



中鋁國際工程股份有限公司
China Aluminum International Engineering Corporation Limited

科技+國際



讓有色更綠色 讓世界更有色

2023

環境、社會及管治報告

ANNUAL ENVIRONMENTAL, SOCIAL, AND GOVERNANCE REPORT

勵精圖治 創新求強



中鋁國際工程股份有限公司
China Aluminum International Engineering Corporation Limited

CONTENTS

目錄

報告導讀 Report Introduction	04	責任專題一 Responsibility Focus I	24
董事長致辭 Message from the Chairman	06	櫛風沐雨二十載，砥礪奮進新時代 Forging Ahead in a New Era after Twenty Years of Development Despite of Various Difficulties	
董事會 ESG 管治聲明 ESG Governance Statement from the Board	10	不忘初心，堅定報國之志 Staying true to our mission and serving country with total loyalty	25
關於我們 About Us	12	科技賦能，見證發展成果 Witnessing development achievements with science and technology empowerment	28
公司簡介 Corporate Profile	12	責任專題二 Responsibility Focus II	34
企業文化 Corporate Culture	14	數智化轉型發展，譜寫時代新篇章 Engaging in Digital and Intelligent Transformation to Write a New Chapter of the Era	
組織架構 Organizational Structure	16	加強數智管理 Strengthening digitization and intellectualization management	34
可持續發展管理 Sustainable Development Management	18	推進智能製造 Promoting intelligent manufacturing	36
組織體繫 Organizational System	18	經濟責任 夯實治理，共築管理根基	40
可持續發展行動 Sustainable Development Actions	19	Economic Responsibility: Enhancing Governance and Jointly Establishing Management Basis	
利益相關方溝通 Communication with Stakeholders	20	堅持黨建引領 Adhering to the guidance of Party building	42
重大議題識擘 Material Issue Identification	22	優化公司治理 Optimizing corporate governance	45
		守法合規運營 Operating in compliance with the law	49
		加強風險防控 Strengthening risk prevention and control	52



客戶責任 聚焦主業，共譜時代新篇 56

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

立足科技創新 Basing on S&T innovation	58
打造品質工程 Building high-quality projects	63
提供優質服務 Providing high-quality services	69

環境責任 綠色發展，共創零碳未來 70

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

響應「雙碳」戰畧 Responding to the carbon peaking and carbon neutrality strategy	72
強化環境管理 Strengthening environmental management	73
踐行綠色運營 Practicing green operations	75
培育低碳文化 Cultivating low-carbon culture	83

員工責任 以人爲本，共赴奮鬥徵途 86

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

保障基本權益 Safeguarding basic rights and interests	88
助推員工發展 Promoting employee development	92
關注健康安全 Paying attention to health and safety	94
開展員工關懷 Caring for employees	99

夥伴責任 和衷共濟，共贏發展機遇 102

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

打造責任供應鏈 Establishing a responsible supply chain	104
加強戰畧合作 Strengthening strategic cooperation	106
推動行業發展 Boosting industrial development	108

公共責任 奉獻社會，共建美好世界 110

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

賦能鄉村振興 Empowering the rural revitalization	112
投身公益慈善 Engaging in public welfare	115
積極境外履責 Performing duties overseas actively	116

未來展望 122

Future Prospect

附錄 123

Appendix

關鍵績效 Key Performance Indicators	123
指標索引 Index Guide	128
釋義 Terms and Abbreviations	131
報告評級 Rating Report	132
意見反饋 Suggestions and Feedback	134

報告導讀

Report Introduction

本報告旨在回應利益相關方期望，展示環境、社會、企業管治及可持續發展方面的理念、管理、行動和成效。

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.

時間範圍

Reporting Period

2023年1月1日至2023年12月31日，部分內容適當追溯歷史數據。

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

報告範圍

Reporting Scope

無特殊說明，本報告涵蓋中鋁國際工程股份有限公司總部、分支機構及其附屬子公司。

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

報告週期

Reporting Cycle

本報告為年度報告。

This report is an annual report.

編製依據

Basis of Preparation

- 全球報告倡議組織《可持續發展報告標準（GRI Standards）》
- Global Reporting Initiative *Sustainability Reporting Standards (GRI Standards)*
- 中國社會科學院《中國企業社會責任報告指南（CASS-ESG 5.0）》
- *Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-ESG 5.0)* of the Chinese Academy of Social Sciences
- 上海證券交易所《上海證券交易所上市公司自律監管指引第1號——規範運作》
- *Guidelines No. 1 of the Shanghai Stock Exchange (SSE) on the Application of Self-Regulation Rules for Listed Companies – Standard Operation* of Shanghai Stock Exchange
- 香港聯合交易所有限公司《主板上市規則》附錄C2——「環境、社會及管治報告指引」
- The Stock Exchange of Hong Kong Limited's Appendix C2 of the *Main Board Listing Rules* - "Guidance on Environmental, Social and Governance Reporting"
- 聯合國2030可持續發展目標（SDGs）
- United Nations 2030 Sustainable Development Goals (SDGs)

數據來源

Data Sources

除特殊說明，本報告所引用的信息與數據來自公司的正式文件、統計報告與財務報告，以及經由公司統計、匯總與審核的環境、社會及管治信息。

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.

報告獲取

Report Access

在中鋁國際官方網站、香港聯交所網站以及上交所網站瀏覽和下載本報告的中文簡體 / 英文、中文繁體 / 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.

稱謂說明

Terms and Description

為便於表達和方便閱讀，「中鋁國際」、「公司」、「我們」表示中鋁國際工程股份有限公司總部、分支機構及附屬子公司。如無特殊說明，本報告中的「元」、「萬元」、「億元」分幣代表「人民幣元」、「人民幣萬元」、「人民幣億元」。

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

董事長致辭

2023 年是中鋁國際貫徹落實黨的二十大精神的開局之年，也是中鋁國際成立二十周年。中鋁國際始終堅持以習近平新時代中國特色社會主義思想為指導，大力實施「科技 + 國際」發展戰畧，圍繞「強經營、推轉型、化風險、深改革」持續攻堅，開創高質量發展新局面。2023 年，經營活動產生的現金流量淨額 72,266.5 萬元，同比增長 37.68%；收入結構得到優化，工業勘察設計與諮詢業務、裝備製造業務收入同比增長 3.99%、1.76%，毛利率分別增加 0.46、0.12 個百分點。

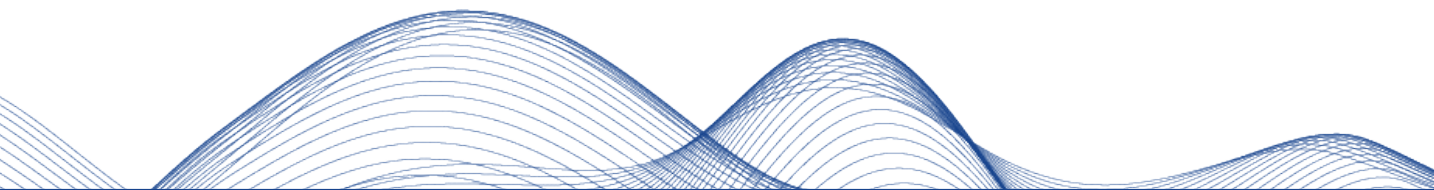
The year 2023 was the first year of CHALIECO for putting the spirit of the 20th National Congress of the Communist Party of China fully into effect, and also the 20th anniversary of the establishment of CHALIECO. CHALIECO, under the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics 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.

深化黨建引領，踐行高質量發展

Practicing high-quality development under the guidance of Party building

我們堅持黨建融入公司治理，全面落實管黨治黨責任，以更大力度、更實舉措推進黨的建設和生產經營、改革發展各項工作「雙向融合」，聚力推進正風肅紀反腐，營造良好政治生態，保障企業發展行穩致遠。

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.



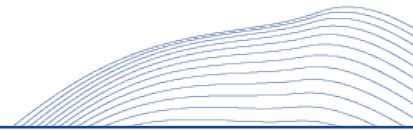
堅持創新驅動，建設科技強國

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

我們始終將科技創新作為推動高質量發展的核心引擎，打造原創技術策源地；首次採取「揭榜掛帥」新機製，強化重點項目統籌；著力提陞創新平臺能級，加快建立面向市場、協同開放的科技創新生態。2023年，重要科技成果實現量和質雙提陞，新取得國際先進及以上水平成果數量達到**18**項，同比增長**30%**；新增**1**家工信部「國家級工業設計中心」，成為中鋁集團內首家獲此殊榮的企業。

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.





錨定「雙碳」目標，助力綠色發展

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

我們秉持「讓有色更綠色、讓世界更有色」的理念，聚焦有色金屬行業綠色低碳發展，堅定不移邁向淨零排放，助力碳達峰、碳中和目標實現；完善環境管理體系和環保風險管控機制，致力於從源頭上提高節能減排效能；加快綠色低碳技術攻關，引領行業綠色低碳轉型。2023年，公司環保投入 **3,532.17** 萬元。

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.

保障員工權益，增進民生福祉

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

我們堅持以人為本，切實維護員工基本權益，賦能員工職業發展，不斷增強員工的凝聚力和向心力；把關愛社會、回報社會作為企業生存的價值和發展動力，積極賦能鄉村振興，全年派出 **7** 名幹部駐村工作，共計投入工作經費 **76.85** 萬元；真誠回饋社會，廣泛參與志願服務、公益捐贈等活動，為社會的和諧發展作出積極貢獻。

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.



持續海外履責，共建美好世界

Continuously performing overseas duties and jointly building a better world

我們順應經濟全球化發展趨勢和國家對外開放大勢，加快「走出去」步伐，以中國技術、中國方案和中國智慧助推「一帶一路」共建國家高質量發展，充分發揮資源優勢，與多個國家和地區開展互利合作，服務全球經濟社會可持續發展；堅持用工本地化，與共建國家共享發展機遇，攜手構建命運共同體。2023年，公司新簽海外合同**191**項，金額**43.9**億元。

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.

路雖遠，行則將至；事雖難，做則必成

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

2024年，我們將聚焦主責主業，深化改革創新，更好發揮「頂樑柱」、「壓艙石」的支撐託底作用，厚植高質量發展優勢，持續提陞企業核心競爭力，在打造「新中鋁國際」新徵程中彰顯擔當、貢獻力量。

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

董事會 ESG 管治聲明

ESG Governance Statement from the Board

公司董事會承諾，本公司嚴格遵守香港聯合交易所有限公司《主板上市規則》附錄 C2——「環境、社會及管治報告指引」的披露要求，負責製定 ESG 方針、策略及目標，審核 ESG 風險評估結果，並對可能影響公司業務運作及利益相關方重點關注的 ESG 相關事宜進行監察。在董事會的領導與監督下，各職能部門以及各成員企業各司其職，協同配合，並定期召開會議，確保適用的 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，公司對議題庫進行完善，並對此進行實質性議題評估，明確年度重點工作。按照《中鋁國際工程股份有限公司社會責任工作管理辦法》、《中鋁國際工程股份有限公司社會責任管理模組及負面清單》，各部門、各單位嚴格履行責任，中鋁國際對 2023 年各模組社會責任指標完成情況進行自我評估，形成報告並上報中鋁集團，並對在環境、安全、穩定等方面造成重大負面影響的單位，實行一票否決。

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.

未來，董事會將繼續健全本公司的 ESG 治理，積極回應利益相關方的關切，製定相應的行動計劃，並定期討論相關目標的進度，推進 ESG 管理提陞。

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.



關於我們

About Us

公司簡介 Corporate Profile

中鋁國際工程股份有限公司（簡稱「中鋁國際」）成立於 2003 年 12 月 16 日，隸屬於中國鋁業集團有限公司（簡稱「中鋁集團」）的工程技術經營單元，是中鋁集團控股子公司，是中國有色金屬行業領先的技術、工程服務與設備供應商。中鋁國際於 2012 年 7 月 6 日在香港聯交所（H 股代碼：02068.HK）上市，於 2018 年 8 月 31 日在上海證券交易所（A 股代碼：601068.SH）主板上市，成為「A+H」股有色工程技術第一股。

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.

中鋁國際現有員工 **11,000** 餘人，擁有 **5** 家國家甲級設計研究院、**2** 家國家甲級勘察院、**3** 家大型綜合建築安裝公司，是一家集技術研發、測繪勘察、設計諮詢、工程建設、裝備製造和運維業務於一體的高新技術企業。公司成立 20 年來，累計獲得省部級及以上科學技術獎 **1,000** 餘項，其中，國家科學進步獎一等獎 **2** 項、二等獎 **20** 餘項，主編和參加



員工 **11,000** 餘人
擁有 **5** 國家甲級設計研究院
2 家國家甲級勘察院
3 家大型綜合建築安裝公司

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.



省部級及以上科學技術獎
1,000 餘項
國家科學進步獎一等獎 **2** 項、
二等獎 **20** 餘項

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.

編寫的國家及行業標準和規範 **140** 餘項，擁有有效授權國內外專利 **3,200** 餘件，其中，有效海外專利 **201** 件，創造了百餘項「中國第一」和「世界第一」。2023 年，中鋁國際分營以第 **98** 位和第 **136** 位的排名蟬聯美國《工程新聞記錄》(ENR)「全球工程設計企業 **150** 強」和「全球承包商 **250** 強」榜單。

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.

近年來，中鋁國際以在行業絕對領先的技術優勢、資質優勢、人才優勢、全產業鏈優勢，為整個有色金屬產業鏈上各類業務提供了全方位綜合技術及工程設計、建設服務，為構建資源節約型和環境友好型社會作出了積極貢獻。

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.



主編和參加編寫的國家及行業標準和規範 **140** 餘項
有效授權國內外專利 **3,200** 餘件
有效海外專利 **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** 位的排名蟬聯美國《工程新聞記錄》(ENR)
「全球工程設計企業 **150** 強」
和「全球承包商 **250** 強」

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.

企業文化

Corporate Culture



全力建設世界一流的提供有色金屬先進技術、成套裝備、集成服務綜合解決方案的現代
新型工業服務企業

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



原創技術的供給者、先進技術的集成者、技術迭代陞級的先行者、成果應用的踐
行者

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



科技 + 國際
S&T + Internationalization



勵精圖治 創新求強
Strive for innovation and strength



創造價值 回報至上
Value creation and return first



• 管理工作落實四個「一」

Implementing four "one" in management

一個導向	一個根本	一個根本	一個「硬約束」
One orientation	One basis	One key	One "hard constraint"

• 經營工作抓實四個「精」

Grasping four "fine" in business

精益經營	精細管理
Fine operation	Fine management
精幹組織	精准落實
Fine organization	Fine implementation

• 項目管理強調四個「化」

Emphasizing four "-ization" in project management

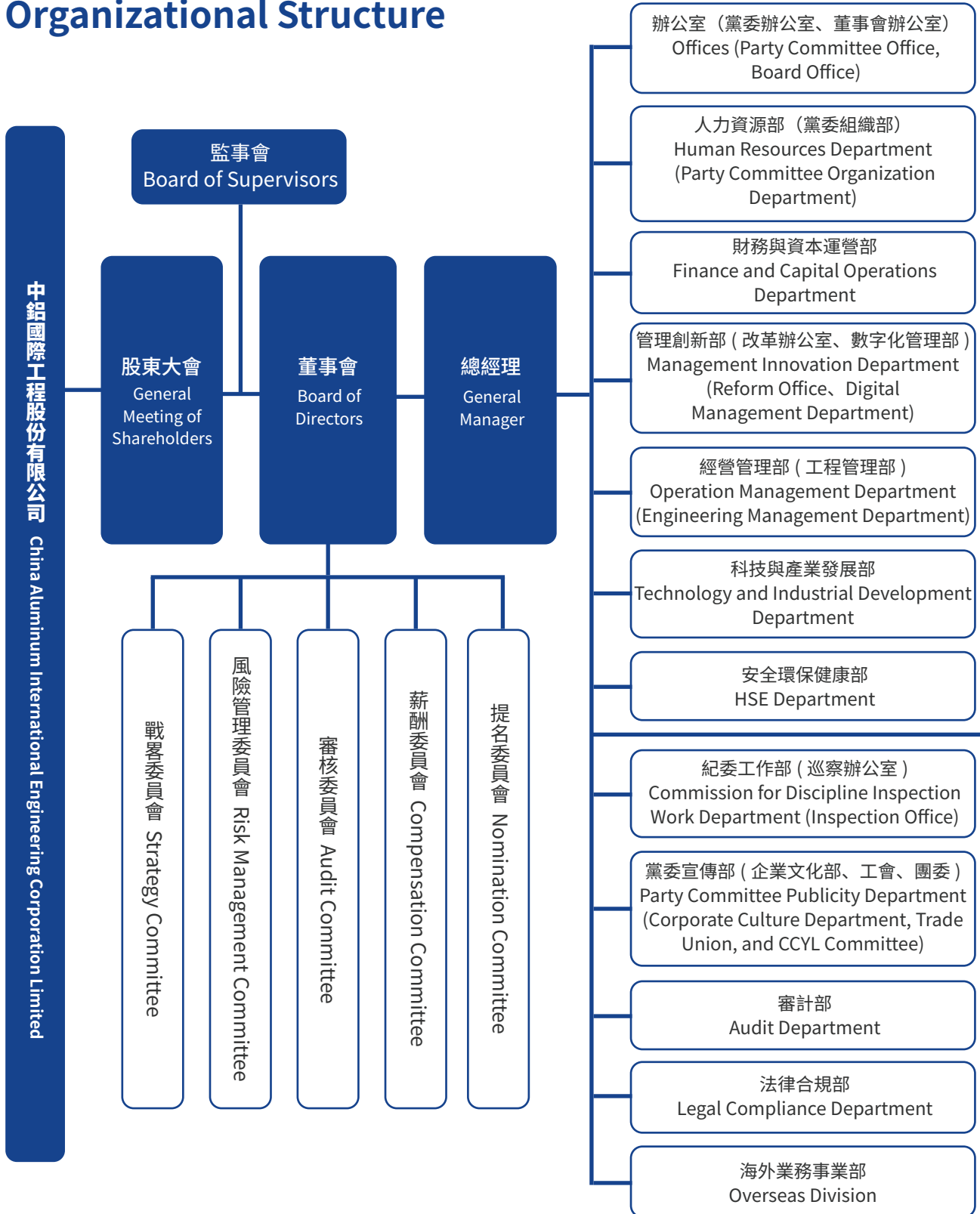
企業化	市場化	專業化	法治化
Enterprization	Marketization	Specialization	Legalization



