneration and evaluation committee. The composition of the board of directors and the system for the board and its specialized committees are improved, while its role in making decisions is fully leveraged. The board of supervisors performs its functions diligently, independently exercises its powers in accordance with the law, maximizes its supervisory role, and ensures its standardized operation.

China Nonferrous Mining Corporation Limited ESG Action Report

China Nonferrous Mining Corporation Limited integrates ESG concepts that it fully embraces into business strategy and operation management, improves operation strategies and ESG information disclosure, and enhances communication with stakeholders.

E: Low carbon and environmental protection

Environment and natural resources: China Nonferrous Mining Corporation Limited makes full use of mining waste ore, improves the ore recovery ratio, and extends the life cycle of mines. The company also updates production processes, equipment, and facilities. Monthly production plans and targets for controlled energy consumption are set with strict performance evaluations. It carries out energy-saving publicity and education to prevent energy waste.

Climate change response: China Nonferrous Mining Corporation Limited drafts the *Notice on Preparing the Action Plan for the Group's Carbon Dioxide Peaking* and standardizes the collection and management of carbon emission data and reports. NFCA assesses climate risks, and the board of directors understands relevant risks through regular quarterly production and operation reports to ensure that all risks are properly managed.

Environmental protection actions: The company divides environmental emergencies into three different levels and makes emergency plans accordingly to minimize negative impacts. It also strengthens environmental inspections and promptly and effectively addresses problems identified. China Nonferrous Mining Corporation Limited strictly monitors construction projects and implements the environmental impact assessment system of the host country.

S: Social contribution

Employment and development: Committed to the principle of equality, diversity, and intolerance to discrimination, China Nonferrous Mining Corporation Limited respects the culture and customs of foreign employees. The use of child labor and forced labor is forbidden. It signs labor contracts with employees, provides competitive salaries with a transparent performance evaluation and promotion mechanism, and develops a diversified and comprehensive training program.

Health and safety: China Nonferrous Mining Corporation Limited formulates occupational health and safety policies such as the *Provisions on Emergency Management of Work Safety*, sets occupational health and safety goals and indicators, and clarifies the responsibilities and tasks of each department. It also designs an emergency rescue and first aid work plan and betters the occupational safety and health protection system.

Supply chain management: China Nonferrous Mining Corporation Limited has established a sound supplier management system. When selecting suppliers, the company considers the supplier's compliance, supply quality, order cycle time, product prices, after-sales service, and other aspects. Before signing a contract with a new supplier, it organizes personnel to conduct on-site visits and reviews and preference is given to local suppliers.

Product responsibility management: China Nonferrous Mining Corporation Limited improves the product quality management system, values customer experience, and constantly improves customer service. Information security and privacy are emphasized and important but confidential materials of partners and customers are strictly protected during operation to prevent leakage or loss of sensitive information.

Community investment: China Nonferrous Mining Corporation Limited fully respects the religious beliefs and cultural traditions of project host countries, and encourages and organizes cultural exchanges to promote mutual understanding with locals. The company encourages employees to participate in activities held by local communities and maintain close relationships with them through communication and interaction.

Anti-corruption: China Nonferrous Mining Corporation Limited puts in place management policies such as the *Implementation Measures for the Prevention and Control of Integrity Risks*, and makes integrity building part of its plans. A whistleblowing mailbox and a hotline are established, allowing employees to report inappropriate behavior. The company strictly monitors key links in anti-corruption efforts such as bidding and procurement and integrates integrity information into daily training to raise integrity awareness.

G: Corporate governance

China Nonferrous Mining Corporation Limited upholds a policy of diversity in the board of directors. The board members are reviewed annually by the nomination committee to ensure that the board is equipped with appropriate expertise, know-how, and core skills to make informed decisions and operate efficiently. The board meets at least four times every year. The audit committee under the board convenes at least two meetings annually to review and discuss the interim and annual consolidated financial statements. The compliance committee holds at least two meetings each year to review the company's internal control policies and management status.

