



**中国铝业股份有限公司**

**ALUMINUM CORPORATION OF CHINA LIMITED**

股份代號 Stock Code : 2600 (香港 HKSE) ACH (美國 US) 601600 (中國 China)

**2020**

**社會責任暨**

**環境、社會與管治報告**  
**Social Responsibility and**  
**Environmental, Social and**  
**Governance Report**





公司標誌由AL構成，似金字塔，象徵公司穩如泰山，同時象徵「勵精圖治、創新求強」的企業精神。工業藍色與銀灰色相組合具有鋁業的行業特徵，同時體現公司穩重的氣質，嚴謹的作風，給人以可靠感和信賴感。

The Company logo is composed of letter A and L, like a pyramid, symbolizing the Company's stability as Tai Mountain, and also the spirit of "striving for excellence, innovation and strength". The combination of industrial blue and silver gray shows the characteristics of the aluminum industry, and at the same time reflects the Company's stability and rigor, giving people a sense of reliability and trust.

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## 總裁致辭

# STATEMENT FROM THE PRESIDENT

### 提升價值創造能力

### 開創高質量發展新局面

2020年，面對新冠疫情、經濟下行等嚴峻考驗，中國鋁業堅定建設世界一流鋁業公司的信心決心，紮實開展全要素對標提質增效，優化佈局結構，深化改革創新，推進轉型升級，發展質量和效益進一步提升。

**經營業績持續提升。**公司統籌推進疫情防控和生產經營發展，做到了國內外員工零感染，有力保障了員工生命安全和身體健康，為生產經營平穩運行創造了條件。全年主要產品產量穩步增長，成本競爭力進一步提升，利潤總額、淨利潤同比分別增長1.7%、5.5%，資產負債率下降1.69個百分點，完成經營性淨現金流149億元，同比增長19%，創歷史最好水平。

### ENHANCING THE ABILITY OF VALUE CREATION CREATING A NEW VERSION OF HIGH-QUALITY DEVELOPMENT

In 2020, facing the severe challenges of COVID-19 pandemic and the economic downturn, Chalco has been firmly determined to build a world-class aluminum company. The Company solidly performed all-factor benchmarking to improve quality and efficiency, optimized layout and structure, continued to deepen reform and innovation, promoted transformation and upgrading, and continuously improved the quality and efficiency of development.

**Operating performance continued to improve.** The Company coordinated the promotion of epidemic prevention and control as well as the production and operation development, achieved zero infection of domestic and foreign employees, effectively guaranteed the life safety and physical health of employees, and created conditions for the smooth operation of production and operation. Throughout the year, the output of major products increased steadily, and cost competitiveness was further improved. Total profit and net profit increased by 1.7% and 5.5% year-on-year, respectively. The debt-to-asset ratio decreased by 1.69 percentage points. Operating net cash flow was 14.9 billion yuan, a year-on-year increase of 19%, creating the best level in history.



## 總裁致辭(續)

### STATEMENT FROM THE PRESIDENT (Continued)

**結構調整取得突破。**公司以「海外+沿海」為核心的「兩海」戰略取得重大進展，首個海外鋁土礦供應基地幾內亞博法項目建成投產並快速達產達標，廣西華昇港口氧化鋁項目同步投運。公司持續提升投資管控能力，新建項目工藝技術、勞動生產率、環保設計等均達到行業一流水準，全部實現投產即盈利，形成了一批具有領先競爭力的利潤增長點。

**改革創新激發動力。**公司重點圍繞健全完善市場化經營機制，啟動了深化改革三年行動，資產運營和專業管控能力得到加強。強化創新驅動，廢陰極石墨化高值利用技術、無炭渣陽極工藝技術攻關取得突破，新開發鋁合金產品22種、精細氧化鋁產品12種，獲得省部級科技進步一等、二等獎7項，創新引領能力不斷增強。

**A breakthrough was made in structural adjustment.**

The Company's "Two Seas" strategy has the "overseas + coastal"- based core and the strategy has made significant progress. The Bofa project in Guinea, the first overseas bauxite supply base, was completed and put into production and quickly reached production standards. The alumina project of Guangxi Huasheng Port was put into operation simultaneously. The Company continues to improve its investment management and control capabilities. The process technology, labor productivity, and environmental protection design of new projects have reached the industry's first-class level, and all of them are profitable when they are put into production, forming a group of leading and competitive profit growth points.

**Reform and innovation stimulated motivation.**

The Company focused on improving the market-oriented operating mechanism, and started to take a three-year action to deepen reforms, and its asset operation and professional management and control capabilities have been strengthened. The Company intensified innovation drive, breakthroughs were made in the high-value utilization technology of waste cathode graphitization and carbon slag-free anode process technology. 22 kinds of aluminum alloy products and 12 kinds of fine alumina products were newly developed. The Company won seven of the first and second prizes of provincial and ministerial-level scientific and technological progress, the innovation leading ability continues to increase.

## 總裁致辭(續)

### STATEMENT FROM THE PRESIDENT (Continued)

**綠色發展成效明顯。**公司堅持環保領先，堅決貫徹「綠水青山就是金山銀山」的理念，以配合中央生態環境保護督察為主線，完善環保管理制度體系，帶頭落實生態環境管控強制性要求，全年新建成國家級綠色礦山1座、省級綠色礦山9座，複墾土地11,042畝，複墾率達到94%，努力為鋁行業率先實現「碳達峰」「碳中和」做出貢獻。

**責任品牌更加彰顯。**公司秉承「點石成金造福人類」的社會責任觀，積極履行社會責任，助力地方脫貧攻堅，榮獲新時代資本論壇金駿馬獎「扶貧先鋒」獎、中國上市公司價值評選「社會責任」獎。

憑藉良好的經營業績，公司蟬聯了福布斯全球2000強、亞洲品牌500強、中國品牌500強、中國上市公司百強榜，榮獲第十屆中國證券金紫荊獎「最佳上市公司」獎；保持了行業最高信用評級，獲得了上海證券交易所資訊披露A級評價。

**The green development achieved remarkable results.**

The Company insists on environmental protection leading, resolutely implements the concept of “lucid waters and lush mountains are invaluable assets”. To cooperate with the central environmental protection supervision as the main line, the Company improved the environmental management system, took the lead in implementing the mandatory requirements for ecological environment management and control, and built a new national level green mine and 9 provincial-level green mines throughout the year, with 11,042 mu of reclaimed land and a reclamation rate of 94%, and strived to contribute to the aluminum industry’s first realization of “carbon peak” and “carbon neutrality”.

**Responsible brands were more prominent.**

The Company adheres to the social responsibility concept of “Turning Stone into Gold and Benefiting Mankind”, actively fulfills its social responsibilities and helps local governments to fight poverty. The Company won the “Poverty Alleviation Pioneer” Award of the New Era Capital Forum Golden Horse Award and the “Social Responsibility” Award of the China Listed Company Value Selection.

With good business performance, the Company has reelected the Forbes Global 2000, the Top 500 Asian Brands, the Top 500 Chinese Brands, and the Top 100 Listed Companies in China, and won the “Best Listed Company” award in the 10th China Securities Golden Bauhinia Awards; The industry’s highest credit rating has been maintained, and the Company has received an A-level evaluation for information disclosure by the Shanghai Stock Exchange.



## 總裁致辭(續) STATEMENT FROM THE PRESIDENT (Continued)

2021年是中國鋁業成立20週年。我們將以提升價值創造能力為統領，以全要素對標為抓手，聚力打造高質量發展新模式，以優異的業績為股東、投資者、員工、協作者和生產經營所在地政府、社區發展貢獻力量。

2021 is the 20th anniversary of the establishment of Chalco. We will take the enhancement of value creation ability as the guide, all-factor benchmarking as the starting point, and strive to create a new model of high-quality development, contribute to the development of shareholders, investors, employees, collaborators and local governments and communities where production and operation are located with outstanding performance.