科技引領 築夢家園
Science and technology lead to the construction of a dream home

組織架構

Organizational Structure



全資子公司
Wholly-owned subsidiaries

- 瀋陽鋁鎂設計研究院有限公司
Shenyang Aluminum and Magnesium Engineering and Research Institute Company Limited (SAMI)
- 貴陽鋁鎂設計研究院有限公司
Guiyang Aluminum Magnesium Design & Research Institute Co., Ltd. (GAMI)
- 長沙有色冶金設計研究院有限公司 CINFC Engineering Corporation Limited (CINF)
- 中國有色金屬長沙勘察設計研究院有限公司
China Nonferrous Metal Changsha Survey and Design Institute Co., Ltd.(CKY)
- 中國有色金屬工業昆明勘察設計研究院有限公司
Kunming Prospecting Design Institute of China Nonferrous Metals Industry Co., Ltd.(KPDII)
- 中國有色金屬工業第六冶金建設有限公司
China Sixth Metallurgical Construction Co., Ltd. (CHSMCC)
- 中色十二冶金建設有限公司
China Nonferrous Metals Industry's 12th Metallurgical Construction Co., Ltd. (12MCC)
- 中鋁國際工程設備有限公司 China Aluminum International Engineering Equipment Co., Ltd.
- 中鋁國際技術發展有限公司 China Aluminum International Technology Development Co., Ltd.
- 中鋁國際鋁應用工程有限公司 CHALIECO Aluminum Application Co., Ltd.
- 中鋁西南建設投資有限公司 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)
- 昆明有色冶金設計研究院股份公司
Kunming Engineering & Research Institute of Nonferrous Metallurgy Co., Ltd. (KERI)
- 九冶建設有限公司 Jiuye Construction Co., Ltd.(Jiuye)
- 中鋁山東工程技術有限公司 CHINALCO Shandong Engineering Technology Co., Ltd. (SDGC)

分公司
Branch companies

- 中鋁國際工程股份有限公司瀋陽分公司 CHALIECO Shenyang Branch
- 中鋁國際工程股份有限公司貴陽分公司 CHALIECO Guiyang Branch
- 中鋁國際工程股份有限公司長沙分公司 CHALIECO Changsha Branch
- 中鋁國際工程股份有限公司洛陽分公司 CHALIECO Luoyang Branch
- 中鋁國際工程股份有限公司長勘分公司 CHALIECO Changkan Branch
- 中鋁國際工程股份有限公司昆明分公司 CHALIECO Kunming Branch
- 中鋁國際工程股份有限公司山東分公司 CHALIECO Shandong Branch
- 中鋁國際工程股份有限公司雲南分公司 CHALIECO Yunnan Branch

境外機構
Overseas Organizations

- 中鋁國際香港有限公司
CHALIECO Hong Kong Limited
- 中鋁國際工程（印度）私人有限責任公司
China Aluminum International Engineering (India) Pty Ltd.
- 中鋁國際工程股份有限公司委內瑞拉分公司
CHALIECO Venezuela Branch
- 中鋁國際馬來西亞公司
CHALIECO Malaysia Branch
- 中鋁國際幾內亞有限公司
SOCIETE CHALIECO GUINEA COMPANY-SARLU
- 中鋁國際越南代表處、印尼代表處
Representative Offices of CHALIECO in Vietnam and Indonesia

可持續發展管理

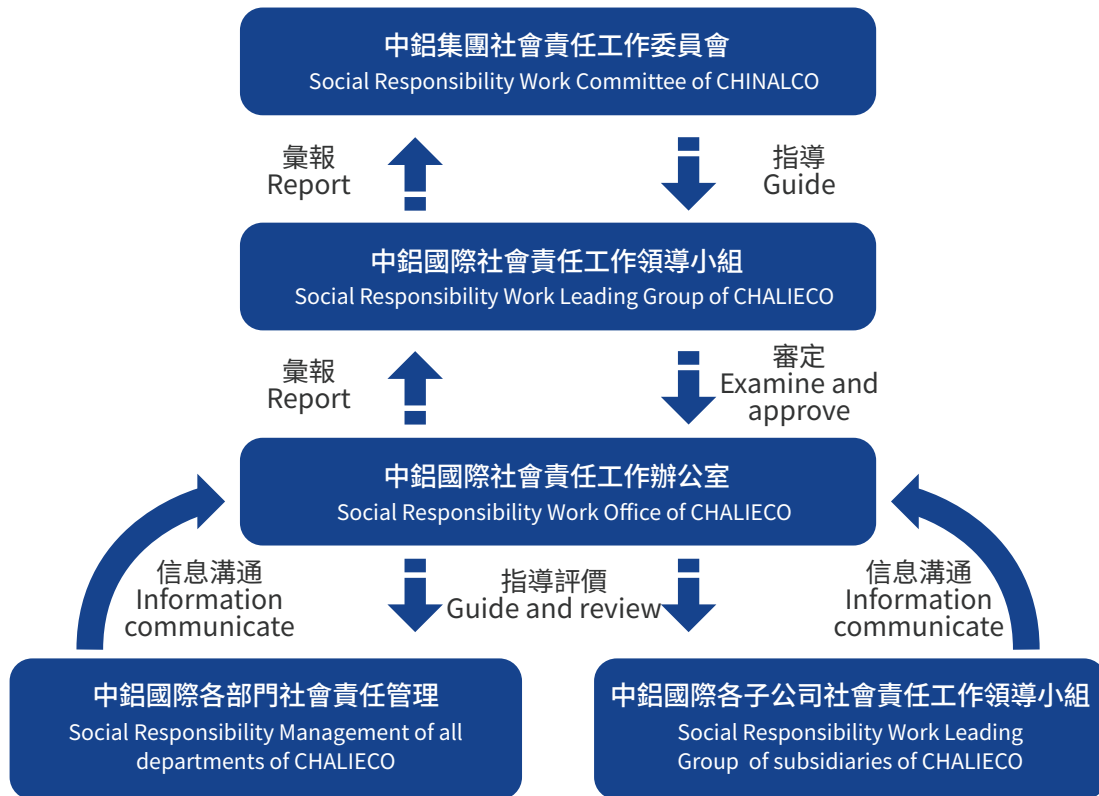
Sustainable Development Management

組織體繫

Organizational System

中鋁國際將社會責任管理有效融入業務管理繫統，成立由黨委書記、董事長擔任組長，總經理擔任常務副組長，領導班子其他成員以及有關人員擔任副組長的社會責任工作領導小組，負責向上彙報社會責任工作進展，向下傳達中鋁集團關於社會責任工作的指導及管理意見，統籌規劃公司社會責任工作的實施。領導小組下設辦公室，負責社會責任的日常工作。

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.



中鋁國際社會責任組織體繫
Social Responsibility Organizational System of CHALIECO

可持續發展行動

Sustainable Development Actions

中鋁國際重點挖掘公司治理、員工權益、環境保護、公平運營、社區支持、鄉村振興等各方面的典型案例，編製發佈公司年度 ESG 報告，向社會公眾充分展現公司良好品牌形象；注重責任品牌建設，總結梳理企業品牌建設典型案例和品牌故事；積極參與行業機構優秀評選，被評為 2023 年度《中國有色金屬報》宣傳工作先進集體，擦亮中鋁國際責任品牌。

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 年度中央企業控股上市公司 ESG 評級中成績突出，達到四星級優秀水平，入選「央企 ESG · 先鋒 100 指數」；憑藉在 ESG 方面的卓越表現，入選「第一屆國新杯 · ESG 金牛獎治理二十強」。

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".

利益相關方溝通

Communication with Stakeholders

中鋁國際主動與利益相關方溝通交流，建立起有效便捷的溝通機制和溝通渠道，積極聽取不同利益相關方的聲音，並就相關問題進行回應，不斷提高公司透明度，提陞管理運營能力。

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.

中鋁國際積極做好投資者關繫維護，不斷創新拓展投資者溝通渠道，通過召開股東大會、定期發佈公告等形式，及時回應投資者訴求，增強信息透明度。2023年，公司嚴格按照相關製度加強信息披露管理，未發生信息披露違規行為。

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.





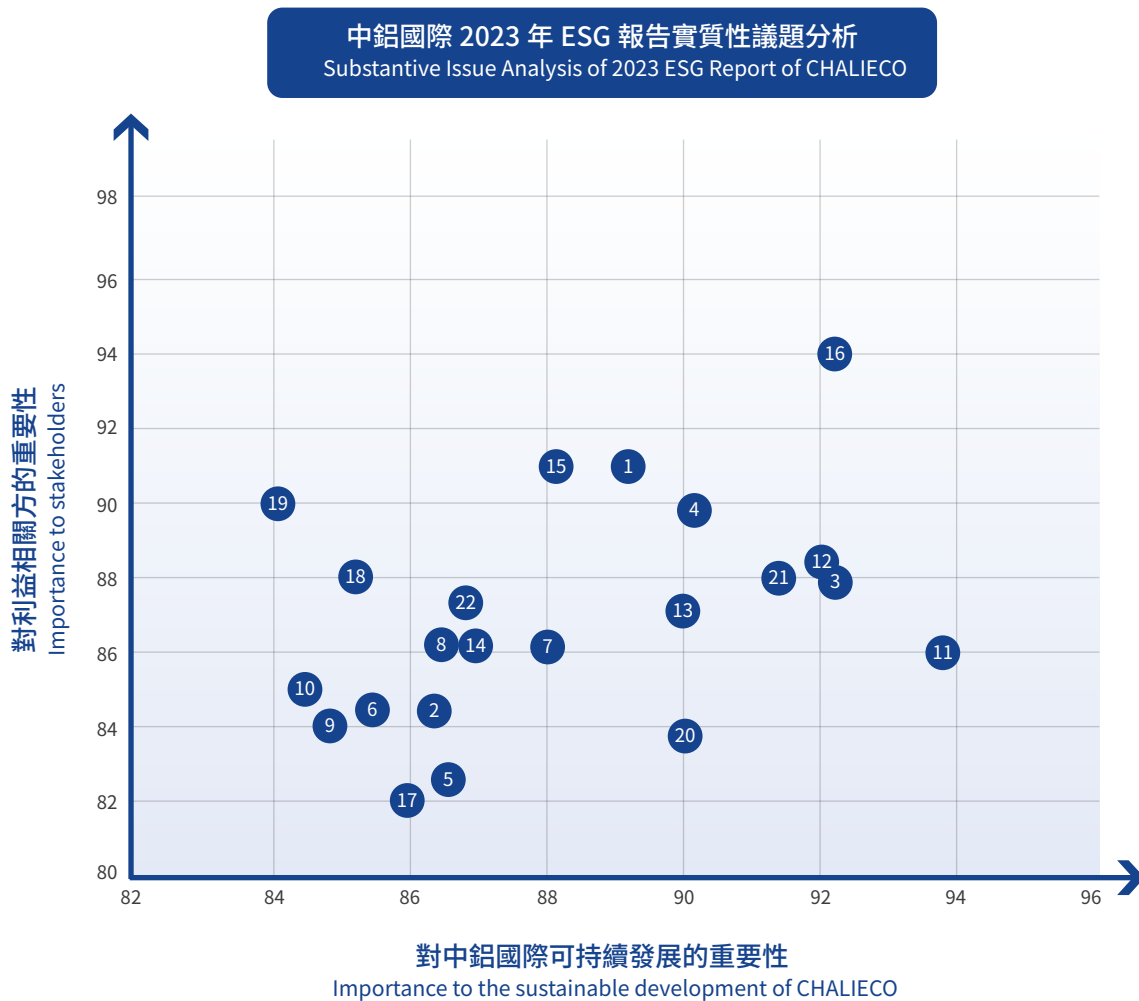
<p>員工 Employees</p>	<p>供應商與客戶 Suppliers and customers</p>	<p>環境 Environment</p>	<p>社區及公眾 Community and the public</p>
<ul style="list-style-type: none"> • 權益維護 Protection of rights and interests • 職業健康 Occupational health • 薪酬福利 Compensation and benefits • 職業發展 Career development 	<ul style="list-style-type: none"> • 依法履約 Contract fulfillment according to the law • 誠信經營 Integrity operations • 優質產品與服務 High-quality products and services 	<ul style="list-style-type: none"> • 合規排放 Compliance with pollutants discharge standards • 節能減排 Energy-saving and emission reduction • 保護生態 Ecological protection 	<ul style="list-style-type: none"> • 改善社區環境 Improve community environment • 參與公益事業 Participate in public welfare activities • 信息公開透明 Disclose information in an open and transparent manner
<ul style="list-style-type: none"> • 職工代表大會 Employees' congress • 集體協商 Collective negotiation • 民主溝通平臺 Democratic communication platform 	<ul style="list-style-type: none"> • 商務溝通 Business communication • 客戶反饋 Customer feedback • 交流研討 Exchanges and discussion 	<ul style="list-style-type: none"> • 工作彙報 Work reporting • 報表報送 Statements reporting • 調研檢查 Investigation and inspection 	<ul style="list-style-type: none"> • 公司網站 Official website • 公司公告 Corporate bulletins • 採訪交流 Interviews and exchanges

重大議題識警

Material Issue Identification

為進一步提高報告信息披露對利益相關方關注議題回應的準確性和全面性，中鋁國際通過優秀企業對標、公司戰畧規劃研究等方式，識警和分析重點 ESG 議題對利益相關方的影響和對公司自身發展的重要性，識警篩選出需要在報告中重點披露的議題，充分回應利益相關方關切。

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	社區發展貢獻 Contribution to community development	12	綠色施工 Green construction
2	水資源使用管理 Water resource use management	13	自主創新 Independent innovation
3	知識產權保護 Protection of intellectual property rights	14	風險管理 Risk management
4	供應鏈管理 Supply chain management	15	反腐倡廉 Anti-corruption and integrity upholding
5	促進行業發展 Promote industrial development	16	安全生產 Work safety
6	廢棄物管理 Waste management	17	合規合法經營 Law-based and compliance operation
7	能源使用管理 Energy use management	18	ESG 管治 ESG governance
8	員工權益保障 Protection of employees' rights and interests	19	鄉村振興 Rural revitalization
9	員工培訓發展 Employee training and development	20	生態保護 Ecological protection
10	員工健康安全 Health and safety of employees	21	境外履責 Overseas responsibility fulfillment
11	項目質量管理 Project quality management	22	本地化運營 Localized operation





責任專題一

Responsibility Focus I:

櫛風沐雨二十載，砥礪奮進新時代

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

在中鋁集團黨組堅強領導下，中鋁國際堅定「科技+國際」發展戰畧，在有色金屬工業領域勇當先鋒，值此成立二十周年之際，製定慶祝中鋁國際成立二十周年活動方案，選樹具有時代特色的中鋁國際先進典型精神，不斷豐富完善中鋁國際精神譜繫，講好中鋁國際故事，增強文化聚合力。

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，堅定報國之志

Staying true to our mission and serving country with total loyalty

自 2003 年成立以來，中鋁國際始終堅持創新發展，服務國家戰畧，服務中鋁集團發展，以高質量黨建為引領，以技術進步為動力，賦能戰畧性新興產業發展、支撐傳統產業迭代陞級、助力提陞戰畧資源保障能力，成長為中國有色金屬工業技術的開拓者、高端工業裝備及產品製造的生力軍。

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 年來，中鋁國際深耕細作、砥礪前行，用實際行動踐行「國之大者」的使命擔當。

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.



中鋁國際發展歷程

Development History of CHALIECO

1950年代-1960年代

所屬企業瀋陽院、貴陽院、長沙院、六冶、十二冶、長勘院、山鋁建成立

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
中鋁國際工程有限責任公司
成立(所屬企業:瀋陽院、貴
陽院)

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

2011年3月

中鋁國際重組改製為股份有限公司，
長勘院、六冶、十二冶、晉鋁建、長鋁建、
山鋁建、中色科技併入中鋁國際

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

所屬企業中色科技成立，承接洛
陽院核心業務

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

長沙院加入中鋁國際

2007:
CINF joined CHALIECO

2012年7月6日

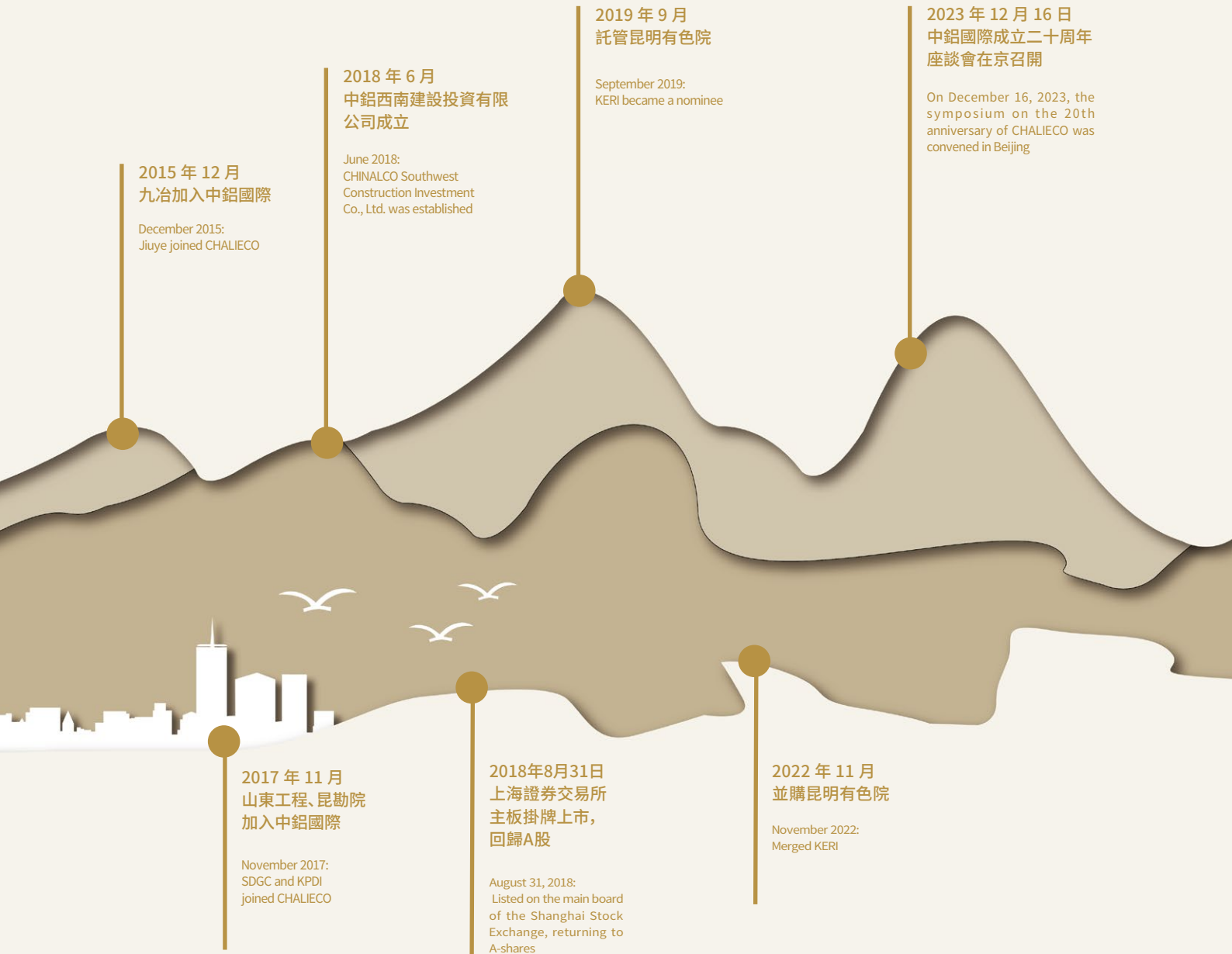
香港聯合交易所掛牌上市

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

掃描右側二維碼
觀看中鋁國際成立二十周年
宣傳片

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





科技賦能，見證發展成果

Witnessing development achievements with science and technology empowerment

中鋁國際聚焦打造原創技術策源地，努力推進重大專項攻關，取得累累科技碩果。20年間，中鋁國際由成立時的2家企業發展到**13**家企業，產業鏈條日趨完整，企業實力不斷壯大；創建了**9**個國家級工程技術研究中心和國家企業技術中心，**1**個國家級工業設計中心，**4**個國家級企業博士後科研工作站，**2**個國家級專精特新「小巨人」企業，**23**個省級工程技術中心和企業技術中心，**3**個省級博士後創新實踐基地，**1**個省級重點實驗室；並取得境內外有效授權專利**3,200**餘件，取得國家級和省部級科技進步獎**1,063**項。

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** 家企業
13 enterprises
- **1** 個國家級工業設計中心
1 national industrial design center
- **2** 個國家級專精特新「小巨人」企業
2 national specialized, sophisticated, characteristic and novel "little giant" enterprises
- **3** 個省級博士後創新實踐基地
3 provincial postdoctoral innovation practice bases
- **9** 個國家級工程技術研究中心和國家企業技術中心
9 national engineering technology research centers and national enterprise technology centers
- **4** 個國家級企業博士後科研工作站
4 national enterprise postdoctoral research stations
- **23** 個省級工程技術中心和企業技術中心
23 provincial engineering technology centers and enterprise technology centers
- **1** 個省級重點實驗室
1 provincial engineering laboratory

科技強國，爭當行業創新排頭兵

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

擁有行業先進的礦山技術

Boasting advanced mining technologies in the industry

設計建成中國首座海拔5,000m以上的大型綠色環保礦山、世界海拔最高且國內開採規模最大銅礦、中國第一座高海拔露天轉地下開採礦山；攻克深地資源安全高效開發繫列技術難題，設計建成會澤鉛鋅礦1,526m中國第一深豎井、新疆阿舍勒銅礦中國提陞速度最快豎井。鋁土礦濕法洗礦脫矽技術、鎢鉬鉍螢石複雜多金屬礦綜合選礦新技術、礦山生態修復技術等一批核心技術實現推廣應用。

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.