CSR Performance

Indicators	2020	2021	2022
Operating income (billion yuan)	136.164	144.467	139.497
Total profit (billion yuan)	3.173	6.954	7.628
Total assets (billion yuan)	109.412	110.845	115.373
Total taxes paid (billion yuan)	4.11	5.962	8.975
Asset-liability ratio (%)	64.46	64.74	66.44
Proportion of international business in total assets of the Company (%)	—	62.30	59.63
Proportion of international business in the Company's total operating income (%)	—	49.51	54.80
Accumulated tax payment of international business (billion yuan)	—	3.7	6.115
Output of non-ferrous metal products (10,000 tons)	185.66	184	176.89
Value of newly signed engineering project contracts (billion yuan)	16.441	17.8	25.132
Total investment in environmental protection (million yuan)	—	541	794
Number of organizations that have passed ISO 14001/ISO 24001 environmental management system certification	25	28	31
Total energy consumption (10,000 tons of standard coal equivalent)	74.64	52.53	45.7075
Comprehensive energy consumption (10,000 tons of standard coal equivalent)	61.89	50.00	44.463
Comprehensive energy consumption per 10,000 yuan of output value (comparable price) (ton of standard coal equivalent / 10,000 yuan)	0.0728	0.0362	0.0266
Greenhouse gas emissions (10,000 tons)	229	205	189
Greenhouse gas emission intensity (tCO ₂ e per 10,000 yuan of output value (comparable price))	0.1375	0.1164	0.1134
Amount of hazardous waste generated (10,000 tons)	53.72	56.85	48.03
Disposal rate of hazardous waste (%)	99.52	98.33	94.27
Amount of non-hazardous waste generated (10,000 tons)	2,417.18	2,209.85	2,351.7510
Disposal rate of non-hazardous waste (%)	86.91	90.36	92.62
Sulfur dioxide emissions (tons)	2,257.53	793.61	557.48
Nitrogen oxide emissions (tons)	658.87	466.28	465.62
COD emissions (tons)	423.81	387.94	232.91
Ammonia nitrogen emissions (tons)	37.23	35.86	39.65

Indicators	2020	2021	2022
Ratio of qualified products (%)	96.34	96.63	97.1
Yield of finished products (%)	—	84.39	96.3
Investment in work safety (million yuan)	405	487	665
Emergency drills	700	527	710
Participants in work safety training (10,000 person-time)	15.8	11.28	13.2
Proportion of clean energy use (%)	—	8.98	4.95
Clean energy consumption (10,000 tons of standard coal equivalent)	—	4.72	2.2636
R&D expenditure (billion yuan)	1.965	2.276	2.304
New authorized patents	221	197	162
Total number of suppliers	13,348	26,000	14,942
Customer satisfaction rate (%)	—	99	96.7
Complaint resolution rate (%)	—	100	100
Total number of employees	49,873	46,774	45,738
Staff turnover rate (%)	2.4	14.58	4.63
Ratio of labor contracts signed (%)	100	100	100
Social insurance coverage rate (%)	100	100	100
Paid annual leave per employee (days)	8.73	10.5	10.5
Proportion of foreign employees in the total employees of overseas subsidiaries (%)	75.44	89	78.22
Proportion of female managers (%)	—	25.37	26.01
Number and proportion of ethnic minority or other ethnic employees (%)	—	2,743 person 10.45%	2,612 person 9.91%
Staff training sessions	181	1070	1126
Total staff training hours	4,560	409,616	433,538
Employee training coverage rate (%)	100	100	100
Donations and for paired assistance and rural vitalization (10,000 yuan)	3,276.39	4,784.38	4,303.32

Expert Opinion

Yu Zhihong, President and Editor-in-Chief of *China Sustainability Tribune*

CNMC Sustainability Report 2022 (hereinafter referred to as the Report) is the 12th consecutive sustainability report released by CNMC. Woven together under the theme of "Together for a Shared Dream", the Report demonstrates a global vision and follows world-class enterprise benchmarks. It communicates messages to customers, the environment, partners, employees, communities, and other stakeholders for further cooperation and a combination of economic, social, and environmental values. The Report also displays CNMC's contributions to the UN 2030 Agenda for Sustainable Development.

The Report discloses information by integrating features with main chapters. Specifically, the features include cases of the fruitful three-year action plan for SOE reform, and extensive efforts in serving the nine programs under China-Africa cooperation and the initiative of "100 Companies in 1,000 Villages". The five chapters of the Report echo CNMC's spirit of "innovation, pioneering spirit, win-win cooperation, and social contribution", showing its distinctiveness. The Company implements the "1+4" development strategy, strengthens governance system and capacity building, incorporates quality management into its overall operation and development, and pursues an industrial system featuring green, low-carbon, and circular development. These endeavors promote economic, social, and environmental sustainability and blaze a sustainability trail with CNMC's characteristics.

