



中铝国际工程股份有限公司

China Aluminum International Engineering Corporation Limited

科技+国际



让有色更绿色 让世界更有色

2023

环境、社会及管治报告

ANNUAL ENVIRONMENTAL, SOCIAL, AND GOVERNANCE REPORT



**励精图治 创新求强**



**中铝国际工程股份有限公司**  
China Aluminum International Engineering Corporation Limited

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# 报告导读

## Report Introduction

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本报告旨在响应利益相关方期望，展示环境、社会、企业管治及可持续发展方面的理念、管理、行动和成效。

This report aims at responding to the expectations of stakeholders by demonstrating the ideas, management, actions, and achievements of the Company in the aspects of environmental, social and corporate governance, as well as sustainable development.

### 时间范围

#### Reporting Period

2023年1月1日至2023年12月31日，部分内容适当追溯历史数据。

This report covers the period from January 1, 2023 to December 31, 2023. Some contents may appropriately trace historical data.

### 报告范围

#### Reporting Scope

无特殊说明，本报告涵盖中铝国际工程股份有限公司总部、分支机构及其附属子公司。

Unless otherwise specified, this report covers the headquarters, branches, and subsidiaries of China Aluminum International Engineering Corporation Limited.

### 报告周期

#### Reporting Cycle

本报告为年度报告。

This report is an annual report.

### 编制依据

#### Basis of Preparation

- 全球报告倡议组织《可持续发展报告标准（GRI Standards）》
- Global Reporting Initiative *Sustainability Reporting Standards (GRI Standards)*
- 中国社会科学院《中国企业社会责任报告指南（CASS-ESG 5.0）》
- *Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-ESG 5.0)* of the Chinese Academy of Social Sciences
- 上海证券交易所《上海证券交易所上市公司自律监管指引第1号——规范运作》
- *Guidelines No. 1 of the Shanghai Stock Exchange (SSE) on the Application of Self-Regulation Rules for Listed Companies – Standard Operation* of the Shanghai Stock Exchange
- 香港联合交易所有限公司《主板上市规则》附录C2——“环境、社会及管治报告指引”
- The Stock Exchange of Hong Kong Limited's Appendix C2 of the *Main Board Listing Rules* - "Guidance on Environmental, Social and Governance Reporting"
- 联合国 2030 可持续发展目标（SDGs）
- United Nations 2030 Sustainable Development Goals (SDGs)

## 数据来源

### Data Sources

除特殊说明，本报告所引用的信息与数据来自公司的正式文件、统计报告与财务报告，以及经由公司统计、汇总与审核的环境、社会及管治信息。

Unless otherwise specified, the information and data cited in this report come from the Company's official documents, statistical reports, and financial reports, as well as the environmental, social and corporate governance information that has been collected, aggregated, and audited by the Company.

## 报告获取

### Report Access

在中铝国际官方网站、香港联交所网站以及上交所网站浏览和下载本报告的中文简体 / 英文、中文繁体 / 英文版本。

The publications in Chinese simplified/English, traditional Chinese/English are available to view and download at the official website of CHALIECO, the official website of the HKEX, and the official website of SSE.

## 称谓说明

### Terms and Description

为便于表达和方便阅读，“中铝国际”“公司”“我们”表示中铝国际工程股份有限公司总部、分支机构及附属子公司。如无特殊说明，本报告中的“元”“万元”“亿元”分别代表“人民币元”“人民币万元”“人民币亿元”。

For convenience of indication and reading, "CHALIECO", "the Company" and "We" refer to the headquarters, branches, and subsidiaries of China Aluminum International Engineering Corporation Limited. Unless otherwise specified, "yuan" in terms of currency in this report represents "RMB yuan".



## Message from the Chairman

# 董事长致辞

2023 年是中铝国际贯彻落实党的二十大精神开局之年，也是中铝国际成立二十周年。中铝国际始终坚持以习近平新时代中国特色社会主义思想为指导，大力实施“科技+国际”发展战略，围绕“强经营、推转型、化风险、深改革”持续攻坚，开创高质量发展新局面。2023 年，经营活动产生的现金流量净额 72,266.5 万元，同比增长 37.68%；收入结构得到优化，工业勘察设计与咨询业务、装备制造业务收入同比增长 3.99%、1.76%，毛利率分别增加 0.46、0.12 个百分点。

The year 2023 was the first year of CHALIECO for putting the spirit of the 20th National Congress of the Communist Party of China fully into effect, and also the 20th anniversary of the establishment of CHALIECO. CHALIECO, under the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, has vigorously implemented the development strategy of "S&T + Internationalization", continued to make breakthroughs in "Strengthening operations, promoting transformation, eliminating risks, and deepening reforms", and created a new situation of high-quality development. In 2023, the net cash flows generated from operating activities were RMB 722.665 million, representing a year-on-year growth of 37.68%. The revenue structure has been optimized, with the industrial survey, design, and consulting business experiencing a year-on-year growth of 3.99%, and the equipment manufacturing business witnessing a growth of 1.76%. The gross profit margin increased by 0.46 and 0.12 percentage points, respectively.

### 深化党建引领，践行高质量发展

#### Practicing high-quality development under the guidance of Party building

我们坚持党建融入公司治理，全面落实管党治党责任，以更大力度、更实举措推进党的建设和生产经营、改革发展各项工作“双向融合”，聚力推进正风肃纪反腐，营造良好政治生态，保障企业发展行稳致远。

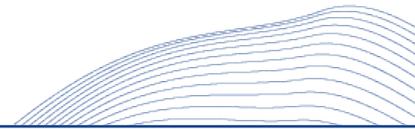
We, by integrating Party building into corporate governance, have fully implemented the responsibility of governance over the Party. With greater efforts and more concrete measures, we have enhanced the in-depth integration of Party building and various works including production, operation, reform and development. Force has been gathered to implement healthy practice, strict discipline and anti-corruption, thereby creating a sound political ecology and guaranteeing our steady and long-term development.

## 坚持创新驱动，建设科技强国

### Contributing to building China into a nation of science and technology with continuous innovation

我们始终将科技创新作为推动高质量发展的核心引擎，打造原创技术策源地；首次采取“揭榜挂帅”新机制，强化重点项目统筹；着力提升创新平台能级，加快建立面向市场、协同开放的科技创新生态。2023年，重要科技成果实现量和质双提升，新取得国际先进及以上水平成果数量达到**18**项，同比增长**30%**；新增**1**家工信部“国家级工业设计中心”，成为中铝集团内首家获此殊荣的企业。

We have always regarded scientific and technological innovation as the core engine power of high-quality development, aiming at creating the source of original technology. For the first time, we have adopted the open competition mechanism to select the best candidates, and strengthened the overall planning of key projects. Efforts have been made to upgrade the level of innovation platforms, accelerating the establishment of a market-oriented, coordinated and open scientific and technological innovation ecosystem. In 2023, we have promoted our important scientific and technological achievements in both quantity and quality and concluded with **18** achievements with internationally advanced level and above with year-on-year increase of **30%**. In addition, **1** affiliated enterprise was recognized as the "National Industrial Design Centers" by the Ministry of Industry and Information Technology, becoming the first enterprise within the Group to receive this honor.



## 锚定“双碳”目标，助力绿色发展

### Facilitating green development by focusing on carbon peaking and carbon neutrality goals

我们秉持“让有色更绿色，让世界更有色”的理念，聚焦有色金属行业绿色低碳发展，坚定不移迈向净零排放，助力碳达峰、碳中和目标实现；完善环境管理体系和环保风险管控机制，致力于从源头上提高节能减排效能；加快绿色低碳技术攻关，引领行业绿色低碳转型。2023年，公司环保投入 **3,532.17** 万元。

Adhering to the concept of "Making the Nonferrous Metal Industry Greener and the World More Colorful", we have concentrated green and low-carbon development of nonferrous industry and unwaveringly moved towards net zero emissions, contributing to the achievement of carbon peaking and carbon neutrality goals. By perfecting environmental management system and environmental risk control mechanism, we have dedicated to improve energy saving and emission reduction efficiency from the source. Moreover, we have accelerated the research on green and low-carbon technology, leading the green and low-carbon transformation of the industry. In 2023, the investments in environmental protection of the Company reached RMB**35.3217** million.

## 保障员工权益，增进民生福祉

### Safeguarding employees' rights and interests and improving people's wellbeing

我们坚持以人为本，切实维护员工基本权益，赋能员工职业发展，不断增强员工的凝聚力和向心力；把关爱社会、回报社会作为企业生存的价值和发展动力，积极赋能乡村振兴，全年派出 **7** 名干部驻村工作，共计投入工作经费 **76.85** 万元；真诚回馈社会，广泛参与志愿服务、公益捐赠等活动，为社会的和谐发展作出积极贡献。

We have always put people first, earnestly protected the basic rights and interests of employees, empowered employees for career development, and constantly enhanced the cohesiveness of employees. Deeming care for society and return to society as our survival value and development motivation, we have actively enabled rural revitalization and dispatched **7** resident village cadres to support the work throughout the year, with total investment of RMB**768.5** thousand. To sincerely give back to society, we have extensively participated in volunteer services, public welfare donations and other activities, making positive contributions to the harmonious development of society.



## 持续海外履责，共建美好世界

### Continuously performing overseas duties and jointly building a better world

我们顺应经济全球化发展趋势和国家对外开放大势，加快“走出去”步伐，以中国技术、中国方案和中国智慧助推“一带一路”共建国家高质量发展，充分发挥资源优势，与多个国家和地区开展互利合作，服务全球经济社会可持续发展；坚持用工本地化，与共建国家共享发展机遇，携手构建命运共同体。2023年，公司新签海外合同**191**项，金额**43.9**亿元。

In line with the general trend of economic globalization and opening-up, we have accelerated the pace of "going global". With Chinese technology, Chinese solutions and Chinese wisdom, we have contributed to the high-quality development of countries along the "Belt and Road". By making full use of our resource advantages, we have developed mutually beneficial cooperation with many countries and regions, serving the sustainable economic and social development of the world. In addition, we have adhered to localized employment and shared development opportunities with countries along the "Belt and Road", with the view of jointly building a community of common future. In 2023, the Company had newly signed **191** overseas contracts, with the amount of RMB**4.39** billion.

## 路虽远，行则将至；事虽难，做则必成

### The journey may be long, but the walker will arrive; the task may be difficult, but the doer will succeed

2024年，我们将聚焦主责主业，深化改革创新，更好发挥“顶梁柱”“压舱石”的支撑托底作用，厚植高质量发展优势，持续提升企业核心竞争力，在打造“新中铝国际”新征程中彰显担当、贡献力量。

In 2024, we will focus on main responsibility and main business, deepen reform and innovation, better play the role of "backbone" and "ballast" to support the bottom, strengthen the advantages of high-quality development, continue to enhance the core competitiveness of the Company, show responsibility and contribute strength in the next journey of building a new CHALIECO.





# 2023

## 董事会 ESG 管治声明

### ESG Governance Statement from the Board

公司董事会承诺，本公司严格遵守香港联合交易所有限公司《主板上市规则》附录C2——“环境、社会及管治报告指引”的披露要求，负责制定ESG方针、策略及目标，审核ESG风险评估结果，并对可能影响公司业务运作及利益相关方重点关注的ESG相关事宜进行监察。在董事会的领导与监督下，各职能部门以及各成员企业各司其职，协同配合，并定期召开会议，确保适用的ESG要求及政策得到遵循。

The board of directors of CHALIECO undertakes to strictly comply with the disclosure requirements of The Stock Exchange of Hong Kong Limited's Appendix C2 of the *Main Board Listing Rules* - "Guidance on Environmental, Social and Governance Reporting", and is responsible for formulating the ESG guidelines, policies and targets, reviewing the ESG risk assessment results, and supervising the ESG-related issues that may affect corporate business operations or concerned by stakeholders. Under the leadership and supervision of the board of directors of CHALIECO, all functional departments and member enterprises perform their own duties and cooperate with each other, and hold meetings in a regular manner to ensure that applicable ESG requirements and policies are followed.

2023年，公司对议题库进行完善，并对此进行实质性议题评估，明确年度重点工作。按照《中铝国际工程股份有限公司社会责任工作管理办法》《中铝国际工程股份有限公司社会责任管理模块及负面清单》，各部门、各单位严格履行责任，中铝国际对2023年各模块社会责任指标完成情况进行自我评估，形成报告并上报中铝集团，并对在环境、安全、稳定等方面造成重大负面影响的单位，实行一票否决。

In 2023, CHALIECO refined the list of the ESG topics and conducted review on material topics, identifying the annual priorities of the year. In line with the *Administrative Measures of China Aluminum International Engineering Corporation Limited on Social Responsibility Work* and the *Social Responsibility Management Modules and Negative List of China Aluminum International Engineering Corporation Limited*, all departments and units of CHALIECO strictly performed their duties. CHALIECO conducted self-assessment on the completion of social responsibility indicators of each module in 2023, and made a written report to CHINALCO based on the assessment results. Units that had a major negative impact on the environment, safety, stability and other aspects were vetoed by one vote.

未来，董事会将继续健全本公司的ESG治理，积极响应利益相关方的关切，制定相应的行动计划，并定期讨论相关目标的进度，推进ESG管理提升。

Looking ahead, the board of directors of CHALIECO will continue to improve its ESG governance, actively respond to the concerns of stakeholders, formulate corresponding actions and plans, and deliberate the progress towards relevant goals, striving to enhance ESG management.

# 关于我们

About Us

## 公司简介 Corporate Profile

中铝国际工程股份有限公司（简称“中铝国际”）成立于2003年12月16日，隶属于中国铝业集团有限公司（简称“中铝集团”）的工程技术经营单元，是中铝集团控股子公司，是中国有色金属行业领先的技术、工程服务与设备供应商。中铝国际于2012年7月6日在香港联交所（H股代码：02068.HK）上市，于2018年8月31日在上海证券交易所（A股代码：601068.SH）主板上市，成为“A+H”股有色金属工程技术第一股。

Established on December 16, 2003, China Aluminum International Engineering Corporation Limited (CHALIECO) is an engineering technology strategic unit and a holding subsidiary of Aluminum Corporation of China (CHINALCO), as well as a leading technology, engineering services and equipment provider in nonferrous metals industry in China. CHALIECO was listed on the Hong Kong Stock Exchange (stock code: 02068.HK) on July 6, 2012, and on the main board of the Shanghai Stock Exchange (stock code: 601068.SH) on August 31, 2018, becoming the first nonferrous engineering company listed on both Hong Kong and Shanghai stock exchanges.

中铝国际现有员工 **11,000** 余人，拥有 **5** 家国家甲级设计研究院、**2** 家国家甲级勘察院、**3** 家大型综合建筑安装公司，是一家集技术研发、测绘勘察、设计咨询、工程建设、装备制造和运维业务于一体的高新技术企业。公司成立20年来，累计获得省部级及以上科学技术奖 **1,000** 余项，其中，国家科技进步奖一等奖 **2** 项、二等奖 **20** 余项，主编和参加



员工 **11,000** 余人  
拥有 **5** 家国家甲级设计研究院  
**2** 家国家甲级勘察院  
**3** 家大型综合建筑安装公司

CHALIECO has more than **11,000** employees, **5** national grade-A design and research institutes, **2** national grade-A survey institutes and **3** large integrated construction and installation companies.



省部级及以上科学技术奖  
**1,000** 余项  
国家科技进步奖一等奖 **2** 项、  
二等奖 **20** 余项

CHALIECO has won over **1,000** science and technology awards at provincial/ministerial level or above cumulatively, including **2** first prizes and over **20** second prizes of the State Scientific and Technological Progress Award.

编写的国家及行业标准和规范 **140** 余项，拥有有效授权国内外专利 **3,200** 余件，其中，有效海外专利 **201** 件，创造了百余项“中国第一”和“世界第一”。2023 年，中铝国际分别以第 **98** 位和第 **136** 位的排名蝉联美国《工程新闻记录》(ENR) “全球工程设计企业 **150** 强”和“全球承包商 **250** 强”榜单。

CHALIECO, now with more than **11,000** employees, **5** national grade-A design and research institutes, **2** national grade-A survey institutes and **3** large integrated construction and installation companies, is a new high-tech enterprise integrating research and development, surveying and mapping, design consultation, engineering construction, equipment manufacturing, operation and maintenance services. Since its establishment two decades ago, CHALIECO has won over **1,000** science and technology awards at provincial/ministerial level or above cumulatively, including **2** first prizes and over **20** second prizes of the State Scientific and Technological Progress Award. It has taken the lead to formulate or participated in the formulation of more than **140** national and industrial standards and codes, and held over **3,200** valid domestic and foreign patents, including **201** valid foreign patents. It has also set over **100** records in China and the world at large. In 2023, CHALIECO ranked **98th** and **136th** in the Engineering News-Record (ENR)'s annual rankings for the 2023 Top **150** Global Design Firms and the 2023 Top **250** International Contractors respectively.

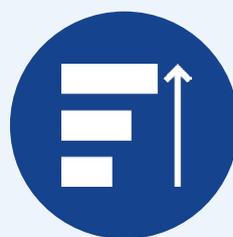
近年来，中铝国际以在行业绝对领先的技术优势、资质优势、人才优势、全产业链优势，为整个有色金属产业链上各类业务提供了全方位综合技术及工程设计、建设服务，为构建资源节约型和环境友好型社会作出了积极贡献。

In recent years, CHALIECO, with its absolute advantages in technology, qualification, talent, and whole industry chain, has provided comprehensive technical and engineering design and construction services for all kinds of businesses in the whole nonferrous metals industry chain, making a positive contribution to the building of a resource-conserving and environmentally-friendly society.



主编和参加编写的国家及行业标准和规范 **140** 余项  
有效授权国内外专利 **3,200** 余件  
有效海外专利 **201** 件

CHALIECO has taken the lead to formulate or participated in the formulation of more than **140** national and industrial standards and codes, and held over **3,200** valid domestic and foreign patents, including **201** valid foreign patents.



以第 **98** 位和第 **136** 位的排名蝉联美国《工程新闻记录》(ENR)  
“全球工程设计企业 **150** 强”  
和“全球承包商 **250** 强”

CHALIECO ranked **98th** and **136th** in the Engineering News-Record (ENR)'s annual rankings for the 2023 Top **150** Global Design Firms and the 2023 Top **250** International Contractors respectively.



# 企业文化

## Corporate Culture



全力建设世界一流的提供有色金属先进技术、成套装备、集成服务综合解决方案的现代新型工业服务企业

To build a world-class modern and new industrial service enterprise providing advanced technologies, package equipment and integrated service solutions in the non-ferrous metal field



原创技术的供给者、先进技术的集成者、技术迭代升级的先行者、成果应用的践行者

Original Technology Supplier, Advanced Technology Integrator, Technological Iteration and Upgrading Pioneer, and Achievement Application Practitioner



科技 + 国际  
S&T + Internationalization



励精图治 创新求强  
Strive for innovation and strength



创造价值 回报至上  
Value creation and return first



• 管理工作落实四个“一”

Implementing four "one" in management

一个导向	一个根本	一个关键	一个“硬约束”
One orientation	One basis	One key	One "hard constraint"

• 经营工作抓实四个“精”

Grasping four "fine" in business

精益经营	精细管理
Fine operation	Fine management
精干组织	精准落实
Fine organization	Fine implementation

• 项目管理强调四个“化”

Emphasizing four "-ization" in project management

企业化	市场化	专业化	法治化
Enterprization	Marketization	Specialization	Legalization

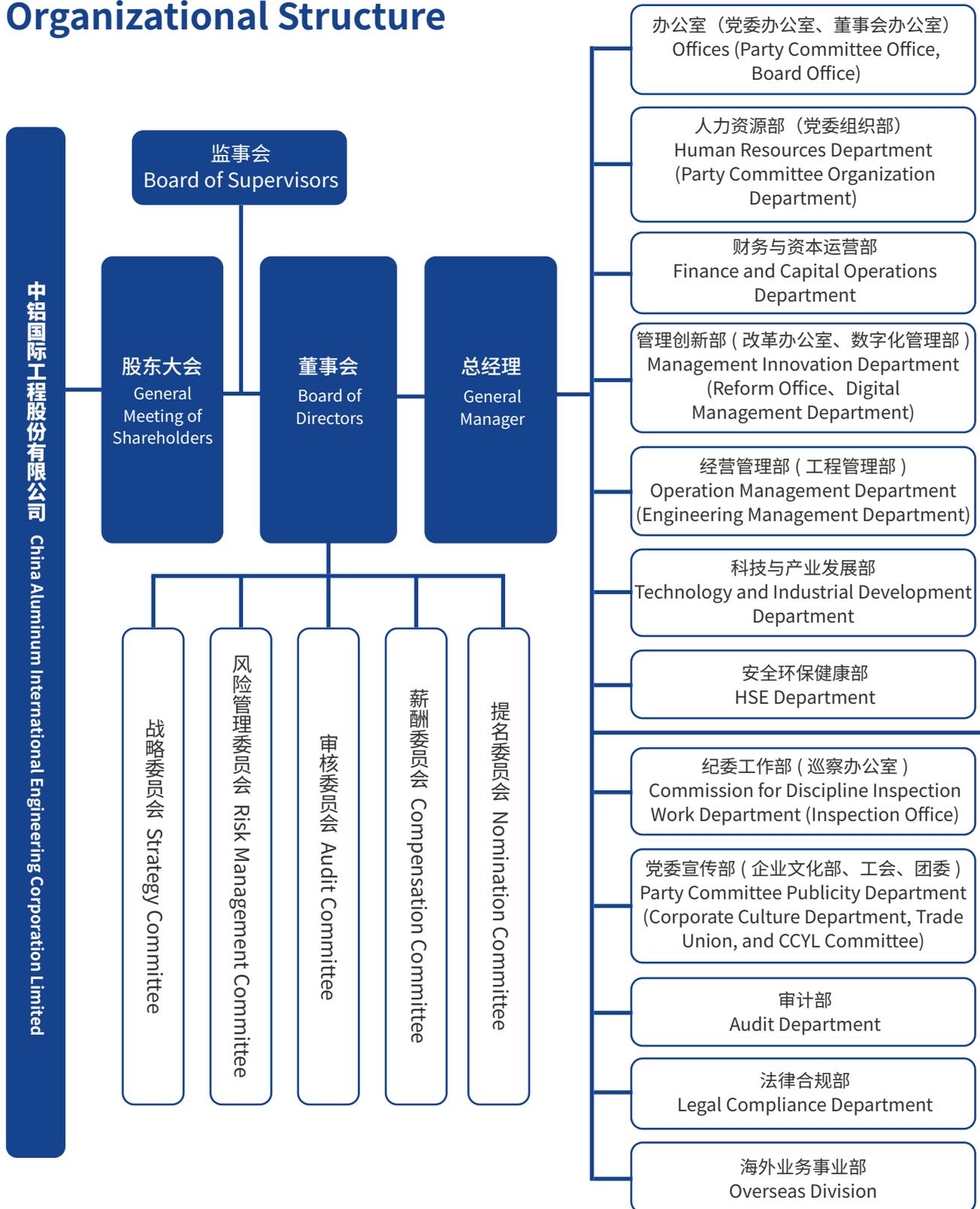


科技引领 筑梦家园  
Science and technology lead to the construction of a dream home



# 组织架构

## Organizational Structure



**全资子公司**  
Wholly-owned subsidiaries

- 沈阳铝镁设计研究院有限公司  
Shenyang Aluminum and Magnesium Engineering and Research Institute Company Limited (SAMI)
- 贵阳铝镁设计研究院有限公司  
Guiyang Aluminum Magnesium Design & Research Institute Co., Ltd. (GAMI)
- 长沙有色冶金设计研究院有限公司 CINFC Engineering Corporation Limited (CINF)
- 中国有色金属长沙勘察设计研究院有限公司  
China Nonferrous Metal Changsha Survey and Design Institute Co., Ltd.(CKY)
- 中国有色金属工业昆明勘察设计院有限公司  
Kunming Prospecting Design Institute of China Nonferrous Metals Industry Co., Ltd.(KPDII)
- 中国有色金属工业第六冶金建设有限公司  
China Sixth Metallurgical Construction Co., Ltd. (CHSMCC)
- 中色十二冶金建设有限公司  
China Nonferrous Metals Industry's 12th Metallurgical Construction Co., Ltd. (12MCC)
- 中铝国际工程设备有限公司 China Aluminum International Engineering Equipment Co., Ltd.
- 中铝国际技术发展有限公司 China Aluminum International Technology Development Co., Ltd.
- 中铝国际铝应用工程有限公司 CHALIECO Aluminum Application Co., Ltd.
- 中铝西南建设投资有限公司 CHINALCO Southwest Construction Investment Co., Ltd.

**控股子公司**  
Holding subsidiaries

- 中色科技股份有限公司 China Nonferrous Metals Processing Technology Co., Ltd. (CNPT)
- 昆明有色冶金设计研究院股份公司  
Kunming Engineering & Research Institute of Nonferrous Metallurgy Co., Ltd. (KERI)
- 九冶建设有限公司 Jiuye Construction Co., Ltd.(Jiuye)
- 中铝山东工程技术有限公司 CHINALCO Shandong Engineering Technology Co., Ltd. (SDGC)

**分公司**  
Branch companies

- 中铝国际工程股份有限公司沈阳分公司 CHALIECO Shenyang Branch
- 中铝国际工程股份有限公司贵阳分公司 CHALIECO Guiyang Branch
- 中铝国际工程股份有限公司长沙分公司 CHALIECO Changsha Branch
- 中铝国际工程股份有限公司洛阳分公司 CHALIECO Luoyang Branch
- 中铝国际工程股份有限公司长勘分公司 CHALIECO Changkan Branch
- 中铝国际工程股份有限公司昆明分公司 CHALIECO Kunming Branch
- 中铝国际工程股份有限公司山东分公司 CHALIECO Shandong Branch
- 中铝国际工程股份有限公司云南分公司 CHALIECO Yunnan Branch

**境外机构**  
Overseas Organizations

- 中铝国际香港有限公司  
CHALIECO Hong Kong Limited
- 中铝国际工程（印度）私人有限责任公司  
China Aluminum International Engineering (India) Pty Ltd.
- 中铝国际工程股份有限公司委内瑞拉分公司  
CHALIECO Venezuela Branch
- 中铝国际马来西亚公司  
CHALIECO Malaysia Branch
- 中铝国际几内亚有限公司  
SOCIETE CHALIECO GUINEA COMPANY-SARLU
- 中铝国际越南代表处、印尼代表处  
Representative Offices of CHALIECO in Vietnam and Indonesia

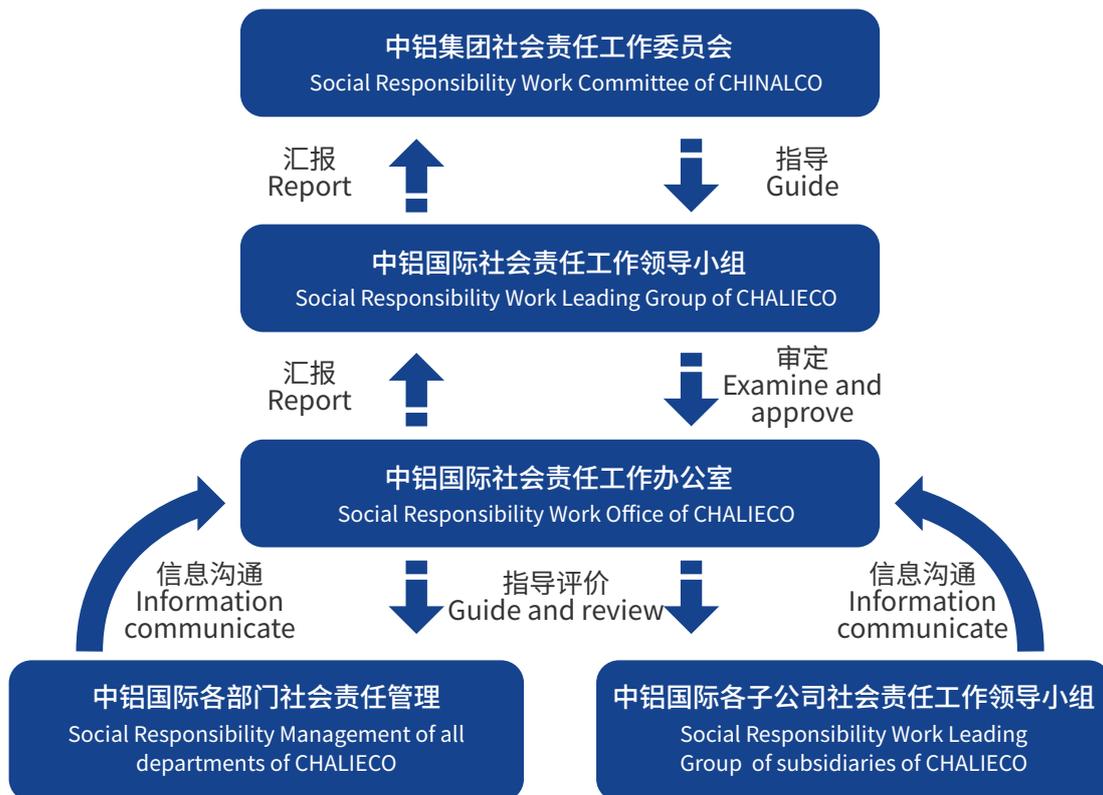
# 可持续发展管理

# Sustainable Development Management

## 组织体系 Organizational System

中铝国际将社会责任管理有效融入业务管理系统，成立由党委书记、董事长担任组长，总经理担任常务副组长，领导班子其他成员以及有关人员担任副组长的社会责任工作领导小组，负责向上汇报社会责任工作进展，向下传达中铝集团关于社会责任工作的指导及管理意见，统筹规划公司社会责任工作的实施。领导小组下设办公室，负责社会责任的日常工作。

CHALIECO has effectively integrated social responsibility management into the business management system, and established a leading group for social responsibility work, with the Company's Party secretary and chairman as the leader, the General Manager as the executive deputy leader, and other members of the management and competent personnel as deputy leaders. The leading group is responsible for reporting the progress of social responsibility work of the Company to the higher level, and conveying the guiding and management opinions and suggestions of CHINALCO on social responsibility work, as well as conducting overall planning for the implementation of the Company's social responsibility work. The office of the leading group is responsible for the daily work of social responsibility.