擁有世界領先的冶金技術

Boasting world-leading metallurgical technologies

在鋁電解方面，自20世紀80年代引進消化吸收日輕160kA技術後，陸續研發180kA、280kA、320kA、350kA、400kA、500kA、600kA繫列電解技術，推動中國大型鋁電解槽技術走向世界；節能長壽命鋁電解槽陰極製造技術及裝備等一批最新綠色低碳技術得到廣泛應用，中鋁國際電解鋁設計產能超過了中國總產能的80%，技術出口到土耳其、馬來西亞、印尼、義大利等多個國家。在氧化鋁方面，形成140萬噸/年超大型高溫拜耳法氧化鋁生產綫成套技術；研發世界最大低熱值燃料焙燒爐、最節能的焙燒爐；18m大型節能機械攪拌分解槽技術攪拌能耗降低20%以上；首創了國內赤泥堆場半幹法、幹法、濕法改幹法技術。在銅鉛鋅冶煉方面，為主設計並總承包中國首個40萬噸側吹煉銅項目，設計中國首個10萬噸氧壓浸出煉鋅項目、世界首個30萬噸氧壓浸出煉鋅項目。

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.

擁有國內唯一一家有色金屬加工設計研發科研院所

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

擁有國內唯一一家有色金屬加工設計研發科研院所，在全國大中型有色金屬加工工程設計市場的佔有率達到 90% 以上。近年來承擔了 60% 以上新建或改擴建的銅 / 鋁板帶生產企業軋製或配套設備的研製任務，開發國內首臺套 2,800mm、2,300mm 等繫列六輥鋁帶冷軋機組裝備，節能環保型鋁軋機全油回收技術已基本取代了進口繫統，國內市場佔有率達到了 70%。自主研發的技術和裝備出口到亞洲、歐洲、美洲和非洲的 20 個國家和地區。

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.

聚焦新業態新領域持續開拓創新

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

推進有色金屬礦山、冶煉、加工等領域數字化轉型，電解槽控制技術得到廣泛應用，打造數字化交付新模式，實施了廣西華昇、雲南神火、西藏驅龍、有色金屬加工工業互聯網平臺、「天空地」一體化礦山重大災害監測與預警繫統等一批數字化智能化繫統建設應用示範工程。圍繞新能源電池材料製備技術、鹽湖提鋰、鋰雲母提鋰、新能源負極材料等不斷拓展新興產業領域，培育新的利潤增長點，打造高質量發展的「發動機」。

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.

中鋁國際重大科技成果（列舉）

CHALIECO's Major Scientific and Technological Achievements (Examples)

超大型綠色節能鋁電解成套技術

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

成果被授予中鋁集團第四屆科技創新傑出成就獎，獲得中國有色金屬工業科學技術一等獎 3 項、二等獎 2 項，中國專利優秀獎 1 項。

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.

電解鋁全流程智能製造關鍵裝備及繫統集成應用

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

成果達到「國際領先水平」，獲得 2021 年中國有色金屬工業科學技術二等獎，2014 年中國有色金屬工業科學技術獎一等獎，工業和信息化部主辦的第四屆「綻放杯」5G 應用徵集大賽標杆賽金獎。

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.

鉛鋅清潔冶煉及資源綜合利用關鍵技術

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

核心技術均為行業首創，經中國有色金屬工業協會等機構評價達到國際領先或國際先進水平，獲得國家科技進步二等獎 1 項，中國有色金屬工業科學技術一等獎 4 項、二等獎 3 項。

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.

大型高尾礦壩深部勘測評價及災變防控關鍵技術與應用

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

成果達到國際領先水平，獲國家勘察金獎 1 項，省部級科技進步獎一等獎 2 項。獲授權發明專利 24 件，主編和參編國家、行業規範 6 部，出版專著 4 部，發表論文 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.

鋼結構裝配式建造施工技術

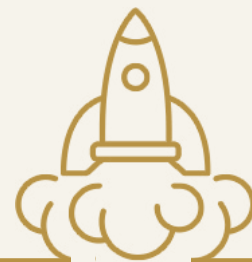
Construction technology for prefabricated steel structure

成果達到國內領先水平，取得國家授權專利 15 件，軟體著作權 1 項，省部級工法 18 項，獲得省部級科學技術獎 5 項。

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.

不積跬步，無以至千裏；不積小流，無以成江海。中鋁國際將堅持黨建引領，堅信科研創新是央企不斷煥發活力的源頭，技術力量是央企實現科技強國使命的重要依託，全面做強做優做大主業，全面提陞競爭力與創新力，凝聚信心與共識，穩中有進、進中向好，揚帆高質量發展新徵程。

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.





責任專題二

Responsibility Focus II:

數智化轉型發展，譜寫時代新篇章

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

中鋁國際貫徹落實《數字中國建設整體佈局規劃》，深入推進製造業智能化陞級，探索數字化與各項業務的深度融合，引領中國有色金屬工業邁向可持續、智能化、創新化發展。2023年，中鋁國際成功上榜上市公司數字化轉型典型案例榜單。

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.

加強數智管理

Strengthening digitization and intellectualization management

中鋁國際將智能一體化平臺建設作為企業管理轉型陞級的重要途徑，推動實現全產業鏈、全流程自動化、管理精細化，通過信息化手段實現管理變革，提高管理效率和管理執行力。

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——數智驅動，「信息+科技」推動精益化管控
 CHSMCC - "Information + Technology" promotes lean management and control via digitization and intellectualization

2023年，六冶杜集項目部將項目管理充分融入六冶智能建造一體化管控服務平臺，在合同管理、分包結算、安全管理、技術管理、物資管理等模組全面實現了信息化辦公，以「信息+科技」實現項目全生命週期精益化管控。

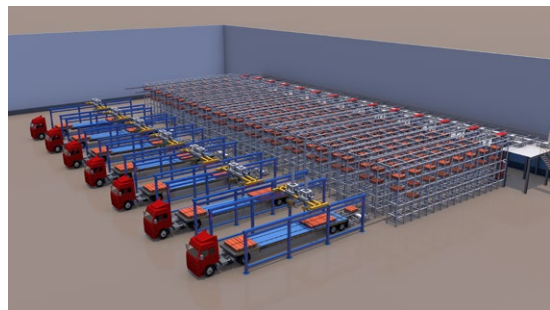
In 2023, the Duji Project Department of CHSMCC fully integrated project management into the Integrated Management, Control & Service Platform for Intelligent Building of China Nonferrous Metal Industrial No. 6 Metallurgy Construction Company, achieving comprehensive information office in modules such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



長沙院——研發智能倉儲及物流輸送設備，實現倉儲智能化
 CINF - Developing intelligent warehousing and logistics conveying equipment to achieve intelligent warehousing

長沙院通過完全自主知識產權的鋅片自動碼垛輸送裝備和基於智能化立體倉庫的銅片極板存儲及轉運繫統，實現倉儲和物流輸送智能化。

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.



長沙院銅片極板存儲及轉運繫統
 Copper sheet electrode storage and transfer system of CINF

推進智能製造

Promoting intelligent manufacturing

中鋁國際強力推進智能製造工作，積極推進項目數智化建設，發揮數智化業務轉型對公司高質量發展的強勁支撐。各勘察設計企業結合專業特點建立了數字化交付平臺、團隊、標準體系，推動華雲三期、青海鋁、紅泥坡等 10 個數字化交付標杆項目建設，實現傳統工藝技術優勢與新一代信息技術的深度融合；施工企業加快 BIM 技術應用，打造一批標誌性工程。

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.

瀋陽院 SAMI

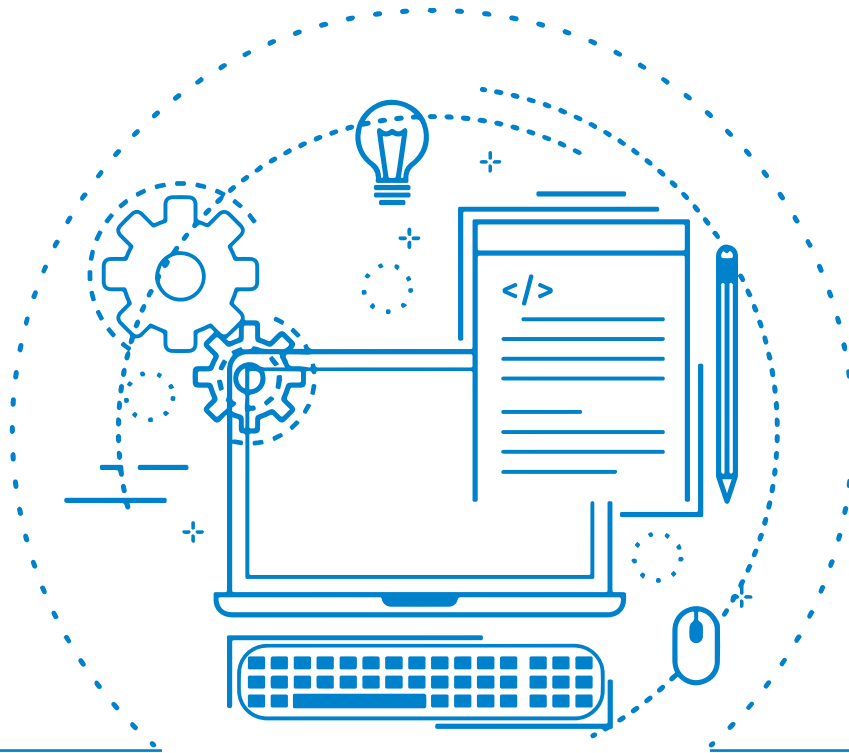
攻克設計建模、智能賦值、數字化建造應用、數字化檔案館、數字化可視化多應用場景開發等技術難題，並取得初步成果。

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.

長勘院 CKY

加強「安全技術 + 信息化 + 智能製造」有機融合，研發包括採空區安全智能化監控與預警應急技術、5G 數據採集控制器等智能技術裝備，不斷突破礦山安全監控關鍵共性技術。

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

在電氣自動化及數智化領域，昆勘院掌握具備大運量超深礦井提陞繫統集成與控制等核心技術。

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.

長沙院
CINF

研發「礦山數智化膏體充填新技術及應用」、「基於多源異構工業物聯網的膏體充填全流程智能巡檢綫上監測技術」、「基於人工智慧的膏體充填全流程生產輔助決策繫統」等多個核心技術，為實現智能開發提供技術支撐和工程示範。

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.

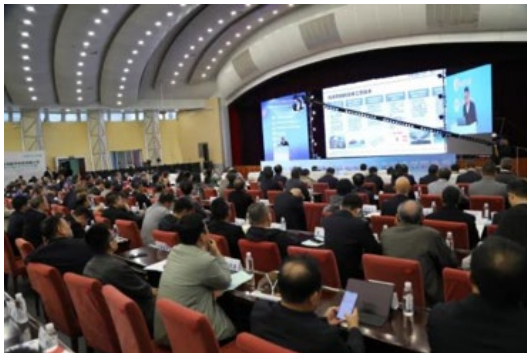


貴陽院——構建「5G+BIM+ 智慧工廠 + 『雙碳』」服務模式，賦能有色行業技術創新

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

貴陽院積極打造和依靠國家鋁鎂電解裝備工程技術研究中心的「3+3+5+N」的科技創新體繫，在「5G+BIM+ 智慧工廠 + 『雙碳』」智能製造技術開展攻關，穩步推進數字化交付和智慧工廠建設，並成功主辦「5G+ 有色金屬智能工廠綠色信息化建設發展論壇」和「5G+BIM+ 智慧工廠 + 『雙碳』」賦能有色金屬行業技術創新論壇，引領鋁工業綠色低碳發展。

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+ 智慧工廠 + 『雙碳』」賦能有色行業技術創新論壇

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



瀋陽院「中鋁華潤電解鋁工程數字孿生應用項目」榮獲 2023 年全球基礎設施數字化光輝大賽流程及發電領域大獎

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

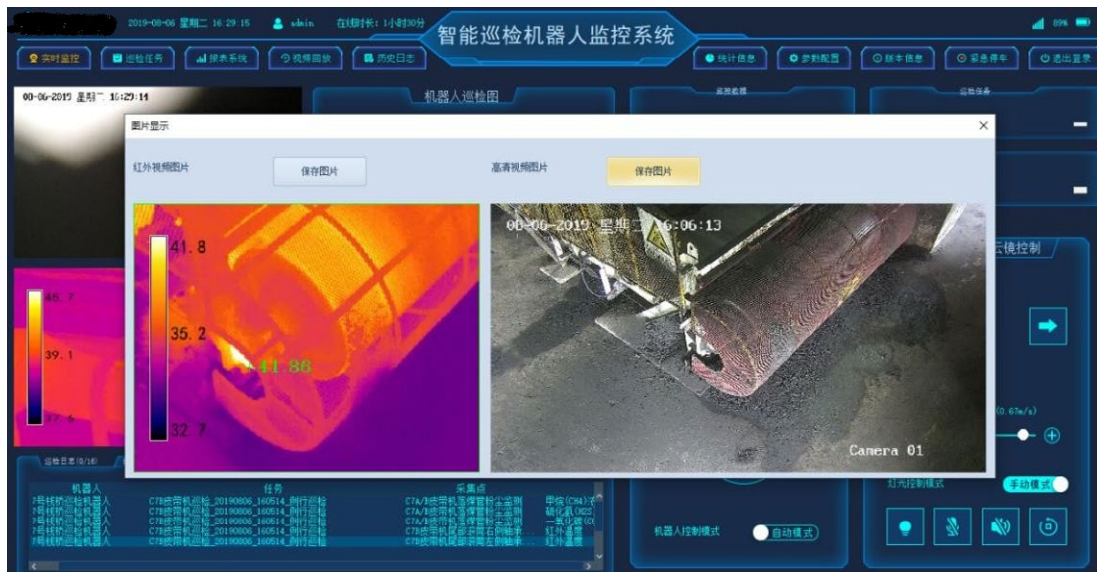


山東工程——研發皮帶智能巡檢機器人，彌補人工巡檢不及時的難題

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

2023年1月，山東工程參與研發的皮帶智能巡檢機器人正式「上崗」，成功實現皮帶機運行的無人化巡檢、可視化管理、智能化報警、故障抓拍等功能，有效彌補人工巡檢不及時、不到位、不準確等不足。

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.



智能巡檢機器人監控繫統
Intelligent inspection robot monitoring system

著眼未來，中鋁國際將繼續積極貫徹「數字強國」發展戰畧，把握信息化時代發展大勢，完善數字化管理，通過智能化、數字化賦能傳統有色金屬產業轉型陞級，為打造世界一流有色金屬公司、引領我國有色金屬產業高質量發展注入新動能。

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 經濟責任

夯實治理，共築管理根基

Economic Responsibility Enhancing Governance and Jointly Establishing Management Basis

中鋁國際不斷加強黨的建設，聚焦黨建融入治理、深化改革、規範董事會運行等方面，不斷完善公司治理體繫，建立健全合規管理體繫，加強風險管理，持續增強風險防控能力，保障企業高質量發展。

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 堅持黨建引領
Adhering to the guidance of
Party building

49 守法合規運營
Operating in compliance with
the law

45 優化公司治理
Optimizing corporate governance

52 加強風險防控
Strengthening risk prevention and
control





堅持黨建引領

Adhering to the guidance of Party building

中鋁國際堅持以習近平新時代中國特色社會主義思想為指導，認真貫徹落實習近平總書記重要講話精神，把黨的二十大精神貫徹落實到中鋁國際轉型陞級和改革發展全過程，全面落實管黨治黨責任，深化黨建與業務「雙向融合」，以高質量黨建引領保障企業高質量發展。

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.

加強黨的政治建設

Strengthening the Party's political work

中鋁國際高質量開展主題教育，組織開展幹部集中培訓，認真落實主題教育規定動作，創新實施自選動作，紮實開展調查研究，把調研成果轉化為解決問題、促進發展的實際成效；組織召開主題教育領導小組會、部署會和推進會，積極配合中央巡視組延伸巡視和接受集團黨組「1+5」政治巡視，從嚴從實抓好問題整改。

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.



中鋁國際與中鋁集團黨組巡迴督導組在昆明召開主題教育工作推進會

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



中鋁國際舉辦「學習貫徹黨的二十大精神」宣講會

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

推進黨的組織建設

Promoting the Party's organizational development

中鋁國際兩級黨委認真落實「兩個一以貫之」，加強基層組織建設，抓實「三型六化」黨支部創建、黨建考核指標優化、黨員「雙提陞」評價、「兩帶兩創」等工作，強化思想引領和宣傳工作，開展形勢任務教育、「雙爭」大討論、聯建共建、公司成立二十周年繫列活動等工作，在國家級媒體宣傳 20 餘次，建設高素質幹部員工隊伍。

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.

持續全面從嚴治黨

Strictly administering the Party strictly

中鋁國際堅持落實黨風廉政建設，推動「四責聯動」有效落實。強化學習培訓，著力構建上下聯動、貫通協同、橫向到邊、縱向到底的「大監督」工作格局；強化監督執紀，以「三不」機製為導向，開展「清風行動」，狠抓經營紀律、總部作風、幹部作風建設，推動黨風政風進一步好轉，營造出風清氣正的良好政治生態。2023年，中鋁國際無貪污訴訟案件發生。

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.