中國鋁業股份有限公司  
黨委副書記、總裁  
朱潤洲  
2021年3月23日

**Zhu, Runzhou**  
*Deputy Secretary of Party Committee and President  
Aluminum Corporation of China Limited*  
March 23<sup>rd</sup>, 2021





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1.2	報告範圍 REPORTING SCOPE
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1.8	意見反饋 RESPONSE TO THE REPORT





# 關於本報告 ABOUT THIS REPORT

本報告主要描述2020年中國鋁業股份有限公司(「中國鋁業」,「本公司」,「公司」)及其分公司和子公司(「本集團」)在環境、社會與管治(「ESG」)及履行社會責任方面的表現,與各利益相關方進行的溝通,回應利益相關方需求。中國鋁業董事會對本公司可持續發展工作全面負責,且本報告已經董事會審閱及批准。詳盡的董事會管治內容詳見「董事會ESG管治聲明」一章。

## 1.1 時間範圍

除非特別說明,本報告期限為2020年1月1日至2020年12月31日(「本報告期」,「本年度」)。

## 1.2 報告範圍

本報告的主體範圍為本集團,著重匯報報告期內與本集團核心業務相關的環境和社會績效與相關政策。

## 1.3 發佈週期

中國鋁業股份有限公司社會責任暨環境、社會與管治報告為年度報告,每年定期發佈。這是我們發佈的第13本報告。

This Report covers Aluminum Corporation of China Limited's ("Chalco" or the "Company") and its branches' and subsidiaries' (collectively referred to as the "Group") environmental, social and governance performances, communication with various stakeholders and responses to the needs of stakeholders. The Board is fully responsible for the Company's sustainable development work, and this report has been reviewed and approved by the Board. For detailed contents on Board governance, please refer to the chapter "ESG GOVERNANCE STATEMENT FROM THE BOARD".

## 1.1 REPORTING PERIOD

This Report covers the period from 1<sup>st</sup> January 2020 to 31<sup>st</sup> December 2020 (the "Reporting Period" or the "Year"), unless otherwise specified.

## 1.2 REPORTING SCOPE

This Report covers Chalco and its branches and subsidiaries, focusing on reporting on the environmental, social and governance performances and related policy.

## 1.3 REPORTING CYCLE

Chalco's Corporate Social Responsibility Report and Environmental, Social and Governance Report is an annual report, which is published on a regular basis. This is our 13<sup>th</sup> report.

## 關於本報告(續) ABOUT THIS REPORT (Continued)

### 1.4 報告依據

本報告依據香港聯合交易所有限公司(「聯交所」)證券上市規則(「上市規則」)附錄二十七《環境、社會及管治報告指引》編製。同時參考上海證券交易所《關於加強上市公司社會責任承擔工作暨發佈〈上海證券交易所上市公司環境信息披露指引〉的通知》，以及全球報告倡議組織(GRI)《可持續發展報告標準》(2018)、國際標準組織《社會責任指南》(ISO 26000:2010)、國家標準GB/T36000《社會責任指南》和國資委《關於中央企業履行社會責任的指導意見》。按上述指引及標準中的報告原則進行重要性議題分析後的評估結果亦作為選擇披露信息的依據。本報告為中英文版，若中文版本與英文版本存在任何不一致，一概以中文版為準。

### 1.5 資料說明

本報告所引用的歷年資料為最終統計資料，其中財務資料如與年報有出入，應以年報為

### 1.4 REPORTING GUIDELINES

This Report was prepared with reference to the Environmental, Social and Governance Reporting Guide (the “ESG Guide”) contained in Appendix 27 of the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited; the Notice on Strengthening Listed Companies’ Assumption of Social Responsibility and the Guidelines on Listed Companies’ Environmental Information Disclosure of the Shanghai Stock Exchange; Sustainability Standards 2018 issued by the Global Reporting Initiative (“GRI”); the International Organization for Standardization (ISO)’s Guidance on Social Responsibility (ISO26000:2010); the national standard GB/T36000 Guidance on Social Responsibility; and the Guidelines to the State-owned Enterprises Directly under the Central Government issued by State-owned Assets Supervision and Administration Commission (“SASAC”). The materiality assessment results according to the reporting principles in the above-mentioned guidelines and standards also serve as the basis for identifying information to be disclosed. This Report is available in both Chinese and English. Should there be any discrepancy between the Chinese version and the English version, the Chinese version shall prevail.

### 1.5 REPORTING DATA SPECIFICATION

The data quoted in this Report is final statistics. If there are any discrepancies between the financial disclosures in this Report and the Company’s Annual



## 關於本報告(續) ABOUT THIS REPORT (Continued)

準。本報告中的財務資料貨幣幣種以人民幣為單位，特別說明除外。

Report, the figures in the Annual Report shall stand. The financial data in this Report is in Renminbi (“RMB”) unless otherwise specified.

### 1.6 指代說明

### 1.6 REPORTING SPECIFICATION

本報告期，除文義另有所指外，下列詞彙應具有以下涵義：

In this Report, the following terms shall have the following meanings unless otherwise specified:

「中國」 “China”	指 refers to	中華人民共和國 The People’s Republic of China
「國資委」 “SASAC”	指 refers to	國務院國有資產監督管理委員會 State-owned Assets Supervision and Administration Commission
「聯交所」 “SEHK”	指 refers to	香港聯合交易所有限公司 The Stock Exchange of Hong Kong Limited
「GRI」 “GRI”	指 refers to	全球報告倡議組織 Global Reporting Initiatives
「中國鋁業」、「公司」和 「本公司」 “Chalco” or the “Company”	指 refers to	中國鋁業股份有限公司 Aluminum Corporation of China Limited
「本集團」 The “Group”	指 refers to	中國鋁業股份有限公司及其分公司和子公司 Aluminum Corporation of China Limited. and its branches and subsidiaries
「中鋁集團」 “Chinalco”	指 refers to	中國鋁業集團有限公司 Aluminum Corporation of China

## 關於本報告(續) ABOUT THIS REPORT (Continued)

「中鋁國貿集團」 “Chalco Trading Group”	指 refers to	中鋁國際貿易集團有限公司 China Aluminum International Trading Group Co., Ltd.
「中鋁物流」 “Chalco Logistics”	指 refers to	中鋁物流集團有限公司 China Aluminum Logistics Group Corporation Co., Ltd.
「中鋁物資」 “Chalco Materials”	指 refers to	中鋁物資有限公司 Chalco Materials Co., Ltd.
「三大平台」 “Three Platforms”	指 refers to	中鋁國貿集團、中鋁物流、中鋁物資 Chalco Trading Group, Chalco Logistics, Chalco Materials
「遵義鋁業」 “Zunyi Aluminum”	指 refers to	遵義鋁業股份有限公司 Zunyi Aluminum Co., Ltd.
「包頭鋁業」 “Baotou Aluminum”	指 refers to	包頭鋁業有限公司 Baotou Aluminum Co., Ltd.
「廣西分公司」 “Guangxi Branch”	指 refers to	中國鋁業股份有限公司廣西分公司 Guangxi Branch of Chalco
「中州鋁業」 “Zhongzhou Aluminum”	指 refers to	中鋁中州鋁業有限公司 Zhongzhou Aluminum Co., Ltd.
「寧夏能源」 “Ningxia Energy”	指 refers to	中鋁寧夏能源集團有限公司 Chalco Ningxia Energy Group Co., Ltd.
「鄭州研究院」 “Zhengzhou Research Institute”	指 refers to	中國鋁業鄭州有色金屬研究院有限公司 Chalco Zhengzhou Nonferrous Metal Research Institute Co., Ltd.
「中鋁山東」 “Chalco Shandong”	指 refers to	中鋁山東有限公司 Chalco Shandong Co., Ltd.
「山西新材料」 “Shanxi New Material”	指 refers to	中鋁山西新材料有限公司 Chalco Shanxi New Material Co., Ltd.



## 關於本報告(續) ABOUT THIS REPORT (Continued)

「中鋁礦業」 “Chalco Mining”	指 refers to	中鋁礦業有限公司 Chalco Mining Co., Ltd.
「青海分公司」 “Qinghai Branch”	指 refers to	中國鋁業股份有限公司青海分公司 Qinghai Branch of Chalco
「貴州分公司」 “Guizhou Branch”	指 refers to	中國鋁業股份有限公司貴州分公司 Guizhou Branch of Chalco
「撫順鋁業」 “Fushun Aluminum”	指 refers to	撫順鋁業有限公司 Fushun Aluminum Co.,Ltd
「蘭州鋁業」 “Lanzhou Aluminum”	指 refers to	蘭州鋁業有限公司 Lanzhou Aluminum Co.,Ltd
「中鋁幾內亞」 “Chalco Guinea”	指 refers to	中國鋁業幾內亞有限公司 Chalco Guinea Company S.A
「廣西華昇」 “Guangxi Huasheng”	指 refers to	廣西華昇新材料有限公司 Guangxi Huasheng New Material Co.,Ltd
「廣西華磊」 “Guangxi Hualei”	指 refers to	廣西華磊新材料有限公司 Guangxi Hualei New Material Co.,Ltd
「貴州華錦」 “Guizhou Huajin Aluminum”	指 refers to	貴州華錦鋁業有限公司 Guizhou Huajin Aluminum Co.,Ltd