中铝国际社会责任组织体系  
Social Responsibility Organizational System of CHALIECO

# 可持续发展行动

## Sustainable Development Actions

中铝国际重点挖掘公司治理、员工权益、环境保护、公平运营、社区支持、乡村振兴等各方面的典型案例，编制发布公司年度 ESG 报告，向社会公众充分展现公司良好品牌形象；注重责任品牌建设，总结梳理企业品牌建设典型案例和品牌故事；积极参与行业机构优秀评选，被评为 2023 年度《中国有色金属报》宣传工作先进集体，擦亮中铝国际责任品牌。

CHALIECO, by focusing on typical cases of the Company in the aspects such as corporate governance, rights and interests of employees, environmental protection, fair operation, community support and rural revitalization, has prepared and released its annual ESG report, fully demonstrating its good brand image to the public. Laying stress on responsible brand building, the Company has summarized and sorted out typical cases and brand stories of its brand building. The Company has also actively participated in the excellent selection of industry institutions and rated as an advanced collective in publicity of 2023 *China Nonferrous Metals News*, polishing the international responsibility brand of CHALIECO.

公司在 2023 年度中央企业控股上市公司 ESG 评级中成绩突出，达到四星级优秀水平，入选“央企 ESG·先锋 100 指数”；凭借在 ESG 方面的卓越表现，入选“第一届国新杯·ESG 金牛奖治理二十强”。

With outstanding achievement in 2023 ESG rating of listed companies held by central enterprises, CHALIECO reached the four-star excellent level and was selected in "Pioneer 100 Index of ESG for Central Enterprises". Relying on its excellent performance in ESG, CHALIECO was also selected as one of the "Top 20 Enterprises in Governance Granted ESG Golden Bull Award in the First National New Cup".

# 利益相关方沟通

## Communication with Stakeholders

中铝国际主动与利益相关方沟通交流，建立起有效便捷的沟通机制和沟通渠道，积极听取不同利益相关方的声音，并就相关问题进行回应，不断提高公司透明度，提升管理运营能力。

CHALIECO has forwardly communicated with stakeholders, and established efficient and convenient communication mechanisms and channels to actively listen to the opinions and suggestions of stakeholders. The issues raised by stakeholders have been handled in a timely manner, so as to further improve the transparency of corporate operations and enhance the corporate management and operations capabilities.

中铝国际积极做好投资者关系维护，不断创新拓展投资者沟通渠道，通过召开股东大会、定期发布公告等形式，及时回应投资者诉求，增强信息透明度。2023年，公司严格按照相关制度加强信息披露管理，未发生信息披露违规行为。

CHALIECO has actively maintained investor relations, constantly innovated and expanded investor communication channels. In forms of general meeting of shareholders, regular announcements and others, the Company has responded to investor demands in a timely manner, promoting information transparency. In 2023, the Company strengthened information disclosure management in strict accordance with relevant systems, avoiding violations in information disclosure.





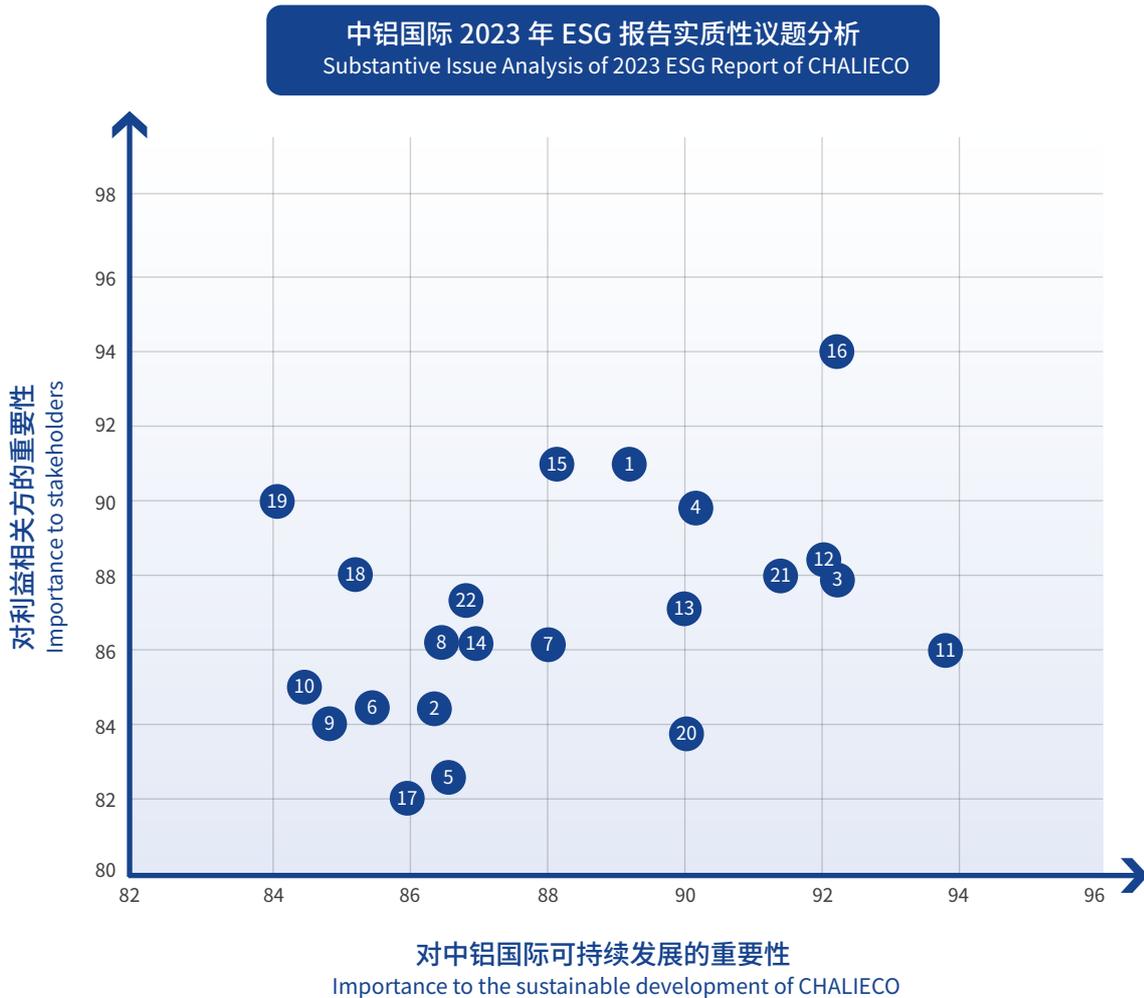
<p>员工 Employees</p>	<p>供应商与客户 Suppliers and customers</p>	<p>环境 Environment</p>	<p>社区及公众 Community and the public</p>
<ul style="list-style-type: none"> <li>• 权益维护 Protection of rights and interests</li> <li>• 职业健康 Occupational health</li> <li>• 薪酬福利 Compensation and benefits</li> <li>• 职业发展 Career development</li> </ul>	<ul style="list-style-type: none"> <li>• 依法履约 Contract fulfillment according to the law</li> <li>• 诚信经营 Integrity operations</li> <li>• 优质产品与服务 High-quality products and services</li> </ul>	<ul style="list-style-type: none"> <li>• 合规排放 Compliance with pollutants discharge standards</li> <li>• 节能减排 Energy-saving and emission reduction</li> <li>• 保护生态 Ecological protection</li> </ul>	<ul style="list-style-type: none"> <li>• 改善社区环境 Improve community environment</li> <li>• 参与公益事业 Participate in public welfare activities</li> <li>• 信息公开透明 Disclose information in an open and transparent manner</li> </ul>
<ul style="list-style-type: none"> <li>• 职工代表大会 Employees' congress</li> <li>• 集体协商 Collective negotiation</li> <li>• 民主沟通平台 Democratic communication platform</li> </ul>	<ul style="list-style-type: none"> <li>• 商务沟通 Business communication</li> <li>• 客户反馈 Customer feedback</li> <li>• 交流研讨 Exchanges and discussion</li> </ul>	<ul style="list-style-type: none"> <li>• 工作汇报 Work reporting</li> <li>• 报表报送 Statements reporting</li> <li>• 调研检查 Investigation and inspection</li> </ul>	<ul style="list-style-type: none"> <li>• 公司网站 Official website</li> <li>• 公司公告 Corporate bulletins</li> <li>• 采访交流 Interviews and exchanges</li> </ul>

# 重大议题识别

## Material Issue Identification

为进一步提高报告信息披露对利益相关方关注议题回应的准确性和全面性，中铝国际通过优秀企业对标、公司战略规划研究等方式，识别和分析重点 ESG 议题对利益相关方的影响和对公司自身发展的重要性，识别筛选出需要在报告中重点披露的议题，充分回应利益相关方关切。

To further improve the accuracy and comprehensiveness of the report information disclosure in response to issues concerned by stakeholders, CHALIECO, by means such as excellent enterprise benchmarking and corporate strategic planning research, has identified and analyzed the impact of key ESG issues on stakeholders and their importance to corporate development. Issues that need to be highlighted in this report thus have been screened and identified. Concerns of stakeholder also have been responded adequately.



1	社区发展贡献 Contribution to community development	12	绿色施工 Green construction
2	水资源使用管理 Water resource use management	13	自主创新 Independent innovation
3	知识产权保护 Protection of intellectual property rights	14	风险管理 Risk management
4	供应链管理 Supply chain management	15	反腐倡廉 Anti-corruption and integrity upholding
5	促进行业发展 Promote industrial development	16	安全生产 Work safety
6	废弃物管理 Waste management	17	合规合法经营 Law-based and compliance operation
7	能源使用管理 Energy use management	18	ESG 管治 ESG governance
8	员工权益保障 Protection of employees' rights and interests	19	乡村振兴 Rural revitalization
9	员工培训发展 Employee training and development	20	生态保护 Ecological protection
10	员工健康安全 Health and safety of employees	21	境外履责 Overseas responsibility fulfillment
11	项目质量管理 Project quality management	22	本地化运营 Localized operation





## 责任专题一

## Responsibility Focus I:

# 栉风沐雨二十载，砥砺前行新时代

*Forging Ahead in a New Era after Twenty Years of Development Despite of Various Difficulties*

在中铝集团党组坚强领导下，中铝国际坚定“科技+国际”发展战略，在有色金属工业领域勇当先锋，值此成立二十周年之际，制定庆祝中铝国际成立二十周年活动方案，选树具有时代特色的中铝国际先进典型精神，不断丰富完善中铝国际精神谱系，讲好中铝国际故事，增强文化凝聚力。

Under the strong leadership of the leading Party group of CHINALCO, we have firmly defined the "S&T + Internationalization" strategy and taken the lead in the field of nonferrous metals industry. As we mark this 20th anniversary, we have formulated a program of activities for celebration, selected our advanced typical spirit with the characteristics of The Times, constantly enriched and improved our mental spectrum, aiming at well telling our stories and enhancing cultural cohesion.



# 不忘初心，坚定报国之志

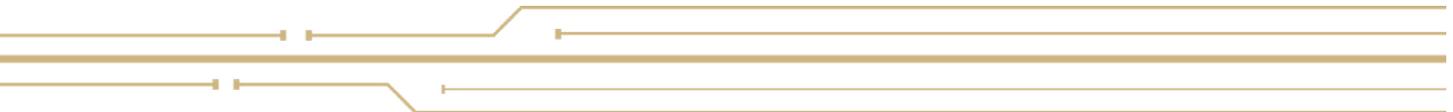
## Staying true to our mission and serving country with total loyalty

自 2003 年成立以来，中铝国际始终坚持创新发展，服务国家战略，服务中铝集团发展，以高质量党建为引领，以技术进步为动力，赋能战略性新兴产业发展、支撑传统产业迭代升级、助力提升战略资源保障能力，成长为中国有色金属工业技术的开拓者、高端工业装备及产品制造的生力军。

Since its establishment in 2003, CHALIECO has always adhered to innovative development and served national strategy and CHINALCO's development. Taking high-quality Party building as guidance and technological progress as power, CHALIECO has enabled the development of strategic emerging industries, supported the iterative upgrading of traditional industries, and contributed to the promotion of guarantee capability of strategic resources, finally growing into a pioneer in nonferrous metals industry technology of China, as well as a new force for high-end industrial equipment and product manufacturing.

20 年来，中铝国际深耕细作、砥砺前行，用实际行动践行“国之大事”的使命担当。

Over the past 20 years, CHALIECO has worked hard and forged ahead, fulfilling its mission with concrete actions by bearing in mind the country's most fundamental interests.





# 中铝国际发展历程

## Development History of CHALIECO

1950年代—1960年代  
所属企业沈阳院、贵阳院、长沙院、六冶、十二冶、长勘院、山铝建成立

From 1950s to 1960s:  
Affiliated enterprises SAMI, GAMI, CINF, CHSMCC, 12MCC, CKY and Shandong Aluminum Industry Co., Ltd. were established

2003年12月16日  
中铝国际工程有限责任公司成立(所属企业:沈阳院、贵阳院)

December 16, 2003:  
CHALIECO was established (affiliated enterprises: SAMI and GAMI)

2011年3月  
中铝国际重组改制为股份有限公司,长勘院、六冶、十二冶、晋铝建、长铝建、山铝建、中色科技并入中铝国际

March 2011:  
CHALIECO was restructured into a joint stock limited company, and CKY, CHSMCC, 12MCC, Jinlv Construction Co., Ltd., China GREAT Wall Aluminum Corporation, Shandong Aluminum Industry Co., Ltd. and CNPT were merged into CHALIECO

2002年  
所属企业中色科技成立,承接洛阳院核心业务

2002:  
Affiliated enterprise CNPT was established to undertake the core business of Luoyang Nonferrous Metals Processing Advanced Technology and High-End Equipment Industry Research Institute

2007年  
长沙院加入中铝国际

2007:  
CINF joined CHALIECO

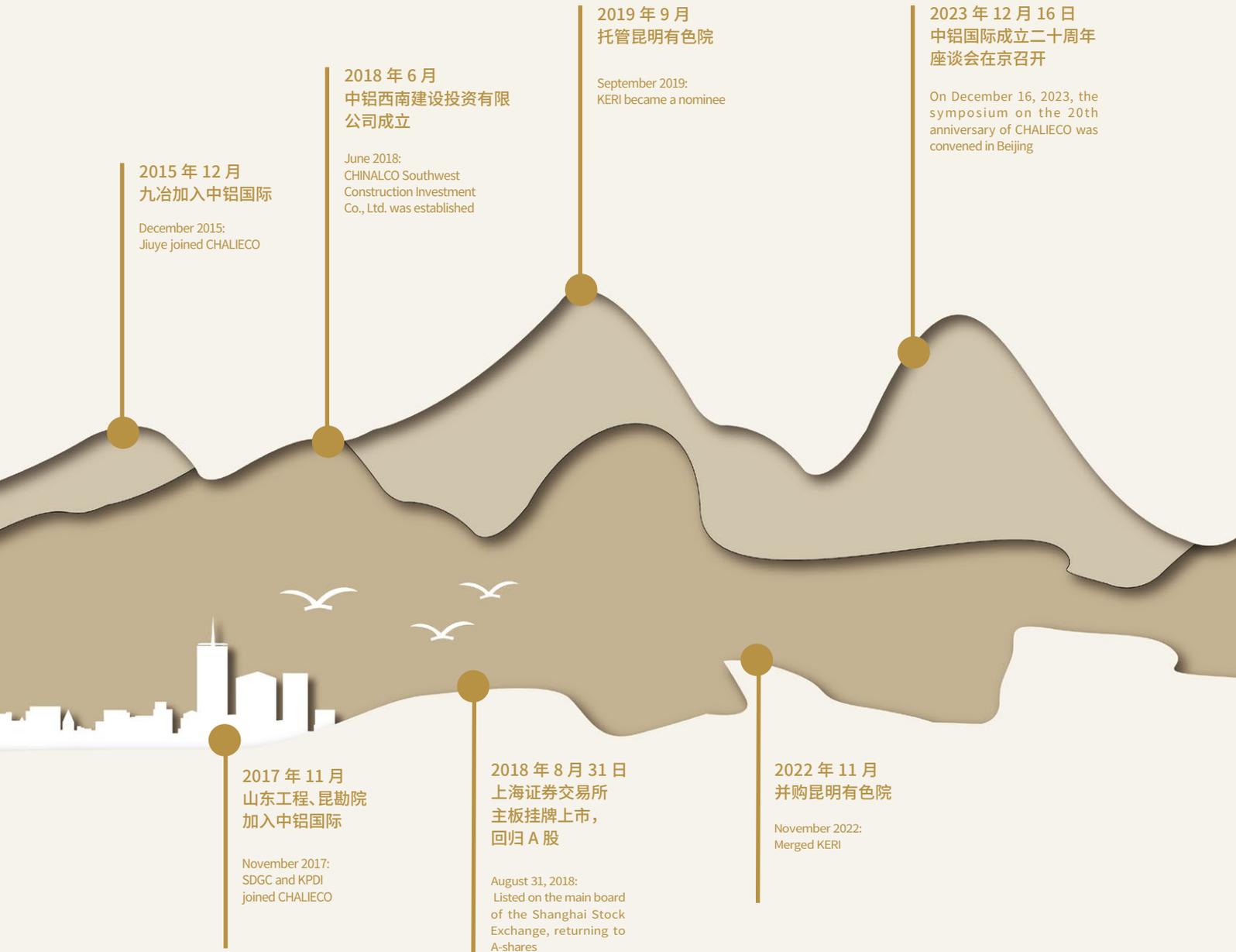
2012年7月6日  
香港联合交易所挂牌上市

July 6, 2012:  
Listed on the Stock Exchange of Hong Kong Limited

扫描右侧二维码  
观看中铝国际成立二十周年  
宣传片

Scan the QR code on the right  
to watch the 20th anniversary  
video of CHALIECO







# 科技赋能，见证发展成果

## Witnessing development achievements with science and technology empowerment

中铝国际聚焦打造原创技术策源地，努力推进重大专项攻关，取得累累科技硕果。20年间，中铝国际由成立时的2家企业发展到**13**家企业，产业链条日趋完整，企业实力不断壮大；创建了**9**个国家级工程技术研究中心和国家企业技术中心，**1**个国家级工业设计中心，**4**个国家级企业博士后科研工作站，**2**个国家级专精特新“小巨人”企业，**23**个省级工程技术研究中心和企业技术中心，**3**个省级博士后创新实践基地，**1**个省级重点实验室；取得境内外有效授权专利**3,200**余件，取得国家级和省部级科技进步奖**1,063**项。

CHALIECO has concentrated on creating the source of original technologies and worked hard to promote research with the focus on major projects, achieving numerous scientific and technological achievements. In the past 20 years, CHALIECO has developed from 2 enterprises at the time of its establishment to **13** enterprises today, with its industrial chain becoming more and more complete and its strength constantly growing. In addition, CHALIECO has established **9** national engineering technology research centers and national enterprise technology centers, **1** national industrial design center, **4** national enterprise postdoctoral research stations, **2** national specialized, sophisticated, characteristic and novel "little giant" enterprises, **23** provincial engineering technology centers and enterprise technology centers, **3** provincial postdoctoral innovation practice bases, and **1** provincial engineering laboratory. Moreover, we have obtained over **3,200** valid patents both domestically and internationally and have been recognized with **1,063** national and provincial/ministerial scientific and technological progress awards.

- **13** 家企业  
13 enterprises
- **1** 个国家级工业设计中心  
1 national industrial design center
- **2** 个国家级专精特新“小巨人”企业  
2 national specialized, sophisticated, characteristic and novel "little giant" enterprises
- **3** 个省级博士后创新实践基地  
3 provincial postdoctoral innovation practice bases
- **9** 个国家级工程技术研究中心和国家企业技术中心  
9 national engineering technology research centers and national enterprise technology centers
- **4** 个国家级企业博士后科研工作站  
4 national enterprise postdoctoral research stations
- **23** 个省级工程技术研究中心和企业技术中心  
23 provincial engineering technology centers and enterprise technology centers
- **1** 个省级重点实验室  
1 provincial engineering laboratory

## 科技强国，争当行业创新排头兵

Strengthening the Country with Science and Technology and Striving to Be the Vanguard of Industry Innovation

### 拥有行业先进的矿山技术

Boasting advanced mining technologies in the industry

设计建成中国首座海拔5,000m以上的大型绿色环保矿山、世界海拔最高且国内开采规模最大铜矿、中国第一座高海拔露天转地下开采矿山；攻克深地资源安全高效开发系列技术难题，设计建成会泽铅锌矿1,526m中国第一深竖井、新疆阿舍勒铜矿中国提升速度最快竖井。铝土矿湿法洗矿脱硅技术、钨钼铋萤石复杂多金属矿综合选矿新技术、矿山生态修复技术等一批核心技术实现推广应用。

We have designed and built China's first large-scale green and environment-friendly mine with an altitude of over 5,000m, the copper mine with the highest altitude in the world and the largest mining scale in China, and China's first high-altitude mine from open-pit mining to underground mining. We have overcome a series of technical difficulties in the safe and efficient development of deep resources and designed and built China's first deep vertical shaft (1,526m) in Huize Lead-Zinc Mine and the vertical shaft with the fastest lifting speed in Ashele Copper Mine, Xinjiang. We have promoted and applied many core technologies, including wet beneficiation and desilication of bauxite, comprehensive beneficiation of tungsten, molybdenum, bismuth, and fluorite complex poly-metallic ores, and ecological restoration of mines.

### 拥有世界领先的冶金技术

Boasting world-leading metallurgical technologies

在铝电解方面，自20世纪80年代引进消化吸收日轻160kA技术后，陆续研发180kA、280kA、320kA、350kA、400kA、500kA、600kA系列电解技术，推动中国大型铝电解槽技术走向世界；节能长寿命铝电解槽阴极制造技术及装备等一批最新绿色低碳技术得到广泛应用，中铝国际电解铝设计产能超过了中国总产能的80%，技术出口到土耳其、马来西亚、印尼、意大利等多个国家。在氧化铝方面，形成140万吨/年超大型高温拜耳法氧化铝生产线成套技术；研发世界最大低热值燃料焙烧炉、最节能的焙烧炉；18m大型节能机械搅拌分解槽技术搅拌能耗降低20%以上；首创了国内赤泥堆场半干法、干法、湿法改干法技术。在铜铅锌冶炼方面，为主设计并总承包中国首个40万吨侧吹炼铜项目，设计中国首个10万吨氧压浸出炼锌项目、世界首个30万吨氧压浸出炼锌项目。

In terms of aluminum electrolysis, we have developed a series of electrolysis technologies since the introduction and usage of the 160kA technology from Nikkei in the 1980s, such as 180kA, 280kA, 320kA, 350kA, 400kA, 500kA, and 600kA, propelling China's large-scale aluminum electrolysis cell technology to the world stage. We have widely applied a batch of the latest green and low-carbon technologies, including energy-saving and long-life cathode manufacturing technology and equipment for aluminum electrolysis cells. Our design capacity of electrolytic aluminum has exceeded 80% of China's total capacity and our technology has been exported to Türkiye, Malaysia, Indonesia, Italy, and other countries. In terms of alumina production, we have developed a complete set of technology for ultra-large high-temperature Bayer process alumina production lines with a capacity of 1,400kt/a. Additionally, we have created the world's largest low-calorific fuel roaster and the most energy-saving roaster. Our 18m large-scale energy-saving mechanical agitation digestion tank technology has reduced agitation energy consumption by more than 20%. Furthermore, we have first developed the semi-dry process, dry process, and wet-to-dry process for red mud disposal sites in China. In terms of copper, lead, and zinc smelting, we have served as the main designer and general contractor for China's first 400kt/a side-blown copper smelting project and designed China's first 100kt/a oxygen pressure leaching zinc smelting project and the world's first 300kt/a oxygen pressure leaching zinc smelting project.



### 拥有国内唯一一家有色金属加工设计研发科研院所

Boasting the only research institute for nonferrous metals processing design and development in China

拥有国内唯一一家有色金属加工设计研发科研院所，在全国大中型有色金属加工工程设计市场的占有率达到 90% 以上。近年来承担了 60% 以上新建或改扩建的铜 / 铝板带生产企业轧制或配套设备的研制任务，开发国内首台套 2,800mm、2,300mm 等系列六辊铝带冷轧机组装备，节能环保型铝轧机全油回收技术已基本取代了进口系统，国内市场占有率达到了 70%。自主研发的技术和装备出口到亚洲、欧洲、美洲和非洲的 20 个国家和地区。

We boast the only research institute for nonferrous metals processing design and development in China and own over 90% market share of large and medium-sized nonferrous metal processing engineering design in China. In recent years, we have undertaken research and development tasks for more than 60% of new or renovated/expanded rolling or supporting equipment of copper/aluminum sheet and strip production enterprises. Moreover, we have developed China's first sets of 2,800mm and 2,300mm wide six-roller aluminum strip cold rolling mill units. The energy-saving and environment-friendly full oil recovery technology for aluminum rolling mills has almost replaced similar imported systems, occupying the domestic market share of 70%. Our self-developed technologies and equipments have been exported to 20 countries and regions in Asia, Europe, America, and Africa.

### 聚焦新业态新领域持续开拓创新

Focusing on new business models and fields and constantly exploring and innovating

推进有色金属矿山、冶炼、加工等领域数字化转型，电解槽控制技术得到广泛应用，打造数字化交付新模式，实施了广西华昇、云南神火、西藏驱龙、有色金属加工工业互联网平台、“天空地”一体化矿山重大灾害监测与预警系统等一批数字化智能化系统建设应用示范工程。围绕新能源电池材料制备技术、盐湖提锂、锂云母提锂、新能源负极材料等不断拓展新兴产业领域，培育新的利润增长点，打造高质量发展的“发动机”。

We have promoted digital transformation in nonferrous metal mining, smelting, and processing, widely applied the electrolysis cell control technology, and created a new digital delivery model. Moreover, we have implemented many digital intelligent system development and application demonstration projects such as Guangxi Huasheng, Yunnan Shenghuo, Tibet Qulong, Internet Platform for Nonferrous Metal Processing Industry, and "Space-air-ground" integrated major mine disaster monitoring and early warning system. We have continuously expanded emerging industrial fields by focusing on new energy battery material preparation technology, lithium extraction from salt lakes, lithium extraction from lithium mica, and new energy cathode materials to develop new profit growth points and create a "driver" for high-quality development.

## 中铝国际重大科技成果（列举）

CHALIECO's Major Scientific and Technological Achievements (Examples)

### 超大型绿色节能铝电解成套技术

A complete set of ultra-large green and energy-saving aluminum electrolysis technology

成果被授予中铝集团第四届科技创新杰出成就奖，获得中国有色金属工业科学技术一等奖 3 项、二等奖 2 项，中国专利优秀奖 1 项。

The achievement has been awarded the Fourth Scientific and Technological Innovation Outstanding Achievement Award of CHINALCO and has received 3 first prizes and 2 second prizes of China Nonferrous Metals Industry Science and Technology Award, as well as 1 Prize of Excellence of China Patent Award.

### 电解铝全流程智能制造关键装备及系统集成应用

Integrated application of key equipment and system for full-process intelligent manufacturing of electrolytic aluminum

成果达到“国际领先水平”，获得 2021 年中国有色金属工业科学技术二等奖，2014 年中国有色金属工业科学技术一等奖，工业和信息化部主办的第四届“绽放杯”5G 应用征集大赛标杆赛金奖。

The achievement is "internationally leading" and has been recognized with multiple awards, including the second prize of China Nonferrous Metals Industry Science and Technology Award in 2021, the first prize of China Nonferrous Metals Industry Science and Technology Award in 2014, and the Gold Award in the Benchmark Competition of the 4th "Blooming Cup" 5G Application Competition organized by the Ministry of Industry and Information Technology of the People's Republic of China.



### 铅锌清洁冶炼及资源综合利用关键技术

Key technology for clean smelting of lead and zinc and comprehensive utilization of resources

核心技术均为行业首创，经中国有色金属工业协会等机构评价达到国际领先或国际先进水平，获得国家科技进步二等奖 1 项，中国有色金属工业科学技术一等奖 4 项、二等奖 3 项。

As a core technology, it is first developed in the industry and is internationally leading or advanced as evaluated by institutions such as the China Nonferrous Metals Industry Association, receiving 1 second prize of the National Science and Technology Progress Award and 4 First Prizes and 3 second prizes of China Nonferrous Metals Industry Science and Technology Award.

### 大型高尾矿坝深部勘测评价及灾变防控关键技术与应用

Key technology and application of deep survey and evaluation of large high tailing dams and disaster prevention and control

成果达到国际领先水平，获国家勘察金奖 1 项，省部级科技进步奖一等奖 2 项。获授权发明专利 24 件，主编和参编国家、行业规范 6 部，出版专著 4 部，发表论文 77 篇。

The achievement is internationally leading and has received one National Survey Gold Award and 2 first prizes of provincial and ministerial scientific and technological progress awards. We have been granted 24 invention patents, edited and co-edited 6 national and industry standards, published 4 monographs, and published 77 papers in this aspect.

## 钢结构装配式建造施工技术

Construction technology for prefabricated steel structure

成果达到国内领先水平，获得国家授权专利 15 件，软件著作权 1 项，省部级工法 18 项，获得省部级科学技术奖 5 项。

The achievement is leading in China and we have obtained 15 national patents, 1 software copyright, 18 provincial and ministerial construction methods, and 5 provincial and ministerial scientific and technological awards.

**不积跬步，无以至千里；不积小流，无以成江海。** 中铝国际将坚持党建引领，坚信科研创新是央企不断焕发活力的源头，技术力量是央企实现科技强国使命的重要依托，全面做强做优做大主业，全面提升竞争力与创新力，凝聚信心与共识，稳中有进、进中向好，扬帆高质量发展新征程。

**A long journey can be covered only by taking one step at a time.** We will adhere to the guidance of Party building, firmly believe that scientific research and innovation are the source of continuous vitality for central enterprises, and technical strength is an important support for central enterprises to fulfill their mission of building a powerful nation in science and technology. Additionally, we will comprehensively strengthen, optimize, and expand our main business, fully improve our competitiveness and innovation capabilities, gather confidence and consensus, make steady progress, and move forward in a positive direction. Moreover, we will embark on a new journey of high-quality development with confidence and determination.





## 责任专题二

## Responsibility Focus II:

# 数智化转型发展，谱写时代新篇章

*Engaging in Digital and Intelligent Transformation to Write a New Chapter of the Era*

中铝国际贯彻落实《数字中国建设整体布局规划》，深入推进制造业智能化升级，探索数字化与各项业务的深度融合，引领中国有色金属工业迈向可持续、智能化、创新发展。2023年，中铝国际成功上榜上市公司数字化转型典型案例榜单。

We have implemented the *Overall Layout Plan for the Construction of Digital China*, profoundly promoted the intelligent upgrading of the manufacturing industry, explored the in-depth integration of digitalization and various businesses, and led China's nonferrous metals industry toward sustainable, intelligent, and innovative development. In 2023, we successfully entered the list of typical digital transformation cases of listed companies.