中鋁國際 2023 年黨風廉政建設警示教育大會
2023 CHALIECO Party Conduct and Integrity Education Conference

深化黨建和業務融合

Boosting in-depth integration of Party building and daily work

中鋁國際持續深化黨建業務融合，聚焦生產經營、科技創新、提質增效、「兩金」壓降等工作中的重點、難點、痛點問題，圍繞「兩帶兩創」、「黨員先鋒崗、示範區、突擊隊」、「支部建在項目上」、「結對共建」等活動推動黨建與業務雙向融合工作；全面實施「黨建+」工作，形成「『1565』黨建工作價值體繫」、「數字黨建」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——以特色黨建推進黨建與生產經營共融互促

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

九冶深入開展「五講六+」活動，持續賦予實質內涵，著力抓好黨建與市場開發、項目履約、安全生產等工作的深度融合，提陞「雙向融合」質效，推動黨建與生產經營融合走深走實。

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.



九冶學習貫徹黨的二十大精神專題培訓班

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

優化公司治理

Optimizing corporate governance

中鋁國際嚴格遵守《中華人民共和國公司法》、《上市公司治理準則》等相關法律法規，按照國務院國資委《提高央企控股上市公司質量工作方案》要求及《上海證券交易所股票上市規則》、《香港聯合交易所有限公司證券上市規則》等證券監管要求，推進上市公司治理完善和規範運作，不斷深化董事會建設，充分發揮董事會定戰略、作決策、防風險作用。2023年，公司成功入選中國上市公司協會「2023上市公司董事會優秀實踐案例」。

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.

堅持黨建融入治理

Insisting on integrating Party building into governance

中鋁國際嚴格遵循國資監管和證券監管的規定和要求，將堅持和加強黨的全面領導寫入公司章程，形成以公司章程為核心，以董事會專門委員會議事規則、董事會秘書工作製度等為基本管理製度的公司治理製度體繫，實現加強黨的領導和完善「A+H」股上市公司治理的有機統一。

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.

同時，公司製定「三重一大」決策事項管理製度、董事會授權管理辦法等，建立重大決策事項清單，進一步明確黨組織在重大事項決策中履行決定和把關定向職責，厘清各治理主體的權責邊界，促進各治理主體高效協同。

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.

加快深徹性改革

Accelerating deep and thorough reforms

中鋁國際構建「1+3+6」的改革體繫，加強優秀總部建設；加快實施設計勘察企業改革，明確「『123+N』的發展路徑，形成以『技術+』為中心的業務模式，推進設計勘察業務做強做優做大」的改革方向，製定改革深化提陞行動實施方案及「科改行動」綜合改革方案；加快推進施工企業改革，明確「按照『專精強特』的發展模式，做精做優做強做特施工業務」的改革方向，推動施工企業本部全面去機關化，開展施工企業直管項目的試點，提陞項目經營、管控、風控、平臺支撐服務能力。

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，公司組織12家所屬企業製定各單位改革深化提陞行動實施方案，6家「科改企業」高質量製定綜合改革方案，促進勘察設計企業深入推進市場化改革和進一步激發科技創新動能。瀋陽院、貴陽院和昆勘院新入選「科改企業」，實現入選「科改企業」數量增至6戶，2022年國資委「科改行動」專項考核中，長沙院為優秀，中色科技、昆明有色院為良好。

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.



施工企業市場化改革工作會

Work meeting on marketization reform of construction enterprises



科技型企業市場化改革工作會

Work meeting on marketization reform of technology-based enterprises

強化獨立董事作用

Strengthening the role of independent directors

中鋁國際明確製定董事會成員多元化政策，多渠道引入國企領導人員、民企高管、專家學者擔任公司獨立董事。

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.



健全良性溝通機製
Enhancing the benign
communication
mechanism

強化會前溝通、組織開展獨立董事調研、邀請獨立董事列席重要會議，促進「三會一層」的溝通交流和協調配合。

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".



加強獨立董事履職支撐
Strengthening the support
provided to independent
directors in the performance
of their duties

建立獨立董事「企情問詢」機製、履職信息支撐機製、參與決策保障機製，明確由董事會辦公室負責為獨立董事履職提供全面支撐服務。組織獨立董事參加監管機構及自律組織舉辦的各類培訓，提高獨立董事履職水平。

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.

董事會運行保障

Ensuring the operation of the Board of Directors

中鋁國際設立董事會辦公室，牽頭推進董事會運行支持和外部董事履職保障工作；聘請專業的境內外公司治理律師團隊，為董事會規範運作提供法律支持；健全完善董事會製度體繫和充分發揮董事會專門委員會建言獻策作用，全面保障董事會高效運行。

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.



完善董事會製度體繫 Improving the Board of Directors system

做好董事會製度的「廢改立」，修編公司章程、董事會專門委員會議事規則等製度，為董事會規範運行提供製度保障。

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.



發揮董事會專門委員會建 言獻策作用

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

重視發揮董事會下設的戰略、審核、薪酬、提名、風險管理 5 個專門委員會作用，組織開展專門委員會會議，2023 年現場會議召開率達到 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.

守法合規運營

Operating in compliance with the law

中鋁國際堅持依法治企，合規運營，恪守誠信經營、公平競爭的商業道德和準則，有序開展企業合規管理工作，形成高效的法律合規工作管控體系，營造良好的企業合規管理文化氛圍。

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.

健全合規管理

Improving compliance management

中鋁國際高度重視合規體系建設工作，聚焦組織體系、製度體系和工作機制三個方面，構建起全面的合規管理體系，為保障公司依法合規運營奠定堅實的基礎，法治央企建設持續深化。

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.

中鋁國際合規管理體系

CHALIECO Compliance Management System



搭建涵蓋公司治理層、經營管理層及工作執行層的合規管理組織體系。組建由黨委書記、董事長任組長的合規管理委員會；總部各部門設置由高級業務經理級及以上人員擔任合規管理員；總部首次設立首席合規官，由總法律顧問兼任。

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.



建立以合規管理規定為核心，相關配套製度、專項指引為基礎，合規管理手冊為補充的「1+N」合規管理製度體繫；製定「一本手冊、十項指引、三類清單」等一繫列合規體繫文件，組織全員簽署《誠信合規承諾書》，推動合規理念深入人心。

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.



製定合規風險防控、合規審查、合規報告等一繫列合規管理工作機製；對合規管理體繫建設情況開展自查，形成《合規管理體繫有效性評價報告》。

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*.



中鋁國際召開合規體繫文件發佈會

CHALIECO held the press conference on compliance system documents

厚植法治文化

Enhancing legal culture

中鋁國際打造全新普法培訓平臺，創新普法方式，通過在全民國家安全教育日、世界知識產權日、公平競爭政策宣傳周、國家憲法日等時間節點開展專題普法活動，有效利用新技術、新媒體開展精準普法，宣傳時效性明顯提陞。

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期成員企業總法律顧問「以案說法」和律師「實務講堂」普法培訓活動；黨委理論學習中心組共集中學習**5次10項**習近平法治思想等文件精神；組織開展全級次法務人員業務交流討論會，高質量完成公司全年普法宣傳任務。

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.



國家憲法日培訓活動

Training activities on National Constitution Day

加強風險防控

Strengthening risk prevention and control

中鋁國際董事會深入貫徹落實國務院國資委關於加強風險管理的各項要求，推動管理層建立獨具特色的全面風險管理體繫和運行機製，有效識警風險，製定重大風險管控方案及應對措施。此外，董事會充分發揮監督管理職能，多次聽取管理層和外部審計師專項風險彙報，提出防範風險的意見建議。

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.

加強內控評價

Enhancing internal control evaluation

中鋁國際製定內部控制獨立評價工作計劃和方案，繫統化落實「強內控、防風險、促合規」總體目標，完善內控體繫建設，增強抗風險能力；牽頭組織開展內控獨立評價工作，夯實公司內控管理。

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.

同時，公司製定《中鋁國際內控建設與監督實施細則》，完成公司《內控手冊》的年度更新，完成對經營單元及 17 家下屬企業「內控流程繫統覆蓋率」的測算工作，組織所屬成員企業開展內控體繫建設自查及內控體繫更新完善工作。

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.

加強風險防範

Strengthening risk prevention and control

中鋁國際將法律審核作為製度製定、合同審簽和決策上會的必經流程，修訂決策事項清單，從嚴防控風險；深化風險管理評價機制，實現閉環管理，對於發現的風險問題，及時反饋並督促解決；加強項目標前成本測算，強化項目過程監管和優質履約，開展項目巡查和總結評價；嚴格落實「兩金」壓降工作方案和逾期應收款專項壓降工作方案；建立月度督辦及通報工作機制；持續強化對重點領域、重點部位、重點項目的督導檢查及巡視巡查；規範運行集團環保精準管理體系。2023年，公司 122 項重大決策事項納入法律審核，全年全級次法律人員共參與審核重大決策 956 項。

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 項

重大決策事項納入法律審核

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

全年全級次法律人員共參與
審核重大決策

956 項

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



合同風險防範

Contract risk prevention and control

健全合同管理製度，規範合同審簽流程；對全級次企業生效合同文本進行抽查，並形成《合同管理專項檢查報告》。全年公司全級次共評審各類經濟合同 **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.



審計整改

Audit rectification

建立健全審計整改工作機製，定期對各單位審計整改情況進行跟蹤檢查，確保整改措施得到有效落實。

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，中鋁國際加強涉外合規風險排查，開展公司全級次境外各業務領域經營業務風險的排查工作；定期梳理公司涉外法治工作現狀、存在問題、具體措施等，建立境外法律合規風險常態化排查處置工作的長效機製，並及時報備重大涉外法律合規風險事項；多次開展特定涉外主體的合規風險排查。

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，公司完成越南林同項目國際仲裁收尾工作，在和解協議履行完畢後撤回國際仲裁並申請退回部分仲裁費用，總結案件經驗教訓，並將其列為法律糾紛典型案例。

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 客戶責任

聚焦主業，共譜時代新篇

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

中鋁國際堅決貫徹「科技 + 國際」戰略部署，深入實施科技創新戰略，不斷完善科技創新管理體系，在科技人才培養、核心技術攻關等方面持續發力；增強企業「科技+」發展動能；加強品質管理，精益打造品質工程；持續提陞客戶服務體驗，不斷提陞客戶滿意度。

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.

58 立足科技創新
Basing on S&T innovation

63 打造品質工程
Building high-quality projects

69 提供優質服務
Providing high-quality services







立足科技創新

Basing on S&T innovation

中鋁國際突出「科技 + 國際」發展規劃，堅持以服務國家和中鋁集團戰略為導向，全面貫徹新發展理念，以提高核心競爭力和增強核心功能為重點，更好地發揮公司在建設現代化產業體系、構建新發展格局中的科技創新、產業控制、安全支撐等作用。

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.

科技創新管理

Management of S&T innovation

中鋁國際立足企業化、市場化、工程化特點，製定《科技創新體系優化方案》；落實集團「1+1」規劃要求，完成中鋁國際「十四五」科技發展專項規劃修訂稿；成立由公司主要領導掛帥的中鋁國際科學技術委員會和 6 個專業技術委員會，並開展多項科技創新相關活動。

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，科技創新平臺建設成就

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

新增 **1** 家

工信部「國家級工業設計中心」，
成為集團內首家獲此殊榮的企業

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** 個

國家企業技術中心

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

新增 **1** 家

國家級專精特新「小巨人」企業

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

6 家

省、市級創新平臺通過驗收或揭牌

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

新增 **1** 家

國家知識產權示範企業

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



科技人才培養

S&T talent cultivation

中鋁國際建立健全科技人才薪酬激勵製度，落實集團「1+8」科技激勵政策，製定《科技人才薪酬激勵實施指導意見》；推進領軍人才計劃落地，加大「鑽石計劃」、「明星計劃」人選培養力度，強化經營單元科技人才隊伍建設繫統化工作；在「卡脖子」關鍵技術和重點領域，利用好集團高層次人才引進的利好渠道，有針對性引進高端人才；推動中鋁國際經營單元設計院與中鋁集團所屬生產企業科技人才「雙向掛職」相關工作，提高科技人才積極性和創造性，打造有色金屬科技人才高地。

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，公司啟動領軍人才培養計劃，製定科技領軍人才和青年科技人才培養計劃方案，有計劃、有針對性地支持和培養科技骨幹人才，共計梳理 **416** 名培養對象，其中，行業領軍人才 **137** 名，優勢專業優秀青年科技人才 **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.

核心技術攻關

Research and development of core technologies

中鋁國際主動履行央企政治責任，參與國家重大任務建設；強化重點項目統籌，推動重點項目建設提質增效；依據集團原創技術策源地方案任務清單、中鋁國際「十四五」科技發展專項規劃和技術研發指南，重點在科技創新的「八大領域、五大方向」組織研發項目。

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，公司承擔了 10 項國家攻關任務、4 項集團攻關任務，榮獲集團首屆科技進步一等獎 3 項、二等獎 4 項，首次以中鋁國際經營單元名義申報承擔國資委重大科研任務，首次採取「揭榜掛帥」新機製，圓滿完成年度重點科研項目立項。「節能長壽命鋁電解槽陰極製造技術及裝備」、「有色行業數字化轉型」等一批關鍵核心技術實現突破。

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.



中鋁國際 2023 年度首批科技重大專項立項評審會在洛陽召開

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——堅持創新驅動，助力中鋁集團實現國家級工業設計中心「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，中色科技入選工信部認定的「第六批國家級工業設計中心」，實現了中鋁集團國家級工業設計中心「零的突破」，相關科技成果分彙榮獲中國有色金屬工業科學技術進步獎一等獎1項、二等獎2項，中國商業聯合會科學技術獎一等獎2項，中鋁集團科技進步一等獎1項，中國發明協會發明創新獎一等獎1項，河南省科技進步獎三等獎1項，在年度獲獎總數及省部級一等獎數量上創歷史新高。

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 Aluminum Corporation of China'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.



第六批國家級工業設計中心授牌儀式

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

知識產權保護

Protection of intellectual property rights

中鋁國際貫徹落實《企業知識產權管理規範》的國家標準 GB/T 29490-2013，發佈《知識產權管理手冊》、《知識產權管理製度控制程序彙編》等文件，多次印發《知識產權相關法律法規彙編》，在全公司營造尊重保護知識產權的良好氛圍。2023年，公司修訂《商標管理辦法》；開展知識產權相關主題培訓；完成年度知識產權管理體系認證的外部監督審核工作，並取得推薦保持認證的審核結果。

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.

數說·中鋁國際知識產權成就

Data-based display of CHALIECO's intellectual property achievements

新申請國內專利 **647** 件，同比增長 **52%**，其中發明專利同比增長 **96%**

647 new Chinese patents are applied for, a YoY increase of **52%**, and invention patents see a YoY increase of **96%**

新獲得授權專利 **368** 件，同比增長 **7%**，其中發明專利同比增長 **33%**

368 new patents are granted, a YoY increase of **7%**, and invention patents see a YoY increase of **33%**

新申報軟著登記 **10** 項，獲得登記 **10** 項

Newly applied for **10** soft-authored registrations and obtained **10** registrations

新立項團標及以上技術標準 **25** 項，其中國標 **6** 項，行標 **9** 項，團標 **10** 項

Newly set up **25** technical standards of group standard and above, including **6** national standards, **9** industrial standards, and **10** group standards

有 **62** 項科技成果完成行業協會組織的技術成果評價，均達到行業領先及以上水平

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

新取得國際先進及以上水平成果數量達到 **18** 項，較去年全年增長 **30%**

18 newly achieved international advanced and above level achievements, an increase of **30%** compared with the whole year of last year

打造品質工程 Building high-quality projects

中鋁國際不斷強化質量管理能力，切實做好質量風險管控工作，高度重視質量品牌建設，有力保障工程建設的安全和質量，為工程質量穩步提陞夯實基礎。2023年，中鋁國際工程項目一次合格率為100%，重大質量事故率為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，中鋁國際工程項目
一次合格率為

100%

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

重大質量事故率為

0

The major quality accident
rate was **0**

質量管理能力建設

Quality management capacity building

中鋁國際遵守《中華人民共和國產品質量法》、《建設工程質量管理條例》、《建設工程施工項目管理規範》等國家法律法規，製定《中鋁國際質量管理辦法》、《中鋁國際項目管理標準化手冊》、《中鋁國際工程股份有限公司工程設計質量管理辦法（試行）》等文件；明確職能優化流程，推進項目管理製度建設。

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.

項目建設全週期實行質量嚴格控制，採用BIM技術，實現信息化管理；工程竣工後，按照與建設方簽訂的保修合同或協議書，履行保修義務，明確工程保修工作組織管理及具體實施的責任歸屬；統一「兩製」責任書範本，以項目成本地圖繪製和規範業務模式為切入點，加強精細化源頭策劃，落實「以收定資」資金管控，規範項目成本管理和分包結算管理，持續提陞項目運營質量；協同督導重點項目，提陞項目管理質量。

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.



十二冶榮獲 7 項 QC 質量管理小組成果獎

12MCC won seven QC Quality Management Group Achievement Awards

質量風險防控

Quality risk prevention and control

中鋁國際高度重視質量風險防控，開展專項治理行動，提陞項目運營質量；優化體繫，嚴控兩商，規範公司採購管理；深入項目巡查，定期總結評價；開展員工培訓和評比，在全公司營造重視質量的良好氛圍。截至 2023 年 12 月末，中鋁國際累計巡查項目 21 個，通過自查、抽查共查出 11 類 110 項問題，全部整改完畢。

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
中鋁國際累計巡查項目

21 個

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



通過自查、抽查共查出

11 類 110 項問題
全部整改完畢

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



第三屆中鋁質量獎獲得者中色科技胡要強
Hu Yaoqiang of CNPT, the winner of the
3rd CHINALCO Quality Award

質量品牌建設

Quality brand building

中鋁國際從項目建設初期質量策劃就將項目力爭創建省、部優和國優工程質量獎作為項目質量活動的重點工作，並走向海外，提陞中鋁國際品牌。

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，公司獲得國家優質工程金獎1項、中國建設工程魯班獎（境外工程）1項、國家優質工程獎（含境外工程）13項、中國鋼結構金獎2項，所屬勘察設計企業獲得行業工程諮詢勘察設計獎139項，其中一等獎37項。在2023年度ENR「全球工程設計企業150強」和「國際工程設計企業225強」榜單中，公司榮列第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.