### 1.7 獲取方式

電子版下載地址如下：

香港聯合交易所網站  
<https://www.hkex.com.hk>  
上海證券交易所網站  
<https://www.sse.com.cn>  
中國鋁業網站  
<https://www.chalco.com.cn>

### 1.7 ACCESS TO THE REPORT

Electronic copies are available as follows:

The Stock Exchange of Hong Kong:  
<https://www.hkex.com.hk>  
The Shanghai Stock Exchange:  
<https://www.sse.com.cn>  
Chalco Website:  
<https://www.chalco.com.cn>



## 關於本報告(續) ABOUT THIS REPORT (Continued)

### 1.8 意見反饋

本集團重視各利益相關方提出的建議或意見，以不斷求進。若閣下對本報告有任何意見，歡迎通過以下方式與本公司取得聯繫：

電話：8610-8229 8322  
傳真：8610-8229 8158  
電郵：ir@chalco.com.cn

另外，本報告的154頁附有意見回饋問卷，歡迎閣下填妥並發送來至電郵信箱。

### 1.8 RESPONSE TO THE REPORT

The Group values suggestions or opinions from various stakeholders in order to continuously improve. If you have any comments on this Report, please contact us:

Phone no.: 8610-8229 8322  
Fax no.: 8610-8229 8158  
Email: ir@chalco.com.cn

Besides, a feedback questionnaire is attached at page 154 of this Report, and you are welcome to fill in and send it to the email address above.

2 走進中國鋁業  
ABOUT CHALCO

2.1 公司簡介  
COMPANY PROFILE

2.2 核心理念  
CORE PHILOSOPHY

2.3 榮譽獎項  
HONORS AND AWARDS



# 走進中國鋁業

## ABOUT CHALCO

### 2.1 公司簡介

#### 1. 公司基本信息

公司名稱  
Company Name

代行董事長  
Acting Chairman of the Board

成立時間  
Date of Establishment

董秘(公司秘書)  
Secretary of the Board  
(Company Secretary)

註冊地址  
Registered Address

總股本  
Total Equity

控股股東  
Controlling Shareholder

公司網址  
Company Website

實際控制人  
The Actual Controller

郵箱地址  
Email Address

### 2.1 COMPANY PROFILE

#### 1. Company basic information

中國鋁業股份有限公司  
Aluminum Corporation of China Limited

敖宏  
Ao Hong

2001年9月10日  
10<sup>th</sup> September, 2001

王軍  
Wang Jun

北京市海淀區西直門北大街62號  
No. 62, Xizhimen North Street,  
Haidian District, Beijing, China

17,022,762,951  
17,022,762,951 shares

中國鋁業集團有限公司  
Aluminum Corporation of China

[www.chalco.com.cn](http://www.chalco.com.cn)

國務院國有資產監督管理委員會  
State-owned Assets Supervision and  
Administration Commission

[ir@chalco.com.cn](mailto:ir@chalco.com.cn)



走進中國鋁業(續)  
ABOUT CHALCO (Continued)

2. 經營業務板塊

2. Operating business segment



3. 三地上市

3. Listed on three stock exchanges

公司股票分別在香港、紐約、上海三地交易所上市。

The Company's shares are listed on the Hong Kong, New York and Shanghai Stock Exchanges.

	HKEX 香港交易所	NYSE	上海證券 SHANGHAI STOCK EXCHANGE
上市時間 Listing Time	2001.12	2001.12	2007.04
股票代碼 Stock Code	2600.HK	ACH.NY	601600.SH

## 走進中國鋁業(續) ABOUT CHALCO (Continued)

### 4. 市場地位



中國鋁業一直以保障國家戰略資源開發和利用為己任，在航空航天、軌道交通、民用高端合金等方面發揮了極為重要的作用，先後為中國第一顆人造衛星、長征系列火箭、神舟系列飛船、嫦娥工程、大飛機、高鐵動車、建築交通等提供了大量高質量的關鍵型材。

### 4. Market presence



Chalco has always been committed to ensuring the development and utilization of national strategic resources. Chalco has always been playing a very important role in critical industries like aerospace, rail transportation, and high-end civilian alloys. Chalco has provided a large number of high-quality key profiles for China's first artificial satellite, Long March series rocket, Shenzhou series spacecraft, Chang'e Project, large aircraft, high-speed trains, construction and transportation.



## 走進中國鋁業(續) ABOUT CHALCO (Continued)

### 2.2 核心理念

社會責任觀：  
Corporate Social Responsibility  
philosophy:

核心價值觀：  
Core values:

企業願景：  
Chalco's vision:

企業精神：  
Corporate's spirit:

企業使命：  
Corporate's mission:

品牌形象：  
Corporate's image:

經營理念：  
Operation philosophy:

管理理念：  
Management philosophy:

文化氛圍：  
Cultural atmosphere:

從業觀：  
Business conduct concept:

安全觀：  
Safety concept:

### 2.2 CORE PHILOSOPHY

點石成金 造福人類  
Turning Stone into Gold and Benefiting Mankind

責任 誠信 開放 卓越  
Responsibility, Integrity, Openness, and Excellence

建設具有全球競爭力的世界一流鋁業公司  
To Become a World-class Global Company with Global  
Competitiveness in the Non-ferrous metal industry

勵精圖治 創新求強  
Striving for Better Performance and Innovating for  
Prosperity

報效國家 回報股東 成就員工 惠澤客戶 造福社會  
珍愛環境  
Bringing Benefits to the Country, Shareholders,  
Employees, Customers, Communities and  
Environment

責任中鋁 誠信中鋁 生態中鋁 法治中鋁 平安中鋁  
和諧中鋁  
Responsible, Integrity, Ecological, Rule of Law,  
Peaceful, and Harmonious

創造價值 回報至上  
Creating Value and Maximizing Returns

精益求精 協同高效  
Striving for Excellence and Collaborating for Efficiency

陽光 坦誠 簡單 包容  
Transparency, Honesty, Simplicity, and Open-  
mindedness

廉潔從業 重德立行  
Working without Corruption and Performing with  
Virtues

安全是效益 員工是財富  
Safety determines corporate efficiency and returns  
while employees are our Wealth

## 走進中國鋁業(續) ABOUT CHALCO (Continued)

### 2.3 榮譽獎項

中國鋁業以106.11億元的品牌價值位居「2020中國品牌500強」榜單148位。

中國鋁業獲《2020最佳中概股榜單》最佳中概新能源股。

中國鋁業榮獲第十屆中國證券金紫荊獎「最佳上市公司」獎。

中國鋁業榮獲證券日報第四屆新時代資本論壇金駿馬獎「扶貧先鋒」獎。

中國鋁業獲第14屆中國上市公司價值評選「社會責任」獎和「資本運作標桿」獎。

中國鋁業位列福布斯全球2,000強榜單第1,168位。

中國鋁業位列世界品牌實驗室主辦的「亞洲品牌大會」發佈的「2020年亞洲品牌500強排行榜」第243位。

中國鋁業位列「2020年中國上市公司百強排行榜」第288位。

### 2.3 HONORS AND AWARDS

With a brand value of 10.611 billion yuan, Chalco ranks 148<sup>th</sup> on the “Top 500 Chinese Brands 2020” list.

Chalco was awarded the best China Concept new energy stock in the “2020 Best China Concept Stocks List”.

Chalco won the “Best Listed Company” award at the 10<sup>th</sup> China Securities Golden Bauhinia Award.

Chalco won the “Poverty Alleviation Pioneer” award in the Golden Horse Award at the 4<sup>th</sup> New Era Capital Forum of Securities Daily.

Chalco won the “Social Responsibility” award and the “Capital Operation Benchmark” award in the 14<sup>th</sup> China Listed Company Value Selection.

Chalco ranks 1,168<sup>th</sup> on the Forbes Global 2,000 list.

Chalco ranks 243<sup>rd</sup> in the “Top 500 Asian Brands 2020” released by the “Asia Brand Summit” hosted by the World Brand Lab.

Chalco ranks 288<sup>th</sup> in the “Top 100 Listed Companies in China 2020”.

3 董事會ESG管治聲明  
ESG GOVERNANCE  
STATEMENT FROM  
THE BOARD



# 董事會ESG管治聲明

## ESG GOVERNANCE STATEMENT FROM THE BOARD

中國鋁業董事會為可持續發展工作的決策機構，負責整體部署和推進公司ESG管理，對公司可持續發展策略全面負責，公司設立的社會責任工作委員會負責推進ESG治理工作，落實ESG管理各項任務指標。

The Board of Directors of Chalco is the decision-making body for sustainable development, responsible for the overall deployment and promotion of the Company's ESG management, and is fully responsible for the Company's sustainable development strategy. The Social Responsibility Working Committee established by the Company is responsible for advancing ESG governance and implementing various task indicators for ESG management.