## 加强数智管理

## Strengthening digitization and intellectualization management

中铝国际将智能一体化平台建设作为企业管理转型升级的重要途径，推动实现全产业链、全流程自动化、管理精细化，通过信息化手段实现管理变革，提高管理效率和管理执行力。

We regard the establishment of an integrated intelligent platform as a crucial pathway for the transformation and upgrading of our enterprise management to drive the automation of the entire industry chain and production process, as well as the refinement of management, and achieve management transformation and enhance both efficiency and execution in our management by leveraging information technology.





**六冶——数智驱动，“信息+科技”推动精益化管控**

CHSMCC - "Information + Technology" promotes lean management and control via digitization and intellectualization

2023年，六冶杜集项目部将项目管理充分融入六冶智能建造一体化管控服务平台，在合同管理、分包结算、安全管理、技术管理、物资管理等模块全面实现了信息化办公，以“信息+科技”实现项目全生命周期精益化管控。

In 2023, the Duji Project Department of CHSMCC fully integrated project management into the Integrated Management, Control & Service Platform for Intelligent Building of China Nonferrous Metal Industrial No. 6 Metallurgy Construction Company, achieving comprehensive information office in modules such as contract management, subcontracting settlement, safety management, technical management, and material management, realizing fine control of the project's entire lifecycle with "information + technology".

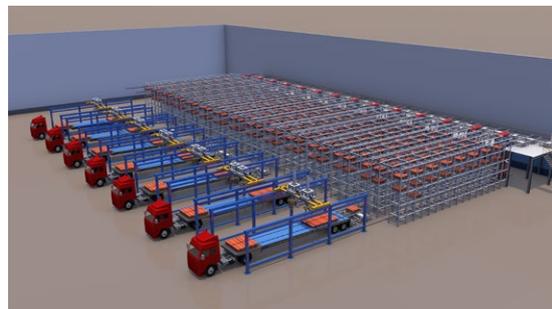


**长沙院——研发智能仓储及物流运输设备，实现仓储智能化**

CINF - Developing intelligent warehousing and logistics conveying equipment to achieve intelligent warehousing

长沙院通过完全自主知识产权的锌片自动码垛输送装备和基于智能化立体仓库的铜片极板存储及转运系统，实现仓储和物流运输智能化。

CINF has achieved intelligent warehousing and logistics conveyance through its automatic stacking and conveying equipment for zinc sheets and a copper sheet electrode storage and transfer system based on an intelligent stereoscopic warehouse with fully independent intellectual property rights.



长沙院铜片极板存储及转运系统  
Copper sheet electrode storage and transfer system of CINF



# 推进智能制造

## Promoting intelligent manufacturing

中铝国际强力推进智能制造工作，积极推进项目数智化建设，发挥数智化业务转型对公司高质量发展的强劲支撑。各勘察设计企业结合专业特点建立了数字化交付平台、团队、标准体系，推动华云三期、青海铝、红泥坡等 10 个数字化交付标杆项目建设，实现传统工艺技术优势与新一代信息技术的深度融合；施工企业加快 BIM 技术应用，打造一批标志性工程。

We have energetically promoted intelligent manufacturing, actively advanced the digitization and intellectualization of our projects, and leveraged the strong support of digital and intelligent business transformation for our high-quality development. Considering their discipline characteristics, various survey, design, and engineering enterprises have established digital delivery platforms, teams, and standard systems, promoted the construction of 10 digital delivery benchmark projects, including Huayun Phase III, Qinghai Aluminum, and Hongnipo, and realized the in-depth integration of conventional technological advantages with the latest information technology. Construction enterprises have accelerated the application of BIM technology to create a batch of landmark projects.

### 沈阳院 SAMI

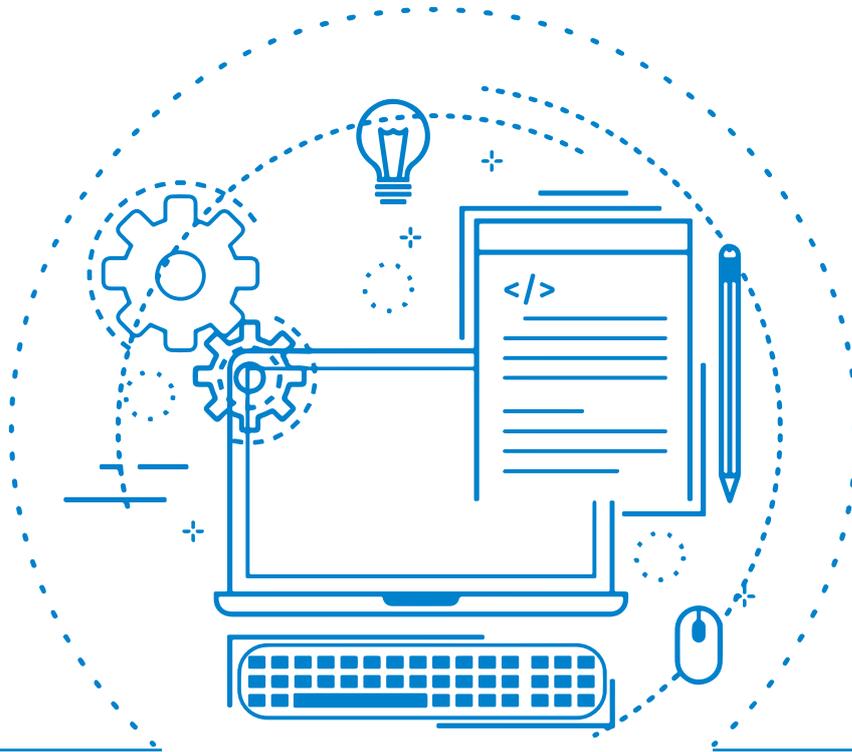
攻克设计建模、智能赋值、数字化建造应用、数字化档案馆、数字化可视化多应用场景开发等技术难题，并取得初步成果。

SAMI overcomes the technical difficulties in design modeling, intelligent assignment, digital fabrication application, digital archive, and multi-application scenario development with digital visualization and has gained preliminary achievements.

### 长勘院 CKY

加强“安全技术 + 信息化 + 智能制造”有机融合，研发包括采空区安全智能化监控与预警应急技术、5G 数据采集控制器等智能技术装备，不断突破矿山安全监控关键共性技术。

Enhancing the flexible integration of "safety technology + informatization + intelligent manufacturing", CKY researches and develops intelligent monitoring and early warning emergency technology for goaf safety, 5G data acquisition controllers, and other intelligent technology equipment, continuously breaking through key common technologies in mine safety monitoring.



昆勘院  
KPMI

在电气自动化及数智化领域，昆勘院掌握具备大运量超深矿井提升系统集成与控制等核心技术。

In terms of electrical automation, digitalization, and intellectualization, KPMI masters core technologies such as integration and control of large-scale and ultra-deep mine lifting systems.

长沙院  
CINF

研发“矿山数智化膏体充填新技术及应用”“基于多源异构工业物联网的膏体充填全流程智能巡检在线监测技术”“基于人工智能的膏体充填全流程生产辅助决策系统”等多个核心技术，为实现智能开发提供技术支撑和工程示范。

CINF researches and develops multiple core technologies such as "New Technology for Digital and Intelligent Paste Backfilling of Mines and Application", "Multi-source Heterogeneous Industrial Internet-Based Online Monitoring Technology for Full-process Intelligent Patrol Inspection of Paste Backfilling", and "Artificial Intelligence-Based Auxiliary Decision-making System for Full-process Production of Paste Backfilling", providing technical support and engineering demonstrations for intelligent mining development.

## 案例 Case

### 贵阳院——构建“5G+BIM+ 智慧工厂 + ‘双碳’ ”服务模式，赋能有色行业技术创新

GAMI - Creating a service model of "5G + BIM + smart factory + 'dual carbon' goals" to empower technological innovation in the nonferrous metals industry

贵阳院积极打造和依靠国家铝镁电解装备工程技术研究中心等“3+3+5+N”的科技创新体系，在“5G+BIM+智慧工厂+‘双碳’”智能制造技术开展攻关，稳步推进数字化交付和智慧工厂建设，并成功举办“5G+有色金属智能工厂绿色信息化建设发展论坛”和“5G+BIM+智慧工厂+‘双碳’”赋能有色金属行业技术创新论坛，引领铝工业绿色低碳发展。

GAMI vigorously creates a "3+3+5+N" scientific and technological innovation system by relying on the National Engineering and Technology Research Center of Aluminum and Magnesium Electrolysis Equipment and others to carry out research and development in "5G + BIM + Smart Factory + 'Dual Carbon' Goals" intelligent manufacturing technology, steadily promoting digital delivery and smart factory construction. GAMI has successfully organized the "5G+ Intelligent Nonferrous Metals Factory Green Informatization Construction Development Forum" and the "5G + BIM + Smart Factory + 'Dual Carbon' Goals" Forum for Empowering Technology Innovation of Nonferrous Metals Industry, leading the green and low-carbon development of the aluminum industry.



“5G+BIM+ 智慧工厂 + ‘双碳’ ” 赋能有色行业技术创新论坛

"5G + BIM + Smart Factory + 'Dual Carbon' Goals" Forum for Empowering Technology Innovation of Nonferrous Metals Industry



沈阳院“中铝华润电解铝工程数字孪生应用项目”荣获 2023 年全球基础设施数字化光辉大赛流程及发电领域大奖

The *Digital Twin Application Project of Electrolytic Aluminum Engineering of Chinalco China Resources of SAMI* won the Prize in Process and Power Generation of 2023 Going Digital Awards in Infrastructure

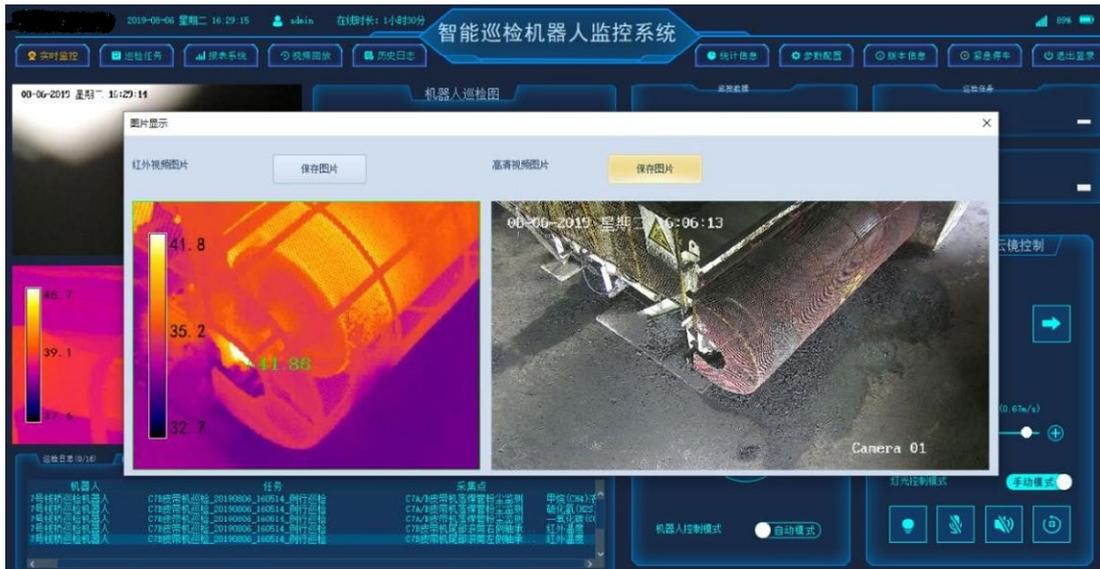


**山东工程——研发皮带智能巡检机器人，弥补人工巡检不及时难题**

SDGC - Developing intelligent belt inspection robots to make up for the problem delayed manual inspection

2023年1月，山东工程参与研发的皮带智能巡检机器人正式“上岗”，成功实现皮带机运行的无人化巡检、可视化管理、智能化报警、故障抓拍等功能，有效弥补人工巡检不及时、不到位、不准确等不足。

In January 2023, the intelligent belt robot developed by SDGC was officially put into service for inspection, successfully achieving unmanned inspection, visual management, intelligent alarm, fault capture, and other features for the operation of belt conveyors, effectively making up the shortcomings of manual inspection such as delayed, inadequate, and inaccurate inspection.



智能巡检机器人监控系统  
Intelligent inspection robot monitoring system

着眼未来，中铝国际将继续积极贯彻“数字强国”发展战略，把握信息化时代发展大势，完善数字化管理，通过智能化、数字化赋能传统有色金属产业转型升级，为打造世界一流有色金属公司、引领我国有色金属产业高质量发展注入新动能。

Looking ahead, we will continue to actively follow the development strategy of "strengthening the country with digital power", seize the trend of the information era, improve digital management, and empower the transformation and upgrading of the traditional nonferrous metals industry through intellectualization and digitization to inject new power for creating a world-class nonferrous metals company and leading the high-quality development of China's nonferrous metals industry.

# 01 经济责任

## 夯实治理，共筑管理根基

### Economic Responsibility Enhancing Governance and Jointly Establishing Management Basis

中铝国际不断加强党的建设，聚焦党建融入治理、深化改革、规范董事会运行等方面，不断完善公司治理体系，建立健全合规管理体系，加强风险管理，持续增强风险防控能力，保障企业高质量发展。

As we continually reinforce Party building, our primary focus is on seamlessly integrating it into governance. We carry out comprehensive reforms and standardize the operations of the Board of Directors. Additionally, we strive to enhance our corporate governance system, establish and refine a compliance management system, reinforce risk management, and consistently bolster risk prevention and control capabilities. These efforts aim to ensure the Company's high-quality development.

42 坚持党建引领  
Adhering to the guidance of  
Party building

45 优化公司治理  
Optimizing corporate governance

49 守法合规运营  
Operating in compliance with  
the law

52 加强风险防控  
Strengthening risk prevention and  
control





## 坚持党建引领

### Adhering to the guidance of Party building

中铝国际坚持以习近平新时代中国特色社会主义思想为指导，认真贯彻落实习近平总书记重要讲话精神，把党的二十大精神贯彻落实到中铝国际转型升级和改革发展全过程，全面落实管党治党责任，深化党建与业务“双向融合”，以高质量党建引领保障企业高质量发展。

We, under the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, have fully respected the spirit of important remarks of General Secretary Xi Jinping, followed the spirit of the 20th National Congress of the Communist Party of China in the whole process of transformation, upgrading, reform, and development of CHALIECO, fully implemented the responsibilities of Party management and governance, and enhanced the integration of Party building and business development, ensuring the high-quality development under the efficient guidance of Party building.

## 加强党的政治建设

### Strengthening the Party's political work

中铝国际高质量开展主题教育，组织开展干部集中培训，认真落实主题教育规定动作，创新实施自选动作，扎实开展调查研究，把调研成果转化为解决问题、促进发展的实际成效；组织召开主题教育领导小组会、部署会和推进会，积极配合中央巡视组延伸巡视，接受集团党组“1+5”政治巡视，从严从实抓好问题整改。

We have carried out high-quality theme education, organized centralized training for the management, conscientiously implemented the prescribed actions for theme education, creatively implemented self-selection actions, conducted solid investigations and research, and transformed the research achievements into practical results in solving problems and promoting development. Moreover, we have organized and held theme education leadership group meetings, deployment meetings, and promotion meetings, actively cooperated with the central inspection team to extend inspections, accepted the "1+5" political inspections of the Party Group of CHINALCO, and strictly and practically rectified problems.



中铝国际与中铝集团党组巡回督导组在昆明召开主题教育工作推进会

The tour supervision group of the Party groups of CHALIECO and CHINALCO held the theme education work promotion in Kunming



中铝国际举办“学习贯彻党的二十大精神”宣讲会

CHALIECO held the promotion for "learning and respecting the spirit of the 20th National Congress of the Communist Party of China"

## 推进党的组织建设

### Promoting the Party's organizational development

中铝国际两级党委认真落实“两个一以贯之”，加强基层组织建设，抓实“三型六化”党支部创建、党建考核指标优化、党员“双提升”评价、“两带两创”等工作，强化思想引领和宣传工作，开展形势任务教育、“双争”大讨论、联建共建、公司成立二十周年系列活动等工作，在国家级媒体宣传 20 余次，建设高素质干部员工队伍。

Our Party committees at two levels have earnestly followed the "two consistencies (namely, upholding Party's leadership over SOEs is a major political principle, which one must consistently hold on to; building a modern corporate system is the goal of reform, which one must consistently hold on to)", strengthened the development of grassroots organizations, and made efforts to establish Party branches of "three types and six transformations", optimize Party building assessment indicators, evaluate Party members through "double promotions", and carry out "two drives, innovation, and efficiency creation". Moreover, they have strengthened ideological guidance and publicity and carried out a series of activities such as situation and task education, "industry leadership and brand excellence" discussions, joint construction, and the 20th anniversary of the Company. Furthermore, we have been promoted more than 20 times in national media and cultivated high-quality management and employees.

## 持续全面从严治党

### Strictly administering the Party strictly

中铝国际坚持落实党风廉政建设，推动“四责联动”有效落实。强化学习培训，着力构建上下联动、贯通协同、横向到边、纵向到底的“大监督”工作格局；强化监督执纪，以“三不”机制为导向，开展“清风行动”，狠抓经营纪律、总部作风、干部作风建设，推动党风政风进一步好转，营造出风清气正的良好政治生态。2023年，中铝国际无贪污诉讼案件发生。

We have insisted on improving Party conduct and upholding integrity to effective "linkage of four responsibilities". We have strengthened learning and training and focused on establishing a "big supervision" work pattern that is interconnected, coordinated, and extended in all aspects. Moreover, we have intensified supervision and discipline inspection and, under the guidance of the "three don'ts" policy, carried out the "clean conduct campaign", boosted the operation disciplines, headquarters style, and management style, and bettered the Party and governance conduct, creating a good political ecology with clean and upright conduct. In 2023, there were no corruption lawsuits filed against CHALIECO.



中铝国际 2023 年党风廉政建设警示教育大会  
2023 CHALIECO Party Conduct and Integrity Education Conference



## 深化党建和业务融合

Boosting in-depth integration of Party building and daily work

中铝国际持续深化党建业务融合，聚焦生产经营、科技创新、提质增效、“两金”压降等工作中的重点、难点、痛点问题，围绕“两带两创”“党员先锋岗、示范区、突击队”“支部建在项目上”“结对共建”等活动推动党建与业务双向融合工作；全面实施“党建+”工作，形成“‘1565’党建工作价值体系”“数字党建”等特色品牌。

We have continued to promote the integration of Party building and business development and focused on key, difficult, and painful issues in production and operation, technological innovation, quality and efficiency improvement, and pressure reduction in "Accounts Receivable and Inventory". Moreover, we have promoted the integration of Party building and business development around activities such as "two drives, innovation, and efficiency creation", "Party member pioneer posts, demonstration areas, and commando units", "the Party branches stationed for projects" and "joint Party building". We have fully executed the "Party Building+" work and formed characteristic brands such as the "'1565' Party Building Work Value System", and "Digital Party Building".

### 案例 Case

#### 九冶——以特色党建推进党建与生产经营共融互促

Jiuye - Facilitating the integration and mutual promotion of Party building and production and operation through distinctive Party building

九冶深入开展“五讲六+”活动，持续赋予实质内涵，着力抓好党建与市场开发、项目履约、安全生产等工作的深度融合，提升“双向融合”质效，推动党建与生产经营融合走深走实。

Jiuye profoundly carries out the "5 policies and 6+" campaign, continuously enriches the substantive meaning, and focuses on the in-depth integration of Party building with market development, project performance, and work safety. The company strives to improve the quality and effectiveness of the "integration of Party Building and business development" and promote the in-depth and practical integration of Party building and production and operation.



#### 九冶学习贯彻党的二十大精神专题培训班

Special training class on learning and respecting the spirit of the 20th National Congress of the Communist Party of China in Jiuye

## 优化公司治理

### Optimizing corporate governance

中铝国际严格遵守《中华人民共和国公司法》《上市公司治理准则》等相关法律法规，按照国务院国资委《提高央企控股上市公司质量工作方案》要求及《上海证券交易所股票上市规则》《香港联合交易所有限公司证券上市规则》等证券监管要求，推进上市公司治理完善和规范运作，不断深化董事会建设，充分发挥董事会定战略、作决策、防风险作用。2023年，公司成功入选中国上市公司协会“2023上市公司董事会优秀实践案例”。

We strictly comply with relevant laws and regulations such as the *Company Law of the People's Republic of China* and the *Code of Corporate Governance for Listed Companies* in China. Following the requirements of the SASAC in respect of the *Work Plan for Improving the Quality of Listed Companies Controlled by Central Enterprises* and regulatory securities requirements of the *Listing Rules of the Shanghai Stock Exchange* and the *Rules Governing The Listing of Securities on The Stock Exchange of Hong Kong Limited*, we have promote the improvement and standardized operation of corporate governance in listed companies, continuously drive the development of the Board of Directors, and fully leverage the role of the Board of Directors in setting strategies, making decisions, and preventing risks. In 2023, CAPCO granted us the Award for Outstanding Practice.

## 坚持党建融入治理

### Insisting on integrating Party building into governance

中铝国际严格遵循国资监管和证券监管的规定和要求，将坚持和加强党的全面领导写入公司章程，形成以公司章程为核心，以董事会专门委员会议事规则、董事会秘书工作制度等为基本管理制度的公司治理制度体系，实现加强党的领导和完善“A+H”股上市公司治理的有机统一。

Strictly adhering to the regulations and requirements of state-owned asset supervision and securities supervision, we have upheld and strengthened the Party's overall leadership and integrated this principle into the Articles of Association of the Company. With the Company's Articles of Association as the core and the rules of procedure of the special committees of the Board of Directors and the working system of the Board Secretary as the basic management system, we have established a corporate governance system that achieves the organic unity of strengthening the Party's leadership and improving the governance of listed companies with "A+H" shares.

同时，公司制定“三重一大”决策事项管理制度、董事会授权管理办法等，建立重大决策事项清单，进一步明确党组织在重大事项决策中履行决定和把关定向职责，厘清各治理主体的权责边界，促进各治理主体高效协同。

Additionally, we have established a list of significant decision-making matters through the development of the "Three-important and One-major" decision-making matter management system and board authorization management methods. This clarifies the responsibilities of Party organizations in making decisions and ensuring direction in major decision-making matters, defines the boundaries of the rights and responsibilities of various governing bodies, and promotes effective cooperation among them.

## 加快深彻性改革

### Accelerating deep and thorough reforms

中铝国际构建“1+3+6”的改革体系，加强优秀总部建设；加快实施设计勘察企业改革，明确“‘123+N’的发展路径，形成以‘技术+’为中心的业务模式，推进设计勘察业务做强做优做大”的改革方向，制定改革深化提升行动实施方案及“科改行动”综合改革方案；加快推进施工企业改革，明确“按照‘专精强特’的发展模式，做精做优做强做特施工业务”的改革方向，推动施工企业本部全面去机关化，开展施工企业直管项目的试点，提升项目经营、管控、风控、平台支撑服务能力。

We have established a "1+3+6" reform system to enhance the construction of excellent headquarters. We have accelerated the implementation of the reform of design and surveying enterprises, and clarified the comprehensive reform plan of "123+N" development path, forming a business model centered on "technology+", promoting the strengthening, optimization and expansion of design and surveying business". To accelerate the reform of construction enterprises, we clarified the reform direction of "following the development model of 'specialization, precision, strength and uniqueness' to refine, optimize, strengthen and specialize the construction business". In addition, to improve their capabilities in project management, control, risk control and platform support services, we have promoted the comprehensive de-institutionalization of construction enterprise headquarters and carried out pilot projects directly managed by construction enterprises.

2023年，公司组织12家所属企业制定各单位改革深化提升行动实施方案，6家“科改企业”高质量制定综合改革方案，促进勘察设计企业深入推进市场化改革和进一步激发科技创新动能。沈阳院、贵阳院和昆勘院新入选“科改企业”，实现入选“科改企业”数量增至6户，2022年国资委“科改行动”专项考核中，长沙院为优秀，中色科技、昆明有色院为良好。

In 2023, to promote the deepening of market-oriented reform and further stimulate the momentum of S&T innovation in survey and design enterprises, we organized 12 affiliated enterprises to formulate their own implementation plans for deepening and improving reforms. Among them, 6 "science and technology reform enterprises" formulated high-quality comprehensive reform plans. With SAMI, GAMI, and KPDI being newly selected as "Science and Technology Reform Enterprises", the number of selected "Science and Technology Reform Enterprises" has increased to 6. In SASAC's special evaluation of "Science and Technology Reform Action" in 2022, CINF was rated excellent, while CNPT and KERI were rated good.



施工企业市场化改革工作会

Work meeting on marketization reform of construction enterprises



科技型企业市场化改革工作会

Work meeting on marketization reform of technology-based enterprises

## 强化独立董事作用

### Strengthening the role of independent directors

中铝国际明确制定董事会成员多元化政策，多渠道引入国企领导人员、民企高管、专家学者担任公司独立董事。

We have implemented a clear policy of diversifying our board members by introducing leaders from SOEs, executives from private enterprises, experts, and scholars as independent directors through various channels.



**健全良性沟通机制**  
Enhancing the benign  
communication  
mechanism

强化会前沟通、组织开展独立董事调研、邀请独立董事列席重要会议，促进“三会一层”的沟通交流和协调配合。

Strengthened pre-meeting communication, organized independent director research, invited independent directors to attend important meetings, and promoted communication and coordination among the "General Meeting of Shareholders, Board of Directors, Board of Supervisors, and Management".



**加强独立董事履职支撑**  
Strengthening the support  
provided to independent  
directors in the performance  
of their duties

建立独立董事“企情问询”机制、履职信息支撑机制、参与决策保障机制，明确由董事会办公室负责为独立董事履职提供全面支撑服务。组织独立董事参加监管机构及自律组织举办的各类培训，提高独立董事履职水平。

Established a mechanism for independent directors to be informed about the Company's situation, provide information support for their performance, and ensure their participation in decision-making. The Board Office has been clearly defined as responsible for providing comprehensive support services for the performance of the independent directors. Organized independent directors to attend various training sessions organized by regulators and self-regulatory organizations to improve their performance levels.

## 董事会运行保障

### Ensuring the operation of the Board of Directors

中铝国际设立董事会办公室，牵头推进董事会运行支持和外部董事履职保障工作；聘请专业的境内外公司治理律师团队，为董事会规范运作提供法律支持；健全完善董事会制度体系和充分发挥董事会专门委员会建言献策作用，全面保障董事会高效运行。

We have established a Board Office and promoted the work of supporting the operation of the Board and guaranteeing the performance of external directors, and we have hired a professional team of domestic and overseas corporate governance lawyers to provide legal support for the standardized operation of the Board. In addition, we have improved the system of the Board of Directors and fully utilized the role of specialized committees in providing advice and suggestions, thus comprehensively ensuring the efficient operation of the Board of Directors.



#### 完善董事会制度体系 Improving the Board of Directors system

做好董事会制度的“废改立”，修编公司章程、董事会专门委员会议事规则等制度，为董事会规范运行提供制度保障。

Successfully implemented the "abolition and establishment" of the Board of Directors system, and revised the Articles of Association, the rules of procedure for the special committees of the Board of Directors, providing institutional guarantees for the standardized operation of the Board of Directors.



#### 发挥董事会专门委员会建 言献策作用

Fully utilizing the role of the  
special committee of the Board  
of Directors in providing  
suggestions

重视发挥董事会下设的战略、审核、薪酬、提名、风险管理 5 个专门委员会作用，组织开展专门委员会会议，2023 年现场会议召开率达到 100%。

Emphasized the role of the Board's 5 special committees, including strategy, audit, compensation, nominating, and risk management. Organized meetings of the special committees, achieving a 100% on-site meeting rate in 2023.

## 守法合规运营

### Operating in compliance with the law

中铝国际坚持依法治企，合规运营，恪守诚信经营、公平竞争的商业道德和准则，有序开展强化企业合规管理工作，形成高效的法律合规工作管控体系，营造良好的企业合规管理文化氛围。

We adhere to the principle of operating in accordance with the law and maintaining compliance. We strictly abide by the business ethics and norms of honest operation and fair competition. We have strengthened compliance management, established an efficient legal compliance work control system, and developed a good corporate compliance management culture.

## 健全合规管理

### Improving compliance management

中铝国际高度重视合规体系建设工作，聚焦组织体系、制度体系和工作机制三个方面，构建起全面的合规管理体系，为保障公司依法合规运营奠定坚实的基础，法治央企建设持续深化。

Attaching great importance to the construction of the compliance system, we have established a comprehensive compliance management system by focusing on the organizational system, institutional system, and work mechanism, thus laying a solid foundation for ensuring the legal and compliant operation of CHALIECO. The construction of a state-owned enterprise under the rule of law continues to deepen.

## 中铝国际合规管理体系

### CHALIECO Compliance Management System



搭建涵盖公司治理层、经营管理层及工作执行层的合规管理组织体系。组建由党委书记、董事长任组长的合规管理委员会；总部各部门设置由高级业务经理级以上人员担任合规管理员；总部首次设立首席合规官，由总法律顾问兼任。

Established an organizational system for compliance management covering the levels of corporate governance, operational management, and work execution. Created a compliance management committee headed by the Party Secretary and Chairman, and appointed compliance administrators served by senior business managers or above in the departments of the headquarters. Also, appointed a Chief Compliance Officer concurrently served by the General Legal Advisor at the headquarters.



建立以合规管理规定为核心，相关配套制度、专项指引为基础，合规管理手册为补充的“1+N”合规管理制度体系；制定“一本手册、十项指引、三类清单”等一系列合规体系文件，组织全员签署《诚信合规承诺书》，推动合规理念深入人心。

Established a "1+N" compliance management system with compliance management regulations as the core, relevant support systems and special policies as the basis, and compliance management manuals as supplements. Developed a series of compliance system documents such as "One Manual, Ten Guidelines, and Three Types of Lists", and organized all employees to sign the *Integrity and Compliance Commitment Letter*, thus promoting the concept of compliance to be deeply rooted in employees' minds.



制定合规风险防控、合规审查、合规报告等一系列合规管理工作机制；对合规管理体系建设情况开展自查，形成《合规管理体系有效性评价报告》。

Developed a set of compliance management mechanisms, including compliance risk prevention and control, compliance auditing, and compliance reporting. Conducted a self-examination on the construction of the compliance management system and prepared the *Report on the Effectiveness Evaluation of the Compliance Management System*.



中铝国际召开合规体系文件发布会

CHALIECO held the press conference on compliance system documents

## 厚植法治文化

Enhancing legal culture

中铝国际打造全新普法培训平台，创新普法方式，通过在全民国家安全教育日、世界知识产权日、公平竞争政策宣传周、国家宪法日等时间节点开展专题普法活动，有效利用新技术、新媒体开展精准普法，宣传时效性明显提升。

We have created a new legal education training platform and innovated legal education methods. By conducting special legal education activities on such occasions as National Security Education Day, World Intellectual Property Day, Fair Competition Policy Awareness Week, and National Constitution Day, we have effectively used new technologies and media to conduct precise legal education, thus greatly improving the timeliness of publicity.