國家優質工程金獎

1 項

1 gold prizes of the National Quality Engineering Award

中國建設工程魯班獎（境外工程）

1 項

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

國家優質工程獎（含境外工程）

13 項

13 National Quality Engineering Awards (including overseas projects)

中國鋼結構金獎

2 項

2 gold prizes of the China Construction Engineering Steel Structure Award

行業工程諮詢勘察設計獎

139 項，其中一等獎 **37** 項

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

中鋁國際 2023年質量品牌建設成就

CHALIECO's achievements in 2023 quality brand building



中鋁國際榮獲中國證券金紫荊獎「最具品牌影響力上市公司」獎

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

國家優質工程金獎

Gold prize of National Quality Engineering Award

- 六冶參與施工總承包的「北京環球影城主題公園（一期）項目」
"Universal Studios Theme Park (Phase I) Project" co-undertaken by CHSMCC

中國建設工程魯班獎（境外工程）

China Construction Engineering Luban Award (overseas project)

- 六冶施工總承包的「剛果（金）SICOMINES 銅鑽礦項目二期工程」
"The Second Phase of the Congo (Kinshasa) SICOMINES Copper and Cobalt Mine Project" undertaken by CHSMCC

國家優質工程獎

Prize of National Quality Engineering Award

- 長勘院勘察，中色科技設計，六冶、十二冶、九冶聯合施工總承包的「中鋁瑞閩汽車輕量化用鋁合金板帶材生產綫項目」
"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「昆明多民族文化旅遊小鎮」
"Kunming Multiethnic Cultural Tourism Town" surveyed by KPDI

國家優質工程獎

Prize of National Quality Engineering Award

- 昆勘院勘察的「昆明市延安醫院醫技綜合樓暨全科醫師培訓基地項目（一期）」

"Kunming Yan'an Hospital Medical Technology Comprehensive Building and General Practitioner Training Base Project (Phase I)" surveyed by KPDI
- 長勘院勘察設計的「荔城街改善人居環境工程——增城區掛綠湖安置新社區(荔城片區)周邊市政配套工程」

"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
- 長勘院勘察設計的「長沙市望城區一路一園建設工程項目及湘江西岸防洪保安工程瀟湘北路堤防三期」

"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
- 長勘院勘察設計的「張家界武陵山大道」

"Zhangjiajie Wuling Mountain Avenue" surveyed and designed by CKY
- 長勘院勘察設計的「浪琴山花園三期 A 號（塔樓）、B 號（塔樓）、A 號 B 號裙房、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
- 長勘院勘察設計的「楷林國際大廈二期 C 座及地下室」

"Kailin International Building Phase II, Block C and Basement" surveyed and designed by CKY
- 長勘院勘察設計的「贛州市綜合文化藝術館項目」

"Ganzhou City Comprehensive Culture and Art Museum Project" surveyed and designed by CKY
- 長勘院牽頭勘察設計的「東方萬悅城·萬達廣場 G1# 購物中心」

"Oriental Joy City · Wanda Plaza G1 # Shopping Mall" led by CKY for survey and design
- 長勘院參與勘察設計的「珠海市金琴快綫工程」

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

國家優質工程獎（境外工程）

Prize of National Quality Engineering Award (overseas project)

- 六冶施工總承包的「剛果（金）SICOMINES 銅鑽礦項目二期工程」
"The Second Phase of the Congo (Kinshasa) SICOMINES Copper and Cobalt Mine Project " undertaken by CHSMCC
- 長沙院勘察設計、六冶和十二冶施工總承包的“幾內亞 Bofa 鋁土礦項目”
"Bauxite Mine Project in Guinea" designed by CKY and co-undertaken by CHSMCC and 12MCC

中國鋼結構金獎

Gold prize of China Construction Engineering Steel Structure Award

- 六冶參建的「西安北客站樞紐工程（一期）二標段工程總承包項目」
"General Contracting Project for Lot 2 of the Xi'an North Railway Station Hub Project (Phase I)" co-undertaken by CHSMCC
- 九冶參加的「烏魯木齊機場改擴建工程機場工程航站樓項目」
"Airport Engineering Terminal Project of the Urumqi Airport Reconstruction and Expansion Project" co-undertaken by Jiuye



中鋁國際和貴陽院設計、六冶施工總承包的雲南神火鋁業有限公司 90 萬噸綠色水電鋁材一體化項目

"Yunnan Shenhua Aluminum Industry Co., Ltd.'s 900kt/a Green Hydropower and Aluminum Integration Project" designed by CHALIECO and GAMI, and constructed by CHSMCC

提供優質服務 Providing high-quality services

中鋁國際制定製度文件嚴抓產品質量，創新制定並實施《中鋁國際工程項目客戶及其項目准入評價管理辦法》，同時實施《中鋁國際國內業務市場營銷管理辦法》、《中鋁國際大客戶營銷管理辦法》等營銷管理製度，充分保障客戶的合法權益；建立大客戶營銷體繫，不斷強化服務意識，提陞服務能力；完善售後權益保護機製，堅決秉承業主至上、按合同履約的原則，積極應對客戶投訴，保障客戶隱私，真正做到替客戶著想、為客戶做事、為客戶創造價值。2023年，中鋁國際新簽國內合同額共計 398.11 億元，未收到關於產品及服務的投訴，客戶滿意度為 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 domestic 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

加強總承包項目管理，提陞客戶服務滿意度

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

2023年，中鋁國際總承包業務部直屬總承包越南仁基氧化鋁項目、委內瑞拉 ALCARA 項目、義大利維斯梅鋁廠技術陞級改造項目、印尼曼帕瓦 100 萬噸氧化鋁工程等項目，實現從合同簽署、開工、合同調整、驗收與生產考核及清欠的項目全生命週期管理，項目均高質量推進或完成交付。

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 環境責任

綠色發展，共創零碳未來

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

中鋁國際深入貫徹新發展理念，將響應「雙碳」政策、提陞環境管理、優化綠色運營、推廣低碳文化等方面作為低碳發展的主要著力點，做「綠水青山就是金山銀山」理念的積極傳播者和模範踐行者，走出自己的「綠色發展之路」。

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 響應「雙碳」戰畧
Responding to the carbon peaking and carbon neutrality strategy

73 強化環境管理
Strengthening environmental management

75 踐行綠色運營
Practicing green operations

83 培育低碳文化
Cultivating low-carbon culture





響應「雙碳」戰畧

Responding to the carbon peaking and carbon neutrality strategy

中鋁國際以國家「雙碳」戰畧和市場節能降耗需求為先導，堅決落實國家關於碳達峰、碳中和工作的決策部署，主動應對氣候變化，不斷加強溫室氣體排放管理，持續推進二氧化碳、甲烷減排，助力形成綠色發展格局。

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.

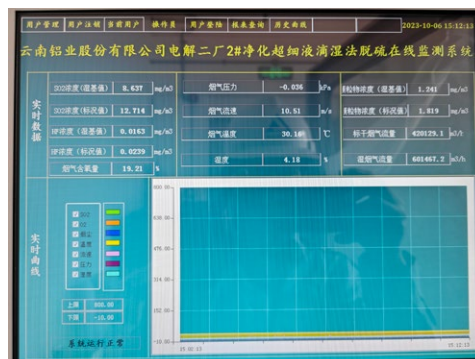


瀋陽院——鋁行業首套超細液滴臥式脫硫繫統成功投入運行

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

2023年9月，瀋陽院設計並總承包的雲鋁陽宗海電解分公司20萬噸電解鋁技術改造工程超低排放項目正式通煙。該項目研發出電解鋁行業超細液滴臥式脫硫繫統，與傳統濕法脫硫技術相比節能35%，處於行業領先水平，助推電解鋁行業綠色低碳技術迭代。

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.



瀋陽院項目現場及監測繫統
SAMI's project site and monitoring system

強化環境管理

Strengthening environmental management

中鋁國際響應國家生態文明建設和可持續發展的號召，搭建並完善環境管理體系，建立環境應急管理製度，全面管控環境風險，開展環保風險隱患大排查，實現環保管理全過程繫統化、精細化，積極推進綠色高質量發展。2023年，公司環保總投入3,532.17萬元，中央生態環境保護督察反饋問題整改計劃完成率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%.

公司環保總投入

3,532.17 萬元

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



強化規劃引領

Strengthening planning leadership

中鋁國際建立並完善環境管理體系，製定公司全年環境保護計劃，嚴格遵循《環境保護法》、《水污染防治法》、《大氣污染防治法》、《固體廢物污染環境防治法》等法律法規，製定《中鋁國際工程股份有限公司生態環境問題整治攻堅三年行動方案》，全面檢查排查企業現階段存在的生態環境保護問題，並進行徹底整治，做到「清存量」、「遏增量」、「求變數」，扎實做好「四節一環保工作」，為公司高質量發展注入新的不竭的「綠色」動力。

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.



環保預警及應急機製

Environmental early warning and emergency mechanisms

中鋁國際根據生態環境保護新形勢新要求，修訂《突發環境事件報告和調查規定》，明確突發環境事件的範圍，對於生態環境行政處罰、突發環境事件以及同類事件重複發生的情形，加強對戰略單元考核，強化對責任單位和責任人的追責力度；定期開展應急演練，檢驗和提陞企業突發環境事件應急響應能力。2023年，無一般及以上突發環境事件。

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.

環保風險隱患排查

Environmental risk and hazard investigation

中鋁國際按照中鋁集團《關於開展生態環境風險隱患大清查工作的通知》工作要求，組織公司全級次企業開展全面生態環境風險隱患大清查工作；建立隱患排查與治理檔案，明確在生態環境保護方面合規管理、監督檢查、污染防治等方面的通用檢查內容，並按照「五定」原則製定隱患整改措施。2023年，中鋁國際生態環境風險隱患大清查工作共清查項目294個，發現一般隱患97個，全部已整改完成，未發現重大隱患。

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.

踐行綠色運營

Practicing green operations

中鋁國際嚴格執行《中華人民共和國環境保護法》等環保法律法規，持續進行節能減排，減少廢氣、廢水、固體廢棄物及其他污染物排放；深耕節能環保技術研發，將綠色、環保、節能理念貫穿施工項目全生命週期，打造綠色施工標杆；擴大鋁應用，向鋁精深加工、價值鏈高端轉型，讓「綠色」成爲高質量發展的鮮明「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.

資源管理

Resource management

中鋁國際建立完善的資源管理體系，明確資源管理的流程和標準，在能源結構轉型、水資源管理、供應商管理方面採取多項措施，有效落實資源節約，提高資源利用效率，推動經濟增長與資源節約、環境保護協調發展。2023年，中鋁國際能源消耗總量 8.0794 萬噸標準煤，天然氣消耗量 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.



消耗總量

8.0794 萬噸標準煤

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



天然氣消耗量

195,928 立方米

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

案例 Case

長沙院——設計的金豐鋰業有限公司電池級碳酸鋰項目正式投產

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，長沙院設計的宜豐縣金豐鋰業有限公司年產3萬噸電池級碳酸鋰項目一期1萬噸項目正式投產。該工藝不僅解決了當前鋰雲母提鋰工藝能耗高、消耗大、回收率低、環境影響大的缺點，且實現資源的綜合利用，引領鋰雲母提鋰技術走上清潔生產之路，達到國際領先水平。

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.



金豐鋰業有限公司鋰雲母提鋰工藝 項目現場

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

降低污染排放

Reducing pollution emissions

中鋁國際認真履行污染防治主體責任，高度重視環境保護與污染防治工作，不斷加大廢氣、廢水、固廢等污染物治理力度，抑製揚塵；採用節能低噪的施工設備、施工工藝和施工機具，分時段施工，嚴禁夜間施工，減少噪音污染，持續鞏固污染治理成效。2023年，中鋁國際廢氣排放量為31,900標立方米；廢水排放量為6.4934萬噸，與去年比較減少16.92萬噸；未發生一般性突發環境事件及重大環境污染、生態破壞事件。

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項技術入選《國家鼓勵的工業節水工藝、技術和裝備目錄》

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

瀋陽院：電解鋁廠含氟生產廢水及初期雨水處理新工藝

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

該工藝適用於電解鋁、碳素等企業生產廢水、初期雨水的處理及回用，可解決廢水含油、氨氮和含氟等特徵污染物問題。

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.

長沙院：銅冶煉廢水零排放技術

CINF: Zero discharge technology for copper smelting wastewater

該技術主要針對銅冶煉廢水中的汗酸、酸性污水、生產廢水、初期雨水和生活污水進行處理回用，實現廢水無害化、資源化和冶煉廢水零排放，減少向自然環境排放重金屬污染物。

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：銅加工生產廢水節水零排放處理工藝

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

該工藝主要針對銅加工過程中廢水水質特點，實現資源化利用，同時回收冷凝水以及 95% 以上的生產廢水。

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.

綠色技術研發

R&D of green technology

中鋁國際組建專業的研發團隊，大力推進節能環保技術推廣與應用，開展節能工藝、技術、裝備攻關，努力實現節能減排降耗，致力於提供環保、可持續發展的產品和服務。2023年，貴陽院設計的「廣元市林豐鋁電項目」被工信部認定為「2022年度重點用能行業能效领跑者」，是電解鋁行業唯一入選項目。

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".

中鋁國際有色領域一流環保技術（列舉）

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

瀋陽院 SAMI	石墨化複合陰極內襯深度節能技術 Deep energy-saving technology for graphite composite cathode lining
貴陽院 GAMI	炭素陽極智能堆垛機組及倉儲管理繫統 Carbon anode intelligent stacking unit and storage management system
長沙院 CINF	鹽法焙燒分解置換提取電池級碳酸鋰工藝 Process for "extraction of battery grade lithium carbonate through salt roasting, decomposition, displacement and extraction"
長勘院 CKY	Online SAR 圓弧地基雷達智能監測繫統及 Online UAV 礦山無人自動安全巡檢繫統 Online SAR circular ground radar intelligent monitoring system and online UAV mine unmanned automatic safety inspection system



長沙院——冶煉技術陞級，實現鋅冶煉綠色化

CINF - Upgrading smelting technology to achieve green zinc smelting

2023年2月，長沙有色院總承包中金嶺南丹霞冶煉廠煉鋅渣綠色化陞級改造項目整體聯動試車成功。該項目顛覆性地實現鋅冶煉綠色化，首先突破氧壓浸出技術，開發富氧側吹處理濕法煉鋅渣技術，實現濕法煉鋅渣的綠色高效處理。

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.



中金嶺南丹霞冶煉廠氧壓浸出煉鋅工程鋅氧壓浸出車間

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



綠色施工

Green construction

中鋁國際建立完善的綠色施工管理體系，在施工過程中嚴格遵守「六個百分之百」，在揚塵污染、噪音控制、工業垃圾排放等方面進行嚴格控制；在存在拆建內容的工程項目中，按照業主合同的約定進行施工，對物料進行再使用。公司依據《建築工程綠色施工評價標準》對照內業資料和施工現場進行考評。

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.

中鋁國際項目施工「六個百分之百」目標

CHALIECO Project Construction "Six 100%" Target

封閉管理百分百
100% of closed-off management

100%

道路硬化百分百
100% of road hardening

物料覆蓋百分百
100% of material coverage

100%

車輛清洗百分百
100% of vehicle cleaning

清潔保濕百分百
100% of cleansing and moisturizing

100%

密閉運輸百分百
100% of closed-off transport





六冶——低碳環保引領工地風尚

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

六冶秉承綠色集約化建設理念，在施工過程中積極探索創新，採用「玻璃 + 石材」的經典外立面幕牆，設立地緣熱泵多聯機空調繫統、光伏發電、太陽能和智能化繫統等裝置，實施地源熱泵、雨水收集模組、透水混凝土、盤扣式腳手架等一繫列綠色施工措施，打造裝配式綠色建築示範項目。

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.



光伏發電裝置
PV power plant

鋁應用推廣

Promotion of aluminum applications

中鋁國際踐行著「擴大鋁應用，向鋁精深加工、價值鏈高端轉型」戰畧，不斷研發多樣化鋁產品，拓展鋁在基礎設施、電信產品、工業設備等方面的應用範圍，提陞鋁產品的性能和質量，通過開展回收、再加工和再利用等工作推動鋁的循環利用，不斷減少金屬燒損和能源消耗，降低碳排放量，提高鋁產品的市場佔有率和競爭力。

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.

案例 Case

六冶——鋁應用業務市場開拓結碩果

CHSMCC - Achievements in market development of aluminum application business

2023年10月，六冶先後中標廣西廣投北海綠色生態鋁一期項目年產200萬噸氧化鋁及配套工程施工項目、珠海市九洲灣出海港口漁網屋面鋁結構工程。

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.



廣西廣投北海綠色生態鋁項目規劃圖
Planning map of Beihai Green Ecological Aluminum
Project of Guangxi Investment Group



珠海市九洲灣出海港口漁網屋面鋁結構工程規劃圖
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

中鋁國際積極響應全球綠色發展倡議，加強低碳知識的宣傳和教育，鼓勵員工積極參與低碳環保活動，提高員工的低碳意識和環保素養，致力於打造綠色品牌，推動鋁行業的可持續發展和環境保護。

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.

強化環保理念

Enhancing environmental protection ideas

中鋁國際積極組織員工參與環保公益活動，倡導員工選擇簡約適度、綠色低碳的健康生活方式，引導員工踐行綠色低碳生產生活，引領勤儉節約的社會風尚；高度重視綠色辦公，保持辦公環境的清潔，助力資源節約，減少環境污染。

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.

中鋁國際綠色辦公相關舉措

CHALIECO's green office-related measures

- 確保辦公用品的安全性和健康性，如無污染的辦公用品和環保型電器
Ensuring the safety and health of office supplies, such as toxin-free office supplies and eco-friendly appliances
- 使用節約資源、減少污染物產生和排放的產品，文件雙面列印、無紙化辦公、選用節能電器、採用 LED 燈管等
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
- 合理利用辦公用品，減少一次性用品的使用，使用可替換筆芯的原子筆，合理保管辦公用品等
Reasonably utilizing office supplies, reducing the use of disposable items, using replaceable ballpoint pens, and storing office supplies properly
- 保持辦公場所的衛生，適當綠化，推行垃圾分類
Maintaining the hygiene of the office space, appropriate greenery and promoting waste classification
- 加大員工的教育力度，加強節能知識的學習和宣傳，提陞員工的節能意識，倡導節約用水、使用環保袋代替塑料袋、提倡綠色出行等
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



中鋁國際開展「節能降碳，你我同行」節能宣傳周活動和「積極應對氣候變化，推動綠色低碳發展」全國宣傳日活動
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"

開展生態保護

Conducting ecological protection

中鋁國際嚴守生態保護紅線，積極參與生態修復項目，在生產施工過程中融入生物多樣性保護理念，扛起生態文明建設的社會責任，為建設美麗中國貢獻力量。2023年，公司研究製定《中鋁國際工程股份有限公司長江黃河流域生態環境保護專項整治行動實施方案》，對非長江、黃河流域企業和項目參照開展專項整治。

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.



長勘院以自主研發技術實現渣庫複綠

Vivrescence of slag storage area with the independently developed technology of CKY



六冶——承建幾內亞 Boffa 鋁土礦礦山項目，踐行生物多樣性保護

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

六冶幾內亞礦山項目通過帶式輸送繫統採用架空棧橋設計，為動物遷徙設置「綠色通道」，保障野生動物的正常生活、遷徙和繁衍，在項目建設過程中有效保護了當地紅樹林生態，實現建築與自然和諧統一的良好融合，彰顯中國企業的责任擔當。

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.