### 有關ESG事宜的監管、管理及策略：

### Regarding supervision, management and strategies related to ESG matters:

中國鋁業董事會主要履行以下ESG相關職責：

The Board of Directors of Chalco mainly performs the following ESG-related responsibilities:

- 審議本集團的ESG管治戰略方針、ESG管理制度與管理目標、本集團重要新議題識別與應用、ESG相關風險與機遇識別及管理 and 年度ESG報告。
- 監督檢查ESG管理相關事宜的識別、評估、管理過程和相關ESG目標的推進進度等。

- Review the Group's ESG governance strategy, ESG management system, and management objectives, the identification and application of important new issues of the Group, the identification and management of ESG-related risks and opportunities, and the annual ESG report.
- Supervise and inspect the identification, evaluation, management process of ESG management-related matters and the progress of related ESG goals.

本集團董事會通過本集團設立的專題匯報機制對公司ESG事宜進行推進和監管。公司管理層採取向董事會進行相關的ESG專題培訓和專題匯報的形式，優化董事會參與ESG事宜的工作機制，促進董事會建設和運行的規範化。

The Board of Directors of the Group promotes and supervises the Company's ESG matters through the special reporting mechanism established by the Group. In order to optimize the working mechanism of the Board of Directors to participate in ESG matters and promote the standardization of Board construction and operation, the Company's management adopts the form of relevant ESG special training and special reports to the Board of Directors.



## 董事會ESG管治聲明(續) ESG GOVERNANCE STATEMENT FROM THE BOARD (Continued)

2020年，公司內部對ESG議題進行了重要性評估，識別出6大關鍵議題，對6大關鍵議題的基本管理情況進行梳理，並提出44條管理提升建議，進而制定改善公司ESG管治的具體改進措施。

為了進一步釐定董事會的監管責任，明確董事會參與ESG事宜的流程，本公司管理層組織了向董事會的ESG專項匯報會，報告了董事會參與ESG監管的職責、公司ESG工作現狀、需提升領域和擬開展的提升工作計劃。此外，本公司組織了ESG專項培訓會，幫助公司各相關方全面了解公司ESG現狀，溝通提升ESG管理實踐的可行性。

社會責任工作委員會主要履行以下ESG相關職責：

- 落實董事會的ESG相關工作部署，準備相關年度工作計劃，配合相關部門落實相關政策、措施及方案
- 與各部門商議並決定適用的ESG相關目標，並定期進行檢討，確認進度

In 2020, the Company conducted an internal assessment of the importance of ESG issues and identified six key issues. The Company sorted out the basic management of the six key issues, and put forward 44 management improvement suggestions, and then formulated specific improvement measures to improve the Company's ESG governance.

In order to further determine the supervisory responsibilities of the Board of Directors and clarify the process for the Board of Directors to participate in ESG matters, the management of the Company organized a special ESG report meeting to the Board of Directors. The meeting reported on the responsibility of the Board of Directors to participate in ESG supervision, the current status of the Company's ESG work, the areas to be improved, and the proposed improvement work plan. In addition, the Company organized special ESG training sessions to help all relevant stakeholders of the Company to fully understand the Company's ESG status quo, and to communicate and improve the feasibility of ESG management practices.

The Social Responsibility Committee mainly performs the following ESG-related responsibilities:

- Implement the ESG-related work deployment of the Board of Directors, prepare relevant annual work plans, and cooperate with relevant departments to implement relevant policies, measures, and plans
- Discuss with various departments and decide on applicable ESG-related targets, and conduct regular reviews to confirm progress

## 董事會ESG管治聲明(續)

### ESG GOVERNANCE STATEMENT FROM THE BOARD (Continued)

#### 有關ESG相關風險管理：

2021年，公司董事會將進一步完善ESG風險管理、信息收集和匯報制度，探索建立與ESG相關的獎懲機制，推動公司ESG治理水平的不斷提升。

對於ESG風險，本集團董事會審核委員會作為董事會下設的專門委員會，對本公司風險管理及內部控制體系的建立健全和執行情況進行監督檢查，並定期與管理層討論風險管理及內部控制的具體執行情況，確保本公司已建立有效的風險管理及內部控制系統。

本公司風險識別與分析流程如下：

1. 收集資料
2. 掌握風險現狀
3. 拆分風險事件
4. 製作風險調查問卷
5. 填寫風險調查問卷
6. 填寫風險案例調查表
7. 訪談公司領導或各部門負責人，對識別的風險進行調整和完善

#### Regarding ESG related risk management:

In 2021, the Company's Board of Directors will further improve ESG risk management, information collection, and reporting systems, and explore the establishment of ESG-related rewards and punishments, so as to promote the continuous improvement of the Company's ESG governance level.

Regarding ESG risks, the Audit Committee of the Board of Directors of the Group, as a special committee under the Board of Directors, supervises and inspects the establishment and implementation of the Company's risk management and internal control system, and regularly discusses the specific implementation of risk management and internal control with the management, so as to ensure that the Company has established an effective risk management and internal control system.

The Company's risk identification and analysis process is as follows:

1. Collect information
2. Grasp the risk status
3. Split risk events
4. Create a risk questionnaire
5. Fill out the risk questionnaire
6. Fill in the risk case survey form
7. Interview company leaders or heads of various departments to adjust and improve the identified risks





## 董事會ESG管治聲明(續) ESG GOVERNANCE STATEMENT FROM THE BOARD (Continued)

### 有關利益相關方的溝通：

中國鋁業非常重視其利益相關方，為重點回應利益相關方的關注，向各利益相關方展開了重要性議題調查。中國鋁業董事會通過參與問卷調查、最終審閱批示兩種方式對本集團重要性議題識別過程進行參與和監督。中國鋁業視環境和社會在其可持續發展中同等重要，將其重要性分為「環境」和「社會」兩大方面。本報告期，中國鋁業綜合外部和內部利益相關方的意見，共識別出10個重要性議題，用作分析中國鋁業可持續發展工作中最需受到重視的方向。

有關ESG相關管理的詳細信息，請參閱「社會責任管治」章節。

### Regarding communication with relevant stakeholders:

Chalco attaches great importance to its stakeholders, and in order to focus on responding to the concerns of stakeholders, the Company has launched surveys on important issues with all stakeholders. The Board of Directors of Chalco participated in and supervised the identification process of the Group's important issues by participating in questionnaire surveys and final review and approval. Chalco regards the environment and society as equally important in its sustainable development, and divides its importance into two major aspects: "Environmental" and "Social". During the reporting period, Chalco integrated the opinions of external and internal stakeholders, and identified 10 material issues, which will be used to analyze the most important aspects of Chalco's sustainable development work.

For detailed information on ESG-related management, please refer to the chapter on "Social Responsibility Governance".

- 4 公司治理  
CORPORATE GOVERNANCE
- 4.1 完善治理架構  
IMPROVING THE GOVERNANCE  
STRUCTURE
- 4.2 崇尚商業道德  
ADVOCATING BUSINESS  
ETHICS





作為在上海、香港和紐約三地上市的上市公司，中國鋁業憑藉完善的「三會一層」治理架構保障公司的穩定運營，同時崇尚商業道德，堅決履行反貪污和反洗錢職責，以規範的反腐敗體系和制度，打造具有商業道德、廉潔奉公的專業團隊，為各利益相關方帶來持續穩定的收益。

### 4.1 完善治理架構

中國鋁業嚴格遵守《中華人民共和國公司法》、中國證監會出台的《上市公司治理準則》等法律法規，作為三地上市的上市公司，中國鋁業同時嚴格遵守《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》《紐約證券交易所上市公司治理規則》(The New York Stock Exchange Listed Company Manual)等證券監管要求。

#### 4.1.1 治理架構

本報告期，中國鋁業繼續優化自身企業治理能力，憑藉明確的公司治理制度、議事規則和工作流程，持續深化完善由股東大會、董事會、監事會和管理層組成的「三會一層」

As a listed company listed in Shanghai, Hong Kong and New York, Chalco guarantees the stable operation of the Company with its comprehensive governance structure of “Three Boards and One Layer”. At the same time, we uphold business ethics, resolutely perform anti-corruption and anti-money laundering responsibilities, to build a professional team with business ethics and integrity with a standardized anti-corruption system, and the system to bring continuous and stable benefits to all stakeholders.