2023年，共完成7期成员企业总法律顾问“以案说法”和律师“实务讲堂”普法培训活动；党委理论学习中心组共集中学习**5次10项**习近平法治思想等文件精神；组织开展全级次法务人员业务交流讨论会，高质量完成公司全年普法宣传任务。

In 2023, we completed a total of 7 sessions of "case study" by general counsels of member enterprises and "practice lecture" by lawyers. The Theoretical Study Center Group of the Party Committee focused on studying **5 times and 10 points** of Xi Jinping's Thoughts on the Rule of Law and other documents; all levels of legal personnel were organized to conduct business exchange seminars. The annual legal education and publicity work was carried out with high quality.



国家宪法日培训活动

Training activities on National Constitution Day



## 加强风险防控

### Strengthening risk prevention and control

中铝国际董事会深入贯彻落实国务院国资委关于加强风险管理的各项要求，推动管理层建立独具特色的全面风险管理体系和运行机制，有效识别风险，制定重大风险管控方案及应对措施。此外，董事会充分发挥监督管理职能，多次听取管理层和外部审计师专项风险汇报，提出防范风险的意见建议。

The Board of Directors of CHALIECO has deeply implemented the requirements of SASAC of the State Council on strengthening risk management, and has promoted the establishment of a unique comprehensive risk management system and operation mechanism by the management, effectively identifying risks and formulating major risk control plans and response measures. In addition, the Board of Directors, making full use of its supervisory and management functions, has repeatedly listened to special risk reports from management and external auditors and made suggestions for risk prevention.

## 加强内控评价

### Enhancing internal control evaluation

中铝国际制定内部控制独立评价工作计划和方案，系统化落实“强内控、防风险、促合规”总体目标，完善内控体系建设，增强抗风险能力；牵头组织开展内控独立评价工作，夯实公司内控管理。

We have developed an independent evaluation work plan and an internal control plan, systematically implementing the overall goal of "strengthening internal control, preventing risks, and promoting compliance", improving the construction of the internal control system, and enhancing risk resistance capabilities. To strengthen CHALIECO's internal control management, we also took the lead in organizing independent internal control evaluations.

同时，公司制定《中铝国际内控建设与监督实施细则》，完成公司《内控手册》的年度更新，完成对经营单元及 17 家下属企业“内控流程系统覆盖率”的测算工作，组织所属成员企业开展内控体系建设自查及内控体系更新完善工作。

In addition, we formulated the *Implementation Rules for the Construction and Supervision of Internal Control of CHALIECO*, completed the annual update of the Company's *Internal Control Manual*, and calculated the "Internal Control Process System Coverage" of operating units and 17 affiliated enterprises. The member enterprises have been organized to conduct self-inspection on the construction of the internal control system and to update and improve the internal control system.

## 加强风险防范

### Strengthening risk prevention and control

中铝国际将法律审核作为制度制定、合同审签和决策上会的必经流程，修订决策事项清单，从严防控风险；深化风险管理评价机制，实现闭环管理，对于发现的风险问题，及时反馈并督促解决；加强项目目标前成本测算，强化项目过程监管和优质履约，开展项目巡查和总结评价；严格落实“两金”压降工作方案和逾期应收款专项压降工作方案；建立月度督办及通报工作机制；持续强化对重点领域、重点部位、重点项目的督导检查及巡视巡查；规范运行集团环保精准管理体系。2023年，公司122项重大决策事项纳入法律审核，全年全级次法律人员共参与审核重大决策956项。

To ensure risk prevention and control, we have made legal review an essential step in system development, contract review and signing, and decision-making meetings. We have revised the list of decision items, deepened the risk management evaluation mechanism, and provided prompt feedback to supervise the resolution of identified risk issues. We have improved pre-bid cost estimation, project process supervision, and performance quality. Additionally, we have conducted project inspections and evaluations. We have implemented the "Accounts Receivable and Inventory" reduction plan and the special reduction plan for overdue receivables strictly. We have established a monthly supervision and notification mechanism and continuously strengthened supervision and inspection of key areas, key parts, and key projects. We have also standardized the operation of the Group's precise environmental management system. In 2023, 122 major corporate decisions were subject to legal review, and legal personnel at all levels participated in the review of 956 major decisions throughout the year.

2023年，公司

**122** 项

重大决策事项纳入法律审核

In 2023, 122 major corporate decisions were subject to legal review

全年全级次法律人员共参与  
审核重大决策

**956** 项

Legal personnel at all levels participated in the review of 956 major decisions throughout the year



**合同风险防范**  
Contract risk prevention and control

健全合同管理制度，规范合同审签流程；对全级次企业生效合同文本进行抽查，并形成《合同管理专项检查报告》。全年公司全级次共评审各类经济合同 **16,515** 份。

Established a sound contract management system and standardized the contract review and signing process. Conducted spot checks on the effective contract texts of affiliated enterprises at all levels and prepared a *Special Inspection Report on Contract Management*. A total of **16,515** different commercial contracts were reviewed at all levels of the Company during the year.



**审计整改**  
Audit rectification

建立健全审计整改工作机制，定期对各单位审计整改情况进行跟踪检查，确保整改措施得到有效落实。

Established a sound audit rectification mechanism, and regularly tracked and inspected the audit rectification status of each enterprise, ensuring that the rectification measures were effectively implemented.





此外，中铝国际加强涉外合规风险排查，开展公司全级次境外各业务领域经营业务风险的排查工作；定期梳理公司涉外法治工作现状、存在问题、具体措施等，建立境外法律合规风险常态化排查处置工作的长效机制，并及时报备重大涉外法律合规风险事项；多次开展特定涉外主体的合规风险排查。

In addition, we have strengthened the investigation of foreign-related compliance risks and investigated business risks in various overseas businesses at all levels of the Company. By regularly reviewing the current situation, existing problems, and specific measures of the Company's foreign-related legal work, we have established a long-term mechanism for normalized investigation and handling of overseas legal compliance risks, and timely reported major foreign-related legal compliance risk issues. The compliance risk investigation of specific foreign-related entities has been carried out several times.

2023年，公司完成越南林同项目国际仲裁收尾工作，在和解协议履行完毕后撤回国际仲裁并申请退回部分仲裁费用，总结案件经验教训，并将其列为法律纠纷典型案例。

In 2023, CHALIECO completed the international arbitration of the Vietnam Lam Dong Project. After the settlement agreement was fulfilled, we withdrew from the international arbitration and applied for a partial refund of the arbitration fees. The summarized case experiences and lessons have been selected as typical cases of legal disputes.

# 02 客户责任

## 聚焦主业，共谱时代新篇

Responsibility for Customers:  
Focusing on the Main Business to  
Create a New Chapter in the Era

中铝国际坚决贯彻“科技+国际”战略部署，深入实施科技创新战略，不断完善科技创新管理体系，在科技人才培养、核心技术攻关等方面持续发力；增强企业“科技+”发展动能；加强质量管理，精益打造品质工程；持续提升客户服务体验，不断提升客户满意度。

By resolutely implementing the strategic deployment of "S&T + Internationalization", we have deeply implemented the strategy of S&T innovation, continuously improved the management system of S&T innovation, and continued to make efforts in cultivating S&T talents, tackling core technologies and other aspects, thus enhancing the development momentum of "S&T+" in enterprises. To continuously improve customer satisfaction, we strengthened the quality management system, leaned in the creation of quality engineering, and continuously improved the customer service experience.

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Basing on S&T innovation

63 打造品质工程  
Building high-quality projects

69 提供优质服务  
Providing high-quality services





# 立足科技创新

## Basing on S&T innovation

中铝国际突出“科技+国际”发展规划，坚持以服务国家和中铝集团战略为导向，全面贯彻新发展理念，以提高核心竞争力和增强核心功能为重点，更好地发挥公司在建设现代化产业体系、构建新发展格局中的科技创新、产业控制、安全支撑等作用。

Highlighting the development plan of "S&T + Internationalization", we have adhered to the strategy of serving the country and CHINALCO to comprehensively implement the new development concept. With a focus on improving core competitiveness and enhancing core functions, we have better played the role of technology innovation, industry control, and security support in building a modern industrial system and a new development pattern.

## 科技创新管理

### Management of S&T innovation

中铝国际立足企业化、市场化、工程化特点，制定《科技创新体系优化方案》；落实集团“1+1”规划要求，完成中铝国际“十四五”科技发展专项规划修订稿；成立由公司主要领导挂帅的中铝国际科学技术委员会和6个专业技术委员会，并开展多项科技创新相关活动。

Based on the characteristics of enterprises, marketing and technology, we have formulated the *S&T Innovation System Optimization Plan*, implemented the Group's "1+1" planning requirements, and completed the revised draft of CHALIECO's "14th Five-Year Plan" for S&T development. In addition, we established the CHALIECO S&T Committee and 6 professional technical committees headed by key executives of the Company, and carried out various S&T innovation-related activities.

## 2023年，科技创新平台建设成就

Achievements in the construction of S&T innovation platforms in 2023

新增 **1** 家

工信部“国家级工业设计中心”，  
成为集团内首家获此殊荣的企业

**One** affiliated enterprise was recognized as the "National Industrial Design Centers" by the Ministry of Industry and Information Technology, becoming the first enterprise within the Group to receive this honor

新增 **3** 个

国家企业技术中心

**Three** affiliated enterprises were recognized as "National Enterprise Technology Centers"

新增 **1** 家

国家级专精特新“小巨人”企业

**One** affiliated enterprise was recognized as a national-level specialized and sophisticated "little giant" enterprise

**6** 家

省、市级创新平台通过验收或揭牌

**Six** provincial and municipal innovation platforms have passed acceptance or been unveiled

新增 **1** 家

国家知识产权示范企业

**One** affiliated enterprise was recognized as a "National-Level Intellectual Property Demonstration Enterprise"



## 科技人才培养

### S&T talent cultivation

中铝国际建立健全科技人才薪酬激励制度，落实集团“1+8”科技激励政策，制定《科技人才薪酬激励实施指导意见》；推进领军人才计划落地，加大“钻石计划”“明星计划”人选培养力度，强化经营单元科技人才队伍建设系统化工作；在“卡脖子”关键技术和重点领域，利用好集团高层次人才引进的利好渠道，有针对性引进高端人才；推动中铝国际经营单元设计院与中铝集团所属生产企业科技人才“双向挂职”相关工作，提高科技人才积极性和创造性，打造有色金属科技人才高地。

We have established and improved the S&T talent compensation incentive system, implemented the Group's "1+8" S&T incentive policy, and formulated the *Guiding Opinions on the Implementation of Remuneration Incentives for Scientific and Technological Personnel*. We have promoted the implementation of the Leading Talent Plan, intensified the training of candidates for the Diamond Project and Star Project, and strengthened the systematic building of technology talent teams in business units. In key technologies and key "bottleneck" areas, we made good use of favorable channels to attract high-level talents from within the Group and targeted the introduction of high-end talents. We have promoted the two-way transfer of technology talents between CHALIECO Business Unit Design Institute and production enterprises affiliated with the CHINALCO, and strengthened the enthusiasm and creativity of technology talents, thus creating a highland for non-ferrous metal technology talents.

2023年，公司启动领军人才培养计划，制定科技领军人才和青年科技人才培养计划方案，有计划、有针对性地支持和培养科技骨干人才，共计梳理**416**名培养对象，其中，行业领军人才**137**名，优势专业优秀青年科技人才**279**名。

In 2023, the Company launched a leading talent training plan, formulated a plan for cultivating leading technology talents and young technology talents, and provided planned and targeted support and training for technology backbone talents. A total of **416** training targets have been identified. Among them, there are **137** industry-leading talents and **279** outstanding young S&T talents in advantageous majors.

## 核心技术攻关

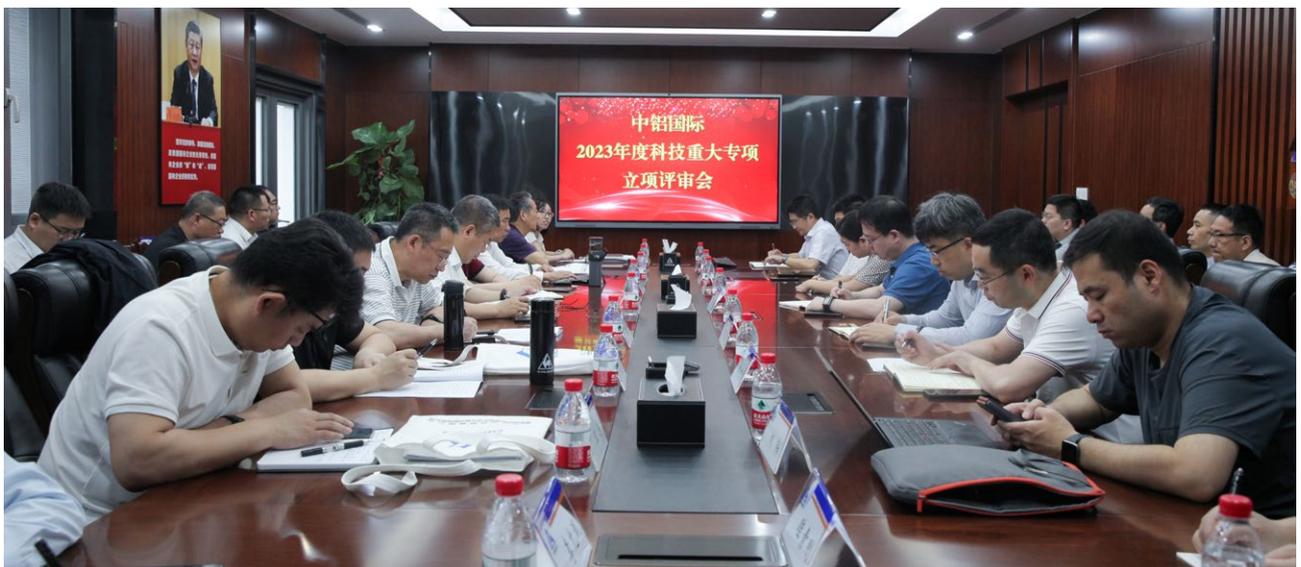
### Research and development of core technologies

中铝国际主动履行央企政治责任，参与国家重大任务建设；强化重点项目统筹，推动重点项目建设提质增效；依据集团原创技术策源地方案任务清单、中铝国际“十四五”科技发展专项规划和技术研发指南，重点在科技创新的“八大领域、五大方向”组织研发项目。

We have actively fulfilled the political responsibility of central SOEs, participated in the construction of major national tasks, strengthened the coordination of key projects, and promoted the acceleration and efficiency of key project construction. Based on the Group's original technology strategy and local project task list, the "14th Five-Year Plan" for Science and Technology Development of CHALIECO, and the Guidelines for Technology Research and Development, we focused on the "eight major fields and five directions" of S&T innovation to organize research and development projects.

2023年，公司承担了**10**项国家攻关任务、**4**项集团攻关任务，荣获集团首届科技进步一等奖**3**项、二等奖**4**项，首次以中铝国际经营单元名义申报承担国资委重大科研任务，首次采取“揭榜挂帅”新机制，圆满完成年度重点科研项目立项。“节能长寿命铝电解槽阴极制造技术及装备”“有色行业数字化转型”等一批关键核心技术实现突破。

In 2023, the Company undertook **10** national research and development tasks and **4** group-level research and development tasks, and won **3** first prizes and **4** second prizes in the Group's first Science and Technology Progress Awards. For the first time, we applied to undertake the major scientific research tasks of SASAC under the name of CHALIECO Business Unit, and completed the annual approval of major scientific research projects by adopting a new mechanism of "open competition mechanism to select the best candidates" for the first time. Several key core technologies, including "energy-efficient and durable aluminum electrolysis cell cathode production technology and equipment" and "digital transformation of nonferrous industry", have made breakthroughs.



中铝国际 2023 年度首批科技重大专项立项评审会在洛阳召开

The evaluation meeting for the first batch of major scientific and technological projects of CHALIECO in 2023 was held in Luoyang



**中色科技——坚持创新驱动，助力中铝集团实现国家级工业设计中心“零的突破”**

CNPT - Adhering to an innovation-driven approach to assist the CHINALCO in achieving a "zero breakthrough" in national industrial design centers

2023年11月，中色科技入选工信部认定的“第六批国家级工业设计中心”名单，实现了中铝集团国家级工业设计中心“零的突破”，相关科技成果分别荣获中国有色金属工业科学技术进步奖一等奖1项、二等奖2项，中国商业联合会科学技术奖一等奖2项，中铝集团科技进步一等奖1项，中国发明协会发明创新奖一等奖1项，河南省科技进步奖三等奖1项，在年度获奖总数及省部级一等奖数量上创历史新高。

In November 2023, CNPT was awarded the sixth batch of national industrial design centers recognized by the Ministry of Industry and Information Technology of China, achieving a "zero breakthrough" for CHINALCO's national industrial design centers. The relevant scientific and technological achievements have won one first prize and two second prizes from the China Nonferrous Metals Industry Science and Technology Progress Award, two first prizes from the China Federation of Commerce Science and Technology Award, one first prize from the Science and Technology Progress Award of CHINALCO, one first prize of the Invention and Innovation Award of China Invention Association, and one third prize of the Henan Province Science and Technology Progress Award, setting a new historical record in the total number of annual awards and the number of provincial and ministerial-level first prizes.



第六批国家级工业设计中心授牌仪式

The awarding ceremony of the sixth batch of national industrial design centers



## 知识产权保护

### Protection of intellectual property rights

中铝国际贯彻落实《企业知识产权管理规范》的国家标准 GB/T 29490-2013，发布《知识产权管理手册》《知识产权管理制度控制程序汇编》等文件，多次印发《知识产权相关法律法规汇编》，在全公司营造尊重保护知识产权的良好氛围。2023年，公司修订《商标管理办法》；开展知识产权相关主题培训；完成年度知识产权管理体系认证的外部监督审核工作，并取得推荐保持认证的审核结果。

We have effectively implemented the national standard of *Enterprise Intellectual Property Management* (GB/T 29490-2013), and released the *Handbook for Intellectual Property Management*, the *Compilation of Control Procedures for Intellectual Property Management System*, and other rules and regulations. We have printed and issued the *Compilation of Laws and Regulations Relating to Intellectual Property Rights* company-wide, creating a good atmosphere of respecting and protecting intellectual property rights throughout the Company. In 2023, CHALIECO revised the *Trademark Management Measures*, conducted training on intellectual property-related topics, completed the external supervision and audit of the annual certification of the intellectual property management system, and obtained the recommended audit results to maintain the certification.

### 数说·中铝国际知识产权成就

Data-based display of CHALIECO's intellectual property achievements

新申请国内专利 **647** 件，同比增长 **52%**，其中发明专利同比增长 **96%**  
647 new Chinese patents are applied for, a YoY increase of **52%**, and invention patents see a YoY increase of **96%**

新获得授权专利 **368** 件，同比增长 **7%**，其中发明专利同比增长 **33%**  
368 new patents are granted, a YoY increase of **7%**, and invention patents see a YoY increase of **33%**

新申报软著登记 **10** 项，获得登记 **10** 项  
Newly applied for **10** soft-authored registrations and obtained **10** registrations

新立项团标及以上技术标准 **25** 项，其中国标 **6** 项，行标 **9** 项，团标 **10** 项  
Newly set up **25** technical standards of group standard and above, including **6** national standards, **9** industrial standards, and **10** group standards

有 **62** 项科技成果完成行业协会组织的技术成果评价，均达到行业领先及以上水平  
62 S&T achievements completed the evaluation of technical achievements organized by industry associations, and all of them reached the industry-leading level or above

新取得国际先进及以上水平成果数量达到 **18** 项，较去年全年增长 **30%**  
18 newly achieved international advanced and above level achievements, an increase of **30%** compared with the whole year of last year

## 打造品质工程

### Building high-quality projects

中铝国际不断强化质量管理能力，切实做好质量风险管控工作，高度重视质量品牌建设，有力保障工程建设的安全和质量，为工程品质稳步提升夯实基础。2023年，中铝国际工程项目一次合格率为100%，重大质量事故率为0。

With the continuous strengthening of quality management capabilities and the effective implementation of quality risk control, we have attached great importance to quality brand building, effectively ensured the safety and quality of engineering construction, and laid a solid foundation for the continuous improvement of project quality. In 2023, CHALIECO's first pass rate of engineering projects was 100% and the major quality accident rate was 0.

2023年，中铝国际工程项目  
一次合格率为

# 100%

In 2023, CHALIECO's first pass rate of engineering projects was **100%**

重大质量事故率为

# 0

The major quality accident rate was **0**

## 质量管理能力建设

### Quality management capacity building

中铝国际遵守《中华人民共和国产品质量法》《建设工程质量管理条例》《建设工程项目管理规范》等国家法律法规，制定《中铝国际质量管理办法》《中铝国际项目管理标准化手册》《中铝国际工程股份有限公司工程设计质量管理办法（试行）》等文件；明确职能优化流程，推进项目管理制度建设。

We abide by the *Product Quality Law of the People's Republic of China*, the *Regulation on the Quality Management of Construction Projects*, the *Code of Construction Project Management*, and other relevant national laws and regulations, and have formulated the *Quality Management Measures of CHALIECO*, the *Standardization Manual for Project Management of CHALIECO*, and the *Quality Management Measures for Engineering Design of China Aluminum International Engineering Corporation Limited (Trial)*. These documents have defined the process of optimizing functions and promoted the construction of project management systems.

项目建设全周期实行质量严格控制，采用BIM技术，实现信息化管理；工程竣工后，按照与建设方签订的保修合同或协议书，履行保修义务，明确工程保修工作组织管理及具体实施的责任归属；统一“两制”责任书范本，以项目成本地图绘制和规范业务模式为切入点，加强精细化源头策划，落实“以收定资”资金管控，规范项目成本管理和分包结算管理，持续提升项目运营质量；协同督导重点项目，提升项目管理质量。

From strict quality control throughout the project construction cycle, we have applied BIM technology to achieve information-based management; after the completion of the project, we have fulfilled our warranty obligations according to the warranty contract or agreement signed with the owner, and clarified the responsibility for organizing and managing the engineering warranty work and its specific implementation. We unified the template of the "two-system" liability statement, strengthened the refined source planning based on the drawing of project cost maps and the standardization of business models, and implemented the "pay according to income" fund management policy, thereby standardizing project cost management and subcontractor settlement management and continuously improving the quality of project management. In order to improve the quality of project management, we have cooperated and supervised key projects.



十二冶荣获 7 项 QC 质量管理小组成果奖  
12MCC won seven QC Quality Management Group Achievement Awards

## 质量风险防控

### Quality risk prevention and control

中铝国际高度重视质量风险防控，开展专项治理行动，提升项目运营质量；优化体系，严控两商，规范公司采购管理；深入项目巡查，定期总结评价；开展员工培训和评比，在全公司营造重视质量的良好氛围。截至 2023 年 12 月末，中铝国际累计巡查项目 21 个，通过自查、抽查共查出 11 类 110 项问题，全部整改完毕。

With quality risk prevention and control highly valued, we have taken special management measures to improve the quality of project operations, optimize the system, and strictly control service providers and suppliers, thus standardizing our procurement management. To create a good atmosphere of valuing quality throughout the Company, we conducted in-depth project inspections, regularly summarized and evaluated them, and conducted employee training and evaluation. As of the end of December 2023, CHALIECO has conducted a total of 21 inspections, and through self-inspection and spot checks, a total of 11 categories and 110 issues have been identified, all of which have been rectified.



截至 2023 年 12 月末  
中铝国际累计巡查项目

21 个

As of the end of December 2023, CHALIECO has conducted a total of 21 inspections



通过自查、抽查共查出

11 类 110 项问题  
全部整改完毕

Through self-inspection and spot checks, a total of 11 categories and 110 issues have been identified, all of which have been rectified



第三届中铝质量奖获得者中色科技胡要强  
Hu Yaoqiang of CNPT, the winner of the 3rd CHINALCO Quality Award

## 质量品牌建设

### Quality brand building

中铝国际从项目建设初期质量策划就将项目力争创建省、部优和国优工程质量奖作为项目质量活动的重点工作，并走向海外，提升中铝国际品牌。

In order to enhance the CHALIECO brand, we have made the establishment of provincial, ministerial and national engineering quality awards a key focus of project quality activities from the early stage of project construction quality planning, and also explored overseas markets.

2023 年，公司获得国家优质工程金奖 1 项、中国建设工程鲁班奖（境外工程）1 项、国家优质工程奖（含境外工程）13 项、中国钢结构金奖 2 项，所属勘察设计企业获得行业工程咨询勘察设计奖 139 项，其中一等奖 37 项。在 2023 年度 ENR “全球工程设计企业 150 强” 和 “国际工程设计企业 225 强” 榜单中，公司荣列第 98 位和第 199 位。

In 2023, we won 1 gold prizes of the National Quality Engineering Award, 1 prizes of the China Construction Engineering Luban Award (overseas projects), 13 National Quality Engineering Awards (including overseas projects), and 2 gold prizes of the China Construction Engineering Steel Structure Award. Our survey and design enterprises won 139 industry engineering consulting survey and design awards, including 37 first prizes. In the 2023 ENR "Top 150 Global Engineering Design Enterprises" and "Top 225 International Engineering Design Enterprises" rankings, we ranked 98th and 199th, respectively.

#### 国家优质工程金奖

**1** 项

**1** gold prizes of the National Quality Engineering Award

#### 中国建设工程鲁班奖（境外工程）

**1** 项

**1** prizes of the China Construction Engineering Luban Award ( overseas projects)

#### 国家优质工程奖（含境外工程）

**13** 项

**13** National Quality Engineering Awards (including overseas projects)

#### 中国钢结构金奖

**2** 项

**2** gold prizes of the China Construction Engineering Steel Structure Award

#### 行业工程咨询勘察设计奖

**139** 项，其中一等奖 **37** 项

**139** industry engineering consulting survey and design awards and design awards, including **37** first prizes



## 中铝国际 2023年质量品牌建设成就

CHALIECO's achievements in 2023 quality brand building



中铝国际荣获中国证券金紫荆奖“最具品牌影响力上市公司”奖

CHALIECO won the "Most Influential Brand Listed Company" award at the China Securities Golden Bauhinia Awards

### 国家优质工程金奖

Gold prize of National Quality Engineering Award

- 六冶参与施工总承包的“北京环球影城主题公园（一期）项目”  
"Universal Studios Theme Park (Phase I) Project" co-undertaken by CHSMCC

### 中国建设工程鲁班奖（境外工程）

China Construction Engineering Luban Award (overseas project)

- 六冶施工总承包的“刚果（金）SICOMINES 铜钴矿项目二期工程”  
"The Second Phase of the Congo (Kinshasa) SICOMINES Copper and Cobalt Mine Project " undertaken by CHSMCC

### 国家优质工程奖

Prize of National Quality Engineering Award

- 长勘院勘察，中色科技设计，六冶、十二冶、九冶联合施工总承包的“中铝瑞闽汽车轻量化用铝合金板带材生产线项目”  
"CHALIECO Ruimin Automobile Lightweight Aluminum Alloy Plate and Strip Production Line Project" surveyed by CKY, designed by CNPT, and co-undertaken by CHSMCC, 12MCC, and Jiuye
- 昆勘院勘察的“昆明多民族文化旅游小镇”  
"Kunming Multiethnic Cultural Tourism Town" surveyed by KPDI

## 国家优质工程奖

Prize of National Quality Engineering Award

- 昆勘院勘察的“昆明市延安医院医技综合楼暨全科医师培训基地项目（一期）”

"Kunming Yan'an Hospital Medical Technology Comprehensive Building and General Practitioner Training Base Project (Phase I)" surveyed by KPDI
- 长勘院勘察设计的“荔城街改善人居环境工程——增城区挂绿湖安置新社区(荔城片区)周边市政配套工程”

"Licheng Street Improvement of Living Environment Project - Municipal Supporting Projects around the New Community for Resettlement of Hanglvhu in Zengcheng District (Licheng District)" surveyed and designed by CKY
- 长勘院勘察设计的“长沙市望城区一路一园建设工程项目及湘江西岸防洪保安工程潇湘北路堤防三期”

"Construction Project of 'One Road, One Park' in Wangcheng District, Changsha City, and the Xiaoxiang North Road Embankment Project (Phase III) of the Flood Control and Security Project on the West Bank of the Xiang River" surveyed and designed by CKY
- 长勘院勘察设计的“张家界武陵山大道”

"Zhangjiajie Wuling Mountain Avenue" surveyed and designed by CKY
- 长勘院勘察设计的“浪琴山花园三期 A 号（塔楼）、B 号（塔楼）、A 号 B 号裙房、垃圾房及地下室”

"A (Tower), B (Tower), A and B podium, Garbage Room, and Basement of the Langqin Mountain Garden Project Phase III" surveyed and designed by CKY
- 长勘院勘察设计的“楷林国际大厦二期 C 座及地下室”

"Kailin International Building Phase II, Block C and Basement" surveyed and designed by CKY
- 长勘院勘察设计的“赣州市综合文化艺术馆项目”

"Ganzhou City Comprehensive Culture and Art Museum Project" surveyed and designed by CKY
- 长勘院牵头勘察设计的“东方万悦城·万达广场 G1# 购物中心”

"Oriental Joy City · Wanda Plaza G1 # Shopping Mall" led by CKY for survey and design
- 长勘院参与勘察设计的“珠海市金琴快线工程”

"Zhuhai Jinqin Express Project" participated in by CKY in survey and design

## 国家优质工程奖（境外工程）

Prize of National Quality Engineering Award (overseas project)

- 六冶施工总承包的“刚果（金）SICOMINES 铜钴矿项目二期工程”  
"The Second Phase of the Congo (Kinshasa) SICOMINES Copper and Cobalt Mine Project " undertaken by CHSMCC
- 长沙院勘察设计、六冶和十二冶施工总承包的“几内亚 Boffa 铝土矿项目”  
"Bauxite Mine Project in Guinea" designed by CKY and co-undertaken by CHSMCC and 12MCC

## 中国钢结构金奖

Gold prize of China Construction Engineering Steel Structure Award

- 六冶参建的“西安北客站枢纽工程（一期）二标段工程总承包项目”  
"General Contracting Project for Lot 2 of the Xi'an North Railway Station Hub Project (Phase I)" co-undertaken by CHSMCC
- 九冶参加的“乌鲁木齐机场改扩建工程机场工程航站楼项目”  
"Airport Engineering Terminal Project of the Urumqi Airport Reconstruction and Expansion Project" co-undertaken by Jiuye



中铝国际和贵阳院设计、六冶施工总承包的云南神火铝业有限公司 90 万吨绿色水电铝材一体化项目  
"Yunnan Shenhuo Aluminum Industry Co., Ltd.'s 900kt/a Green Hydropower and Aluminum Integration Project" designed by CHALIECO and GAMI, and constructed by CHSMCC

## 提供优质服务

### Providing high-quality services

中铝国际制定制度文件严抓产品质量，创新制定并实施《中铝国际工程项目客户及其项目准入评价管理办法》，同时实施《中铝国际国内业务市场营销管理办法》、《中铝国际大客户营销管理办法》等营销管理制度，充分保障客户的合法权益；建立大客户营销体系，不断强化服务意识，提升服务能力；完善售后权益保护机制，坚决秉承业主至上、按合同履约的原则，积极应对客户投诉，保障客户隐私，真正做到替客户着想、为客户做事、为客户创造价值。2023年，中铝国际新签合同额共计398.11亿元，未收到关于产品及服务的投诉，客户满意度为90%。

To strictly control product quality, we have formulated various institutional documents and creatively formulated and implemented the *Management Measures for Customer and Project Access Evaluation of CHALIECO Engineering Projects*. At the same time, we have formulated the *Administrative Measure of China Aluminum International Engineering Corporation Limited on Domestic Business Marketing*, the *Administrative Measure of China Aluminum International Engineering Corporation Limited on Key Account Marketing*, and other marketing management regulations, fully protecting the legitimate rights and interests of customers. We have established a key account marketing management system and continuously strengthened our service awareness to enhance our service capabilities. With resolutely adhering to the principle of putting the owner first and fulfilling the contract following the contract, we refined after-sales rights and interests protection mechanisms, actively responded to customer complaints, and strictly kept customer privacy confidential. These actions have really put us in a position to think for our customers, to do things for them, and to create value for them. In 2023, the new contract value of CHALIECO totaled RMB39.811 billion, with no complaints received about products and services and a customer satisfaction rate of 90%.