架空棧橋帶式輸送繫統

The belt conveyor system with an overhead wharf design

04 員工責任

以人為本，共赴奮鬥徵途

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

中鋁國際秉承「以人為本、關愛全體」理念，全力保障員工基本權益，提供可靠的安全保護和健康保障條件；以員工發展為導向，為員工創造良好的工作氛圍，讓員工擁有更多獲得感、幸福感、安全感與自豪感。

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 保障基本權益
Safeguarding basic rights and interests

92 助推員工發展
Promoting employee development

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

99 開展員工關懷
Caring for employees





保障基本權益

Safeguarding basic rights and interests

中鋁國際嚴格遵守《中華人民共和國勞動法》、《中華人民共和國勞動合同法》等法律法規，提陞員工體驗和幸福感受，構建和諧、規範的勞動關係。報告期內，公司未發生使用童工及強製勞工等違規情況。如發現任何違反勞動法律法規的情況，包括身份信息不實等問題，將立即根據相關法律法規終止僱傭合約。同時，切實保障員工主動選擇離職的權利。

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.

平等僱傭

Fair employment

中鋁國際貫徹平等的企業理念，對不同國籍、種族、性彙、宗教信仰和文化背景的員工一視同仁，始終秉承公開、公平、公正的原則引進和選配人才，杜絕僱用童工與其他強製性勞動，為職工創造多元包容、公平合理的職場環境。2023年，公司未發生重大勞動爭議和人權投訴問題。

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年中鋁國際員工情況（單位：人）

Employees at CHALIECO in 2023 (Unit: person)

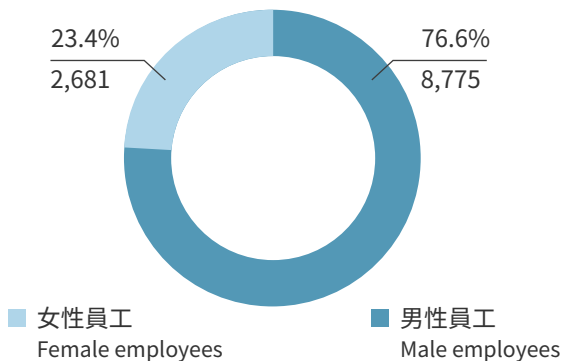
員工總數

Total number of employees

11,456

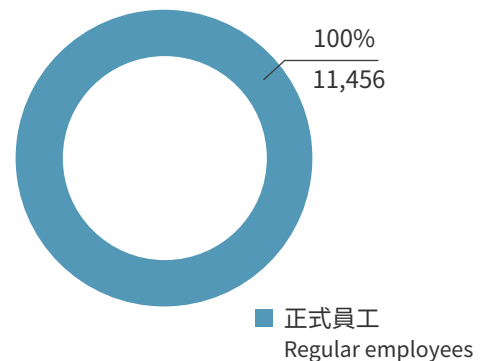
按性彙劃分的員工人數

Number of employees by gender



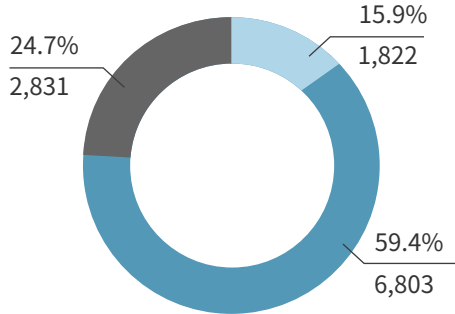
按僱傭類型劃分的員工人數

Number of employees by type of employment



按年齡劃分的員工人數

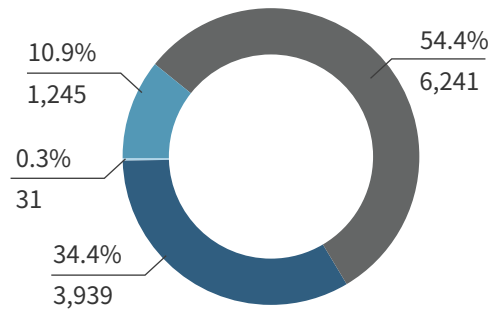
Number of employees by age



- 30 歲以下員工數
Number of employees under 30 years old
- 30 歲 - 50 歲員工數
Number of employees between 30 and 50 years old
- 50 歲以上員工數
Number of employees over 50 years old

按學歷劃分的員工人數

Number of employees by education background



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

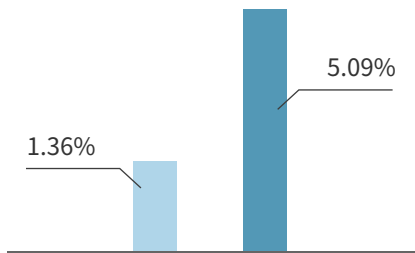
2023 員工流失率

Employee turnover in 2023

6.45%

按性別劃分的員工流失比例

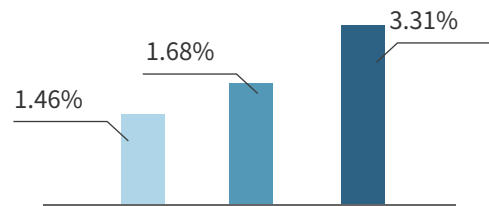
Employee turnover by gender



- 女性員工
Female employees
- 男性員工
Male employees

按年齡劃分的員工流失比例

Employee turnover by age



- 30 歲以下員工數
Number of employees under 30 years old
- 30 歲 - 50 歲員工數
Number of employees between 30 and 50 years old
- 50 歲以上員工數
Number of employees over 50 years old



薪酬福利

Compensation and benefits

中鋁國際重視員工薪酬福利體系建設，依法為員工繳納「五險一金」，建立年金保障制度，並落實各項補貼和節假日福利待遇；統籌實施全局性薪酬考核激勵改革，全面推進薪酬管理信息化應用；實現工資總額分配向技術密集、創新力度大、解決卡脖子或突破關鍵核心技術的企業傾斜；增強薪酬待遇對科技人才的激勵效果，完善和優化海外人才的薪酬結構和收入水平，留住關鍵人才。

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

中鋁國際持續完善以職工代表大會為基本形式的民主管理機製，保障員工的知情權、建議權、參與權和監督權。2024年1月29日，中鋁國際組織召開三屆三次職工代表大會，大會審議通過了行政工作報告、職工代表提案等事項，選舉了中鋁國際第四屆監事會職工代表監事，進行了2023年度領導班子和領導人員的述職及民主評議。

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.

中鋁國際工會工作「三個堅持」

"Three insisting" on the Labor Union Work of CHALIECO

- 堅持企業改革、改製、職工安置方案必須由本級職代會或職工大會審議通過，涉及職工切身利益的重大製度出臺必須經過同級職代會或職代會聯席會審議通過。中鋁國際各級工會組織召開職代會 13 次，均設立廠務公開欄。

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.

- 堅持職工代表每年一次聽取企業領導人員述職述廉並民主評議企業領導人員的製度。

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.

- 堅持做好職代會提案辦理工作，全年共收集兩級職代會徵集提案 4 件，落實率達到 100%，做到了件件有落實、項項有回音。

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.



中鋁國際三屆三次職工代表大會

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



掃碼，查看勞模精神展中鋁國際風采

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



助推員工發展

Promoting employee development

中鋁國際堅持「發展依靠員工、發展爲了員工、發展成果由職工共享」理念，暢通人才發展通道，致力於在企業發展、共建共享中成就員工。

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.

暢通晉陞通道

Building smooth promotion channels

中鋁國際致力於爲員工提供全方位、公平的職業發展機會，打造暢通無阻的職業發展通道，爲每一位員工創造廣闊的成長空間；推進管理人員競爭上崗、末等調整和不勝任退出工作，全面實行經理層任期製契約化和職業經理人製度，所屬企業試點進行中層管理人員競爭上崗，打造公平、公正的評價和晉陞機製，爲員工成長發展提供良好的製度保障。

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，推行經理層成員任期製和契約化改革的企業57戶，193位經理層成員納入任期製契約化管理，並全部完成協議書的簽訂；本部和所屬企業共164人通過中鋁集團高級職稱評審，獲得正高和副高職稱，占通過總人數的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

經理層成員納入任期製契約化管理

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

164 人

通過中鋁集團高級職稱評審

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

重視人才培養

Focusing on talent cultivation

中鋁國際成立總部人力資源交流培訓中心，印發《中鋁國際人力資源交流培訓中心管理辦法》，全面啟動人才交流中心常態化、規範化有效運行；參加中鋁集團科技領軍人才培訓班，組織開展中鋁國際講堂、中鋁國際雲課堂，為員工提供多樣化的培訓和學習資源，豐富的職業技能提陞機會；持續開展人才推優評先工作，開展綜合管理能力培訓和技能比武、「中鋁國際杯」工程技術職業技能大賽等勞動競賽，營造「比學趕幫超」濃厚氛圍，讓員工成為價值創造主力軍；組織召開第一屆勞動模範和先進集體表彰大會、中鋁國際勞動模範和先進集體代表座談會，表彰 9 名勞模、10 個先進集體。2023 年，公司全級次企業累計培訓 52,349 人次，培訓投入 1,222.6 萬元，培訓時長 377,686.45 小時；新建勞模工匠、技術能手等工作室 9 個，投入經費 1094.05 萬元；獲省級以上榮譽的工作室 14 個。

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.



公司全級次企業累計培訓

52,349 人次

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



培訓投入

1,222.6 萬元

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



培訓時長

377,686.45 小時

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

人均培訓小時數

Number of training hours per capita

33 小時

33 hours

按性彙劃分員工培訓比例 (%)

Proportion of employee training by gender (%)



男性員工

95.58%

Male employees **95.58%**



女性員工

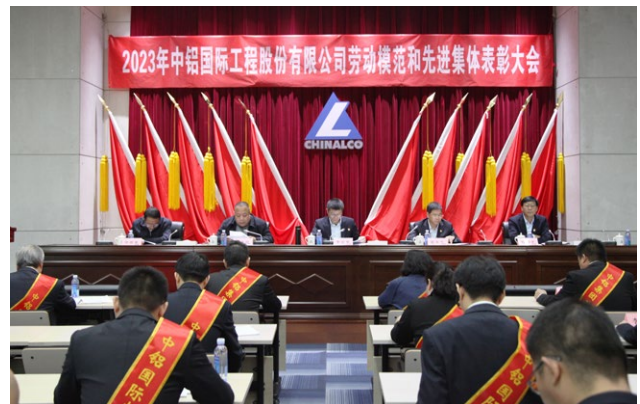
92.97%

Female employees **92.97%**



中鋁國際 2023 年項目經理綜合素質提陞培訓班

2023 Comprehensive Quality Improvement Training Course for Project Managers of CHALIECO



中鋁國際召開勞動模範和先進集體表彰大會

CHALIECO Held Commendation Conference for Model Workers and Advanced Collectives

關注健康安全

Paying attention to health and safety

中鋁國際嚴格遵循《職業病防治法》、《安全生產法》等相關法規，整肅安全短板，築牢安全防綫，為企業安全健康發展提供堅實保障；加強安全應急管理，著力提陞應急處置能力；重視安全教育及培訓，增強員工安全生產意識，營造安全文化氛圍；通過一繫列措施保障員工身心健康，為員工提供可靠的安全保護和健康保障條件。

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.

加強安全管理

Strengthening safety management

中鋁國際牢固樹立「一切風險皆可控制、一切事故皆可預防」的安全發展理念，深入開展安全管理強化年活動，強化安全生產標準化建設，持續加強集團職業健康安全生產標準化體繫、承包商安全管理標準化體繫的運行和考評，開展常態化循環式安全督查，加強安全風險防範；倒逼各級逐級壓實安全責任，全面加強安全生產管理，為員工安全築起牢固的保障牆；加大對農民工工資支付監管力度，採取專戶專儲、專款專用的方式，確保農民工工資按時發放。

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.



防範安全風險
Conducting potential
risk inspection

成立安全專項督查組，督促企業常態化加強自然災害風險防範應對工作；組織開展繫列安全環保檢查及隱患排查工作，全年累計排查並解決重大安全事故隱患 6 項。

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.



強化安全落實
Strengthening safety
implementation

全面貫徹落實《2023 年安全環保工作要點》，牽頭組織企業執行安委會雙主任製，實現生產車間生產及巡視通道視頻全覆蓋，積極申報安全生產標準化企業；建立月度督辦及通報工作機製，督導企業有序推進任務並及時開展問題整改。

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.



中鋁國際副總經理劉瑞平到洛陽開展項目安全督導

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



六冶在中秋國慶雙節期間搶進度抓質量保安全

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

2023年11月24日，天津建設總包施工現場發生一起模架支撐體系坍塌事故。事故發生在山西永鑫鐵路專用線集運站建設項目，配煤繫統原料煤棚2號機頭房。在澆築混凝土過程中，造成較大安全事故。事故發生後，中鋁國際立即啟動應急預案，積極配合地方政府開展現場救援和事故調查，妥善完成善後處理工作，並在公司全面開展警示教育、全面清查整治安全風險隱患，完善了9項規章制度，對所屬企業377個在建項目開展全範圍停工排查，並對17個不合格分包商進行清退處理，努力實現工程項目的本質安全，防止同類事故發生。

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.

營造安全氛圍

Creating an atmosphere of safety

中鋁國際以營造平安和諧的環境為己任，重視安全文化宣教，強化公司各個層級的安全責任意識，全力培養安全生產管理人才，規範員工安全行爲；重視安全教育及培訓，增強員工安全意識，提陞員工防護能力，守護公司安全平穩運行。

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.



培養安全管理人才
Cultivating safety management talents

製訂《關於加強安全管理隊伍建設的工作方案》，以「傳幫帶、師帶徒」的方式，為企業培養懂業務、會管理的安全管理骨幹；開展企業安全管理人員履職能力提升培訓、安全專題培訓等活動，增強員工自身防護能力。

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.



加強安全文化建設
Strengthening the construction of work safety culture

以安全生產月、職業病宣傳周、節能宣傳周等活動為抓手，深入開展新安全生產法等宣教學習、安全環保培訓、應急演練等活動，提陞全員安全環保意識。2023年，參加安全生產培訓員工10,482人，安全培訓覆蓋率達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%.



中鋁國際舉辦網絡安全知識培訓
CHALIECO Held Training on Network Security Knowledge



案例 Case

印尼氧化鋁項目實現 300 萬安全工時里程碑

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

中鋁國際印尼氧化鋁項目團隊堅持 HSE 違章「零容忍」，始終堅守安全規章製度，加強安全管理工作，積極營造「人人管安全」的良好氛圍。2023 年 9 月，項目業主方向中鋁國際印尼氧化鋁項目部及表現突出的參建單位予以表彰。

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.



項目業主方向中鋁國際印尼氧化鋁項目部及表現突出的參建單位予以表彰

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

重視職業健康

Attaching importance to occupational health

中鋁國際製定《安全環保健康責任規定》、《職業健康安全和環境委員會工作規則》，定期開展健康知識培訓，組織開展全體員工健康體檢，為員工撐起「健康保護傘」；切實關注員工心理健康，幫助員工保持積極向上的精神狀態，維護員工健康權益。2023 年，中鋁國際百萬工時傷害率為 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，中鋁國際百萬工時傷害率為

0.0912

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

開展員工關懷

Caring for employees

中鋁國際以多種形式關心慰問離退休員工，做好困難員工幫扶工作；關愛女性員工，切實維護女性員工權益和身心健康；定期組織開展豐富多彩的員工活動，實現工作與生活的平衡，營造積極向上的工作氛圍。

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「河南省模範職工小家」

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

六冶公司始終堅持「服務公司生產經營和職工群眾」工作方針，積極開展「職工小家」建設，使「職工之家」成為公司凝聚力量的「心」陣地，為公司高質量發展聚力賦能。2023年，六冶六公司喜獲「河南省模範職工小家」榮譽稱號。

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".



六冶六公司職工之家
Family of Employees of
No.6 Company of CHSMCC

困難員工幫扶

Assisting employees in difficulties

中鋁國際扎實開展「我為群眾辦實事」活動，解決涉及職工群眾生產生活等各類急難愁盼問題；不斷完善困難幫扶機製，為員工排憂解難；落實有關職工福利政策，在國家法定節日向員工發放節日慰問品，及時慰問生病住院、生育等員工，讓員工感受到實實在在的溫暖。2023年，中鋁國際列支幫扶資金總額 40.87 萬元，幫扶困難職工 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.

關懷女性員工

Caring for female employees

中鋁國際嚴格遵守《女職工勞動保護法特等規定》，為女性員工提供平等溫暖的工作環境，維護其哺乳假、產假等各項福利；組織開展「三八節」女性關愛繫列活動，與女性員工同心共鳴；在每年員工健康體檢中，開展女職工專項體檢，為女性員工增加健康保障。2023年，中鋁國際全級次女性員工體檢人數達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，中鋁國際全級次女職工體檢人數達

2,990 人

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



中鋁國際舉辦 2023 年「三八」繫列活動

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

工作生活平衡

Balancing work and life

中鋁國際組織開展形式多樣的文化體育活動，豐富廣大員工的業餘文化生活，不斷增強員工的凝聚力向心力；積極加強服務員工陣地建設，提高員工幸福指數。

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.



中鋁國際舉行首屆職工體育運動會「迎『籃』而上杯」籃球比賽

CHALIECO Held the First Employee Sports Meeting - Basketball Competition



中鋁國際舉行首屆職工體育運動會「『乒』出國際杯」乒乓球比賽

CHALIECO Held the First Employee Sports Meeting - Pingpong Competition



昆勘院舉辦慶祝建院七十周年足球邀請賽

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



長勘院舉辦「慶國慶」籃球比賽

CKY Held "Celebrating the National Day" Basketball Game

05 夥伴責任

和衷共濟，共贏發展機遇

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

中鋁國際堅持打造責任供應鏈，與合作夥伴建立全方位、多領域、深層次的合作關係，通過推進行業交流溝通、與合作夥伴強強聯合，為將中鋁國際建設成為世界一流企業提供堅實保障。

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.

104 打造責任供應鏈
Establishing a responsible supply chain

106 加強戰略合作
Strengthening strategic cooperation

108 推動行業發展
Boosting industrial development





打造責任供應鏈

Establishing a responsible supply chain

中鋁國際長期實施陽光採購，堅持本地化採購，並不斷強化供應商管理力度和管理效能，全力打造公正、公開、負責任的供應鏈，提陞供應鏈韌性。

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.

實施陽光採購

Transparent procurement

中鋁國際遵守《招標投標法》、《反不正當競爭法》等國家法律法規，製定公司採購招標體繫重構方案，強化對成員企業招投標工作的監督檢查，開展採購及招投標問題專項治理活動，確保採購陽光、透明。2023年，中鋁國際新建招標製度13項，通過自查抽查共發現問題40項，對27名責任人進行問責處理，對梳理發現的12類33項問題進行了跟蹤整改。

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.

堅持本地化採購

Localized procurement

中鋁國際堅持本地化採購，製定《中鋁國際工程股份有限公司工程項目物資採購管理辦法（暫行）》，優先使用中鋁集團內部產品、材料及服務，對於商混等地材優先邀請當地供應商參與投標，保持供應鏈穩定。

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.

供應商管理

Supplier management

中鋁國際不斷修訂完善《供應商管理辦法》、《分包商管理規定》等製度，對供應商進行分類篩選，建立科學的考核機制，優勝劣汰，使供應商准入、評價、退出均遵守嚴格的程序，降低供應鏈風險，以考核促提陞，提高供應商的質量。

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.