### 4.1 IMPROVING THE GOVERNANCE STRUCTURE

Chalco strictly abides by the “Company Law of the People’s Republic of China” and the “Code of Corporate Governance of Listed Companies” issued by the China Securities Regulatory Commission. As a listed company in the three places, Chalco also strictly complies with the “Rules Governing the Listing of Stocks on Shanghai Stock Exchange”, “Rules Governing the Listing of Securities on the Stock Exchange of Hong Kong Limited”, “The New York Stock Exchange Listed Company Manual” and other securities regulatory requirements.

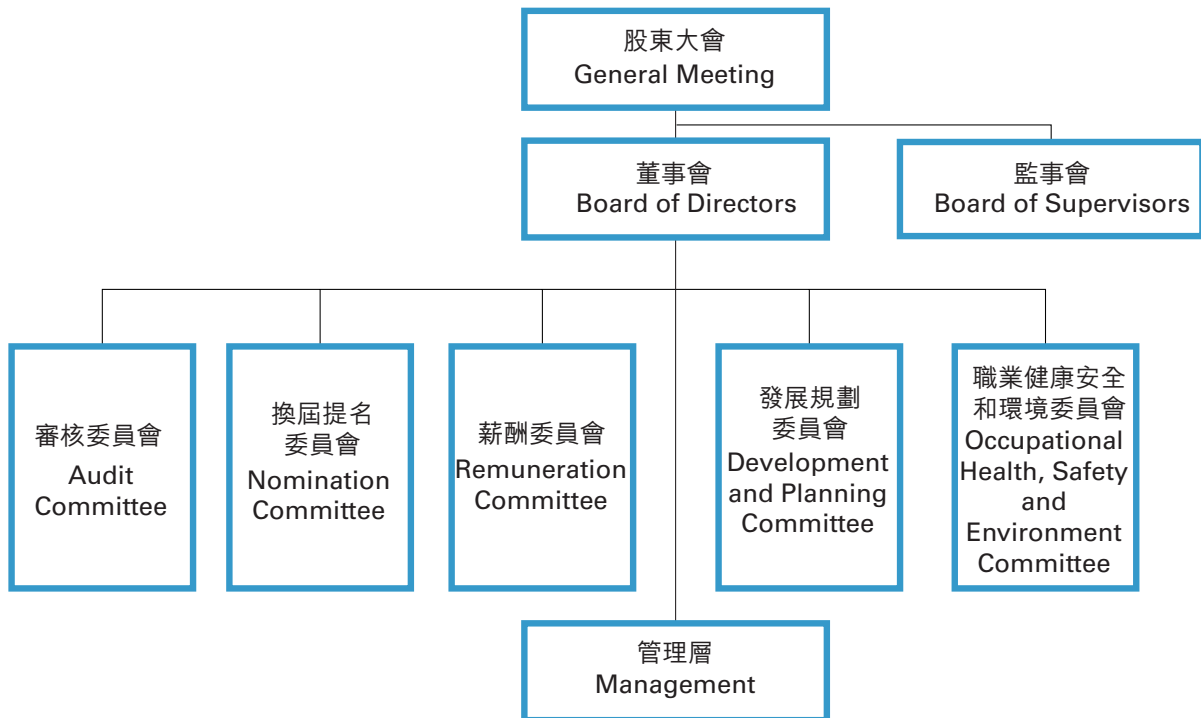
#### 4.1.1 Governance Structure

During the reporting period, Chalco continued to optimize its corporate governance capabilities, continued to formulate clear corporate governance systems, rules of procedure and work processes, and continued to deepen and improve the “Three Boards and One Layer” framework composed of shareholders’ meetings,

## 公司治理(續) CORPORATE GOVERNANCE (Continued)

治理架構和各項治理制度，致力秉持高水準的企業治理能力有效領導中國鋁業實現可持續的高質量發展，以良好的業績回報社會和廣大股東。

the Board, Supervisors and management, and also other various governance systems, committed to upholding a high level of corporate governance capabilities to effectively lead Chalco to achieve sustainable high-quality development, and to reward society and stakeholders with good performances.



中國鋁業「三會一層」治理架構  
Chalco's "Three Boards and One Layer"



## 公司治理(續) CORPORATE GOVERNANCE (Continued)

### 4.1.2 治理機制

#### 股東大會

股東大會是中國鋁業最高權力機構，股東大會依法行使決定公司的經營方針和投資計劃，審議批准公司的利潤分配方案和彌補虧損方案，修訂公司章程、股東大會議事規則、董事會議事規則和監事會議事規則等職權。

本報告期，中國鋁業股東大會邀請了機構投資者在內的股東共組織召開2次會議，審議通過14項議案。

#### 董事會

董事會是中國鋁業的經營決策機構，對股東大會負責。董事會依法行使的職權包括但不限於以下各項：執行股東大會的決議；決定公司的發展戰略、經營計劃和投資方案；制定公司的年度財務預算方案、決算方案；制定公司的利潤分配方案和彌補虧損方案；制定公司

### 4.1.2. Governance Mechanism

#### General Meeting

The general meeting is the highest authority of Chalco, legally exercising its rights: to decide on the Company's management principles and investment plans; to review and approve profit distribution and loss recovery plans; and to revise the Company's constitution and the rules and procedures for general meetings, meetings of the Board of Directors and Board of Supervisors.

During the reporting period, the general meeting of Shareholders of Chalco invited shareholders including institutional investors to organize 2 meetings and deliberated and approved 14 proposals.

#### Board of Directors

Board of Directors is the operating decision-making body of Chalco, accountable to the general meeting. The Board of Directors legally exercises its duties including but not limited to the following items: executing the resolutions of general meetings; deciding on the Company's development strategies, business plans and investment plans; and formulating the Company's annual financial budget, financial statement, profit distribution plan, loss recovery plan, as well as any proposal

## 公司治理(續)

### CORPORATE GOVERNANCE (Continued)

增加或者減少註冊資本的方案；制定公司的基本管理制度並監督制度的執行情況；決定公司風險管理、合規和內部控制政策，制定公司內控合規管理等相關制度；制定股權激勵計劃等。

截至本報告期末，本公司第七屆董事會有6名董事，分別為：執行董事朱潤洲先生，非執行董事敖宏先生和王軍先生，獨立非執行董事陳麗潔女士、胡式海先生和李大壯先生。本報告期，中國鋁業共召開9次董事會會議，審議通過36項議案。

公司董事會辦公室為董事會的服務機構，負責董事會日常事務，為董事會進行生產經營決策提供決策支持，每月將公司所屬行業市場信息、公司生產經營情況、重點項目進展情況等編製《董事通訊》供公司董事參閱，不定期就重點事項及時向公司外部董事進行匯報，並安排公司外部董事對公司所屬企業開展工作調研，確保公司外部董事及時了解行業、公司相關信息。本報告期，為方便公司外部董事深入了解公司三大平台運營情況及公司所屬企業

to increase or decrease registered capital. The Board also determines basic management systems, including policies and processes for the management of risk, internal controls and compliance, equity incentive plans etc., as well as supervises the implementation of the Company's regulatory obligations.

As of the end of the reporting period, the Company's seventh session of Board of Directors consisted of 6 directors: Mr. Zhu Runzhou, Chairman and Executive Director; Mr. Ao Hong, Mr. Wang Jun, Executive Directors; Ms. Chen Lijie, Mr. Hu Shihai and Mr. Li Dazhuang, Non-Executive Directors. The Board held 9 meetings, reviewed and passed 36 proposals during the reporting period.

The office of the Board of Directors is the service organization of the Board of Directors, responsible for the daily affairs of the Board of Directors. It also provides decision support for the reference for the Board of Directors to make production and operation decisions, preparing monthly "Directors' Newsletter" with market information of the industry, production and operation of the Company, progress of key projects, etc. The office also reports to the external Directors of the Company on key matters from time to time. To ensure that the external Directors are kept abreast of industry and company-related information, the office arranges work research on the enterprises belonging to the Company. During this reporting period, in order to facilitate the external Directors of the Company to have an in-depth understanding of the operation of the three major platforms and the production and



## 公司治理(續) CORPORATE GOVERNANCE (Continued)

的生產經營情況，公司分別於5月和9月安排公司外部董事對三大平台和青海分公司開展了工作調研。



公司外部董事通過視頻對「三大平台」開展工作調研

The Company's external Directors conducted work research on "three platforms" through video.

### 監事會

監事會是公司監督機構，對股東大會負責。監事會依法行使職權，檢查公司財務及風險管理和內部控制情況，對董事會、高級管理層及其成員的履職進行監督評價，並提出意見與建議。

截至本報告期末，公司監事會主要由4名監事，包括：監事會主席葉國華先生，監事單淑蘭女士、關曉光先生和岳旭光先生。本報告期，公司共召開了4次監事會，對公司定期財務報告、內部控制及其他有關重要事項進行了認真審議，共審核通過8項議案。

operation of the enterprises belonging to the Company, the Company arranged the external Directors to conduct work research on the "three platforms" and Qinghai Branch in May and September respectively.