#### 案例 Case

#### 加强总承包项目管理，提升客户服务满意度

Strengthening the management of general contracting projects to improve customer service satisfaction

2023年，中铝国际总承包业务部直属总承包越南仁基氧化铝项目、委内瑞拉ALCARA项目、意大利维斯梅铝厂技术升级改造项目、印尼曼帕瓦100万吨氧化铝工程等项目，实现从合同签署、开工、合同调整、验收与生产考核及清欠的项目全生命周期管理，项目均高质量推进或完成交付。

In 2023, CHALIECO's General Contracting Business Department directly contracted projects such as the NhanCo Alumina Project in Vietnam, the ALCARA Project in Venezuela, the PortoVesme Plant Technology Upgrade and Renovation Project in Italy, and the 1,000kt/a Alumina Project in Mempawah, Indonesia. These projects achieved full lifecycle management from contract signing, start-up, contract adjustment, acceptance and production evaluation to debt settlement. All projects were advanced or delivered with high quality.

# 03 环境责任

## 绿色发展，共创零碳未来

### Environmental Responsibility: Creating a Zero-Carbon Future with Green Development

中铝国际深入贯彻新发展理念，将响应“双碳”政策、提升环境管理、优化绿色运营、推广低碳文化等方面作为低碳发展的主要着力点，做“绿水青山就是金山银山”理念的积极传播者和模范践行者，走出自己的“绿色发展之路”。

We have implemented the new development concept and made responding to the policy of "carbon peaking and carbon neutrality", improving environmental management, optimizing green operations and promoting low-carbon culture the main focus of low-carbon development. By being an active disseminator and model practitioner of the concept that "lucid waters and lush mountains are invaluable assets", we have embarked on our own path of "green development".

72 响应“双碳”战略  
Responding to the carbon peaking and carbon neutrality strategy

73 强化环境管理  
Strengthening environmental management

75 践行绿色运营  
Practicing green operations

83 培育低碳文化  
Cultivating low-carbon culture





# 响应“双碳”战略

## Responding to the carbon peaking and carbon neutrality strategy

中铝国际以国家“双碳”战略和市场节能降耗需求为先导，坚决落实党中央和国家关于碳达峰、碳中和工作的决策部署，主动应对气候变化，不断加强温室气体排放管理，持续推进二氧化碳、甲烷减排，助力形成绿色发展格局。

Guided by the national "Dual Carbon" strategy and the market demand for energy conservation and consumption reduction, we have resolutely implemented the decisions and policies of the Party Central Committee and the State on carbon peak and carbon neutrality, proactively responded to climate change, continuously strengthened greenhouse gas emission management, and further promoted the reduction of carbon dioxide and methane emissions, thus contributing to the formation of a green development pattern.



### 沈阳院——铝行业首套超细液滴卧式脱硫系统成功投入运行

SAMI - The first ultra-fine liquid droplet horizontal desulfurization system in the aluminum industry has been successfully put into operation

2023年9月，沈阳院设计并总承包的云铝阳宗海电解分公司20万吨电解铝技术改造工程超低排放项目正式通烟。该项目研发出电解铝行业超细液滴卧式脱硫系统，与传统湿法脱硫技术相比节能35%，处于行业领先水平，助推电解铝行业绿色低碳技术迭代。

In September 2023, the Ultra-low Emission Project of the 200kt/a Electrolytic Aluminum Technology Transformation Project of Yunnan Aluminium Yangzonghai Electrolysis Branch, designed and contracted by SAMI, was officially put into operation. This project has developed an ultrafine liquid droplet horizontal desulfurization system for the electrolytic aluminum industry, which saves 35% energy compared to traditional wet desulfurization technology and is at the forefront of the industry, promoting the iteration of green and low-carbon technologies in the electrolytic aluminum industry.



沈阳院项目现场及监测系统  
SAMI's project site and monitoring system

## 强化环境管理

### Strengthening environmental management

中铝国际响应国家生态文明建设和可持续发展的号召，搭建并完善环境管理体系，建立环境应急管理制度，全面管控环境风险，开展环保风险隐患大排查，实现环保管理全过程系统化、精细化，积极推进绿色高质量发展。2023年，公司环保总投入 3,532.17 万元，中央生态环境保护督察反馈问题整改计划完成率 100%。

In response to the call for national ecological civilization construction and sustainable development, we have established and improved an environmental management system and an environmental emergency management system to comprehensively control environmental risks. We have conducted a comprehensive investigation of environmental risks and hazards, achieved systematic and refined environmental management throughout the process, and actively promoted green and high-quality development. In 2023, our total investment in environmental protection was RMB35.3217 million, and the completion rate of the rectification plan for problems feedback from the central ecological environmental protection inspection was 100%.

公司环保总投入

**3,532.17** 万元

Our total investment in environmental protection was RMB**35.3217** million



## 强化规划引领

### Strengthening planning leadership

中铝国际建立并完善环境管理体系，制定公司全年环境保护计划，严格遵循《环境保护法》《水污染防治法》《大气污染防治法》《固体废物污染环境防治法》等法律法规，制定《中铝国际工程股份有限公司生态环境问题整治攻坚三年行动方案》，全面检查排查企业现阶段存在的生态环境保护问题，并进行彻底整治，做到“清存量”“遏增量”“求变量”，扎实做好“四节一环保”工作，为公司高质量发展注入新的不竭的“绿色”动力。

In strict compliance with the *Environmental Protection Law of the People's Republic of China*, the *Water Pollution Prevention and Control Law of the People's Republic of China*, the *Atmospheric Pollution Prevention and Control Law of the People's Republic of China*, the *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Waste* and other national laws and regulations, we have established and improved our environmental management system and formulated our annual environmental protection plan. We have formulated the *Three-Year Action Plan for the Improvement of Ecological and Environmental Issues of China Aluminum International Engineering Corporation Limited*, thoroughly inspected and investigated the current ecological and environmental problems in the Company, and carried out thorough rectification. These measures have enabled us to achieve the goals of "inventory clearance," "growth restraint," and "variable search," and to solidly carry out the work of "four savings and one environmental protection," injecting new and inexhaustible "green" momentum into the high-quality development of the Company.



## 环保预警及应急机制

### Environmental early warning and emergency mechanisms

中铝国际根据生态环境保护新形势新要求，修订《突发环境事件报告和调查规定》，明确突发环境事件的范围，对于生态环境行政处罚、突发环境事件以及同类事件重复发生的情形，加强对战略单元考核，强化对责任单位和责任人的追责力度；定期开展应急演练，检验和提升企业突发环境事件应急响应能力。2023年，无一般及以上突发环境事件。

In accordance with the new situation and requirements of ecological environmental protection, we have revised the *Regulations on Reporting and Investigation of Environmental Emergencies*, clarifying the scope of environmental emergencies. For ecological environmental administrative penalties, sudden environmental incidents and situations where similar incidents occur repeatedly, we have strengthened the evaluation of strategic units, strengthened the accountability of responsible units and individuals, and regularly conducted emergency drills to test and improve the emergency response capabilities of enterprises to environmental emergencies. In 2023, there were no general or above environmental emergencies occurred in the Company.

## 环保风险隐患排查

### Environmental risk and hazard investigation

中铝国际按照中铝集团《关于开展生态环境风险隐患大清查工作的通知》工作要求，组织公司全级次企业开展全面生态环境风险隐患大清查工作；建立隐患排查与治理档案，明确在生态环境保护方面合规管理、监督检查、污染防治等方面的通用检查内容，并按照“五定”原则制定隐患整改措施。2023年，中铝国际生态环境风险隐患大清查工作共清查项目294个，发现一般隐患97个，全部已整改完成，未发现重大隐患。

In accordance with the requirements of the *Notice on Carrying out a Comprehensive Ecological Environmental Risk and Hidden Danger Inspection* by CHINALCO, we have organized affiliated enterprises at all levels to carry out a comprehensive ecological environmental risk and hidden danger inspection. We have established a hazard investigation and control file and defined the general inspection content in compliance management, supervision and inspection, pollution prevention and control, and other aspects of ecological environmental protection. We have also formulated hazard elimination measures according to the "five fixations" principle. In 2023, a total of 294 ecological and environmental hazards were inspected by CHALIECO, and 97 general hazards were found. All of them have been eliminated and no major hazards have been found.

# 践行绿色运营

## Practicing green operations

中铝国际严格执行《中华人民共和国环境保护法》等环保法律法规，持续进行节能减排，减少废气、废水、固体废弃物及其他污染物排放；深耕节能环保技术研发，将绿色、环保、节能理念贯穿施工项目全生命周期，打造绿色施工标杆；扩大铝应用，向铝精深加工、价值链高端转型，让“绿色”成为高质量发展的鲜明“底色”。

Through the strict implementation of environmental protection laws and regulations, such as the *Environmental Protection Law of the People's Republic of China*, we have continuously carried out energy conservation and emission reduction, reducing emissions of exhaust gas, wastewater, solid waste and other pollutants. With the deep cultivation of energy-saving and environmental protection technology research and development, we have integrated the concepts of green, environmental protection and energy conservation throughout the life cycle of construction projects, setting a benchmark for green construction. We have expanded the application of aluminum, moving toward deep processing and a high-end value chain, making "green" a clear "background" for high-quality development.

## 资源管理

### Resource management

中铝国际建立完善的资源管理体系，明确资源管理的流程 and 标准，在能源结构转型、水资源管理、供应商管理方面采取多项措施，有效落实资源节约，提高资源利用效率，推动经济增长与资源节约、环境保护协调发展。2023年，中铝国际能源消耗总量 8.0794 万吨标准煤，天然气消耗量 195,928 立方米。

By establishing a comprehensive resource management system, we have defined the processes and standards for resource management. In terms of energy structure transformation, water resource management and supplier management, we have taken various measures to effectively implement resource conservation and improve resource utilization efficiency, thus promoting the coordinated development of economic growth, resource conservation and environmental protection. In 2023, CHALIECO's total energy consumption was 80.794 thousand tons of standard coal equivalent, and natural gas consumption was 195,928 cubic meters.



消耗总量

**8.0794** 万吨标准煤

CHALIECO's total energy consumption was **80.794** thousand tons of standard coal equivalent



天然气消耗量

**195,928** 立方米

Natural gas consumption was **195,928** cubic meters

## 案例 Case

### 长沙院——设计的金丰锂业有限公司电池级碳酸锂项目正式投产

CINF - The Battery-grade Lithium Carbonate Project of Jinfeng Lithium Industry Co., Ltd., designed by CINF, has been officially put into operation

2023年8月，长沙院设计的宜丰县金丰锂业有限公司年产3万吨电池级碳酸锂项目一期1万吨项目正式投产。该工艺不仅解决了当前锂云母提锂工艺能耗高、消耗大、回收率低、环境影响大的缺点，且实现资源的综合利用，引领锂云母提锂技术走上清洁生产之路，达到国际领先水平。

In August 2023, the 10kt/a Project of the 30kt/a battery-grade lithium carbonate project (Phase I) of Yifeng County Jinfeng Lithium Industry Co., Ltd., designed by CINF, was officially put into operation. This process not only addresses the issues of high energy consumption, low recovery rate, and significant environmental impact of the current lithium mica extraction process, but also achieves comprehensive resource utilization. This leads the lithium mica extraction technology towards clean production and an international leading level.



金丰锂业有限公司锂云母提锂工艺  
项目现场

The site of the lithium mica  
extraction process project of Jinfeng  
Lithium Industry Co., Ltd.

## 降低污染排放

### Reducing pollution emissions

中铝国际认真履行污染防治主体责任，高度重视环境保护与污染防治工作，不断加大废气、废水、固废等污染物治理力度，抑制扬尘；采用节能低噪的施工设备、施工工艺和施工机具，分时段施工，严禁夜间施工，减少噪声污染，持续巩固污染治理成效。2023年，中铝国际废气排放量为31,900标立方米；废水排放量为6.4934万吨，与去年比较减少16.92万吨；未发生一般性突发环境事件及重大环境污染、生态破坏事件。

We have conscientiously fulfilled our primary responsibility for pollution prevention and treatment, and attached great importance to environmental protection and pollution prevention and treatment work. We have continuously stepped up our efforts to control pollutants such as exhaust gas, wastewater and solid waste, and to suppress dust. We have adopted energy-saving and low-noise construction equipment, construction techniques, construction machinery and other low-noise tools. Construction is carried out in stages, and night construction is strictly prohibited in order to reduce noise pollution and continuously consolidate the effectiveness of pollution control. In 2023, CHALIECO's exhaust emissions were 31,900 standard cubic meters and wastewater emissions were 64,934 tons, a decrease of 169,200 tons compared to the previous year. There were no general environmental emergencies, major environmental pollution or ecological damage incidents in the Company.

### 3项技术入选《国家鼓励的工业节水工艺、技术和装备目录》

Three technologies have been selected for the *Catalogue of Industrial Water Saving Techniques, Technologies and Equipment Encouraged by the State*

#### 沈阳院:电解铝厂含氟生产废水及初期雨水处理新工艺

SAMI: New process for treating wastewater and initial rainwater from fluoride production in aluminum electrolysis plants

该工艺适用于电解铝、碳素等企业生产废水、初期雨水的处理及回用，可解决废水含油、氨氮和含氟等特征污染物问题。

This process is suitable for treating and reusing production wastewater and initial rainwater from enterprises, such as those involved in electrolytic aluminum and carbon production. It can effectively address characteristic pollutants, such as oil, ammonia nitrogen, and fluoride, found in wastewater.

#### 长沙院:铜冶炼废水零排放技术

CINF: Zero discharge technology for copper smelting wastewater

该技术主要针对铜冶炼废水中的污酸、酸性污水、生产废水、初期雨水和生活污水进行处理回用，实现废水无害化、资源化和冶炼废水零排放，减少向自然环境排放重金属污染物。

The technology is primarily designed to treat and recycle acid, acidic wastewater, production wastewater, initial rainwater, and domestic wastewater in copper smelting wastewater. Its goal is to achieve harmless and resourceful utilization of wastewater, zero discharge of smelting wastewater, and a reduction in the discharge of heavy metal pollutants into the natural environment.

#### 中色科技:铜加工生产废水节水零排放处理工艺

CNPT: Water saving and zero discharge treatment process for copper processing production wastewater

该工艺主要针对铜加工过程中废水水质特点，实现资源化利用，同时回收冷凝水以及95%以上的生产废水。

The main objective of this process is to improve the water quality of wastewater in copper processing, achieve resource utilization, and recover over 95% of production wastewater and condensate water.

## 绿色技术研发

### R&D of green technology

中铝国际组建专业的研发团队，大力推进节能环保技术推广与应用，开展节能工艺、技术、装备攻关，努力实现节能减排降耗，致力于提供环保、可持续发展的产品和服务。2023年，贵阳院设计的“广元市林丰铝电项目”被工信部认定为“2022年度重点用能行业能效领跑者”，是电解铝行业唯一入选项目。

Committed to providing environmentally friendly and sustainable products and services, we have established a professional R&D team to promote and apply energy-saving and environmental protection technologies. We have conducted R&D on energy-saving processes, technologies, and equipment to achieve energy conservation, emission reduction, and consumption reduction. In 2023, The Guangyuan Linfeng Aluminum Power Project, designed by GAMI, has been recognized by the Ministry of Industry and Information Technology as the only selected "2022 Key Energy Efficiency Leader in the Electrolytic Aluminum Industry".

## 中铝国际有色领域一流环保技术（列举）

Top-notch environmentally-friendly technologies of CHALIECO in nonferrous metals industry (Examples)

<p><b>沈阳院</b> SAMI</p>	<p>石墨化复合阴极内衬深度节能技术 Deep energy-saving technology for graphite composite cathode lining</p>
<p><b>贵阳院</b> GAMI</p>	<p>炭素阳极智能堆放机组及仓储管理系统 Carbon anode intelligent stacking unit and storage management system</p>
<p><b>长沙院</b> CINF</p>	<p>盐法焙烧分解置换提取电池级碳酸锂工艺 Process for "extraction of battery grade lithium carbonate through salt roasting, decomposition, displacement and extraction"</p>
<p><b>长勘院</b> CKY</p>	<p>Online SAR 圆弧地基雷达智能监测系统及 Online UAV 矿山无人自动安全巡检系统 Online SAR circular ground radar intelligent monitoring system and online UAV mine unmanned automatic safety inspection system</p>



长沙院——冶炼技术升级，实现锌冶炼绿色化

CINF - Upgrading smelting technology to achieve green zinc smelting

2023年2月，长沙有色院总承包中金岭南丹霞冶炼厂炼锌渣绿色化升级改造项目整体联动试车成功。该项目颠覆性地实现锌冶炼绿色化，首先突破氧压浸出技术，开发富氧侧吹处理湿法炼锌渣技术，实现湿法炼锌渣的绿色高效处理。

In February 2023, the integrated commissioning of the green upgrading and transformation project for zinc smelting slag area of Danxia Smeltery under Shenzhen Zhongjin Lingnan Nonfemet Co., Ltd. undertaken by CINF was successfully completed. This project has achieved a significant advancement in green zinc smelting and has pioneered the use of oxygen pressure leaching technology. It has developed the oxygen-enriched side-blowing technology to treat wet zinc smelting slag, which solves the problem of green and efficient treatment of wet zinc smelting slag.



中金岭南丹霞冶炼厂氧压浸出炼锌工程氧压浸出车间

Zinc oxygen pressure leaching workshop of the oxygen pressure leaching zinc refining project at Danxia Smeltery under Shenzhen Zhongjin Lingnan Nonfemet Co., Ltd.



## 绿色施工

### Green construction

中铝国际建立完善的绿色施工管理体系，在施工过程中严格遵守“六个百分百”，在扬尘污染、噪音控制、工业垃圾排放等方面进行严格控制；在存在拆建内容的工程项目中，按照业主合同的约定进行施工，对物料进行再使用。公司依据《建筑工程绿色施工评价标准》对照内业资料和施工现场进行考评。

By implementing a robust green construction management system, we have strictly adhered to the "Six 100%" standards throughout the construction process. We have also implemented stringent control measures to minimize dust pollution, noise, and industrial waste discharge. In projects involving demolition and construction, we followed the owner's contract provisions and reused materials whenever possible. According to the *Green Construction Evaluation Standards for Construction Projects*, we have conducted evaluations by comparing internal data and construction sites.

### 中铝国际项目施工“六个百分百”目标

CHALIECO Project Construction "Six 100%" Target

封闭管理百分百  
100% of closed-off management

100%

道路硬化百分百  
100% of road hardening

物料覆盖百分百  
100% of material coverage

100%

车辆清洗百分百  
100% of vehicle cleaning

清洁保湿百分百  
100% of cleansing and moisturizing

100%

密闭运输百分百  
100% of closed-off transport





### 六冶——低碳环保引领工地风尚

CHSMCC - Leading the construction site style with low carbon and environmental protection

六冶秉承绿色集约化建设理念，在施工过程中积极探索创新，采用“玻璃+石材”的经典外立面幕墙，设立地源热泵多联机空调系统、光伏发电、太阳能和智能化系统等装置，实施地源热泵、雨水收集模块、透水混凝土、盘扣式脚手架等一系列绿色施工措施，打造装配式绿色建筑示范项目。

Adhering to the concept of green and intensive construction, CHSMCC has actively explored innovation during the construction process and adopted the classic facade curtain wall of "glass + stone". To create a demonstration project for green prefabricated buildings, it has established facilities such as geothermal heat pump multi-unit air conditioning systems, PV power generation, solar energy and intelligent systems, implemented a series of green construction measures such as ground source heat pumps, rainwater collection modules, permeable concrete and buckle scaffolding.



光伏发电装置  
PV power plant



## 铝应用推广

### Promotion of aluminum applications

中铝国际践行着“扩大铝应用，向铝精深加工、价值链高端转型”战略，不断研发多样化铝产品，拓展铝在基础设施、电信产品、工业设备等方面的应用范围，提升铝产品的性能和质量，通过开展回收、再加工和再利用等工作推动铝的循环利用，不断减少金属烧损和能源消耗，降低碳排放量，提高铝产品的市场占有率和竞争力。

We have effectively implemented the Group's development strategy of expanding aluminum applications and transforming deep processing of aluminum and high-end value chain. Through continuous research and development, we have expanded the application of aluminum in infrastructure, telecommunications, and industrial equipment. Our efforts have resulted in improved performance and quality of aluminum products. By recycling, reprocessing, and promoting the reuse of aluminum, we have consistently reduced metal burning, energy consumption, and carbon emissions. This has also improved the market share and competitiveness of aluminum products.



#### 六冶——铝应用业务市场开拓结硕果

CHSMCC - Achievements in market development of aluminum application business

2023年10月，六冶先后中标广西广投北海绿色生态铝一期项目年产200万吨氧化铝及配套工程施工项目、珠海市九洲湾出海港口渔网屋面铝结构工程。

In October 2023, CHSMCC successively won the bid for the 2,000kt/a alumina and supporting engineering construction project of the Beihai Green Ecological Aluminum (Phase I) Project of Guangxi Investment Group, as well as the Aluminum Structure Project for Fishing Net Roof of Jiuzhou Bay Port in Zhuhai City.



广西广投北海绿色生态铝项目规划图  
Planning map of Beihai Green Ecological Aluminum  
Project of Guangxi Investment Group



珠海市九洲湾出海港口渔网屋面铝结构工程规划图  
Planning map of Aluminum Structure Project for  
Fishing Net Roof of Jiuzhou Bay Port in Zhuhai City

## 培育低碳文化

### Cultivating low-carbon culture

中铝国际积极响应全球绿色发展倡议，加强低碳知识的宣传和教育，鼓励员工积极参与低碳环保活动，提高员工的低碳意识和环保素养，致力于打造绿色品牌，推动铝行业的可持续发展和环境保护。

In response to the global green development initiative, we have promoted low-carbon knowledge and encouraged employee participation in environmental protection activities. This has improved their low-carbon awareness and environmental literacy. Our commitment to building a green brand promotes sustainable development and environmental protection in the aluminum industry.

## 强化环保理念

### Enhancing environmental protection ideas

中铝国际积极组织员工参与环保公益活动，倡导员工选择简约适度、绿色低碳的健康生活方式，引导员工践行绿色低碳生产生活，引领勤俭节约的社会风尚；高度重视绿色办公，保持办公环境的清洁，助力资源节约，减少环境污染。

We have encouraged our employees to participate in public welfare activities focused on ecological and environmental protection. We have also promoted a simple, moderate, green, and low-carbon lifestyle among our employees, guiding them to practice green and low-carbon production and living. This has helped to set a positive example for society, promoting diligence and thrift. We have prioritized maintaining a green office and a clean work environment to conserve resources and reduce environmental pollution.

### 中铝国际绿色办公相关举措

#### CHALIECO's green office-related measures

- 确保办公用品的安全性和健康性，如无污染的办公用品和环保型电器  
Ensuring the safety and health of office supplies, such as toxin-free office supplies and eco-friendly appliances
- 使用节约资源、减少污染物产生和排放的产品，文件双面打印、无纸化办公、选用节能电器、采用 LED 灯管等  
Using products that save resources and reduce the generation and emission of pollutants, such as double-sided document printing, paperless office, energy-saving appliances, and the use of LED tubes
- 合理利用办公用品，减少一次性用品的使用，使用可替换笔芯的原子笔，合理保管办公用品等  
Reasonably utilizing office supplies, reducing the use of disposable items, using replaceable ballpoint pens, and storing office supplies properly
- 保持办公场所的卫生，适当绿化，推行垃圾分类  
Maintaining the hygiene of the office space, appropriate greenery and promoting waste classification
- 加大员工的教育力度，加强节能知识的学习和宣传，提升员工的节能意识，倡导节约用水、使用环保袋代替塑料袋、提倡绿色出行等  
Strengthening education for employees, improving learning and promotion of energy conservation knowledge, increasing energy conservation awareness, advocating water conservation, using eco-friendly bags instead of plastic bags, and promoting green travel



中铝国际开展“节能降碳，你我同行”节能宣传周活动和“积极应对气候变化，推动绿色低碳发展”全国宣传日活动  
CHALIECO held an energy conservation publicity week with the theme "Let's work together to save energy and reduce carbon" and a national publicity day with the theme "Actively respond to climate change and promote green and low-carbon development"

## 开展生态保护

Conducting ecological protection

中铝国际严守生态保护红线，积极参与生态修复项目，在生产施工过程中融入生物多样性保护理念，扛起生态文明建设的社会责任，为建设美丽中国贡献力量。2023年，公司研究制定《中铝国际工程股份有限公司长江黄河流域生态环境保护专项整治行动实施方案》，对非长江、黄河流域企业和项目参照开展专项整治。

Strictly adhering to the red line of ecological protection, we have taken the initiative to participate in ecological restoration projects and integrated the concept of biodiversity protection into the production and construction process. In order to contribute to the construction of a beautiful China, we have assumed the social responsibility of ecological civilization construction. In 2023, we studied and formulated the *Implementation Plan for the Special Rectification Action of Ecological Environment Protection in the Yangtze and Yellow River Basin of China Aluminum International Engineering Corporation Limited*, and carried out the special rectification of enterprises and projects outside the Yangtze and Yellow River Basin.



长勘院以自主研发技术实现渣库复绿  
Virescence of slag storage area with the independently developed technology of CKY

## 案例 Case

### 六冶——承建几内亚 Boffa 铝土矿矿山项目，践行生物多样性保护

CHSMCC - Undertaking the Bauxite Mine Project in Guinea and practicing biodiversity conservation

六冶几内亚矿山项目通过带式输送系统采用架空栈桥设计，为动物迁徙设置“绿色通道”，保障野生动物的正常生活、迁徙和繁衍，在项目建设过程中有效保护了当地红树林生态，实现建筑与自然和谐统一的良好融合，彰显中国企业的责任担当。

The Bauxite Mine Project in Guinea of CHSMCC has implemented a 'green channel' for animal migration. This is achieved through the use of a belt conveyor system with an overhead wharf design, which ensures the normal life, migration, and reproduction of wild animals. During the project construction process, the local mangrove ecology was effectively protected, and a harmonious integration of architecture and nature was achieved, demonstrating the responsible practices of Chinese enterprises.



架空栈桥带式输送系统

The belt conveyor system with an overhead wharf design

# 04 员工责任

## 以人为本，共赴奋斗征途

### Responsibility for Employees: Striving for a Better Future by Putting People First

中铝国际秉承“以人为本、关爱全体”理念，全力保障员工基本权益，提供可靠的安全保护和健康保障条件；以员工发展为导向，为员工创造良好的工作氛围，让员工拥有更多获得感、幸福感、安全感与自豪感。

By adhering to the concept of caring for our employees and their well-being, we have fully protected their basic rights and provided reliable safety and health conditions. We focus on employee development and creating a positive work atmosphere to provide a sense of achievement, happiness, security, and pride.

88 保障基本权益  
Safeguarding basic rights and interests

92 助推员工发展  
Promoting employee development

94 关注健康安全  
Paying attention to health and safety

99 开展员工关怀  
Caring for employees





# 保障基本权益

## Safeguarding basic rights and interests

中铝国际严格遵守《中华人民共和国劳动法》《中华人民共和国劳动合同法》等法律法规，提升员工体验和幸福感，构建和谐、规范的劳动关系。报告期内，公司未发生使用童工及强制劳工等违规情况。如发现任何违反劳动法律法规的情况，包括身份信息不实等问题，将立即根据相关法律法规终止雇佣合约。同时，切实保障员工主动选择离职的权利。

By strictly adhering to laws and regulations such as the *Labor Law of the People's Republic of China* and the *Labor Contract Law of the People's Republic of China*, we have improved the experience and happiness of employees and established harmonious and standardized employment relationships with employees. During the reporting period, CHALIECO did not have any violations such as the use of child labor and forced labor. If any violation of labor laws and regulations is found, including false identity information, the Company will promptly terminate the employment contract in accordance with applicable laws and regulations. Simultaneously, the Company will sincerely safeguard employees' right to voluntarily resign.

## 平等雇佣

### Fair employment

中铝国际贯彻平等的企业理念，对不同国籍、种族、性别、宗教信仰和文化背景的员工一视同仁，始终秉承公开、公平、公正的原则引进和选配人才，杜绝雇用童工与其他强制性劳动，为职工创造多元包容、公平合理的职场环境。2023年，公司未发生重大劳动争议和人权投诉问题。

Adhering to the corporate philosophy of equality, we have always treated employees of different nationalities, races, genders, religious beliefs and cultural backgrounds equally. We are committed to the principles of openness, fairness and impartiality in the recruitment and selection of talents, and have eliminated the employment of child labor and other mandatory labor, creating a diversified, inclusive, fair and reasonable workplace for employees. In 2023, the Company did not have any major labor disputes or human rights complaints.