供應商管理製度

Supplier Management System

准入

Access

公司要求供應商提供QHSE管理體系與認證文件，並優先考慮使用環保節能產品的供應商。

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.

評價

Evaluation

在生產施工期間，公司通過分包商過程管控及獎懲考核機制，對分包商隊伍資質、能力、信譽、素質等進行綜合考評，動態調整合格分包商名錄；將分包商納入項目安全環保教育培訓管理中，定期組織考評，敦促分包商落實好現場安全環保責任。

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

公司對分包商用工管理、安全環保工作落實情況進行監管，對存在違反法律規定的用工行為、發生突發性環境事件的分包商等，將對其清退並列入黑名單。

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 年供應商數量 **2,488** 個
Number of suppliers in 2023 (2,488)

東北 **100** 個
100 in Northeast China

華北 **372** 個
372 in North China

華南 **267** 個
267 in South China

華中 **546** 個
546 in Central China

西南 **559** 個
559 in Southwest

華東 **479** 個
479 in East China

西北 **156** 個
156 in Northwest

海外 **9** 個
9 overseas

加強戰略合作

Strengthening strategic cooperation

中鋁國際主動通過政企合作、校企合作、企企合作的方式，形成了互帶互動、資源互補、共建共享的政校企合作發展新格局，共譜高質量發展新篇。

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，中鋁國際與陝西有色金屬集團、中國銅業開展交流合作，與中冶賽迪簽訂戰略合作框架協議，與寶武鋁業攜手建設「以學促幹」央企標杆，在集團內部與中鋁高端製造、中鋁股份合作，並承接多個公司項目建設，共商共建共促有色金屬行業新發展。

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.



中鋁國際與陝西有色金屬集團開展合作交流

Cooperation and Exchange between CHALIECO and Shaanxi Nonferrous Metals Group Co., Ltd.



中鋁國際與中冶賽迪簽署戰略合作框架協議

CHALIECO and CISDI Sign Strategic Cooperation Framework Agreement



中鋁國際董事長李宜華接待力拓中國區副總裁南利輝一行

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

中鋁國際與洛陽市澗西區人民政府等開展合作，通過政企合作形式實現雙方優勢互補，合力為經濟社會發展提供有力支撐。

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.



中鋁國際與河南省文旅投資集團、洛陽市澗西區人民政府舉行會談

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

中鋁國際與河南科技大學等學校攜手開展產學研用融合，通過知識資本、人力資本和物質資本的深度耦合，加速科技成果轉化，形成推進科技創新發展的強大合力。

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.

案例 Case

河南省有色金屬加工先進工藝和高端裝備產業研究院正式揭牌

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

2023年8月，由中色科技牽頭，聯合河南科技大學等七家單位組建成立的產學研用深度融合的技術創新平臺——河南省有色金屬加工先進工藝和高端裝備產業研究院正式揭牌，這標誌著校企合作、協同創新新徵程正式開啟。

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.



河南省有色金屬加工先進工藝和高端裝備產業研究院正式揭牌

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

推動行業發展

Boosting industrial development

中鋁國際通過推動行業標準製定，主辦、承辦、參與行業論壇和會議，促進行業資源對接流通，引領和推動行業發展，攜手譜寫互惠共贏的合作新篇章。

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.

標準製定

Standard formulation

中鋁國際主動參與行業標準製定工作，引領行業規範化、健康化發展，促進行業發展和自身品牌影響力、知名度提陞。

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.



長勘院——主編的《岩土工程設計標準》DBJ43/T001-2023 正式發佈

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

2023年7月17日，湖南省住房和城鄉建設廳發佈了關於發佈《湖南省通風與空調工程施工質量驗收標準》等5項湖南省工程建設地方標準的通知（湘建科函〔2023〕64號），其中由中鋁國際長勘院主編的《岩土工程設計標準》（編號為DBJ43/T001-2023），現被批准為湖南省工程建設推薦性地方標準。本標準的發佈，有效擴大了長勘院在行業的影響力，是多年來高度重視技術質量和科技創新取得的豐碩成果。

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.

行業交流

Industry exchange

中鋁國際積極加強行業交流，推廣行業理念與先進模式，打造科技論壇、綠色冶金高峰論壇等交流平臺，帶動行業綠色化、智能化發展，營造良好發展生態。2023年，公司與中國有色金屬工業協會開展合作交流，主辦「智融滇冶，綠創未來」綠色冶金高峰論壇、「5G+有色金屬智能工廠綠色信息化建設發展論壇」、「2023（第三屆）有色金屬智能製造高端論壇」等行業交流活動。

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".



中鋁國際召開首屆科技論壇

CHALIECO Held the First Science and Technology Forum

06 公共責任

奉獻社會，共建美好世界

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

中鋁國際堅定擔當起央企助力鄉村振興的責任使命，全力支持幫扶地區振興發展；傾情公益慈善活動，積極參與志願服務，扛起央企社會責任，向社會傳遞愛心與溫暖；融入「一帶一路」建設，堅持「走出去」戰畧，與當地社會合力發展、共享幸福、共獲成長。

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.

112 賦能鄉村振興
Empowering the rural revitalization

115 投身公益慈善
Engaging in public welfare

116 積極境外履責
Performing duties overseas actively





賦能鄉村振興

Empowering the rural revitalization

中鋁國際認真貫徹習近平總書記關於「三農」問題的重要指示，有序推動鄉村振興工作。2023年，中鋁國際及各成員企業扶貧及鄉村振興項目投入 237.94 萬元，項目惠及 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.



扶貧及鄉村振興項目投入

237.94 萬元

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



項目惠及

3,748 人

Benefiting **3,748** people

愛心消費幫扶

Assistance in caring consumption

中鋁國際在鞏固拓展脫貧攻堅成果過渡期內繼續多元化實施消費幫扶，依託央企消費幫扶電商平臺和各央企自有電商平臺，集中採購和幫銷國資央企定點幫扶和對口支援縣農產品，以消費幫扶帶動脫貧地區持續增收，實現可持續脫貧。2023年，中鋁國際及成員企業從幫扶縣直接購買農產品共 211.04 萬元。

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.



中鋁國際積極參與第二屆「央企消費幫扶興農周」活動

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

開展產業幫扶

Industrial assistance

中鋁國際將發展幫扶產業作為鞏固拓展脫貧攻堅成果的治本之策，推動各類資源、幫扶措施向促進產業發展聚力，持續深挖鄉村合作社盈利能力，實現鄉村振興從「接受輸血」到「自我造血」的轉變。長沙院鄉村振興駐村幫扶工作隊第一輪工作期滿獲最高等次評價。

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

長沙院——鞏固脫貧成果，助力鄉村發展

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

長沙院以實際行動積極履行社會責任，派遣鄉村振興工作隊入駐湖南省邵陽市隆回縣荷香橋鎮天馬山村，密切聯繫群眾，堅決守住返貧致貧底線，拓展就業渠道幫助低收入村民穩定就業。2023年，天馬山村集體經濟收入已入賬 26 萬元，切實提高了村民尤其是脫貧戶村民的收入。

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.



荷香桥镇天马山村：土法养鸡“钱”景好

隆回新闻 联播

發展鄉村特色產業實踐——烏雞蛋雞養殖

Developing Rural Characteristic Industry - Backbone Chicken and Layer Breeding



天馬山村村支兩委感謝長沙院牌匾

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

案例 Case

貴陽院——堅持產業幫扶，拓寬金坑村發展道路

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

貴陽院積極推動金坑村實現鄉村振興，發展種植生態大米、烤煙，養殖生態稻田魚、稻田鴨等產業幫扶項目，投入產業幫扶資金，深化「十戶一體」抱團發展模式，形成「一村一品」產業發展格局；引進企業達成合作協議，採取「公司+基地+農戶」模式，帶動村民就業與村集體經濟增收。

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.



貴陽院被評為全省鄉村振興駐村幫扶工作先進集體
GAMI was Awarded the Advanced Collective for Rural Revitalization Assistance in the Province



投身公益慈善

Engaging in public welfare

中鋁國際始終堅持「奉獻、友愛、互助、進步」的志願精神，引導廣大志願者積極參與社會公益活動，組織開展公益捐贈、學雷鋒等繫列公益志願活動，與社區開展防詐騙、防火檢查活動，溝通宣傳相關知識。截至 2023 年末，中鋁國際註冊青年志願者 847 人，年度志願者服務總時長 2,305 小時，企業捐贈總額為 3.9563 萬元。

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.

註冊青年志願者

847 人

The number of registered youth volunteers has reached 847 people

年度志願者服務總時長

2,305 小時

2,305 hours of volunteer services cumulatively

企業捐贈總額為

3.9563 萬元

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



中鋁國際黨員幹部志願者積極開展掃雪鏟冰行動，給公司全體員工創造安全通暢的出行環境

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



貴陽院團委開展助老「金暉行動」 Youth League Committee of GAMI Launched "Golden Sunshine Action" to Help the Aged



九冶鋼構公司機關及咸陽鋼構廠團支部志願者協助咸陽市渭城區交警大隊開展文明交通勸導服務活動

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



中色科技團委開展學雷鋒志願服務活動

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



積極境外履責

Performing duties overseas actively

中鋁國際充分服務和融入「一帶一路」倡議，踐行「走出去」戰略，用好用足國內國際兩個市場、兩種資源，立足本土優勢拓展境外業務，提陞海外市場開發和海外項目執行能力；推進本地化用工，關心關愛海外員工，做負責任的全球企業公民。

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.

拓展境外業務

Expanding overseas business

中鋁國際不斷加大海外市場資源投入，加強與境外鋁業公司、能源公司等合作，打造多批海外業務精品項目，如印尼鋁電一體化項目、韓國負極材料項目等。同時，公司持續完善「1+N+1」的海外營銷體系，深度開發屬地市場，推動海外業務高質量發展。報告期內，公司新簽約重大海外項目共 16 項，實現年度海外市場開發目標，海外營業收入 337,426.3 萬元，同比增長 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，國際業務成就

International Business Achievements in 2023

- 承攬中鋁幾內亞氧化鋁銀行級可研及印尼赤道氧化鋁項目預可研工作
Undertook the bank-level feasibility study of Alumina Chinalco in Guinea and the pre-feasibility study of the Equatorial Alumina Project in Indonesia
- 與俄鋁完成 EPS 合同簽約，與 ERG 集團簽署合同近 10 個
Signed EPS contracts with RUSAL and nearly 10 contracts with ERG Group
- 瀋陽院實現石墨化爐海外市場和美國本土項目簽約雙突破
SAMI achieved double breakthroughs in the overseas market of graphitization furnaces and project signing in the United States

- 貴陽院設計的印尼華青鋁業 25 萬噸電解鋁項目全部投產，標誌著公司第一個 500KA 級電解鋁技術成功輸出海外
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
- 昆勘院剛果（金）公司成為中鋁集團首家在剛果（金）的找礦資源平臺公司
Congo (Kinshasa) Company of KPDI became the first mineral exploration platform company of CHINALCO in the Democratic Republic of Congo (Kinshasa)
- 十二冶簽訂印尼中偉鎳礦項目合同，海外市場自主開拓實現「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



瀋陽院——踐行「科技 + 國際」，推動國家裝備製造業「走出去」

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

瀋陽院穩步推進各項經營生產業務，推動中國裝備製造「走出去」，成功簽署俄鋁泰舍特陽極廠焙燒爐燃控繫統供貨等多項海外合同，承攬的印尼國家鋁業電解繫列陞級改造項目首臺電解槽順利點火，帶動遼寧省企業裝備製造輸出海外金額達2.6億元人民幣，成為印尼國家鋁業電解繫列陞級改造項目的重要里程碑。

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，遼寧衛視《遼寧新聞》對中鋁國際瀋陽院融入「一帶一路」建設進行報導
On October 17, 2023, Liaoning News of Liaoning TV Reported on the Integration of CHALIECO SAMI into the "Belt and Road" Initiative



貴陽院印度BALCO電解鋁項目第一批貨物順利發運
Successful Shipment of the First Batch of Goods for India BALCO Electrolytic Aluminum Project of GAMI

海外優質工程

Overseas quality projects

中鋁國際積極踐行「一帶一路」倡議，樹立海外標杆，高標準推進項目建設，以質量和信譽提陞中鋁國際施工管理品牌，以匠心之作彰顯擔當。

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榮獲國家級大獎

CHSMCC - Third national award for overseas project construction

六冶剛果（金）華剛礦業項目建設團隊通過制定里程碑節點計劃、細化落實責任、優化建設方案、嚴控工程質量、創新應用新技術等舉措，實現11個月產出首批銅精礦、14個月產出首批陰極銅、17個月產出首批粗製氫氧化鈷產品的施工奇跡，刷新非洲礦山建設的「中國速度」。2023年，六冶承建的剛果（金）華剛礦業SICOMINES銅鈷礦項目二期工程同時榮獲中國建設工程魯班獎（境外工程）和國家優質工程獎（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).



六冶承建的剛果（金）華剛礦業 SICOMINES 銅鈷礦項目二期工程

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



九冶——優質履約，順利完成 1 號機組順利發電任務

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

九冶嚴格對照「業主滿意、效益優良、品牌卓著、市場接續」工作標準，抓好項目施工生產，狠抓項目履約「三零」專項行動，打造品質工程。2023 年 8 月，九冶承建的印尼曼帕瓦年產量 100 萬噸的氧化鋁項目自備燃煤電廠 1 號鍋爐水壓試驗一次成功。

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產量 100 萬噸氧化鋁項目

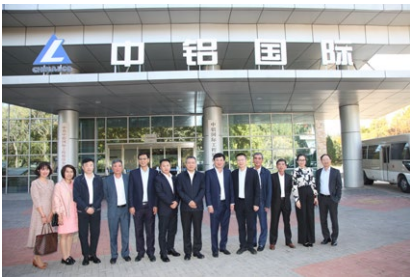
Mampawah 1,000kt/a Alumina Project in Indonesia undertaken by Jiuye

加速國際互動

Accelerating international interactions

中鋁國際深化與「一帶一路」共建國家的合作交流，組織赴沙特、印尼、越南、幾內亞等數十個國家的商務和技術服務出行活動，接待俄鋁、俄鎳、力拓、阿聯酋鋁業、印度Vedanta集團和越煤集團等近百批海外客戶來訪與考察，商務和技術溝通成效顯著。

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.



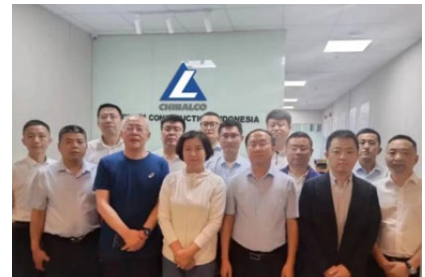
越煤集團董事長吳皇銀一行到中鋁國際參觀交流

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



印度巴拉索爾合金公司董事長普拉莫德·米塔爾一行訪問中鋁國際

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



印尼晉商企業交流座談會在十二冶印尼子公司召開

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

案例 Case

貴陽院——獲評「一帶一路」宣傳工作先進單位

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

貴陽院積極開展國際交流合作，舉辦國際學術會議，與「一帶一路」共建國家分享交流技術成果，並在多家媒體發表《把握國發 2 號機遇，闖出海外新天地》、《堅持技術引領，深拓兩個市場》等多篇報導，為講好企業共商共建共享故事營造良好的輿論氛圍。2023 年 12 月，貴陽院被中國工程諮詢協會評為「一帶一路」宣傳工作先進單位。

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.

海外員工關愛

Caring for overseas employees

中鋁國際保障海外員工基本權益，關注員工生活狀況和身心健康，瞭解員工需求，幫扶困難員工；堅持本土化用工，帶動當地經濟發展，並嚴格按照公司安全管理要求，保證現場施工人員生命安全。

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——幾內亞 Boffa 鋁土礦礦山項目帶動就業

CHSMCC - Bauxite mine project in Guinea boosted employment

六冶為幾內亞Boffa鋁土礦礦山項目當地居民解決吃水難和兒童教育等問題，為當地2,000名員工提供就業崗位，創造就業機會，將人文文化延續傳承，彰顯中國企業良好的責任擔當，是中鋁國際海內外員工共同打造中國企業深耕「一帶一路」的成功範例。

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.



中鋁幾內亞員工與都巴村村民商討合作

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

未來展望

Future Prospect

艱難方顯勇毅，磨礪始得玉成

Only in hard times can courage and perseverance be manifested.

Only after polishing can a piece of jade be finer.

回首2023，我們勤耕不輟，履踐致遠；展望2024，我們繼往開來，再譜新篇。新的起點，中鋁國際將在習近平新時代中國特色社會主義思想指引下，堅持「科技 + 國際」發展戰略，以高質量黨建為引領，以科技創新為引擎，以實幹篤定前行，永葆初心，銳意進取，立足新時代，勇鑄新發展局面，奮力擔負起新的使命，為加快建設「新中鋁國際」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" !