CNMC complies with international rules and standards, implements SASAC's three-year action plan of deepening SOE reform and the listed company quality improvement plan, and encourages listed subsidiaries to release their CSR or ESG reports. A new part of the Report, "ESG Special Actions", demonstrates a full picture of NFC, Ningxia Orient Tantalum Industry Co., Ltd., and China Nonferrous Mining Corporation Limited taking specific steps and achieving environmental, social, and governance results. These cases showcase that central SOEs play a leading and major role in ESG information disclosure.

The year 2023 marks the 10th anniversary of the Belt and Road Initiative. CNMC, the pioneer of China's non-ferrous metal companies to go global and the vanguard of supporting the security of national strategic resources, is expected to deepen open cooperation with stakeholders and contribute to BRI connectivity for win-win and shared benefits. CNMC will adopt a more science-based, innovative, and robust model to seek high-quality development.



Report Rating



GoldenBee Evaluation Report on CSR Report

Report No.: 20231128009
Date of Evaluation: July 2023

Authorized by: China Nonferrous Metal Mining (Group) Co., Ltd.
Evaluated by: GoldenBee ThinkTank Evaluation Centre

Basis of Evaluation: Guidance on Social Responsibility Reporting (GB/T 38001-2012) (a China national standard), and the requirements of GoldenBee CSR Reporting Evaluation System

GoldenBee ThinkTank Evaluation Centre

A+ (Excellence)

D	C	B	A	A+
Starting (D)	Development (C)	Catch-up (B)	Good (A)	Excellence (A+)

Report Name: Sustainability Report 2022 of China Nonferrous Metal Mining (Group) Co., Ltd.
Report Score: 84.91

Readability of Report (Scoring Rate: 100%)

With an appropriate length, a modern design, the right color combination, and neat titles, the report integrates different forms such as illustrations, data, charts, and other information disclosure means. Put together in an orderly manner, the report is appealing to readers and promises an excellent reading experience.

Completeness of Structure (Scoring Rate: 93.8%)

The report features comprehensive disclosure including information about sustainability management, the company profile, and messages from the Chairman. Consisting of two features and five chapters, the report systematically presents the specific practices and key outcomes of the Company's CSR performance in a detailed and complete manner.

Credibility of Report (Scoring Rate: 90.0%)

Following an objective and rigorous style, the report discloses negative information such as employee turnover rate, supported by the provision of data sources and reporting commitments to improve credibility. Comments from a retired employee and CSR experts are also cited, further enhancing the report's trustworthiness.

Materiality of Content (Scoring Rate: 80.0%)

According to relevant CSR standards, the report elaborates on the identification, prioritization, improvement, and review process of 17 material topics such as project quality, customer service, employee training and career development, and service quality improvement. The information under each topic is disclosed in great detail, making the report stand out in terms of its materiality.

Overall Evaluation

The Sustainability Report 2022 of China Nonferrous Metal Mining (Group) Co., Ltd. is rated as "Excellence (A+)" upon evaluation. Therefore, it is a model and benchmark among corporate social responsibility reports.

Evaluation Institution: GoldenBee ThinkTank

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Feedback Form

Dear readers,

Thank you very much for reading the China Nonferrous Metal Mining (Group) Co., Ltd. 2022 Sustainability Report. In order to continuously improve the report preparation, we are eager to listen to your opinions and suggestions. Please help answer the questions in the feedback form and send it back to us.

Please tick "√" in the corresponding position.

Your identity:

- Government and regulatory authority Shareholder/investor Customer Employee Partner
 Scientific research institution or university Community resident Media Peer company Social organization
 Financial institution

Multiple-choice questions:

1. Are you satisfied with this report on the whole?

- Yes No Fair

2. Is the information you are interested in shown in the report?

- Yes No Fair

3. Do you think the report truthfully reflects CNMC's work on social responsibility and its impact on stakeholders?

- Yes No Fair

4. Can you easily find the information of interest to you in the report?

- Yes No Fair

5. Are you satisfied with the layout design of the report?

- Yes No Fair

Open questions:

6. What do you think are the weaknesses of this report?

7. What information do you want to be published in this report on a regular basis?

8. Do you have any comments and suggestions for our work on social responsibility and its report?

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