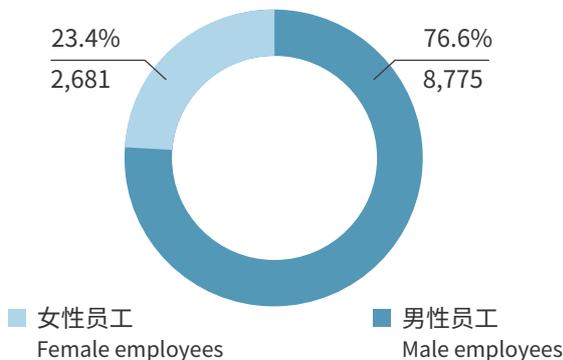
## 2023年中铝国际员工情况（单位：人）

Employees at CHALIECO in 2023 (Unit: person)

员工总数  
 Total number of employees **11,456**

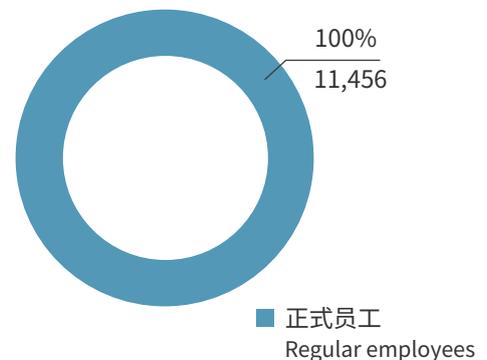
按性别划分的员工人数

Number of employees by gender



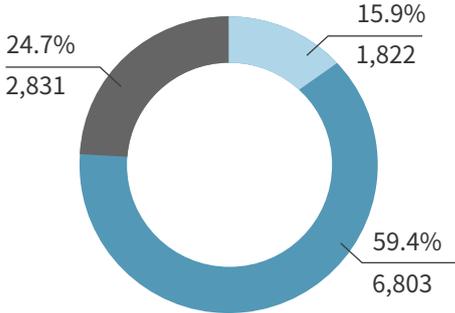
按雇佣类型划分的员工人数

Number of employees by type of employment



按年龄划分的员工人数

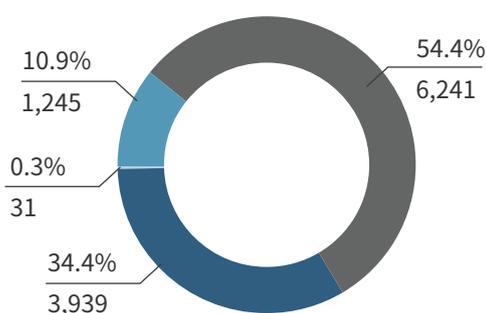
Number of employees by age



- 30岁及以下员工数  
Number of employees under 30 years old
- 30岁—50岁员工数  
Number of employees between 30 and 50 years old
- 50岁以上员工数  
Number of employees over 50 years old

按学历划分的员工人数

Number of employees by education background



- 博士  
Employees with a doctor's degree
- 硕士  
Employees with a master's degree
- 本科  
Employees with a bachelor's degree
- 其他  
Others

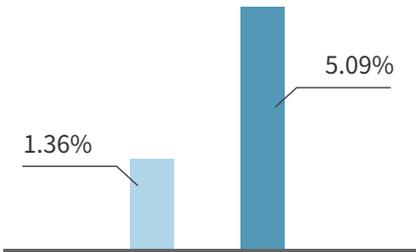
2023 员工流失率

Employee turnover in 2023

6.45%

按性别划分的员工流失比例

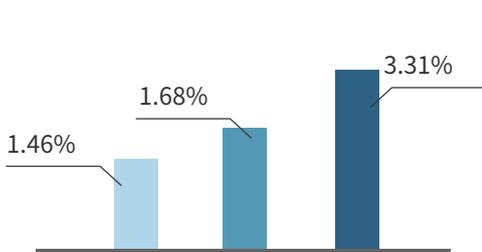
Employee turnover by gender



- 女性员工  
Female employees
- 男性员工  
Male employees

按年龄划分的员工流失比例

Employee turnover by age



- 30岁及以下员工数  
Number of employees under 30 years old
- 30岁—50岁员工数  
Number of employees between 30 and 50 years old
- 50岁以上员工数  
Number of employees over 50 years old



## 薪酬福利

### Compensation and benefits

中铝国际重视员工薪酬福利体系建设，依法为员工缴纳“五险一金”，建立年金保障制度，并落实各项补贴和节假日福利待遇；统筹实施全局性薪酬考核激励改革，全面推进薪酬管理信息化应用，实现工资总额分配向技术密集、创新力度大、解决卡脖子或突破关键核心技术的企业倾斜，增强薪酬待遇对科技人才的激励效果，完善和优化海外人才的薪酬结构和收入水平，留住关键人才。

We have attached great importance to the construction of employee compensations and welfare systems, social insurance and provident funds for employees in accordance with the law, established an annuity protection system, and implemented various subsidies and holiday benefits; coordinated the implementation of global compensation assessment and incentive reform, and comprehensively pushed forward the application of information technology in compensation management; realized that the distribution of the total remuneration is focused on the enterprises that are technology-intensive, highly innovative, and have solved key core technologies; enhanced the incentive effect of the remuneration packages on the scientific and technological talents, improved and optimized the remuneration structure and income level of the overseas talents, and realized the retention of the key talents.

## 民主管理

### Democratic management

中铝国际持续完善以职工代表大会为基本形式的民主管理机制，保障员工的知情权、建议权、参与权和监督权。2024年1月29日，中铝国际组织召开三届三次职工代表大会，大会审议通过了行政工作报告、职工代表提案等事项，选举了中铝国际第四届监事会职工代表监事，进行了2023年度领导班子和领导人员的述职及民主评议。

We have continuously implemented the democratic management mechanism of employees by holding the Employees' Congress to guarantee the employees' rights to information, to make suggestions, participation and supervision. On January 29, 2024, CHALIECO organized and held the third session of the 3rd Employees' Congress, which deliberated and passed the administrative work report, proposals of employee representatives and other matters, elected employee representative supervisors for the fourth session of the Board of Supervisors of CHALIECO, and carried out the duty statement and democratic evaluation of the leadership team and leaders for the fiscal year of 2023.

## 中铝国际工会工作“三个坚持”

"Three insisting" on the Labor Union Work of CHALIECO

- 坚持企业改革、改制、职工安置方案必须由本级职代会或职工大会审议通过，涉及职工切身利益的重大制度出台必须经过同级职代会或职代会联席会审议通过。中铝国际各级工会组织召开职代会 13 次，均设立厂务公开栏。

Insisting that enterprise reform, restructuring, and employee resettlement programs must be deliberated and passed by the employees' congress at the same level, and that the introduction of major systems involving the immediate interests of employees must be deliberated and passed by the staff council or joint employees' congress at the same level. The trade union organizations at all levels of CHALIECO held 13 employees' congresses, all of which have set up a publicity column for affairs.

- 坚持职工代表每年一次听取企业领导人员述职述廉并民主评议企业领导人员的制度。

Insisting that employee representatives once a year listen to the report on the duties and integrity of enterprise leaders and democratically appraise the system of enterprise leaders.

- 坚持做好职代会提案办理工作，全年共收集两级职代会征集提案 4 件，落实率达到 100%，做到了件件有落实、项项有回音。

Insisting on doing a good job of processing proposals for the employee congress. We have collected 4 proposals for the Employees' Congress at two levels throughout the year, and achieved a 100% implementation rate so that every issue has been implemented and every work has been handled.



中铝国际三届三次职工代表大会

Third Session of the 3rd Employees' Congress held by CHALIECO



扫码，查看劳模精神展中铝国际风采

Scan the QR code to learn more about the exhibition of model workers' spirit of CHALIECO

# 助推员工发展

## Promoting employee development

中铝国际坚持“发展依靠员工、发展为了员工、发展成果由职工共享”理念，畅通人才发展通道，致力于在企业发展、共建共享中成就员工。

Adhering to the concept of "development depends on employees, development is for employees and development achievements are shared by employees", we have opened up talent development channels, and devoted ourselves to helping employees in enterprise development, co-construction and sharing.

### 畅通晋升通道

Building smooth promotion channels

中铝国际致力于为员工提供全方位、公平的职业发展机会，打造畅通无阻的职业发展通道，为每一位员工创造广阔的成长空间；推进管理人员竞争上岗、末等调整和不胜任退出工作，全面实行经理层任期制契约化和职业经理人制度，所属企业试点进行中层管理人员竞争上岗，打造公平、公正的评价和晋升机制，为员工成长发展提供良好的制度保障。

We are committed to providing employees with all-around and fair career development opportunities, creating smooth promotion channels and broad growth space for each employee; promoting competition for posts, last-class adjustment and resignation for incompetence, and fully implementing the contract-based tenure system for managers and the professional manager system. Affiliated enterprises have carried out competition for posts at the Management level on a pilot basis, created a fair and impartial evaluation and promotion mechanism, and provided good institutional guarantees for the growth and development of employees.

2023年，推行经理层成员任期制和契约化改革的企业57户，193位经理层成员纳入任期制契约化管理，并全部完成协议书的签订；本部和所属企业共164人通过中铝集团高级职称评审，获得正高和副高职称，占通过总人数的52.3%。

In 2023, 57 enterprises implemented the tenure system and contractual reform of the management members. 193 management members were included in the contractual management of the tenure system and all agreements have been signed. A total of 164 people from the headquarters and affiliated enterprises have passed the senior title evaluation of CHINALCO and obtained senior and vice-senior professional titles, accounting for 52.3% of the total number of people who passed.

193 位

经理层成员纳入任期制契约化管理

193 management members were included in the contractual management of the tenure system

164 人

通过中铝集团高级职称评审

A total of 164 people from the headquarters and affiliated enterprises have passed the senior title evaluation of CHINALCO

## 重视人才培养

### Focusing on talent cultivation

中铝国际成立总部人力资源交流培训中心,印发《中铝国际人力资源交流培训中心管理办法》,全面启动人才交流中心常态化、规范化有效运行;参加中铝集团科技领军人才培训班,组织开展中铝国际讲堂、中铝国际云课堂,为员工提供多样化的培训和学习资源,丰富的职业技能提升机会;持续开展人才推优评先工作,开展综合管理能力培训和技能比武、“中铝国际杯”工程技术职业技能大赛等劳动竞赛,营造“比学赶帮超”浓厚氛围,让员工成为价值创造主力军;组织召开第一届劳动模范和先进集体表彰大会、中铝国际劳动模范和先进集体代表座谈会,表彰9名劳模、10个先进集体。2023年,公司全级次企业累计培训52,349人次,培训投入1,222.6万元,培训时长377,686.45小时;新建劳模工匠、技术能手等工作室9个,投入经费1094.05万元;获省级以上荣誉的工作室14个。

We have established the Human Resources Exchange and Training Center of at the headquarters, issued the *Administrative Measures for the Human Resources Exchange and Training Center of CHALIECO*, and fully started the normalized, standardized and effective operation of the talent exchange center; participated in the training course for leading science and technology talents of CHINALCO, organized the CHALIECO lecture and cloud class to provide employees with diversified training and learning resources and rich opportunities to improve vocational skills; continued to carry out the work of talent recommendation and evaluation, comprehensive management ability training and skill competitions, "CHALIECO International Cup" Engineering Technology Vocational Skills Competition and other labor competitions, created a strong atmosphere of "Comparison, Learning, Catching up, Helping and Surpassing", so that employees become the main force for value creation; held the 1st Commendation Conference for Model Workers and Advanced Collectives and the Symposium of Representatives of Model Workers and Advanced Collectives of CHALIECO to commend 9 model workers and 10 advanced collectives. In 2023, a total of 52,349 people-times of employees from affiliated enterprises at all levels participated in training activities, the investments in training reached RMB12.226 million and the course length amounted to 377,686.45 hours; 9 new studios for model craftsmen and technical experts was built, with an investment of RMB10.9405 million; and 14 studios won honors above provincial level.



公司全级次企业累计培训

**52,349** 人次

A total of **52,349** people-times of employees from affiliated enterprises at all levels participated in training activities



培训投入

**1,222.6** 万元

The investments in training reached RMB**12.226** million



培训时长

**377,686.45** 小时

The course length amounted to **377,686.45** hours



### 人均培训小时数

Number of training hours per capita

**33** 小时

33 hours

### 按性别划分员工培训比例 (%)

Proportion of employee training by gender (%)



男性员工

**95.58%**

Male employees **95.58%**



女性员工

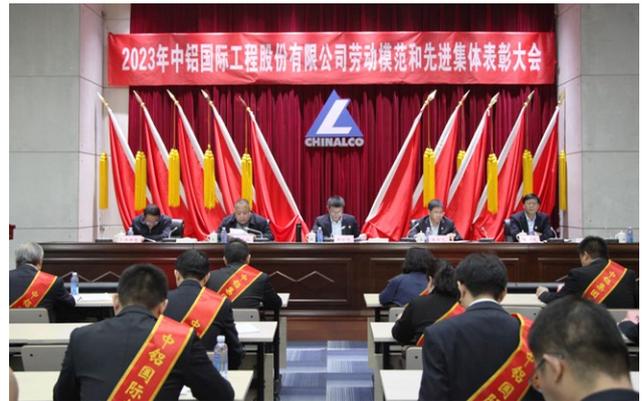
**92.97%**

Female employees **92.97%**



中铝国际 2023 年项目经理综合素质提升培训班

2023 Comprehensive Quality Improvement Training Course for Project Managers of CHALIECO



中铝国际召开劳动模范和先进集体表彰大会

CHALIECO Held Commendation Conference for Model Workers and Advanced Collectives

## 关注健康安全

### Paying attention to health and safety

中铝国际严格遵循《职业病防治法》《安全生产法》等相关法规，整肃安全短板，筑牢安全防线，为企业安全健康发展提供坚实保障；加强安全应急管理，着力提升应急处置能力；重视安全教育及培训，增强员工安全生产意识，营造安全文化氛围；通过一系列措施保障员工身心健康，为员工提供可靠的安全保护和健康保障条件。

We have strictly followed the *Law of the People's Republic of China on Prevention and Control of Occupational Diseases*, the *Law of the People's Republic of China on Work Safety* and other relevant laws and regulations to rectify safety shortcomings, to build a solid line of defense for safety, and provide a solid guarantee for the safe and healthy development of enterprises; strengthened safety emergency management and focused on improving emergency response capacity; paid attention to safety education and training, enhance employees' awareness of work safety, and created a safety culture atmosphere; ensured the physical and mental health of employees through a series of measures, and provided reliable safety protection and health guarantee conditions for employees.

## 加强安全管理

### Strengthening safety management

中铝国际牢固树立“一切风险皆可控制、一切事故皆可预防”的安全发展理念，深入开展安全管理强化年活动，强化安全生产标准化建设，持续加强集团职业健康安全生产标准化体系、承包商安全管理标准化体系的运行和考评，开展常态化循环式安全督查，加强安全风险防范；倒逼各级逐级压实安全责任，全面加强安全生产管理，为员工安全筑起牢固的保障墙；加大对农民工工资支付监管力度，采取专户专储、专款专用的方式，确保农民工工资按时发放。

We have firmly established the safety development concept of "all risks can be controlled and all accidents can be prevented", carried out in-depth activities in the year of strengthening safety management, strengthened the standardized construction of work safety, continuously strengthened the operation and evaluation of the Group's occupational health and work safety standardization system and contractor safety management standardization system, carried out normalized circular safety supervision, and strengthened safety risk prevention; call on all levels to implement safety responsibilities step by step, comprehensively strengthen work safety management, and build a solid guarantee wall for the safety of employees; strengthened the supervision of migrant workers' wage payment, adopted special accounts and earmarked funds to ensure that migrant workers' wages were paid on time.



**防范安全风险**  
Conducting potential  
risk inspection

成立安全专项督查组，督促企业常态化加强自然灾害风险防范应对工作；组织开展系列安全环保检查及隐患排查工作，全年累计排查并解决重大安全事故隐患 6 项。

A special safety supervision team was set up to urge enterprises to strengthen natural disaster risk prevention and response regularly; a series of safety and environmental protection inspections and hidden danger investigations were organized and carried out, with a total of 6 major potential safety accidents investigated and solved throughout the year.



**强化安全落实**  
Strengthening safety  
implementation

全面贯彻落实《2023 年安全环保工作要点》，牵头组织企业执行安委会双主任制，实现生产车间生产及巡视通道视频全覆盖，积极申报安全生产标准化企业；建立月度督办及通报工作机制，督导企业有序推进任务并及时开展问题整改。

We fully implemented the *2023 Key Points of Safety and Environmental Protection Work*, took the lead in organizing enterprises to implement the double-director system of safety committee, realized full video coverage of production and patrol channels in production workshops, and actively declared work safety standardization enterprises; established a monthly supervision and notification working mechanism to supervise enterprises to orderly promote tasks and timely carry out problem rectification.



中铝国际副总经理刘瑞平到洛阳开展项目安全督导

Liu Ruiping, Deputy General Manager of CHALIECO, Conducted Project Safety Supervision in Luoyang



六冶在中秋国庆双节期间抢进度抓质量保安全

CHSMCC Accelerated Progress, Conducted Quality Inspection and Ensured Work Safety During the Mid-Autumn Festival and National Day

2023年11月24日，天津建设总包施工现场发生一起模架支撑体系坍塌事故。事故发生在山西永鑫铁路专用线集运站建设项目，配煤系统原料煤棚2号机头房。在浇筑混凝土过程中，造成较大安全事故。事故发生后，中铝国际立即启动应急预案，积极配合地方政府开展现场救援和事故调查，妥善完成善后处理工作，并在公司全面开展警示教育、全面清查整治安全风险隐患，完善了9项规章制度，对所属企业377个在建项目开展全范围停工排查，并对17个不合格分包商进行清退处理，努力实现工程项目的本质安全，防止同类事故发生。

On November 24, 2023, a model supporting system collapsed at the construction site of Tianjin Construction's General Contracting Project. The incident occurred in the raw coal shed No. 2 powerhouse of the coal blending system of the Shanxi Yongxin Railway Dedicated Line Container Freight Station Construction Project. The safety incident occurred during concrete casting. Right after the incident, CHALIECO promptly initiated the emergency plan, actively cooperated with the local government in on-site rescue and incident investigation, and properly completed the aftermath handling work. CHALIECO also comprehensively carried out warning education internally and checked and eliminated safety risks and hidden dangers. CHALIECO improved 9 regulations, completely suspended 377 on-going construction projects of its affiliated enterprises for safety inspection and 17 unqualified subcontractors have been discharged. CHALIECO strives to realize the intrinsic safety of projects and prevent similar incidents.

## 营造安全氛围

### Creating an atmosphere of safety

中铝国际以营造平安和谐的环境为己任，重视安全文化宣教，强化公司各个层级的安全责任意识，全力培养安全生产管理人才，规范员工安全行为；重视安全教育及培训，增强员工安全意识，提升员工防护能力，守护公司安全平稳运行。

We have taken creating a safe and harmonious environment as our responsibility, attached importance to safety culture publicity and education, strengthened the awareness of safety responsibilities at all levels of the Company, made every effort to cultivate work safety management talents, and standardized employees' safety behaviors; paid attention to safety education and training, enhanced employees' safety awareness, improved their safety capabilities, and ensured the safe and stable operation of the Company.



制订《关于加强安全管理队伍建设的工作方案》，以“传帮带、师带徒”的方式，为企业培养懂业务、会管理的安全管理骨干；开展企业安全管理人员履职能力提升培训、安全专题培训等活动，增强员工自身防护能力。

We have formulated the *Work Plan on Strengthening the Construction of Safety Management Team* to train safety management backbones who understand business and management for the enterprise in the way of "teaching and mentoring, mentoring and apprenticeship"; carried out activities such as training to improve the performance ability of enterprise safety management personnel and special safety training to enhance employees' self-protection ability.



以安全生产月、职业病宣传周、节能宣传周等活动为抓手，深入开展新安全生产法等宣教学习、安全环保培训、应急演练等活动，提升全员安全环保意识。2023年，参加安全生产培训员工10,482人，安全培训覆盖率达100%。

Starting with activities such as Work Safety Month, Occupational Disease Publicity Week and Energy Conservation Publicity Week, we have carried out in-depth education and learning of new work safety laws, safety and environmental protection training, emergency drills and other activities to enhance the awareness of safety and environmental protection among all employees. In 2023, 10,482 employees participated in work safety training, and the coverage rate of safety training reached 100%.



**中铝国际举办网络安全知识培训**  
CHALIECO Held Training on Network Security Knowledge

## 案例 Case

### 印尼氧化铝项目实现 300 万安全工时里程碑

Indonesia alumina project achieved 3,000,000 safe man-hours milestone

中铝国际印尼氧化铝项目团队坚持 HSE 违章“零容忍”，始终坚守安全规章制度，加强安全管理工作，积极营造“人人管安全”的良好氛围。2023 年 9 月，项目业主方向中铝国际印尼氧化铝项目部及表现突出的参建单位予以表彰。

The Indonesia alumina project team of CHALIECO adhered to the principle of "zero tolerance" for HSE violations, always stuck to safety rules and regulations, strengthened safety management, and actively created a good atmosphere of "everyone is in charge of safety". In September, the project Employer commended the Indonesia alumina project department of CHALIECO and other participating units for their outstanding performance.



项目业主方向中铝国际印尼氧化铝项目部及表现突出的参建单位予以表彰

The Project Employer Commended the Indonesia Alumina Project Department of CHALIECO and Other Participating Units for Their Outstanding Performance

## 重视职业健康

Attaching importance to occupational health

中铝国际制定《安全环保健康责任规定》《职业健康安全与环境委员会工作规则》，定期开展健康知识培训，组织开展全体员工健康体检，为员工撑起“健康保护伞”；切实关注员工心理健康，帮助员工保持积极向上的精神状态，维护员工健康权益。2023 年，中铝国际百万工时伤害率为 0.0912。

We have formulated the *Regulation on Safety, Environment and Health Responsibility* and the *Work Rules of the Occupational Health, Safety and Environmental Committee*, regularly carried out health knowledge training, organized physical examinations for all employees, as well as special medical checkups for female employees. We have paid close attention to the mental health of employees, helped them maintain a positive mental state, and safeguarded their health rights and interests. In 2023, the injury rate per million man-hours of CHALIECO was 0.0912.



2023 年，中铝国际百万工时伤害率为

# 0.0912

In 2023, the injury rate per million man-hours of CHALIECO was **0.0912**

# 开展员工关怀

## Caring for employees

中铝国际以多种形式关心慰问离退休员工，做好困难员工帮扶工作；关爱女性员工，切实维护女性员工权益和身心健康；定期组织开展丰富多彩的员工活动，实现工作与生活的平衡，营造积极向上的工作氛围。

We care for retired employees in various forms and help them with difficulties; care for female employees, effectively safeguard their rights and interests as well as physical and mental health; regularly organize rich and colorful employee activities to achieve work-life balance and create a positive working atmosphere.



### 六冶——以情暖心，打造“河南省模范职工小家”

CHSMCC - building "model family of employees in Henan Provincial" with warmhearted spirit

六冶公司始终坚持“服务公司生产经营和职工群众”工作方针，积极开展“职工小家”建设，使“职工之家”成为公司凝聚力量的“心”阵地，为公司高质量发展聚力赋能。2023年，六冶六公司喜获“河南省模范职工小家”荣誉称号。

CHSMCC has always adhered to the working policy of "serving the company's production and operation and the masses of workers" and actively carried out the construction of "workers' home", making it a place for the Company to gather strength and empower its high-quality development. In 2023, No.6 Company of China Nonferrous Metal Industrial No. 6 Metallurgy Construction Company won the honorary title of "Model Family of Employees in Henan Provincial".



六冶六公司职工之家  
Family of Employees of  
No.6 Company of CHSMCC

## 困难员工帮扶

### Assisting employees in difficulties

中铝国际扎实开展“我为群众办实事”活动，解决涉及职工群众生产生活等各类急难愁盼问题；不断完善困难帮扶机制，为员工排忧解难；落实有关职工福利政策，在国家法定节日向员工发放节日慰问品，及时慰问生病住院、生育等员工，让员工感受到实实在在的温暖。2023年，中铝国际列支帮扶资金总额40.87万元，帮扶困难职工153人。

We have carried out the activity of "Serving the People in Practice" to solve all kinds of urgent and anxious problems involving the production and life of employees. We have continuously improved the difficulty assistance mechanism to help employees solve their problems. We have implemented relevant employee welfare policies, distributed holiday consolations to employees on national statutory festivals, and timely expressed sympathy to sick inpatients and pregnant women so that employees can feel real warmth. In 2023, CHALIECO supported 153 employees in need with a total amount of RMB408,700.

## 关怀女性员工

### Caring for female employees

中铝国际严格遵守《女职工劳动保护法特别规定》，为女性员工提供平等温暖的工作环境，维护其哺乳假、产假等各项福利；组织开展“三八节”女性关爱系列活动，与女性员工同心共鸣；在每年员工健康体检中，开展女职工专项体检，为女性员工增加健康保障。2023年，中铝国际全级次女性员工体检人数达2,990人。

We have strictly followed the *Special Provisions on Labor Protection of Female Employees*, provided an equal and warm working environment for female employees, and safeguarded their breastfeeding leave, maternity leave and other benefits. We have organized a series of activities to care for women on International Women's Day, which resonated with female employees. In the annual health check-up of employees, we have carried out special physical examinations for female employees to increase their health security. In 2023, the number of female employees at all levels in CHALIECO reached 2,990.



2023年，中铝国际全级次女性员工体检人数达

**2,990** 人

In 2023, the number of female employees at all levels in CHALIECO reached **2,990**



中铝国际举办2023年“三八”系列活动

CHALIECO held a series of activities to celebrate the 2023 International Women's Day

## 工作生活平衡

Balancing work and life

中铝国际组织开展形式多样的文化体育活动，丰富广大员工的业余文化生活，不断增强员工的凝聚力向心力；积极加强服务员工阵地建设，提高员工幸福指数。

We have organized and carried out rich and diversified cultural and sports activities to enrich the spare-time cultural life of employees, continuously enhance their cohesion and centripetal force, actively strengthen the construction of service positions for employees, and improve the happiness index of employees.



中铝国际举行首届职工体育运动会“迎‘篮’而上杯”篮球比赛

CHALIECO Held the First Employee Sports Meeting - Basketball Competition



中铝国际举行首届职工体育运动会“‘乒’出国际杯”乒乓球比赛

CHALIECO Held the First Employee Sports Meeting - Pingpong Competition



昆勘院举办庆祝建院七十周年足球邀请赛

KPDI Held a Football Invitational Tournament for Celebrating the 70th Anniversary of its Establishment



长勘院举办“庆国庆”篮球比赛

CKY Held "Celebrating the National Day" Basketball Game

# 05 伙伴责任

## 和衷共济，共赢发展机遇

### Responsibility for Partners: Gathering Strength to Achieve Win-Win Results

中铝国际坚持打造责任供应链，与合作伙伴建立全方位、多领域、深层次的合作关系，通过推进行业交流沟通、与合作伙伴强强联合，为将中铝国际建设成为世界一流企业提供坚实保障。

We have insisted on building a responsible supply chain, established all-round, multi-field and in-depth cooperative relations with partners, and provided a solid guarantee for building CHALIECO into a world-class enterprise by promoting industry exchanges and strong alliances with partners.

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Establishing a responsible supply chain

106 加强战略合作  
Strengthening strategic cooperation

108 推动行业发展  
Boosting industrial development





# CONTRACT

The success of a business depends on the members of company provides success...  
...the market is not efficient, other studies of capital markets have pointed...  
...the market was some strong-form efficient. The market's ability to efficiently...  
...cannot necessarily be taken as indicative of a market efficient at pricing.

Another observed discrepancy between the theory and real markets is that at...  
the late stages of a bull market, the market is driven by buyers who take little...  
underlying value. Towards the end of a crash, markets go into free fall as...  
extricate themselves from positions regardless of the unusually good value...  
positions represent. This is indicated by the large differences in the value...  
compared to fundamentals (such as forward price to earnings ratios) in...  
powerful) participants should always immediately take advantage of...  
or artificially low prices caused by the irrational participants by taking...  
but this is obviously not, in general, enough to prevent bubbles from...  
developing. It may be inferred that many rational participants are...  
irrationality of the market at extremes and are willing to allow...  
drive the market as far as they will, and only take advantage...  
have more than merely fundamental reasons that the market...  
value.

Measuring market penetration accurately is essential...  
discovering new opportunities. Financial institutions...  
intelligence to determine what products and services...  
online customers and where it is most likely to...  
that markets behave consistently with the...  
stronger forms. Some economists...





# 打造责任供应链

## Establishing a responsible supply chain

中铝国际长期实施阳光采购，坚持本地化采购，并不断强化供应商管理力度和管理效能，全力打造公正、公开、负责任的供应链，提升供应链韧性。

We have long implemented transparent procurement, adhered to localized procurement, and continuously strengthened supplier management and management efficiency, making every effort to build a fair, open and responsible supply chain and improve the resilience of the supply chain.

### 实施阳光采购

#### Transparent procurement

中铝国际遵守《招标投标法》《反不正当竞争法》等国家法律法规，制定公司采购招标体系重构方案，强化对成员企业招标投标工作的监督检查，开展采购及招投标问题专项治理活动，确保采购阳光、透明。2023年，中铝国际新建招标制度13项，通过自查抽查共发现问题40项，对27名责任人进行问责处理，对梳理发现的12类33项问题进行了跟踪整改。

We abide by the *Bidding Law of the People's Republic of China*, the *Anti-Unfair Competition Law of the People's Republic of China*, and other national laws and regulations, formulate the reconstruction plan for the company's procurement bidding system, strengthen the supervision and inspection of the bidding work of member enterprises, carry out special governance activities on procurement and bidding issues, and confirm that procurement is transparent. In 2023, we established 13 new bidding systems. A total of 40 problems were found through self-inspection and spot check, 27 responsible persons were held accountable, and 33 problems in 12 categories were tracked and rectified.

### 坚持本地化采购

#### Localized procurement

中铝国际坚持本地化采购，制定《中铝国际工程股份有限公司工程项目物资采购管理办法（暂行）》，优先使用中铝集团内部产品、材料及服务，对于商混等地材优先邀请当地供应商参与投标，保持供应链稳定。

We insist on localized procurement, formulate the *Administrative Measures of China Aluminum International Engineering Corporation Limited on Procurement of Engineering Project Materials (Interim)*, give priority to the use of internal products, materials and services of CHINALCO, and invite local suppliers to participate in bidding for commercial concrete and other flooring materials to maintain a stable supply chain.