公司獨立董事赴青海分公司開展工作調研

The Company's independent Directors went to Qinghai branch to conduct work research

### Board of Supervisors

The Board of Supervisors is the Company's supervisory body, accountable to the general meeting. The Board of Supervisors legally exercises its duties to inspect and investigate the Company's financial and risk management and internal controls, to supervise and appraise the performance of the Board of Directors, senior management and their members, as well as to give opinions and make recommendations.

As of the end of the reporting period, the Board of Supervisors consisted of 4 Supervisors, including Mr. Ye Guohua, Chairman of the Supervisory Board, Ms. Shan Shulan, Mr. Guan Xiaoguang, and Mr. Yue Xuguang, Supervisors. In this reporting period, the Company held 4 supervisory committees, to review the Company's regular financial reports, internal controls and other relevant important issues. A total of 8 proposals were reviewed and approved.

## 公司治理(續) CORPORATE GOVERNANCE (Continued)

### 管理層

管理層主要職能包括主持公司的生產經營管理工作，組織實施董事會決議、公司發展戰略、年度經營計劃、投資計劃、財務預算方案，制定、組織並執行業績及績效考核和薪酬激勵等。董事會定期檢討授予管理層的職能及其工作情況，確保公司整體利益。本公司管理層向董事會或者監事會報告公司重大合同的簽訂和執行情況、資金運用情況和盈虧情況。

截至本報告期末，本公司主要高級管理人員包括：總裁朱潤洲先生、財務總監兼董事會秘書王軍先生、副總裁吳茂森先生。

### Management

The main functions of management include being in charge of the Company's production and other operations, organizing the implementation of the Board of Directors' resolutions and the Company's development strategies, annual business plan, investment plan, financial budget plan, as well as formulating and carrying out performance appraisals and the remuneration incentive scheme. The Board of Directors reviews the functions and performance of management to protect the interest of the Company as a whole. The management of the Company reports to the Board of Directors or the Board of Supervisors the signing and implementation of the Company's major contracts, the use of funds, and the profitability loss situation.

As of the end of the reporting period, the Company's key senior management personnel include: President Mr. Zhu Runzhou, Chief Financial Officer and Secretary of the Board (Company Secretary) Mr. Wang Jun, and Vice President Mr. Wu Maosen.





## 4.2 崇尚商業道德

### 4.2.1 反腐敗管理體系

中國鋁業建立了集體決策機制和廉潔從業的責任體系，完善了信用管理制度，發揮各級紀檢監察部門的監督作用，將廉政建設與生產經營緊密結合，開展廉潔風險防控工作，從制度到運營各個環節持續進行風險控制，有效防範和查處腐敗及商業賄賂案件。

### 4.2.2 反腐敗管理制度

中國鋁業不斷加強恪守商業道德教育和相關人員的管理，對賄賂、勒索、欺詐及洗黑錢等不法行為始終採取「零容忍」，本集團嚴格遵守《中華人民共和國反洗錢法》《中華人民共和國刑法》等相關法例，研究制定了《紀律檢查委員會議事規則(試行)》《2020年黨風廉政建設和反腐敗工作要點》等系列制度和政策，進一步規範紀委議事程序，為加

## 4.2 ADVOCATING BUSINESS ETHICS

### 4.2.1 Anti-corruption Management System

Chalco has established a collective decision-making mechanism and a responsibility system for honest employment, which improved the credit management system, brought into play the supervisory role of discipline inspection and supervision departments at all levels, closely integrated the construction of an honest government with production and operation, and carried out the prevention and control of corruption risks. Continuously risk controls from the system to all aspects of operation, effectively preventing and investigating corruption and commercial bribery cases.

### 4.2.2 Anti-Corruption Management System

Chalco has been continuously strengthening its business ethics education and the management of relevant person and has always adopted "zero tolerance" for illegal acts such as bribery, extortion, fraud and money laundering. The Group strictly abides by the "Anti-Money Laundering Law of the People's Republic of China" and the "Criminal Law of the People's Republic of China" and other related laws. The Company studied and formulated a series of systems and policies such as the "Rules of Procedure of the Disciplinary Inspection Committee (for Trial Implementation)" and "Key Points for the Construction of Party Conduct and

## 公司治理(續)

### CORPORATE GOVERNANCE (Continued)

強黨風廉政建設和反腐敗工作中的組織協調作用奠定制度基礎，本集團嚴格遵守國家相關法律法規及中鋁集團相關政策文件，貫徹落實各項黨風廉政建設和反腐敗工作。本報告期，中國鋁業進一步強化考核制度，將作風建設、督查工作、問題整改等納入黨建考核，指標體系逐步完善。更加注重日常監督，建立黨建工作「一月一提示、一季一督查」工作機制，督促考核從嚴高效，問題回饋精準直接，考核導向作用凸顯，真正將軟約束變成了硬要求，推動公司黨建工作各項重點任務落實。本報告期，本公司未發生任何違反與賄賂、勒索、欺詐和洗黑錢相關的對本公司有重大影響的違法違規行為。

本集團雖無正式關於「疏通費」商業道德管理辦法，但從財務報告中可以看出結論，本集團並無相關費用產生。而且，該種

Clean Government and Anti-corruption Work in 2020" to further standardize the proceedings of the Commission for Discipline Inspection, and lay the institutional foundation for strengthening the organizational and coordinating role in anti-corruption work of combating corruption and building clean government. The Group has strictly abided by relevant national laws and regulations and relevant policy documents related to Chinalco, and has implemented various Party style and clean government building and anti-corruption work. During the reporting period, Chalco further strengthened the assessment system, incorporating style construction, supervision work, and problem rectification into the Party building assessment to gradually improve the indicator system. The Company paid more attention to daily supervision and establishing a working mechanism of the Party building work: "One reminder per month, one inspection per quarter". The mechanism urged strict and efficient assessment, provided accurate and direct feedback on problems, and highlighted the guiding role of assessment. The process truly turns soft constraints into hard requirements and promotes the Company's Party building and the implementation of key tasks of the work. During the reporting period, the Company did not have any violations with significant impact on the Company that related to bribery, extortion, fraud and money laundering.

Although the Group has no formal business ethics management measures for "facilitation payments", it can be concluded from the financial report that the Group has not incurred related expenses. Moreover, this kind of



## 公司治理(續) CORPORATE GOVERNANCE (Continued)

行為於本集團的營運地點的法律上並不允許，同時本集團對此等不法行為絕不容忍。

behaviors is not allowed in the law of the place of operation of the Group, and the Group will not tolerate such illegal behaviors.

### 4.2.3 承包商反腐建設

中國鋁業嚴格把控供應鏈反貪污建設，與供應商簽訂《反商業賄賂書》，致力於打造合規、透明的營商環境。

### 4.2.3 Contractor Anti-corruption Construction

Chalco strictly controls the anti-corruption construction of the supply chain, and signed the "Anti-Commercial Bribery Letter" with suppliers to create a compliant and transparent business environment.

中國鋁業制定了《中國鋁業股份有限公司生產領域業務外包管理規定》，明確要求各企業在業務外包過程中若存在玩忽職守、營私舞弊或者收受賄賂等行為，將根據情節輕重和產生的後果，追究相關單位和人員的責任。

Chalco has formulated the "Regulations on the Management of Outsourcing in the Production Field of Aluminum Corporation of China Limited", which clearly requires all companies to investigate the responsibilities of relevant units and personnel if there are neglecting their duties, engaging in fraud, or accepting bribes in the process of business outsourcing, based on the severity and consequences.

### 4.2.4 反腐倡廉培訓

本公司董事會、管理層始終堅持「零容忍」的態度懲治腐敗。本報告期，本公司各分子企業持續深入開展黨風廉政建設，增強黨員幹部廉潔自律意識，築牢拒腐防變思想防線，打造規範化、法治化的運營環境。

### 4.2.4 Anti-corruption Training

The Company's Board of Directors and management have always adhered to a "Zero tolerance" approach to punish corruption. During the reporting period, the subsidiaries and enterprises of the Company continued to deepen the construction of party style and clean government, strengthened the awareness of integrity and self-discipline of Party members and cadres. The Company strengthened the ideological line of defense against corruption and degeneration, and created a standardized and legalized operating environment.