附錄

Appendix

關鍵績效

Key Performance Indicators

指標 Indicators	2021		2022		2023
經濟責任 Economic responsibility					
	調整前 Before Adjustment	調整後 After Adjustment	調整前 Before Adjustment	調整後 After Adjustment	
總資產 (萬元) Total assets (RMB10,000)	5,882,803.53	6,002,275.67	4,739,128.86	4,739,221.82	4,094,380.30
淨資產 (萬元) Net assets (RMB10,000)	1,651,518.20	1,636,472.27	1,045,505.73	1,045,598.68	725,450.00
營業收入 (萬元) Operating revenue (RMB10,000)	2,334,819.63	2,389,872.34	2,369,732.89	2,369,732.89	2,233,717.10
納稅總額 (萬元) Total tax payment (RMB10,000)	77,205.87		86,603.77		79,277.64
研發資金投入 (萬元) Investments in R&D (RMB10,000)	76,012.72		91,206.62		94,330.9
研發人員數量 (人) Number of R&D personnel (person)	2,584		2,479		2,164
累計有效專利數 (件) Cumulative number of valid patents (piece)	2,406		2,832		3,214
其中：發明專利 (件) Among which: Patents for inventions (piece)	1,061		1,120		1,385
完成專利受理 (件) Number of patent applications accepted (piece)	313		381		647
其中：發明專利 (件) Among which: Patents for inventions (piece)	133		176		369
新增專利授權 (件) Number of newly added authorized patents (piece)	303		312		368
其中：發明專利 (件) Among which: Patents for inventions (piece)	65		80		109



指标 Indicators	2021	2022	2023
企業規章製度法律審核率 (%) Legal review rate of corporate rules and regulations (%)	100	100	100
企業經濟合同法律審核率 (%) Legal review rate of corporate business contracts (%)	100	100	100
企業重要經濟決策法律審核率 (%) Legal review rate of important corporate business decisions (%)	100	100	100
守法合規培訓次數 (次) Number of legal compliance training sessions (time)	8	18	20
守法合規培訓時長 (小時) Number of hours for legal compliance training (hour)	30	36	38
守法合規培訓人次 (人次) Number of people receiving training on legal compliance (person-time)	624	1,032	1,404
召開董事會 (次) Number of board meetings held (time)	6	12	9
召開股東大會 (次) Number of general shareholders' meetings held (time)	3	3	3
供應商總數 (個) Number of suppliers (nos.)	4,272	5,267	2,488
因為社會責任不合規被否決的潛在供應商數量 (個) Number of potential suppliers rejected for non-compliance of social responsibility (nos.)	26	8	6
報告期內審查的供應商數量 (個) Number of suppliers reviewed during the reporting period (nos.)	4,272	5,267	2,488
因為社會責任不合規被中止合作的供應商數量 (個) Number of suppliers suspended for non-compliance of social responsibility (nos.)	0	0	0
供應商社會責任 /ESG 培訓次數 (次) Number of CSR/ESG trainings for suppliers (nos.)	0	0	0
投訴解決率 (%) Complaint resolution rate (%)	100	100	100
社會責任 Social responsibility			
員工人數 (人) Number of employees (person)	12,489	12,219	11,456
報告期內吸納就業人數 (人) Number of newly recruited employees during the reporting period (person)	30	76	137
體檢覆蓋率 (%) Coverage of physical examination for employees (%)	100	100	100

指标 Indicators	2021	2022	2023
健康檔案覆蓋率 (%) Coverage of health record (%)	100	100	100
勞動合同簽訂率 (%) Signing rate of employment contracts (%)	100	100	100
集體合同覆蓋率 (%) Coverage of collective contracts (%)	100	100	100
社會保險覆蓋率 (%) Coverage of social insurance (%)	100	100	100
通過申訴機製申請、處理和解決的員工申訴數量 (個) Number of employee complaints filed, handled and solved through complaint mechanism (nos.)	0	0	0
女性管理者人數 (人) Number of female managers (person)	1,410	1,441	1,260
中層管理者中女性管理者占比 (%) Proportion of female managers in middle management (%)	31	31.66	6.12
少數民族員工占比 (%) Proportion of ethnic minority employees(%)	4.59	4.56	4.48
本地化僱傭比例 (%) Localized employment rate (%)	86	88	85.43
人均帶薪休假天數 (天) Days of paid leaves per capita (day)	10.00	10.49	11
員工培訓投入 (萬元) Investments in employee training (RMB10,000)	880.62	738.19	1,222.6
員工培訓人次 (人次) Number of participants of employee training (person-time)	29,971	28,686	52,349
員工培訓時長 (小時) Number of hours for employee training (hour)	123,629.80	283,428.00	377,686.45
員工薪酬同比增長 (%) YOY growth of employee compensation (%)	1.77	3	12
殘疾人僱傭人數 (人) Number of people with disabilities employed (person)	85	78	61
困難職工幫扶投入 (萬元) Investment in supporting workers in difficulty (RMB10,000)	103.19	537.53	40.87
安全生產事故數 (件) Number of work safety accidents (time)	0	1	1
因工傷損失工作日數 (天) Working days lost due to work-related injuries (day)	0	6,106	42,000
因工亡故人數 (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
安全教育與培訓人次 (人次) Number of participants in safety education and training (person-time)	54,560	55,301	122,276
安全教育與培訓時長 (小時) Number of hours for safety education and training (hour)	98,650	99,285	427,966
安全培訓覆蓋率 (%) Coverage of safety training (%)	-	-	100
員工群眾來訪接訪率 (%) Reception rate of visits of employees and other stakeholders(%)	100	100	100
來信來函受理率 (%) Handing rate of letters and mails (%)	100	100	100
慈善捐助總額 (萬元) Total charitable donations (RMB10,000)	154.44	8.7	3.9563
環境責任 Environmental responsibility			
環保總投入 (萬元) Investments in environmental protection (RMB10,000)	12,807.37	3,423.10	3,532.17
能源消耗總量 (噸標準煤) Total energy consumption (tce)	35,279.40	11,362.05	80,794
萬元營收能源消耗強度 (噸標準煤 / 萬元) Energy consumption intensity per RMB10,000 of operating revenue (tce/ RMB10,000)	0.0151	0.0462	0.0378
燃油使用量 (陸) Fuel oil consumption (liter)	19,886,004.90	38,462.46	61,043,063.32
汽油使用量 (陸) Gasoline consumption (liter)	3,292,824.40	1,882,071.76	38,885,310.92
柴油使用量 (陸) Diesel consumption (liter)	16,593,180.50	2,044,766.46	22,157,752.4
天然氣使用量 (立方米) Natural gas consumption (m ³)	346,075.00	223,793.16	195,928
用電量 (萬千瓦時) Electricity consumption (10,000 kWh)	8,534.90	5,418.74	11,515.03
總用水量 (噸) Total water consumption (ton)	725,006.00	199,459.76	766,595
用水強度 (噸 / 萬元) Water consumption intensity (ton/RMB10,000)	0.31	0.68	0.34
無害廢棄物排放量 (噸) (廚餘垃圾、建築垃圾等) 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
萬元營收無害廢棄物排放強度 (噸 / 萬元) Non-hazardous waste discharge intensity per RMB10,000 of operating revenue (ton/RMB10,000)	0.0019	0.0003	0.0052
有害廢棄物排放量 (噸) (硒鼓、廢棄燈管等) Discharge of hazardous waste (ton) (toner cartridges, damaged light tubes, etc.)	2.53	0.17	29.315
萬元營收有害廢棄物排放強度 (噸 / 萬元) Hazardous waste discharge intensity per RMB10,000 of operating revenue (ton/RMB10,000)	1.06x10 ⁻⁶	7.17x10 ⁻⁸	1.31x10 ⁻⁵
環保培訓人次 (人次) Number of participants in environmental protection training (person-time)	13,588	13,999	10,890
環保培訓覆蓋率 (%) Coverage of environmental protection training (%)	31	33	34
萬元產值能耗 (噸標煤 / 萬元產值) Energy consumption per RMB10,000 output value (tce/RMB10,000 output value)	0.0356	0.0288	0.0362
年度新鮮水用水量 (噸) Annual fresh water consumption (ton)	16,859	142,463	755,194
再生水使用量 (噸) Amount of reclaimed water used (ton)	3,999	4,406	11,401
一般工業固體廢物綜合利用率 (%) Comprehensive utilization rate of non-hazardous industrial solid waste (%)	-	-	72.09
工業固體廢棄物重複利用率 (%) Industrial solid waste reuse rate (%)	100	100	100
污染物排放達標率 (%) Compliance rate of pollutant emissions (%)	-	-	100
固廢處置合規率 (%) Compliance rate of solid waste disposal (%)	100	100	100
主要污染物排放達標率 (%) Compliance rate of major pollutant emissions (%)	100	100	100
辦公用電量 (萬千瓦時) Electricity used in office buildings (10,000 kWh)	8,534.90	7,230.48	7,330.6
辦公用水量 (萬噸) Water used in office buildings (10,000 tons)	72.50	70.23	45.84

指標索引

Index Guide

目錄 Contents		港交所 ESG 指引 ¹ HKEX ESG Guide	上交所指引 ² SSE Guidelines	CASS-ESG 5.0
報告導讀 Report Introduction		彙報範圍 Reporting Boundaries	1.1、1.3、8.5	P1.1、P1.2、P1.3
董事長致辭 Message from the Chairman		-	8.4	P2.1、P2.2
董事會 ESG 管治聲明 ESG Governance Statement from the Board		管治架構 Governance Structure	2.1.1	P2.1、P2.2、G2.1、G2.2、G2.3
關於我們 About Us		-	5.2、6.5.4、8.3、8.4、8.8	P4.1、P4.2、P4.3、P4.4
可持續發展管理 Sustainable Development Management	組織體繫 Organizational System	管治架構 Governance Structure	7.1.3、8.3、8.5、8.6、8.14、8.8、8.12	G3.1、G3.2、G3.3
	可持續發展行動 Sustainable Development Actions	-	-	-
	利益相關方溝通 Communication with Stakeholders	彙報原則： 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
	重大議題識警 Material Issue Identification		8.9	G3.5
責任專題一： 櫛風沐雨二十載， 砥礪奮進新時代 Responsibility Focus I: Forging Ahead in a New Era after Twenty Years of Development Despite of Various Difficulties	不忘初心，堅定報國之志 Staying true to our mission and serving country with total loyalty	-	-	P3.1
	科技賦能，見證發展成果 Witnessing development achievements with science and technology empowerment	-	-	P3.1
責任專題二： 數智化轉型發展， 譜寫時代新篇章 Responsibility Focus II: Engaging in Digital and Intelligent Transformation to Write a New Chapter of the Era	加強數智管理 Strengthening Digitization and Intellectualization Management	-	-	P3.1
	推進智能製造 Promoting intelligent manufacturing	-	-	P3.1

目錄 Contents		港交所 ESG 指引 ¹ HKEX ESG Guide	上交所指引 ² SSE Guidelines	CASS-ESG 5.0
經濟責任 夯實治理，共築管理根基 Economic Responsibility: Enhancing Governance and Jointly Establishing Management Basis	堅持黨建引領 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
	優化公司治理 Optimizing corporate governance		-	G1.1、G1.2
	守法合規運營 Operating in compliance with the law		4.1.1、8.1、8.2	G1.3、G1.5
	加強風險防控 Strengthening risk prevention and control		5.1、5.16	-
客戶責任 聚焦主業，共譜時代新篇 Responsibility for Customers: Focusing on the Main Business to Create a New Chapter in the Era	立足科技創新 Basing on S&T innovation	B6、B6.3	8.2、8.15	V1.2、V2.1、V2.2、V2.3、V2.4
	打造品質工程 Building high-quality projects	B6、B6.4	8.2、8.6	S4.1、S4.2
	提供優質服務 Providing high-quality services	B6、B6.2、B6.5	8.1、8.2	S4.1、S4.3、S4.5、S4.6、S4.7
環境責任 綠色發展，共創零碳未來 Environmental Responsibility: Creating a Zero-Carbon Future with Green Development	響應「雙碳」戰略 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
	強化環境管理 Strengthening environmental management	A1	8.1、8.6、8.8、8.11、8.12	E1.1、E1.2、E1.3、E1.4、E1.9
	踐行綠色運營 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
員工責任 以人為本，共赴奮鬥徵途 Responsibility for Employees: Striving for a Better Future by Putting People First	保障基本權益 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
	助推員工發展 Promoting employee development	B3、B3.1、B3.2	8.1、8.3、8.7、8.14	S2.1、S2.2、S2.4
	關注健康安全 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
	開展員工關懷 Caring for employees	B8、B8.1、B8.2	8.1、8.6、8.7、8.14、8.15	S1.10



目錄 Contents		港交所 ESG 指引 ¹ HKEX ESG Guide	上交所指引 ² SSE Guidelines	CASS-ESG5.0
夥伴責任 和衷共濟，共贏發展機遇 Responsibility for Partners: Gathering Strength to Achieve Win-Win Results	打造責任供應鏈 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
	加強戰略合作 Strengthening strategic cooperation	-	8.2	V2.8
	推動行業發展 Boosting industrial development	-	8.3、8.8、8.13	V2.8
公共責任 奉獻社會，共建美好世界 Responsibility for the Community: Contributing to Society and Building a Better World	賦能鄉村振興 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
	積極境外履責 Performing duties overseas actively	B8、B8.1、B8.2	8.6	V1.1、V1.2、V1.3
未來展望 Future Prospect	-	-	A1	
附錄 Appendix	關鍵績效 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
	指標索引 Index Guide	-	-	A4
	釋義 Terms and Abbreviations	-	-	-
	報告評級 Rating Report	-	-	A3
	意見反饋 Suggestions and Feedback	-	-	A5

¹ 我們遵循港交所《主板上市規則》附錄 C2——「環境、社會及管治報告指引」中「不遵守就解釋」條文，對未披露指標 A1.2、A1.5、A2.5、B6.1 做出如下解釋：

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 受業務性質及業務範圍影響，A1.2、A1.5 條款暫未統計，未來公司將持續推進排放物管理提陞工作。

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 公司為設計施工類企業，不適用 A2.5、B6.1 條款。

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

² 《上海證券交易所上市公司自律監管指引第 1 號——規範運作》簡稱《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".

釋義

Terms and Abbreviations

全稱 Full name	簡稱 Abbreviated name
中國鋁業集團有限公司 Aluminum Corporation of China	集團 The Group or CHINALCO
瀋陽鋁鎂設計研究院有限公司 Shenyang Aluminum & Magnesium Engineering and Research Institute Company Limited (SAMI)	瀋陽院 SAMI
貴陽鋁鎂設計研究院有限公司 Guiyang Aluminum & Magnesium Engineering and Research Institute Company Limited (GAMI)	貴陽院 GAMI
長沙有色冶金設計研究院有限公司 CINF Engineering Corporation Limited	長沙院 CINF
中色科技股份有限公司 China Nonferrous Metals Processing Technology Co., Ltd.	中色科技 CNPT
中國有色金屬長沙勘察設計研究院有限公司 China Nonferrous Metal Changsha Survey and Design Institute Co., Ltd.	長勘院 CKY
中國有色金屬工業昆明勘察設計研究院有限公司 Kunming Prospecting Design Institute of China Nonferrous Metals Industry Co., Ltd.	昆勘院 KPDI
昆明有色冶金設計研究院股份公司 Kunming Nonferrous Metallurgy Design and Research Institute Co., Ltd.	昆明院 KERI
中國有色金屬工業第六冶金建設有限公司 China Nonferrous Metal Industrial No. 6 Metallurgy Construction Company	六冶 CHSMCC
九冶建設有限公司 Jiuye Construction Co., Ltd.	九冶 Jiuye
中色十二冶金建設有限公司 China Nonferrous Metal Industrial No. 12 Metallurgy Construction Company	十二冶 12MCC
中鋁山東工程技術有限公司 CHALIECO Shandong Engineering Technology Co., Ltd.	山東工程 SDGC
中鋁國際（天津）建設有限公司 CHALIECO (Tianjin) Construction Co., Ltd.	天津建設 Tianjin Construction

報告評級

Rating Report

《中鋁國際工程股份有限公司 2023 環境、社會及管治報告》評級報告

受中鋁國際工程股份有限公司委託，「中國企業社會責任報告評級專家委員會」抽選專家組成評級小組，對《中鋁國際工程股份有限公司 2023 環境、社會及管治報告》（以下簡稱《報告》）進行評級。

一、評級依據

中國社會科學院《中國企業社會責任報告指南（CASS-ESG 5.0）》暨「中國企業社會責任報告評級專家委員會」《中國企業 ESG 報告評級標準（2023）》。

二、評級過程

1. 評級小組審核確認《報告》編寫組提交的《企業 ESG 報告過程性和可及性評估資料確認書》及相關證明材料；
2. 評級小組對《報告》編寫過程及內容進行評價，擬定評級報告；
3. 評級專家委員會副主席、評級小組組長、評級小組專家共同簽署評級報告。

三、評級結論

過程性 (★★★★★)

中鋁國際成立公司社會責任工作領導小組，由董事長擔任組長。領導小組負責向上彙報社會責任工作進展，向下傳達中鋁集團關於社會責任工作的指導及管理意見，統籌規劃公司社會責任工作的實施；報告所引用的信息與數據來自公司的正式文件、統計報告與財務報告，以及經由公司，統計、匯總與審核的環境、社會及管治信息，過程性表現卓越。

實質性 (★★★★★)

《報告》披露了完善 ESG 治理、服務國家戰略、產品技術創新、節約能源資源、減少「三廢」排放、應對氣候變化、產品 / 服務質量管理、員工健康與安全、可持續供應鏈等所在行業關鍵性議題，敘述詳實充分，實質性表現卓越。

完整性 (★★★★☆)

《報告》主體內容從「經濟責任 夯實治理，共築管理根基」、「客戶責任 聚焦主業，共譜時代新篇」、「環境責任 綠色發展，共創零碳未來」、「員工責任 以人為本，共赴奮鬥徵途」、「夥伴責任 和衷共濟，共贏發展機遇」、「公共責任 奉獻社會，共建美好世界」等角度繫統披露了所在行業核心指標的 82.35%，具有領先的完整性表現。

平衡性 (★★★★☆)

《報告》披露了「安全生產事故數」、「因工傷損失工作日數」、「突發環境事件及重大環境污染、生態破壞事件」、「貪污訴訟案件」等負面數據信息，具有領先的平衡性表現。

可比性 (★★★★★)

《報告》披露了「營業收入」、「累計有效專利數」、「供應商總數」、「員工人數」、「環保總投入」、「環保培訓人次」、「安全培訓覆蓋率」等80個關鍵指標連續3年的對比數據，並通

過「中鋁國際分別以第98位和第136位的排名蟬聯美國《工程新聞記錄》（ENR）『全球工程設計企業150強』和『全球承包商250強』榜單」等進行橫向比較，可比性表現卓越。

可讀性 (★★★★★)

《報告》採用議題型框架結構，繫統展示了企業在戰略引領、公司治理、環境責任、社會責任等重點議題下的履責理念、實踐與成效，充分回應了利益相關方的期望與訴求；封面採用插畫風格，同時融入中鋁國際相關元素，提升了報告的辨識度；章節跨頁選用選用契合篇章主題的實景大圖，以高度概括性語句起篇，提綱挈領，可讀性表現卓越。

可及性 (★★★★★)

《報告》與公司年報同時發佈；提供中英文版本，擬通過中鋁國際官方網站、香港聯交所網站以及上交所網站、印刷品、新媒體傳播（微信等）等多種形式進行傳播，可及性表現卓越。

綜合評級 (★★★★★)

經評級小組評價，《中鋁國際工程股份有限公司 2023 環境、社會及管治報告》為五星級，是一份卓越的企業 ESG 報告。



中國企業社會責任報告
評級專家委員會
Chinese Expert Committee on CSR Report Rating

中鋁國際工程股份有限公司環境、社會及管治報告
首次獲得五星級評價

四、改進建議

1. 增加行業核心指標的披露，提高報告的完整性；
2. 增加報告負面信息披露，進一步提升報告的平衡性。

評級專家委員會副主席

評級小組組長

評級小組專家



掃碼查看企業評級檔案

出具時間：2024年3月26日

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.

Vice Chairman of the Rating Expert Committee

Leader of the Rating Panel

Expert of the Rating Panel



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

Issued on: March 26, 2024



意見反饋

Suggestions and Feedback

親愛的讀者：

您好！

非常感謝您閱讀本報告，為進一步瞭解您對中鋁國際 ESG 管理與信息披露工作的期望和需求，我們誠摯地邀請您參與調查，您的觀點和見解對我們至關重要。我們由衷感謝您的寶貴意見和建議！

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. 您對本報告的總體評價如何？

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. 您認為本報告是否能反映公司對經濟、社會和環境的重大影響？

是 否

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

Yes No

3. 您認為本報告所披露信息、數據、指標的清晰、準確、完整度如何？

較高 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. 您認為本報告的結構安排如何？

較合理 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. 您認為本報告版式安排、設計形式是否易讀？

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. 您認為本報告哪些方面最讓您滿意？

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

7. 您對中鋁國際 ESG 工作有哪些意見和建議？

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

8. 您認為本報告還需要披露哪些您希望進一步瞭解的信息？

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

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