### 供应商管理

#### Supplier management

中铝国际不断修订完善《供应商管理办法》《分包商管理规定》等制度，对供应商进行分类筛选，建立科学的考核机制，优胜劣汰，使供应商准入、评价、退出均遵守严格的程序，降低供应链风险，以考核促提升，提高供应商的质量。

We have constantly revised and improved the *Administrative Measures on Suppliers*, the *Regulation on Subcontractor Management* and other rules and regulations to classify and screen suppliers, establish a scientific assessment mechanism for the best, so that supplier access, evaluation and withdrawal compliance with strict procedures, reduce supply chain risks, promote improvement through assessment and improve supplier quality.

## 供应商管理制度

### Supplier Management System

#### 准入

Access

公司要求供应商提供 QHSE 管理体系与认证文件，并优先考虑使用环保节能产品的供应商。

The Company requires suppliers to provide QHSE management system and certification documents, and gives priority to suppliers who use environmentally-friendly and energy-saving products.

#### 评价

Evaluation

在生产施工期间，公司通过分包商过程管控及奖惩考核机制，对分包商队伍资质、能力、信誉、素质等进行综合考评，动态调整合格分包商名录；将分包商纳入项目安全环保教育培训管理中，定期组织考评，敦促分包商落实好现场安全环保责任。

During the production and construction period, the Company, through the subcontractor process control and the reward and punishment assessment mechanisms, conducts a comprehensive evaluation of subcontractors' qualifications, capability, reputation and quality, and dynamically adjusts the list of qualified subcontractors. The Company integrates subcontractors into the project safety and environmental protection education and training system, organizes regular evaluations, and urges subcontractors to implement on-site safety and environmental protection responsibilities.

#### 退出

Withdrawal

公司对分包商用工管理、安全环保工作落实情况进行监管，对存在违反法律规定的用工行为、发生突发性环境事件的分包商等，将对其清退并列入黑名单。

The Company supervises the management of subcontractors' employment and the implementation of safety and environmental protection. Subcontractors who have violated the laws and regulations on employment and those who have had environmental emergencies will be removed and blacklisted.

2023 年供应商数量 **2,488** 个  
Number of suppliers in 2023 (2,488)

东北 **100** 个  
100 in Northeast China

华北 **372** 个  
372 in North China

华南 **267** 个  
267 in South China

华中 **546** 个  
546 in Central China

西南 **559** 个  
559 in Southwest

华东 **479** 个  
479 in East China

西北 **156** 个  
156 in Northwest

海外 **9** 个  
9 overseas

# 加强战略合作

## Strengthening strategic cooperation

中铝国际主动通过政企合作、校企合作、企企合作的方式，形成了互带互动、资源互补、共建共享的政校企合作发展新格局，共谱高质量发展新篇。

We have taken the initiative to form a new pattern of government-universities-enterprise cooperation and development featuring interaction, resource complementation, co-construction and sharing through government-enterprise cooperation, university-enterprise cooperation and enterprise-enterprise cooperation, so as to jointly write a new chapter of high-quality development.

### 企企合作

#### Enterprise-enterprise cooperation

2023年，中铝国际与陕西有色金属集团、中国铜业开展交流合作，与中冶赛迪签订战略合作框架协议，与宝武铝业携手建设“以学促干”央企标杆，在集团内部与中铝高端制造、中铝股份合作，并承接多个公司项目建设，共商共建共促有色金属行业新发展。

In 2023, we carried out exchanges and cooperation with Shaanxi Nonferrous Metals Group Co., Ltd. and China Copper Co., Ltd., signed a strategic cooperation framework agreement with CISDI, joined hands with Baowu Aluminum to build the benchmark of central enterprises for "promoting actions through learning", cooperated with Chinalco Advanced Manufacturing Co., Ltd. and Chalco within the group, and undertook the construction of multiple companies' projects to promote the new development of the nonferrous metal industry through discussion and joint contribution.



中铝国际与陕西有色金属集团开展合作交流  
Cooperation and Exchange between CHALIECO and Shaanxi Nonferrous Metals Group Co., Ltd.



中铝国际与中冶赛迪签署战略合作框架协议  
CHALIECO and CISDI Sign Strategic Cooperation Framework Agreement



中铝国际李宜华董事长接待力拓中国区副总裁南利辉一行  
Chairman Li Yihua of CHALIECO Received the Delegation Led by Nan Lihui, Vice President of Rio Tinto China

## 政企合作

### Government-enterprise cooperation

中铝国际与洛阳市涧西区人民政府等开展合作，通过政企合作形式实现双方优势互补，合力为经济社会发展提供有力支撑。

We have cooperated with the People's Government of Luoyang Jianxi District to complement each other's advantages through government-enterprise cooperation and jointly provided strong support for economic and social development.



中铝国际与河南省文旅投资集团、洛阳市涧西区人民政府举行会谈

CHALIECO Held Talks with Henan Culture and Tourism Investment Group Co., Ltd. and the People's Government of Luoyang Jianxi District

## 校企合作

### University-enterprise cooperation

中铝国际与河南科技大学等学校携手开展产学研用融合，通过知识资本、人力资本和物质资本的深度耦合，加速科技成果转化，形成推进科技创新发展的强大合力。

We have joined hands with Henan University of Science and Technology and other universities to carry out the industry-university-research-application integration, accelerate the transformation of scientific and technological achievements through the deep cooperation of knowledge capital, human capital and material capital, and form a strong synergy to promote the development of scientific and technological innovation.



### 河南省有色金属加工先进工艺和高端装备产业研究院正式揭牌

Equipment Research Institute of Henan Province Nonferrous Metal Processing Design and Research Institute was officially unveiled

2023年8月，由中色科技牵头，联合河南科技大学等七家单位组建成立的产学研用深度融合的技术创新平台——河南省有色金属加工先进工艺和高端装备产业研究院正式揭牌，这标志着校企合作、协同创新新征程正式开启。

In August 2023, the Equipment Research Institute of Henan Province Nonferrous Metal Processing Design and Research Institute was officially unveiled. It is a technological innovation platform led by CNPT and jointly established with seven units including Henan University of Science and Technology that deeply integrated industry, university, research and application, marking the official start of a new journey of university-enterprise cooperation and collaborative innovation.



河南省有色金属加工先进工艺和高端装备产业研究院正式揭牌

Equipment Research Institute of Henan Province Nonferrous Metal Processing Design and Research Institute Officially Unveiled



## 推动行业发展

### Boosting industrial development

中铝国际通过推动行业标准制定，主办、承办、参与行业论坛和会议，促进行业资源对接流通，引领和推动行业发展，携手谱写互惠共赢的合作新篇章。

By promoting the formulation of industry standards, hosting, undertaking and participating in industry forums and conferences, we promoted the connection and circulation of industry resources, led and promoted the development of the industry, and worked together to write a new chapter of mutually beneficial and win-win cooperation.

## 标准制定

### Standard formulation

中铝国际主动参与行业标准制定工作，引领行业规范化、健康化发展，促进行业发展和自身品牌影响力、知名度提升。

We actively participated in the formulation of industry standards, led the standardized and healthy development of the industry, and promoted the development of the industry and the improvement of its own brand influence and popularity.



### 案例 Case

#### 长勘院——主编的《岩土工程设计标准》DBJ43/T001-2023 正式发布

CKY - *Standard for Geotechnical Engineering Design (DBJ43/T001-2023)* edited was officially released

2023年7月17日，湖南省住房和城乡建设厅发布了关于发布《湖南省通风与空调工程施工质量验收标准》等5项湖南省工程建设地方标准的通知（湘建科函〔2023〕64号），其中由中铝国际长勘院主编的《岩土工程设计标准》（编号为DBJ43/T001-2023），现被批准为湖南省工程建设推荐性地方标准。本标准的发布，有效扩大了长勘院在行业的影响力，是多年来高度重视技术质量和科技创新取得的丰硕成果。

On July 17, 2023, the Hunan Provincial Department of Housing and Urban-Rural Development issued notices on five local standards for engineering construction in Hunan Province (XJKH [2023] No. 64), including the *Standard for Quality Acceptance and Inspection of Construction of Ventilation and Air Conditioning Works in Hunan Province*. Among them, the *Standard for Geotechnical Engineering Design (DBJ43/T001-2023)* edited by CKY of CHALIECO is now approved as a recommended local standard for engineering construction in Hunan Province. The release of this standard has effectively expanded the influence of CKY in the industry and is a fruitful achievement made by attaching great importance to technical quality and scientific and technological innovation over the years.

## 行业交流

### Industry exchange

中铝国际积极加强行业交流，推广行业理念与先进模式，打造科技论坛、绿色冶金高峰论坛等交流平台，带动行业绿色化、智能化发展，营造良好发展生态。2023年，公司与中国有色金属工业协会开展合作交流，主办“智融滇冶，绿创未来”绿色冶金高峰论坛、“5G+有色金属智能工厂绿色信息化建设发展论坛”、“2023（第三届）有色金属智能制造高端论坛”等行业交流活动。

We have actively strengthened industry exchanges, promoted industry concepts and advanced models, built exchange platforms such as science and technology forums and green metallurgy summit forums, drove the green and intelligent development of the industry, and created a good ecological environment for development. In 2023, the Company carried out cooperation and exchanges with the China Nonferrous Metals Industry Association, and hosted industry exchange activities such as "Intelligent Integration of Yunnan Metallurgy, Creating Green Future" Green Metallurgy Summit Forum, "5G + Nonferrous Metal Intelligent Factory Green Information Construction Development Forum", and "2023 (3rd) High-end Forum on Nonferrous Metal Intelligent Manufacturing".



中铝国际召开首届科技论坛

CHALIECO Held the First Science and Technology Forum

# 06 公共责任

## 奉献社会，共建美好世界

### Responsibility for the Community: Contributing to Society and Building a Better World

中铝国际坚定担当起央企助力乡村振兴的责任使命，全力支持帮扶地区振兴发展；倾情公益慈善活动，积极参与志愿服务，扛起央企社会责任，向社会传递爱心与温暖；融入“一带一路”建设，坚持“走出去”战略，与当地社会合力发展、共享幸福、共获成长。

We have firmly fulfilled the responsibilities and mission of a central enterprise to contribute to rural revitalization and fully supported the revitalization and development of the helping areas; we have devoted ourselves to public welfare and charitable activities, actively participated in volunteer services, and shouldered the social responsibility of a central enterprise to convey love and warmth to the society; we have integrated into the construction of the "Belt and Road", adhered to the strategy of "Going Global", and made concerted efforts with the local society to develop, share the happiness and gain the growth together.

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## 赋能乡村振兴

### Empowering the rural revitalization

中铝国际认真贯彻习近平总书记关于“三农”问题的重要指示，有序推动乡村振兴工作。2023年，中铝国际及各成员企业扶贫及乡村振兴项目投入 237.94 万元，项目惠及 3,748 人。

We have conscientiously implemented the important instructions of General Secretary Xi Jinping on "agriculture, rural areas and farmers" to promote rural revitalization in an orderly manner. In 2023, CHALIECO and its member enterprises invested RMB2,379,400 in poverty alleviation and rural revitalization projects, benefiting 3,748 people.



扶贫及乡村振兴项目投入

**237.94** 万元

Invested RMB**2,379,400** in poverty alleviation and rural revitalization projects



项目惠及

**3,748** 人

Benefiting **3,748** people

## 爱心消费帮扶

Assistance in caring consumption

中铝国际在巩固拓展脱贫攻坚成果过渡期内继续多元化实施消费帮扶，依托央企消费帮扶电商平台和各央企自有电商平台，集中采购和帮销国资央企定点帮扶和对口支援县农产品，以消费帮扶带动脱贫地区持续增收，实现可持续脱贫。2023年，中铝国际及成员企业从帮扶县直接购买农产品共 211.04 万元。

During the transitional period of consolidating and expanding the achievements in poverty alleviation, we have continued to implement diversified consumption assistance. Relying on the e-commerce platform for consumption assistance of central enterprises and the e-commerce platforms owned by each central enterprise, we centrally purchased and helped sell agricultural products from designated and paired-assistance counties supported by state-funded central enterprises, to drive the continuous income increase of areas lifted out of poverty with consumption assistance and achieve sustainable poverty alleviation. In 2023, CHALIECO and its member enterprises directly purchased RMB2.1104 million of agricultural products from help counties.



中铝国际积极参与第二届“央企消费帮扶兴农周”活动

CHALIECO Actively Participated in the Second "Week of Central Enterprises Consumption Assistance to Promote Agriculture"

## 开展产业帮扶

### Industrial assistance

中铝国际将发展帮扶产业作为巩固拓展脱贫攻坚成果的治本之策，推动各类资源、帮扶措施向促进产业发展聚力，持续深挖乡村合作社盈利能力，实现乡村振兴从“接受输血”到“自我造血”的转变。长沙院乡村振兴驻村帮扶工作队第一轮工作期满获最高等次评价。

We took the development of assistance industries as a fundamental solution to consolidate and expand the achievements in poverty alleviation, promoted various resources and support measures to focus on promoting industrial development, continued to explore the profitability of rural cooperatives, and realized the transformation of rural revitalization from external help to self-support. The first round of work of the CINF Rural Revitalization Assistance Team won the highest rating.

### 案例 Case

#### 长沙院——巩固脱贫成果，助力乡村发展

CINF - Consolidating the achievements of poverty alleviation and promoting rural development

长沙院以实际行动积极履行社会责任，派遣乡村振兴工作队入驻湖南省邵阳市隆回县荷香桥镇天马山村，密切联系群众，坚决守住返贫致贫底线，拓展就业渠道帮助低收入村民稳定就业。2023年，天马山村集体经济收入已入账26万元，切实提高了村民尤其是脱贫户村民的收入。

CINF has actively fulfilled its social responsibilities with practical actions, dispatched a rural revitalization team to Tianmashan Village, Hexiangqiao Town, Longhui County, Shaoyang City, Hunan Province, closely contacted the masses and firmly held the first line of returning to poverty, expanded employment channels to help low-income villagers stabilize their employment. In 2023, the collective economic income of Tianmashan Village reached RMB260,000, which effectively improved the income of villagers, especially those who have been lifted out of poverty.



发展乡村特色产业实践——乌鸡蛋鸡养殖

Developing Rural Characteristic Industry - Backbone Chicken and Layer Breeding



天马山村村支两委感谢长沙院牌匾

Plaque of Thanks to CINF by the Party Branch and Village Committee of Tianmashan Village

## 案例 Case

### 贵阳院——坚持产业帮扶，拓宽金坑村发展道路

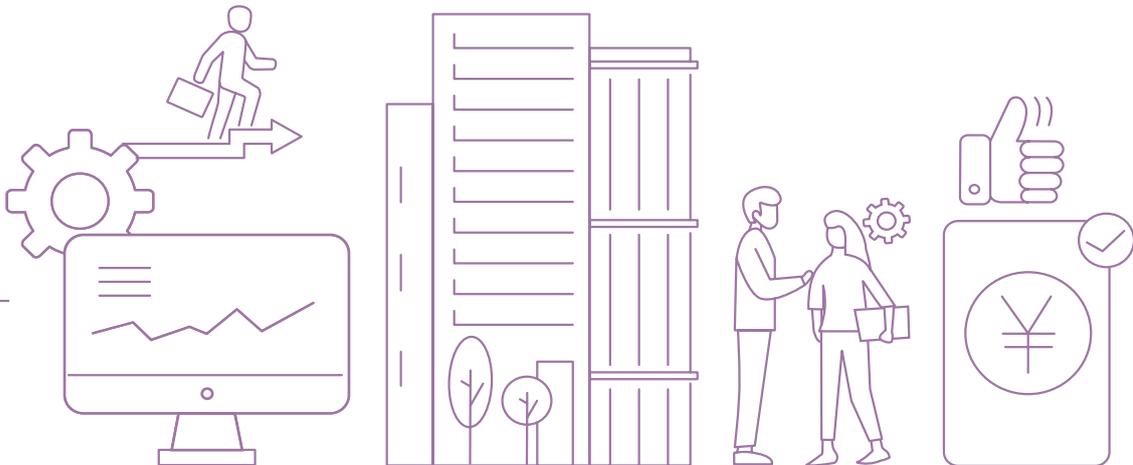
GAMI - Adhering to industrial assistance and broadening the development path of Jinkeng Village

贵阳院积极推动金坑村实现乡村振兴，发展种植生态大米、烤烟，养殖生态稻田鱼、稻田鸭等产业帮扶项目，投入产业帮扶资金，深化“十户一体”抱团发展模式，形成“一村一品”产业发展格局；引进企业达成合作协议，采取“公司+基地+农户”模式，带动村民就业与村集体经济增收。

GAMI has actively promoted Jinkeng Village to realize rural revitalization, and developed industrial assistance projects such as planting ecological rice and flue-cured tobacco and breeding ecological paddy field fish and paddy field ducks, provided industrial assistance funds, deepened the development model of "ten households as a unit", and formed an industrial development pattern of "one village with one product". GAMI has introduced enterprises to reach cooperation agreements with them and adopted the mode of "Company + Base + Farmer Household" to promote villagers' employment and increase the collective economic income of the village.



贵阳院被评为全省乡村振兴驻村帮扶工作先进集体  
GAMI was Awarded the Advanced Collective for Rural Revitalization Assistance in the Province



# 投身公益慈善

## Engaging in public welfare

中铝国际始终坚持“奉献、友爱、互助、进步”的志愿精神，引导广大志愿者积极参与社会公益活动，组织开展公益捐赠、学雷锋等系列公益志愿活动，与社区开展防诈骗、防火检查活动，沟通宣传相关知识。截至 2023 年末，中铝国际注册青年志愿者 847 人，年度志愿者服务总时长 2,305 小时，企业捐赠总额为 3.9563 万元。

We have always adhered to the volunteer spirit of "dedication, friendship, mutual assistance and progress", guided volunteers to actively participate in social welfare activities, organized a series of public welfare voluntary activities such as charitable donations and learning from Lei Feng, carried out fraud prevention and fire inspection activities with communities, and communicated and publicized relevant knowledge. As of the end of 2023, the number of registered youth volunteers has reached 847 people, with 2,305 hours of volunteer services cumulatively. The total donations by the Company amounted to RMB39,563 in 2023.

注册青年志愿者

**847** 人

The number of registered youth volunteers has reached 847 people

年度志愿者服务总时长

**2,305** 小时

2,305 hours of volunteer services cumulatively

企业捐赠总额为

**3.9563** 万元

The total donations by the Company amounted to RMB39,563 in 2023



中铝国际党员干部志愿者积极开展扫雪铲冰行动，给公司全体员工创造安全通畅的出行环境

Volunteers of Party Members and Cadres of CHALIECO Actively Participated in Snow and Ice Cleaning Activities to Create a Safe and Smooth Travel Environment for All Employees



贵阳院团委开展助老“金晖行动” Youth League Committee of GAMI Launched "Golden Sunshine Action" to Help the Aged



九冶钢构公司机关及咸阳钢构厂团支部志愿者协助咸阳市渭城区交警大队开展文明交通劝导服务活动

Volunteers from the Jiuye Metallurgical Steel Structure Company and the Youth League Branch of Xianyang Steel Structure Factory Assisted Traffic Police Brigade in Weicheng District, Xianyang City



中色科技团委开展学雷锋志愿服务活动

Youth League Committee from CNPT Launched Various Volunteer Service Activities to Learn from Lei Feng



## 积极境外履责

### Performing duties overseas actively

中铝国际充分服务和融入“一带一路”倡议，践行“走出去”战略，用好用足国内国际两个市场、两种资源，立足本土优势拓展境外业务，提升海外市场开发和海外项目执行能力；推进本地化用工，关心关爱海外员工，做负责任的全球企业公民。

We have fully adhered to the "Belt and Road" initiative, implemented the "going global" strategy, made full use of both domestic and international markets and resources, expanded overseas business based on local advantages, enhanced overseas market development and overseas project execution capabilities; we have further implemented the localized employment in overseas market, and actively fulfilled overseas social responsibilities, benefiting local employees with practical actions.

## 拓展境外业务

### Expanding overseas business

中铝国际不断加大海外市场资源投入，加强与境外铝业公司、能源公司等合作，打造多批海外业务精品项目，如印尼铝电一体化项目、韩国负极材料项目等。同时，公司持续完善“1+N+1”的海外营销体系，深度开发属地市场，推动海外业务高质量发展。报告期内，公司新签约重大海外项目共16项，实现年度海外市场开发目标，海外营业收入337,426.3万元，同比增长238.32%。

We have continuously increased the investment of resources in overseas markets, strengthened cooperation with overseas aluminum companies and energy companies, and developed many excellent projects for overseas business, such as Indonesia's aluminum-electricity integration project and South Korea's anode material project. At the same time, we will continue to improve the "1+N+1" overseas marketing system, deeply develop local markets and promote high-quality development of overseas business. During the reporting period, a total of 16 major overseas projects were newly signed, achieving the annual overseas market development target. The overseas operating revenue in 2023 amounted to RMB 3,374.263 million, showing a year-on-year growth of 238.32%.

## 2023年，国际业务成就

### International Business Achievements in 2023

- ▶ 承揽中铝几内亚氧化铝银行级可研及印尼赤道氧化铝项目预可研工作  
Undertook the bank-level feasibility study of Alumina Chinalco in Guinea and the pre-feasibility study of the Equatorial Alumina Project in Indonesia
- ▶ 与俄铝完成 EPS 合同签约，与 ERG 集团签署合同近 10 个  
Signed EPS contracts with RUSAL and nearly 10 contracts with ERG Group
- ▶ 沈阳院实现石墨化炉海外市场和美国本土项目签约双突破  
SAMI achieved double breakthroughs in the overseas market of graphitization furnaces and project signing in the United States

- ▶ 贵阳院设计的印尼华青铝业 25 万吨电解铝项目全部投产，标志着公司第一个 500kA 级电解铝技术成功输出海外

The 250kt/a electrolytic aluminum project of PT Indonesia Asahan Aluminium designed by GAMI was put into operation, marking the successful export of the company's first 500KA electrolytic aluminum technology overseas

- ▶ 昆勘院刚果（金）公司成为中铝集团首家在刚果（金）的找矿资源平台公司

Congo (Kinshasa) Company of KPDI became the first mineral exploration platform company of CHINALCO in the Democratic Republic of Congo (Kinshasa)

- ▶ 十二冶签订印尼中伟镍矿项目合同，海外市场自主开拓实现“零”突破

12MCC signed the contract for the CNGR Zoomwe Nickel Mine Project in Indonesia, achieving a "zero" breakthrough in Independent development of the overseas market



### 沈阳院——践行“科技+国际”，推动国家装备制造业“走出去”

SAMI - Practice "S&T + Internationalization" to promote the national equipment manufacturing industry to "go global"

沈阳院稳步推进各项经营生产业务，推动中国装备制造“走出去”，成功签署俄铝泰舍特阳极厂焙烧炉燃控系统供货等多项海外合同，承揽的印尼国家铝业电解系列升级改造项目首台电解槽顺利点火，带动辽宁省企业装备制造输出海外金额达 2.6 亿元人民币，成为印尼国家铝业电解系列升级改造项目的重要里程碑。

SAMI has steadily promoted various operations and production businesses, promoted China's equipment manufacturing to "go global", and successfully signed a number of overseas contracts such as the supply of a combustion control system for the baking furnace in RUSAL Taishet anode plant, and successfully initiated the first electrolytic cell of the contracted INALUM Electrolysis Series Upgrading and Reconstruction Project, driving Liaoning enterprises to export equipment manufacturing to overseas markets with an amount of RMB260 million, which has become an important milestone of INALUM Electrolysis Series Upgrading and Reconstruction Project.



2023 年 10 月 17 日，辽宁卫视《辽宁新闻》对中铝国际沈阳院融入“一带一路”建设进行报道

On October 17, 2023, *Liaoning News* of Liaoning TV Reported on the Integration of CHALIECO SAMI into the "Belt and Road" Initiative



贵阳院印度BALCO电解铝项目第一批货物顺利发运

Successful Shipment of the First Batch of Goods for India BALCO Electrolytic Aluminum Project of GAMI



## 海外优质工程

### Overseas quality projects

中铝国际积极践行“一带一路”倡议，树立海外标杆，高标准推进项目建设，以质量和信誉提升中铝国际施工管理品牌，以匠心之作彰显担当。

We have actively implemented the "Belt and Road" Initiative, set up an overseas benchmark, promoted project construction with high standards, enhanced the construction management brand of CHALIECO with quality and reputation, and demonstrated our responsibilities with ingenuity.



### 六冶——承建境外工程第三次荣获国家级大奖

CHSMCC - Third national award for overseas project construction

六冶刚果（金）华刚矿业项目建设团队通过制定里程碑节点计划、细化落实责任、优化建设方案、严控工程质量、创新应用新技术等举措，实现11个月产出首批铜精矿、14个月产出首批阴极铜、17个月产出首批粗制氢氧化钴产品的施工奇迹，刷新非洲矿山建设的“中国速度”。2023年，六冶承建的刚果（金）华刚矿业SICOMINES铜钴矿项目二期工程同时荣获中国建设工程鲁班奖（境外工程）和国家优质工程奖（境外工程）。

By formulating milestone node plans, refining responsibilities, optimizing construction schemes, strictly controlling project quality and creatively applying new technologies, the construction team of the Congo (Kinshasa) SICOMINES Copper and Cobalt Mine Project (Phase II) of CHSMCC achieved a construction miracle of producing the first batch of copper concentrates within 11 months, the first batch of cathode copper within 14 months and the first batch of crude cobalt hydroxide products within 17 months, refreshing the "China Speed" of mine construction in Africa. In 2023, the Congo (Kinshasa) SICOMINES Copper and Cobalt Mine Project (Phase II) of CHSMCC Won Both the China Construction Engineering Luban Award (Overseas Project) and National Quality Engineering Award (Overseas Project).



六冶承建的刚果（金）华刚矿业 SICOMINES 铜钴矿项目二期工程

The Congo (Kinshasa) SICOMINES Copper and Cobalt Mine Project (Phase II) of CHSMCC

## 案例 Case

### 九冶——优质履约，顺利完成 1 号机组发电任务

Jiuye - Quality performance and successful completion of unit 1 smooth power generation task

九冶严格对照“业主满意、效益优良、品牌卓著、市场接续”工作标准，抓好项目施工生产，狠抓项目履约“三无”专项行动，打造品质工程。2023年8月，九冶承建的印尼曼帕瓦年产量100万吨的氧化铝项目自备燃煤电厂1号锅炉水压试验一次成功。

In strict accordance with the working standards of "employer satisfaction, excellent efficiency, outstanding brand and market continuity", Jiuye has focused on project construction and production, and paid close attention to the special action of "three zeros" in project performance to create quality projects. In August 2023, the hydrostatic test of the No.1 boiler in the self-provided coal-fired power plant of Mampawah 1,000kt/a Alumina Project in Indonesia undertaken by Jiuye was successful at one time.



九冶承建印尼曼帕瓦年产 100 万吨氧化铝项目

Mampawah 1,000kt/a Alumina Project in Indonesia undertaken by Jiuye

## 加速国际互动

### Accelerating international interactions

中铝国际深化与“一带一路”共建国家的合作交流，组织赴沙特、印尼、越南、几内亚等数十个国家的商务和技术服务出行活动，接待俄铝、俄镍、力拓、阿联酋铝业、印度Vedanta集团和越煤集团等近百批海外客户来访与考察，商务和技术沟通成效显著。

We have deepened cooperation and exchanges with countries along the "Belt and Road", organized business and technical service trips to dozens of countries such as Saudi Arabia, Indonesia, Vietnam and Papua New Guinea, and received nearly 100 groups of overseas customers such as RUSAL, Norilsk Nickel, Rio Tinto, Emirates Global Aluminum, India Vedanta Group and Vinacomin Group for visits and investigation. The commercial and technical communication has achieved remarkable results.



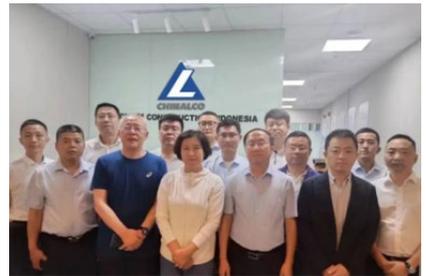
越煤集团董事长吴皇银一行到中铝国际参观交流

Delegation led by Wu Huangyin, Chairman of Vinacomin Group, visited CHALIECO for exchanges



印度巴拉索尔合金公司董事长普拉莫德·米塔尔一行访问中铝国际

Pramod Mittal, Chairman of Balasore Alloy Limited (India), and his delegation visited CHALIECO



印尼晋商企业交流座谈会在十二冶印尼子公司召开

The Symposium of Shanxi Merchants in Indonesia was held at the subsidiary of 12MCC in Indonesia

## 案例 Case

### 贵阳院——获评“一带一路”宣传工作先进单位

GAMI - Advanced unit in the publicity of the "Belt and Road" Initiative

贵阳院积极开展国际交流合作，举办国际学术会议，与“一带一路”共建国家分享交流技术成果，并在多家媒体发表《把握国发2号机遇，闯出海外新天地》《坚持技术引领，深拓两个市场》等多篇报道，为讲好企业共商共建共享故事营造良好的舆论氛围。2023年12月，贵阳院被中国工程咨询协会评为“一带一路”宣传工作先进单位。

GAMI actively carried out international exchanges and cooperation, held international academic conferences, shared technical achievements with countries participating in the "Belt and Road" Initiative, and published many reports such as *Seizing the Opportunity stated in No.2 Document of State Council to Make New Achievements Overseas* and *Insisting on Technology Leadership and Deepening "Two Markets"*, creating a good public opinion atmosphere for telling stories about extensive consultation, joint contribution and shared benefits among enterprises. In December 2023, GAMI was rated as an advanced unit in the publicity of the "Belt and Road" Initiative by the China National Association of Engineering Consultants.

## 海外员工关爱

### Caring for overseas employees

中铝国际保障海外员工基本权益，关注员工生活状况和身心健康，了解员工需求，帮扶困难员工；坚持本土化用工，带动当地经济发展，并严格按照公司安全管理要求，保证现场施工人员生命安全。

We safeguard the basic rights and interests of overseas employees, pay attention to their living conditions and physical and mental health, understand their needs, and help them in difficulty. We adhere to localized employment to drive local economic development and strictly follow the company's safety management requirements to ensure the life safety of on-site construction personnel.

### 案例 Case

#### 六冶——几内亚 Boffa 铝土矿项目带动就业

CHSMCC - Bauxite mine project in Guinea boosted employment

六冶为几内亚Boffa铝土矿项目当地居民解决吃水难和儿童教育等问题，为当地2,000名员工提供就业岗位，创造就业机会，将人文文化延续传承，彰显中国企业良好的责任担当，是中铝国际海内外员工共同打造中国企业深耕“一带一路”的成功范例。

CHSMCC solved the problems of drinking water and children's education for the local residents in the Bauxite Mine Project in Guinea, provided jobs for 2,000 local employees, created employment opportunities, inherited a humanistic culture, and demonstrated a good sense of responsibility of Chinese enterprises. This project served as a successful model of CHALIECO actively contributing to the "Belt and Road" initiative both domestically and internationally.