## 公司治理(續) CORPORATE GOVERNANCE (Continued)

案例：所屬企業開展廉政建設培訓

**Case: Affiliated Companies Carry out Training on Building A Clean Government**



2020年6月，中國鋁業廣西分公司紀委書記李惟揚以《樹立正確的權利觀、價值觀、人生觀，做忠誠乾淨擔當的黨員幹部》為題講廉政黨課。

In June 2020, Li Weiyang, the Secretary of the Disciplinary Committee of the Guangxi Branch of Chalco, gave a lecture on clean government with the topic of "Establishing a Correct View of Rights, Values, and Outlook on Life, and Being a Loyal and Clean Party Member and Cadre".

2020年6月，包頭鋁業紀委書記王際清以《國有企業關鍵崗位職務犯罪的預防》為題，在包頭鋁業炭素廠生陽極黨支部講廉政黨課。

In June 2020, Wang Jiqing, the Secretary of the Disciplinary Committee of Baotou Aluminum Industry, gave a lecture on clean government at the Baotou Aluminum Industry Carbon Plant's Raw Anode Party Branch with the topic "Prevention of Duty Crimes in Key Positions of State-owned Enterprises".

- 5 社會責任管治  
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## 社會責任管治

# SOCIAL RESPONSIBILITY GOVERNANCE

本集團社會責任管治以實現高水準的企業可持續發展為目標，並堅信良好的可持續發展策略能有效助力企業長遠策略和目標的實現，帶領本集團把握和應對可持續發展帶來的機遇和風險。為此，中國鋁業積極將社會責任全面融入企業日常管理體系中，承擔起對員工、客戶、社會和環境等利益相關方的責任。

The Group's social responsibility governance aims at achieving a high level of sustainable development, and we firmly believe that a sound sustainability strategy can effectively contribute to the realization of long-term strategies and objectives, leading the Group to grasp and respond to the opportunities and risks brought about by sustainable development. To this end, Chalco actively integrates social responsibility into the day-to-day management system and assumes responsibility for various stakeholders including employees, customers, society and environment.

### 5.1 責任管治體系

中國鋁業以「點石成金、造福人類」作為履行社會責任的核心理念，以回報股東、成就員工、惠澤客戶、造福社會和珍愛環境為公司使命，將社會責任管理有效融入公司業務管理系統(CBS)中，實現公司主要業務單元全覆蓋，出台了《中國鋁業股份有限公司社會責任管理模塊》相關文件，建立系統化的管理體系、組織體系、制度體系以及考評體系，並明確了本集團五大履責領域，分別為：公司治理、員工權益、環境保護、公平運營、社區支持。同時針對五大履責領域分別建立了責任範圍、責任主體、分配至各部門的責任指標以及負面清單，共80項禁止事項。

### 5.1 MANAGEMENT SYSTEM

Chalco adopts "Turning Stone into Gold and Benefiting Mankind" as the core value of social responsibility, takes rewarding shareholders, empowering employees, benefiting customers and society, and cherishing environment as the Company's mission, and effectively integrates social responsibility into the Company's business management system (CBS). We established a responsibility management system which achieves full coverage of the Company's main business units, released "Chalco Social Responsibility Management Module" documents regulating responsibility management system, organizational system, documents system and evaluation system. Five areas of responsibility are identified, which are corporate governance, employee rights and interests, environmental protection, fair operation and community support. At the same time, the scope, entity and indicators of social responsibility as well as the negative list of over 80 prohibited items were established.



## 社會責任管治(續) SOCIAL RESPONSIBILITY GOVERNANCE (Continued)



### 5.2 責任管治架構

為更好地落實各項社會責任工作，高效地推進可持續發展工作，中國鋁業設立了社會責任工作委員會作為公司社會責任的最高管理機構，並由公司主要領導擔任工作委員會主任。公司社會責任工作委員會下設社會責任工作辦公室，負責日常工作，歸口職能部門為黨群工作部。公司的各部門按照社會責任職能分工，具體負責業務範圍內的社會責任工作，並設有社會責任工作聯絡員在實際運營的每個環節中執行公司社會責任的相關政策。各成員企業成立社會責任工作領導小

### 5.2 GOVERNANCE STRUCTURE

In order to better implement various social responsibility work and efficiently promote sustainable development work, Chalco has established a Social Responsibility Working Committee as the highest management body of the Company's social responsibility, with the Company's main leaders serving as the director of the working committee. The Corporate Social Responsibility Execution Committee has a Social Responsibility Office, which is responsible for day-to-day work, and the centralized functional department is the Culture Department. According to the division of social responsibility, the various departments of the Company are specifically responsible for the social responsibility work within the scope of business, and have social responsibility liaison officers to implement the Company's policies

## 社會責任管治(續) SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

組，建立社會責任管理制度和流程，並制定社會責任管理的年度工作計劃，落實中鋁集團社會責任重大項目。

in the process of actual operation. Each subsidiary established a leading group for social responsibility work, formed social responsibility management system and formulated an annual work plan to implement Chalco's major social responsibility projects.



中國鋁業社會責任工作管治架構  
**Chalco's CSR Governance Structure**





## 社會責任管治(續) SOCIAL RESPONSIBILITY GOVERNANCE (Continued)



中國鋁業社會責任工作職能劃分  
Chalco' CSR Corresponding Departments



## 社會責任管治(續)

### SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

中國鋁業針對社會責任工作實行績效管理，黨群工作部(企業文化部)負責對各單位社會責任計劃落實、實踐情況和工作成效進行調研和客觀評價，並向公司社會責任工作委員會匯報。

本報告期，中國鋁業在社會責任工作委員會的領導下，各項可持續發展工作成效顯著，業績穩步提升，客戶滿意度持續上升，惠及公司各主要利益相關方。在業績、客戶滿意度、經營理念和社區建設上取得了良好成效，進一步鞏固了本集團可持續發展工作基礎，推動了本集團實現可持續發展進程，切實提高了公司各部門、各單位可持續發展工作的水準。

Chalco implements performance management for social responsibility work. The Corporate Culture Department is responsible for investigating and objectively evaluating the implementation of social responsibility plans, practices and work results of various units, and reporting to the Corporate Social Responsibility Execution Committee.

During the reporting period, under the leadership of the Committee, Chalco achieved remarkable results in various sustainable development efforts, steadily improved performance, and continued an increase in customer satisfaction, benefiting all major stakeholders of the company. Good results have been achieved in performance, customer satisfaction, business philosophy and community building, which further consolidated the base of Group's sustainable development work, promoted the Group's sustainable development process, and effectively improved the sustainability of all departments and units of the company.



社會責任管治(續)  
SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

5.3 利益相關方溝通

中國鋁業期望透過本報告回應不同利益相關方對我們履行社會責任的期待與要求，並將各利益相關方的意見納入企業可持續發展管理工作當中。本公司充分考慮各利益相關方的要求，通過多種渠道與主要利益相關方保持良好溝通，針對其關注的主要事宜，適時採取合適的行動回應他們的期望。

重要利益相關方溝通方式

Communication channels

利益相關方 Stakeholders	溝通方式 Communication Channels	期望與要求 Expectations and Concerns
主要股東 Major Shareholders	股東大會 Annual General Meeting 公司公告 Corporate announcements 實地考察 On-site investigation	保障股東權利及權益 Protecting the rights and interests of shareholders 完善公司治理 Improving corporate governance 提升經營業績 Improving business performance

5.3 STAKEHOLDER ENGAGEMENT

Chalco expects to respond to the expectations and requirements of various stakeholders for our fulfillment of social responsibilities through this report, and incorporate the opinions of various stakeholders into the management of corporate sustainable development. The Company fully considers the requirements of various stakeholders, maintains good communication with major stakeholders through multiple channels, and takes appropriate actions in a timely manner to respond to their expectations.