中铝几内亚员工与都巴村村民商讨合作

Employees of CHALIECO in Guinea Discussed Cooperation with Villagers of Boffa Village

# 未来展望

## Future Prospect

### 艰难方显勇毅，磨砺始得玉成

Only in hard times can courage and perseverance be manifested.

Only after polishing can a piece of jade be finer.

回首 2023，我们勤耕不辍，履践致远；展望 2024，我们继往开来，再谱新篇。新的起点，中铝国际将在习近平新时代中国特色社会主义思想指引下，坚持“科技 + 国际”发展战略，以高质量党建为引领，以科技创新为引擎，以实干笃定前行，永葆初心，锐意进取，立足新时代，勇铸新发展局面，奋力担负起新的使命，为加快建设“新中铝国际”不懈努力！

Looking back to 2023, we have been diligently working hard and fulfilling our mission; looking forward to 2024, we will continue our work and make a new chapter. Standing at this new starting point, we will, as always, follow the guidance of Xi Jinping Thoughts on Socialism with Chinese Characteristics for a New Era, adhere to implement the development strategy of "S&T + Internationalization", take high-quality Party building as the guiding principle, and scientific and technological innovation as the driving force. We will advance with steady efforts, always remain true to our original aspirations, forge ahead with determination, bravely create a new development situation, strive to shoulder new missions, and make unremitting efforts to accelerate the construction of a "New CHALIECO" !



# 附录

## Appendix

### 关键绩效

Key Performance Indicators

指标 Indicators	2021		2022		2023
<b>经济责任 Economic responsibility</b>					
	调整前 Before Adjustment	调整后 After Adjustment	调整前 Before Adjustment	调整后 After Adjustment	
总资产 (万元) Total assets (RMB10,000)	5,882,803.53	6,002,275.67	4,739,128.86	4,739,221.82	4,094,380.30
净资产 (万元) Net assets (RMB10,000)	1,651,518.20	1,636,472.27	1,045,505.73	1,045,598.68	725,450.00
营业收入 (万元) Operating revenue (RMB10,000)	2,334,819.63	2,389,872.34	2,369,732.89	2,369,732.89	2,233,717.10
纳税总额 (万元) Total tax payment (RMB10,000)	77,205.87		86,603.77		79,277.64
研发资金投入 (万元) Investments in R&D (RMB10,000)	76,012.72		91,206.62		94,330.9
研发人员数量 (人) Number of R&D personnel (person)	2,584		2,479		2,164
累计有效专利数 (件) Cumulative number of valid patents (piece)	2,406		2,832		3,214
其中：发明专利 (件) Among which: Patents for inventions (piece)	1,061		1,120		1,385
完成专利受理 (件) Number of patent applications accepted (piece)	313		381		647
其中：发明专利 (件) Among which: Patents for inventions (piece)	133		176		369
新增专利授权 (件) Number of newly added authorized patents (piece)	303		312		368
其中：发明专利 (件) Among which: Patents for inventions (piece)	65		80		109



指标 Indicators	2021	2022	2023
企业规章制度法律审核率 (%) Legal review rate of corporate rules and regulations (%)	100	100	100
企业经济合同法律审核率 (%) Legal review rate of corporate business contracts (%)	100	100	100
企业重要经济决策法律审核率 (%) Legal review rate of important corporate business decisions (%)	100	100	100
守法合规培训次数 (次) Number of legal compliance training sessions (time)	8	18	20
守法合规培训时长 (小时) Number of hours for legal compliance training (hour)	30	36	38
守法合规培训人次 (人次) Number of people receiving training on legal compliance (person-time)	624	1,032	1,404
召开董事会 (次) Number of board meetings held (time)	6	12	9
召开股东大会 (次) Number of general shareholders' meetings held (time)	3	3	3
供应商总数 (个) Number of suppliers (nos.)	4,272	5,267	2,488
因为社会责任不合规被否决的潜在供应商数量 (个) Number of potential suppliers rejected for non-compliance of social responsibility (nos.)	26	8	6
报告期内审查的供应商数量 (个) Number of suppliers reviewed during the reporting period (nos.)	4,272	5,267	2,488
因为社会责任不合规被中止合作的供应商数量 (个) Number of suppliers suspended for non-compliance of social responsibility (nos.)	0	0	0
供应商社会责任 /ESG 培训次数 (次) Number of CSR/ESG trainings for suppliers (nos.)	0	0	0
投诉解决率 (%) Complaint resolution rate (%)	100	100	100
<b>社会责任 Social responsibility</b>			
员工人数 (人) Number of employees (person)	12,489	12,219	11,456
报告期内吸纳就业人数 (人) Number of newly recruited employees during the reporting period (person)	30	76	137
体检覆盖率 (%) Coverage of physical examination for employees (%)	100	100	100

指标 Indicators	2021	2022	2023
健康档案覆盖率 (%) Coverage of health record (%)	100	100	100
劳动合同签订率 (%) Signing rate of employment contracts (%)	100	100	100
集体合同覆盖率 (%) Coverage of collective contracts (%)	100	100	100
社会保险覆盖率 (%) Coverage of social insurance (%)	100	100	100
通过申诉机制申请、处理和解决的员工申诉数量 (个) Number of employee complaints filed, handled and solved through complaint mechanism (nos.)	0	0	0
女性管理者人数 (人) Number of female managers (person)	1,410	1,441	1,260
中层管理者中女性管理者占比 (%) Proportion of female managers in middle management (%)	31	31.66	6.12
少数民族员工占比 (%) Proportion of ethnic minority employees(%)	4.59	4.56	4.48
本地化雇佣比例 (%) Localized employment rate (%)	86	88	85.43
人均带薪休假天数 (天) Days of paid leaves per capita (day)	10.00	10.49	11
员工培训投入 (万元) Investments in employee training (RMB10,000)	880.62	738.19	1,222.6
员工培训人次 (人次) Number of participants of employee training (person-time)	29,971	28,686	52,349
员工培训时长 (小时) Number of hours for employee training (hour)	123,629.80	283,428.00	377,686.45
员工薪酬同比增长 (%) YOY growth of employee compensation (%)	1.77	3	12
残疾人雇佣人数 (人) Number of people with disabilities employed (person)	85	78	61
困难职工帮扶投入 (万元) Investment in supporting workers in difficulty (RMB10,000)	103.19	537.53	40.87
安全生产事故数 (件) Number of work safety accidents (time)	0	1	1
因工伤损失工作日数 (天) Working days lost due to work-related injuries (day)	0	6,106	42,000
因工亡故人数 (人) Number of work-related deaths (person)	0	1	7
因工亡故占比 (%) Proportion of work-related deaths (%)	0	0.008%	0.061%

指标 Indicators	2021	2022	2023
安全教育与培训人次 (人次) Number of participants in safety education and training (person-time)	54,560	55,301	122,276
安全教育与培训时长 (小时) Number of hours for safety education and training (hour)	98,650	99,285	427,966
安全培训覆盖率 (%) Coverage of safety training (%)	-	-	100
员工群众来访接访率 (%) Reception rate of visits of employees and other stakeholders(%)	100	100	100
来信来函受理率 (%) Handing rate of letters and mails (%)	100	100	100
慈善捐助总额 (万元) Total charitable donations (RMB10,000)	154.44	8.7	3.9563
<b>环境责任 Environmental responsibility</b>			
环保总投入 (万元) Investments in environmental protection (RMB10,000)	12,807.37	3,423.10	3,532.17
能源消耗总量 (吨标准煤) Total energy consumption (tce)	35,279.40	11,362.05	80,794
万元营收能源消耗强度 (吨标准煤 / 万元) Energy consumption intensity per RMB10,000 of operating revenue (tce/ RMB10,000)	0.0151	0.0462	0.0378
燃油使用量 (升) Fuel oil consumption (liter)	19,886,004.90	38,462.46	61,043,063.32
汽油使用量 (升) Gasoline consumption (liter)	3,292,824.40	1,882,071.76	38,885,310.92
柴油使用量 (升) Diesel consumption (liter)	16,593,180.50	2,044,766.46	22,157,752.4
天然气使用量 (立方米) Natural gas consumption (m <sup>3</sup> )	346,075.00	223,793.16	195,928
用电量 (万千瓦时) Electricity consumption (10,000 kWh)	8,534.90	5,418.74	11,515.03
总用水量 (吨) Total water consumption (ton)	725,006.00	199,459.76	766,595
用水强度 (吨 / 万元) Water consumption intensity (ton/RMB10,000)	0.31	0.68	0.34
无害废弃物排放量 (吨) (厨余垃圾、建筑垃圾等) Discharge of non-hazardous waste (ton) (kitchen waste, construction waste, etc.)	4,639.57	730.5	11,598.6

指标 Indicators	2021	2022	2023
万元营收无害废弃物排放强度 (吨 / 万元) Non-hazardous waste discharge intensity per RMB10,000 of operating revenue (ton/RMB10,000)	0.0019	0.0003	0.0052
有害废弃物排放量 (吨) (硒鼓、废弃灯管等) Discharge of hazardous waste (ton) (toner cartridges, damaged light tubes, etc.)	2.53	0.17	29.315
万元营收有害废弃物排放强度 (吨 / 万元) Hazardous waste discharge intensity per RMB10,000 of operating revenue (ton/RMB10,000)	1.06x10 <sup>-6</sup>	7.17x10 <sup>-8</sup>	1.31x10 <sup>-5</sup>
环保培训人次 (人次) Number of participants in environmental protection training (person-time)	13,588	13,999	10,890
环保培训覆盖率 (%) Coverage of environmental protection training (%)	31	33	34
万元产值能耗 (吨标煤 / 万元产值) Energy consumption per RMB10,000 output value (tce/RMB10,000 output value)	0.0356	0.0288	0.0362
年度新鲜水用水量 (吨) Annual fresh water consumption (ton)	16,859	142,463	755,194
再生水使用量 (吨) Amount of reclaimed water used (ton)	3,999	4,406	11,401
一般工业固体废物综合利用率 (%) Comprehensive utilization rate of non-hazardous industrial solid waste (%)	-	-	72.09
工业固体废物重复利用率 (%) Industrial solid waste reuse rate (%)	100	100	100
污染物排放达标率 (%) Compliance rate of pollutant emissions (%)	-	-	100
固废处置合规率 (%) Compliance rate of solid waste disposal (%)	100	100	100
主要污染物排放达标率 (%) Compliance rate of major pollutant emissions (%)	100	100	100
办公用电量 (万千瓦时) Electricity used in office buildings (10,000 kWh)	8,534.90	7,230.48	7,330.6
办公用水量 (万吨) Water used in office buildings (10,000 tons)	72.50	70.23	45.84

# 指标索引

## Index Guide

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可持续发展管理 Sustainable Development Management	组织体系 Organizational System	管治架构 Governance Structure	7.1.3、8.3、8.5、8.6、8.14、8.8、8.12	G3.1、G3.2、G3.3
	可持续发展行动 Sustainable Development Actions	-	-	-
	利益相关方沟通 Communication with Stakeholders	汇报原则： 重要性 Reporting Principles: Materiality	7.2.1、7.2.3、7.4.4、8.5、8.6、8.10	G1.10、G1.11、G3.6、G3.7
	重大议题识别 Material Issue Identification		8.9	G3.5
责任专题一： 栉风沐雨二十载， 砥砺前行新时代 Responsibility Focus I: Forging Ahead in a New Era after Twenty Years of Development Despite of Various Difficulties	不忘初心，坚定报国之志 Staying true to our mission and serving country with total loyalty	-	-	P3.1
	科技赋能，见证发展成果 Witnessing development achievements with science and technology empowerment	-	-	P3.1
责任专题二： 数智化转型发展， 谱写时代新篇章 Responsibility Focus II: Engaging in Digital and Intelligent Transformation to Write a New Chapter of the Era	加强数智管理 Strengthening Digitization and Intellectualization Management	-	-	P3.1
	推进智能制造 Promoting intelligent manufacturing	-	-	P3.1

目录 Contents		港交所 ESG 指引 <sup>1</sup> HKEX ESG Guide	上交所指引 <sup>2</sup> SSE Guidelines	CASS-ESG 5.0
经济责任   夯实治理, 共筑管理根基 Economic Responsibility: Enhancing Governance and Jointly Establishing Management Basis	坚持党建引领 Adhering to the guidance of Party building	B7、B7.1、B7.2、B7.3	2.1.1、2.1.2、2.1.3、2.2.1、3.1.1、6.5.4	G1.7
	优化公司治理 Optimizing corporate governance		-	G1.1、G1.2
	守法合规运营 Operating in compliance with the law		4.1.1、8.1、8.2	G1.3、G1.5
	加强风险防控 Strengthening risk prevention and control		5.1、5.16	-
客户责任   聚焦主业, 共谱时代新篇 Responsibility for Customers: Focusing on the Main Business to Create a New Chapter in the Era	立足科技创新 Basing on S&T innovation	B6、B6.3	8.2、8.15	V1.2、V2.1、V2.2、V2.3、V2.4
	打造品质工程 Building high-quality projects	B6、B6.4	8.2、8.6	S4.1、S4.2
	提供优质服务 Providing high-quality services	B6、B6.2、B6.5	8.1、8.2	S4.1、S4.3、S4.5、S4.6、S4.7
环境责任   绿色发展, 共创零碳未来 Environmental Responsibility: Creating a Zero-Carbon Future with Green Development	响应“双碳”战略 Responding to the carbon peaking and carbon neutrality strategy	A2、A2.3、A4、A4.1	8.8、8.9	E2.4、E5.1、V4.1
	强化环境管理 Strengthening environmental management	A1	8.1、8.6、8.8、8.11、8.12	E1.1、E1.2、E1.3、E1.4、E1.9
	践行绿色运营 Practicing green operations	A1.6、A2、A2.1、A2.4	8.3、8.8、8.9、8.10、8.13	E1.8、E2.1、E2.2、E2.4、E2.5、E2.9、E3.1、E3.2、E3.3、E3.4、E3.5
	培育低碳文化 Cultivating low-carbon culture	A3、A3.1	-	E1.7、E2.14、E4.1、E4.2、E4.3、V4.4
员工责任   以人为本, 共赴奋斗征途 Responsibility for Employees: Striving for a Better Future by Putting People First	保障基本权益 Safeguarding basic rights and interests	B1、B1.1、B1.2、B4、B4.1、B4.2	8.1、8.3、8.7、8.14、8.15	S1.1、S1.2、S1.3、S1.5、S1.6、S1.7
	助推员工发展 Promoting employee development	B3、B3.1、B3.2	8.1、8.3、8.7、8.14	S2.1、S2.2、S2.4
	关注健康安全 Paying attention to health and safety	B2、B2.3	8.3、8.6、8.7、8.13、8.14	S3.1、S3.4、S3.5、S3.6、S3.7、S3.8、S3.9
	开展员工关怀 Caring for employees	B8、B8.1、B8.2	8.1、8.6、8.7、8.14、8.15	S1.10



目录 Contents		港交所 ESG 指引 <sup>1</sup> HKEX ESG Guide	上交所指引 <sup>2</sup> SSE Guidelines	CASS-ESG5.0
伙伴责任   和衷共济，共赢发展机遇 Responsibility for Partners: Gathering Strength to Achieve Win-Win Results	打造责任供应链 Establishing a responsible supply chain	B5、B5.1、B5.2、B5.3、B5.4	8.1、8.2、8.3、8.6、8.8	S5.1、S5.2、V2.5、V2.6
	加强战略合作 Strengthening strategic cooperation	-	8.2	V2.8
	推动行业发展 Boosting industrial development	-	8.3、8.8、8.13	V2.8
公共责任   奉献社会，共建美好世界 Responsibility for the Community: Contributing to Society and Building a Better World	赋能乡村振兴 Empowering the rural revitalization	B8、B8.1、B8.2	8.1、8.4	V1.1、V1.2、V1.3、V1.4、V3.1、V3.3
	投身公益慈善 Engaging in public welfare	B8、B8.1、B8.2	8.1、8.3、8.4、8.6、8.15	V3.4、V3.6、V3.7
	积极境外履责 Performing duties overseas actively	B8、B8.1、B8.2	8.6	V1.1、V1.2、V1.3
未来展望 Future Prospect	-	-	A1	
附录 Appendix	关键绩效 Key Performance Indicators	A1.1、A1.3、A1.4、A2.1、A2.2、B2.1、B2.2、B3.1、B3.2	8.1、8.2、8.4、8.5、8.8	A2
	指标索引 Index Guide	-	-	A4
	释义 Terms and Abbreviations	-	-	-
	报告评级 Rating Report	-	-	A3
	意见反馈 Suggestions and Feedback	-	-	A5

<sup>1</sup> 我们遵循港交所《主板上市规则》附录 C2——“环境、社会及管治报告指引”中“不遵守就解释”条文，对未披露指标 A1.2、A1.5、A2.5、B6.1 做出如下解释：

We adhere to the provision in Appendix C2 of the *Main Board Listing Rules* of the Stock Exchange of Hong Kong Limited, titled "Guidance on Environmental, Social and Governance Reporting," regarding the "Comply or Explain" principle. The undisclosed indicators in A1.2, A1.5, A2.5, B6.1 and B6.1 are explained as follows:

① 受业务性质及业务范围影响，A1.2、A1.5 条款暂未统计，未来公司将持续推进排放物管理提升工作。

Affected by the nature and scope of business, A1.2 and A1.5 clauses have not been counted temporarily; in the future, the Company will continue to enhance emissions management.

② 公司为设计施工类企业，不适用 A2.5、B6.1 条款。

A2.5 and B6.1 clauses do not apply to the business of the Company, as the Company is a design and construction company.

<sup>2</sup> 《上海证券交易所上市公司自律监管指引第 1 号——规范运作》简称《指引》

*Guidelines No. 1 of the Shanghai Stock Exchange (SSE) on the Application of Self-Regulation Rules for Listed Companies – Standard Operation* is referred to as "SSE Guidelines".

## 释义

### Terms and Abbreviations

全称 Full name	简称 Abbreviated name
中国铝业集团有限公司 Aluminum Corporation of China	集团 The Group or CHINALCO
沈阳铝镁设计研究院有限公司 Shenyang Aluminum & Magnesium Engineering and Research Institute Company Limited (SAMI)	沈阳院 SAMI
贵阳铝镁设计研究院有限公司 Guiyang Aluminum & Magnesium Engineering and Research Institute Company Limited (GAMI)	贵阳院 GAMI
长沙有色冶金设计研究院有限公司 CINF Engineering Corporation Limited	长沙院 CINF
中色科技股份有限公司 China Nonferrous Metals Processing Technology Co., Ltd.	中色科技 CNPT
中国有色金属长沙勘察设计院有限公司 China Nonferrous Metal Changsha Survey and Design Institute Co., Ltd.	长勘院 CKY
中国有色金属工业昆明勘察设计院有限公司 Kunming Prospecting Design Institute of China Nonferrous Metals Industry Co., Ltd.	昆勘院 KPDI
昆明有色冶金设计研究院股份公司 Kunming Nonferrous Metallurgy Design and Research Institute Co., Ltd.	昆明院 KERI
中国有色金属工业第六冶金建设有限公司 China Nonferrous Metal Industrial No. 6 Metallurgy Construction Company	六冶 CHSMCC
九冶建设有限公司 Jiuye Construction Co., Ltd.	九冶 Jiuye
中色十二冶金建设有限公司 China Nonferrous Metal Industrial No. 12 Metallurgy Construction Company	十二冶 12MCC
中铝山东工程技术有限公司 CHALIECO Shandong Engineering Technology Co., Ltd.	山东工程 SDGC
中铝国际（天津）建设有限公司 CHALIECO (Tianjin) Construction Co., Ltd.	天津建设 Tianjin Construction

# 报告评级

## Rating Report

### 《中铝国际工程股份有限公司 2023 环境、社会及管治报告》评级报告

受中铝国际工程股份有限公司委托，“中国企业社会责任报告评级专家委员会”抽选专家组成评级小组，对《中铝国际工程股份有限公司 2023 环境、社会及管治报告》（以下简称《报告》）进行评级。

#### 一、评级依据

中国社会科学院《中国企业社会责任报告指南（CASS-ESG 5.0）》暨“中国企业社会责任报告评级专家委员会”《中国企业 ESG 报告评级标准（2023）》。

#### 二、评级过程

1. 评级小组审核确认《报告》编写组提交的《企业 ESG 报告过程性和可及性评估资料确认书》及相关证明材料；
2. 评级小组对《报告》编写过程及内容进行评价，拟定评级报告；
3. 评级专家委员会副主席、评级小组组长、评级小组专家共同签署评级报告。

#### 三、评级结论

##### 过程性 (★★★★★)

中铝国际成立公司社会责任工作领导小组，由董事长担任组长。领导小组负责向上汇报社会责任工作进展，向下传达中铝集团关于社会责任工作的指导及管理意见，统筹规划公司社会责任工作的实施；报告所引用的信息与数据来自公司的正式文件、统计报告与财务报告，以及经由公司，统计、汇总与审核的环境、社会及管治信息，过程性表现卓越。

##### 实质性 (★★★★★)

《报告》披露了完善 ESG 治理、服务国家战略、产品技术创新、节约能源资源、减少“三废”排放、应对气候变化、产品/服务质量管理、员工健康与安全、可持续供应链等所在行业关键性议题，叙述详实充分，实质性表现卓越。

##### 完整性 (★★★★☆)

《报告》主体内容从“经济责任 夯实治理，共筑管理根基”“客户责任 聚焦主业，共谱时代新篇”“环境责任 绿色发展，共创零碳未来”“员工责任 以人为本，共赴奋斗征途”“伙伴责任和衷共济，共赢发展机遇”“公共责任 奉献社会，共建美好世界”等角度系统披露了所在行业核心指标的 82.35%，具有领先的完整性表现。

##### 平衡性 (★★★★☆)

《报告》披露了“安全生产事故数”“因工伤损失工作日数”“突发环境事件及重大环境污染、生态破坏事件”“贪污诉讼案件”等负面数据信息，具有领先的平衡性表现。

##### 可比性 (★★★★★)

《报告》披露了“营业收入”“累计有效专利数”“供应商总数”“员工人数”“环保总投入”“环保培训人次”“安全培训覆盖率”等 80 个关键指标连续 3 年的对比数据，并通过“中铝国际分别

以第 98 位和第 136 位的排名蝉联美国《工程新闻记录》(ENR) ‘全球工程设计企业 150 强’和 ‘全球承包商 250 强’榜单”等进行横向比较，可比性表现卓越。

##### 可读性 (★★★★★)

《报告》采用议题型框架结构，系统展示了企业在战略引领、公司治理、环境责任、社会责任等重点议题下的履责理念、实践与成效，充分回应了利益相关方的期望与诉求；封面采用插画风格，同时融入中铝国际相关元素，提升了报告的辨识度；章节跨页选用选用契合篇章主题的实景大图，以高度概括性语句起篇，提纲挈领，可读性表现卓越。

##### 可及性 (★★★★★)

《报告》与公司年报同时发布；提供中英文版本，拟通过中铝国际官方网站、香港联交所网站以及上交所网站、印刷品、新媒体传播（微信等）等多种形式进行传播，可及性表现卓越。

##### 综合评级 (★★★★★)

经评级小组评价，《中铝国际工程股份有限公司 2023 环境、社会及管治报告》为五星级，是一份卓越的企业 ESG 报告。



中国企业社会责任报告  
评级专家委员会  
Chinese Expert Committee on CSR Report Rating

中铝国际工程股份有限公司环境、社会及管治报告  
首次获得五星级评价

#### 四、改进建议

1. 增加行业核心指标的披露，提高报告的完整性；
2. 增加报告负面信息披露，进一步提升报告的平衡性。

评级专家委员会副主席

评级小组组长

评级小组专家



出具时间：2024 年 3 月 26 日

扫码查看企业评级档案

## Rating Report of 2023 Environmental, Social and Governance Report of China Aluminum International Engineering Corporation Limited

Upon the request of China Aluminum International Engineering Corporation Limited, the Chinese Expert Committee on CSR Report Rating invited experts to form a rating panel to rate the *2023 Environmental, Social and Governance Report of China Aluminum International Engineering Corporation Limited* (hereinafter referred to as "the Report").

### I. Rating Basis

*Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-ESG 5.0)* issued by the Chinese Academy of Social Sciences, and *Rating Standards for Corporate Social Responsibility Reporting in China (2023)* issued by the Chinese Expert Committee on CSR Report Rating.

### II. Rating Process

1. The rating panel reviews and confirms the *Confirmation Letter on Process and Accessibility Rating Materials of ESG Reporting* and associated materials submitted by the preparation team of the Report;
2. The rating panel assesses the compilation process and contents of the Report and prepared the rating report;
3. The vice chairman of the Chinese Expert Committee on CSR Report Rating, the leader of the rating panel, and the experts of the rating panel jointly review and sign the rating report.

### III. Rating Conclusion

#### Process (★★★★★)

CHALIECO established a leading group for corporate social responsibility work, with the chairman of the Company as the head. The leading group was responsible for reporting the progress of social responsibility work to superiors, conveying the guidance and management opinions of CHINALCO on social responsibility work to subordinates, and coordinating and planning the implementation of the Company's social responsibility work. The information and data cited in the Report were from official documents, statistical reports and financial reports of the Company, as well as environmental, social and governance information collected, summarized and reviewed by the Company, achieving an excellent performance in the aspect of process.

#### Materiality (★★★★★)

The Report disclosed key issues in the industry, including improving ESG governance, serving national strategies, innovating products and technologies, saving energy resources, reducing emissions of "three wastes", tackling climate change, product/service quality management, employee health and safety, sustainable supply chain, etc. The information was adequate and detailed, achieving an excellent performance in the aspect of materiality.

#### Completeness (★★★★☆)

The main content of the Report systematically disclosed 82.35% of the core indicators of the industry from the perspectives of "Economic Responsibility: Enhancing Governance and Jointly Establishing Management Foundation", "Responsibility for Customers: Focusing on the Main Business to Create a New Chapter in the Era", "Environmental Responsibility: Creating a Zero-Carbon Future with Green Development", "Responsibility for Employees: Striving for a Better Future by Putting People First", "Responsibility for Partners: Gathering Strength to Achieve Win-Win Results" and "Responsibility for the Community: Contributing to Society and Building a Better World", achieving a good performance in the aspect of completeness.

#### Balance (★★★★☆)

The Report disclosed negative data information including "number of work safety accidents", "number of lost working days due to work injury", "environmental emergencies and major environmental pollution and ecological damage incidents" and "corruption litigation cases", achieving a good performance in the aspect of balance.

#### Comparability (★★★★★)

The Report disclosed the comparative data of 80 key indicators for three consecutive years, including "operating revenue", "cumulative number of

valid patents", "total number of suppliers", "number of employees", "total investment in environmental protection", "person-times of environmental protection training" and "coverage rate of safety training". Through horizontal comparison, CHALIECO ranked 98th and 136th in the Engineering News-Record (ENR)'s annual rankings for the 2023 Top 150 Global Design Firms and the 2023 Top 250 International Contractors respectively, achieving an excellent performance in the aspect of comparability.

#### Readability (★★★★★)

The Report adopted an issue-based framework structure to systematically disclose the concept, practice and effectiveness of the Company in fulfilling its responsibilities under key issues, including strategic guidance, corporate governance, environmental responsibility and social responsibility, fully responding to the expectations and demands of stakeholders. The cover used an illustration style and integrated relevant elements of CHALIECO, which made the Report more recognizable. Each chapter had a real-life large picture fitting the theme on the cross-page, and summarized the main contents with recapitulative statements, achieving an excellent performance in the aspect of readability.

#### Accessibility (★★★★★)

The Report was released together with the Company's annual report, both in Chinese and English versions. It was intended to be disseminated through various forms, including the CHALIECO official website, HKEX website and SSE website, printed materials, and new media communication (WeChat, etc.), achieving an excellent performance in the aspect of accessibility.

#### Overall Rating (★★★★★)

According to the assessment of the rating panel, the *2023 Environmental, Social and Governance Report of China Aluminum International Engineering Corporation Limited* is awarded a five-star rating. It is an excellent ESG report.



中国企业社会责任报告  
评级专家委员会  
Chinese Expert Committee on CSR Report Rating

The Environmental, Social and Governance Report of China Aluminum International Engineering Corporation Limited has been awarded a five-star rating for the first time.

### IV. Improvement Suggestions

1. The disclosure of core indicators relating to the industry shall be enhanced to further improve the completeness of the Report;
2. The disclosure of negative information shall be enhanced to further improve the balance of the Report.

黄峰慧

Vice Chairman of the Rating Expert Committee

张喜

Leader of the Rating Panel

魏秀丽

Expert of the Rating Panel



Scan the QR code to learn more about the corporate rating report.

Issued on: March 26, 2024



## 意见反馈

### Suggestions and Feedback

亲爱的读者：

您好！

非常感谢您阅读本报告，为进一步了解您对中铝国际 ESG 管理与信息披露工作的期望和需求，我们诚挚地邀请您参与调查，您的观点和见解对我们至关重要。我们由衷感谢您的宝贵意见和建议！

Dear readers,

Thank you very much for reading this report. In order to better meet your expectations and needs for the ESG management and information disclosure of CHALIECO, we sincerely invite you to participate in the survey, as your views and insights are of great importance to us. We sincerely thank you for your valuable opinions and suggestions!

1. 您对本报告的总体评价如何？

很好  好  一般  差  很差

1.What is your overall assessment of this report?

Very good  Good  Fair  Poor  Very poor

2. 您认为本报告是否能反映公司对经济、社会和环境的重大影响？

是  否

2.Do you think this report reflects the significant economic, social and environmental impact of the Company?

Yes  No

3. 您认为本报告所披露信息、数据、指标的清晰、准确、完整度如何？

较高  高  一般  低  很低

3.What do you think of the information, data and indicators disclosed in this report in terms of clarity, accuracy and completeness?

Very good  Good  Fair  Poor  Very poor

4. 您认为本报告的结构安排如何？

较合理  合理  一般  差  很差

4.What do you think of the structure of this report?

Very reasonable  Reasonable  Fair  Poor  Very poor

5. 您认为本报告版式安排、设计形式是否易读？

很好  好  一般  差  很差

5.Do you think the layout and presentation design of this report is easy to read?

Very good  Good  Fair  Poor  Very poor

6. 您认为本报告哪些方面最让您满意？

6.What do you think are the most satisfying aspects in this report?

7. 您对中铝国际 ESG 工作有哪些意见和建议？

7.What are your comments and suggestions on the ESG work of CHALIECO?

8. 您认为本报告还需要披露哪些您希望进一步了解的信息？

8.What other information do you think needs to be disclosed in this report?

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