## 社會責任管治(續)

## SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

利益相關方 Stakeholders	溝通方式 Communication Channels	期望與要求 Expectations and Concerns
政府和監管機構 Governments and Regulators	定期信息報送 Regular reporting and submission of information 與監管機構定期會話 Regular communication with regulatory authorities 參與會議/研討會 Participation in Meetings/ Seminars	守法合規經營 Operating in compliance with laws and regulations 繳納稅款 Fulfilling tax obligation according to law 帶動當地經濟 Promoting local economic development 促進地方就業 Creating local job opportunities 保障員工職業健康與安全 Ensuring occupational health and safety for employees 企業安全生產運營 Producing and operating safely
員工 Employees	職工代表大會 Workers congresses 建議箱 Suggestions boxes 座談會 Participation in Forums	職業健康 Occupational health 薪酬福利 Remuneration and benefits 職業發展 Career development 人文關懷 Employee caring



## 社會責任管治(續) SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

利益相關方 Stakeholders	溝通方式 Communication Channels	期望與要求 Expectations and Concerns
客戶 Customers	商務溝通 Business communication 客戶回饋 Customer feedbacks	完善的質量保證體系 Sound quality assurance system 提供高質量產品和服務 Providing quality products and services
同行公司 Peer Companies	與當地勞動部門溝通 Communication with local labour departments 參與行業論壇 Participation in industry forums 考察互訪 Visits and inspections with industry peers	促進行業發展 Promoting industry development
潛在投資者與金融機構 Potential Investors and Financial Institutions	信息披露 Listing information disclosures 投資者說明會 Briefings for investors 路演 Roadshows and reverse roadshow 分析師簡報會 Briefings for analysts	及時準確披露相關信息 Disclosing information timely and accurately 提升經營業績，進行利潤分配 Improving operating performance, profit distribution

## 社會責任管治(續)

### SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

利益相關方 Stakeholders	溝通方式 Communication Channels	期望與要求 Expectations and Concerns
供應商 Suppliers	招標 Tendering	公平、透明的供應鏈管理 Fair and transparent supply chain management
承包商 Contractors	研討會、論壇 Seminars and Conferences 准入與評估 Entry requirements and evaluation 實地考察 On-site investigation	健康安全 Health and safety 公平、透明的供應鏈管理 Fair and transparent supply chain management
社區與公眾 Communities	公益活動 Charitable activities 利益相關方參與 Stakeholder engagement	改善社區環境 Improving community environment 支持社區公益 Supporting community welfare 精準扶貧 Targeted Poverty Alleviation

#### 5.4 重要性議題識別

本報告期，中國鋁業針對不同的環境及社會議題以問卷形式向各利益相關方展開了重要性調查，了解他們對本集團可持續發展工作的意見。調查問卷以聯交所監管要求為基礎，結合國內外ESG相關標準及行業熱點，調查了涉及環境和社會層面的20個議題對於利益相關方以及中國鋁業的重要程度，並形成了中國鋁業於環境和社會層面的兩個重要性議題矩陣。通過對調查結果的進一步審核，最終確定了在報告中重點披露的議題。

#### 5.4 MATERIALITY ASSESSMENT AND RESULT

During the reporting period, Chalco conducted a stakeholder survey on the materiality of various environmental and social issues to understand their opinions on the sustainable development of the Group. The questionnaire is based on the regulatory requirements of the SEHK, combined with relevant domestic and foreign ESG standards and industry hotspots, and investigated the importance of 20 environmental and social issues to stakeholders and Chalco, and formed a materiality matrix of at the environmental and social levels. After further review of the survey results, the key issues to be disclosed in the report were finally determined.

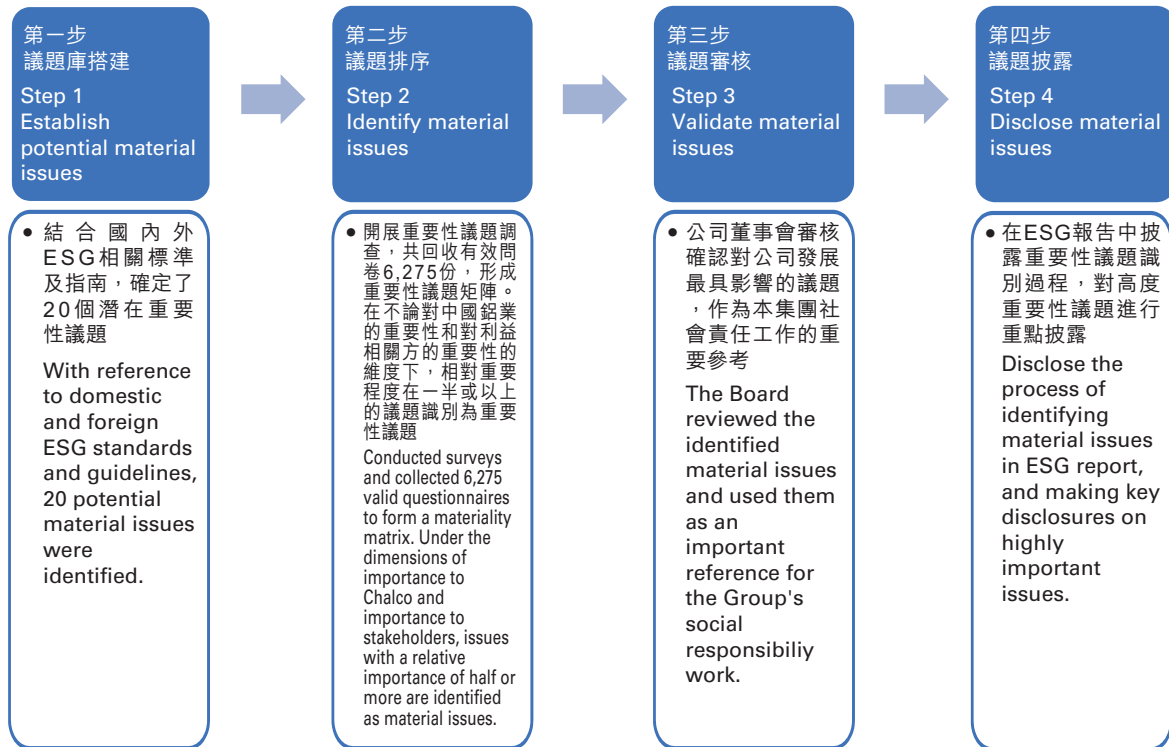


## 社會責任管治(續)

### SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

#### 中國鋁業重要性議題識別流程

#### Materiality Assessment Process

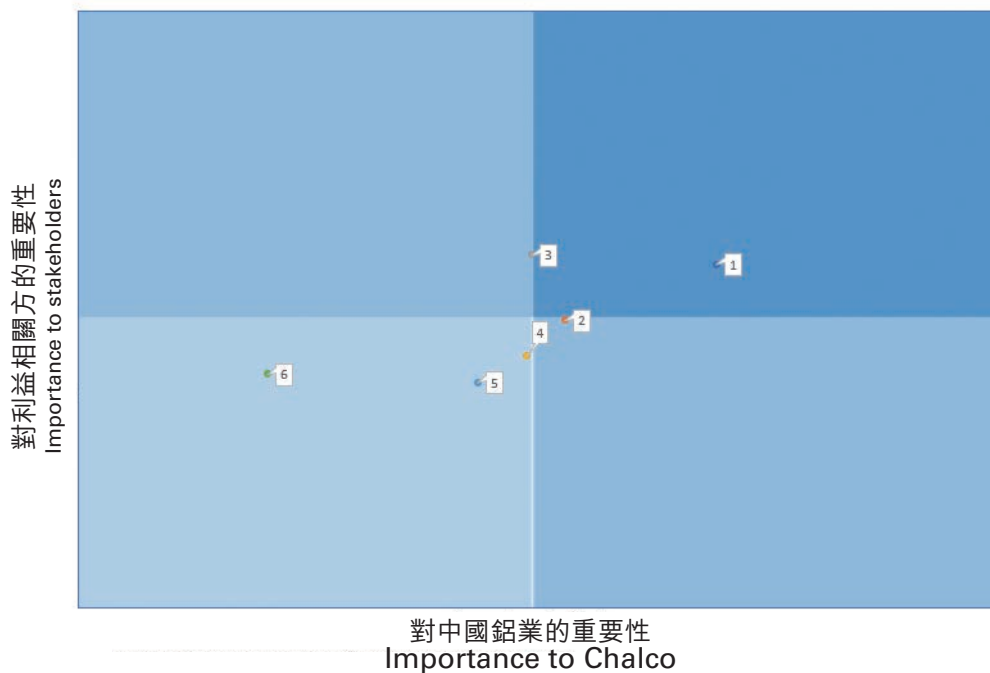


本次重要性議題調查共識別出10個重要性議題，其中「環境」層面3個，「社會」層面7個。中國鋁業「環境」和「社會」層面重要性議題矩陣圖如下：

A total of 10 material issues were identified through the survey, including 3 from the environmental aspect and 7 from the social aspect. The materiality matrix of Chalco is as follows:

# 社會責任管治(續) SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

中國鋁業環境層面議題重要性分析  
Chalco's Environmental Materiality Matrix



- 1. 廢氣、廢水、固體廢棄物的產生、排放與管理  
Generation, discharge and management of waste gas, wastewater and solid waste
- 2. 環境修復和礦山復墾  
Environmental restoration and mine reclamation
- 3. 危機廢棄物的處置與管理  
Disposal and management of hazardous waste
- 4. 資源使用及管理  
Energy use and efficiency
- 5. 可再生能源使用  
Renewable energy use
- 6. 氣候變化  
Climate change





## 社會責任管治(續)

## SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

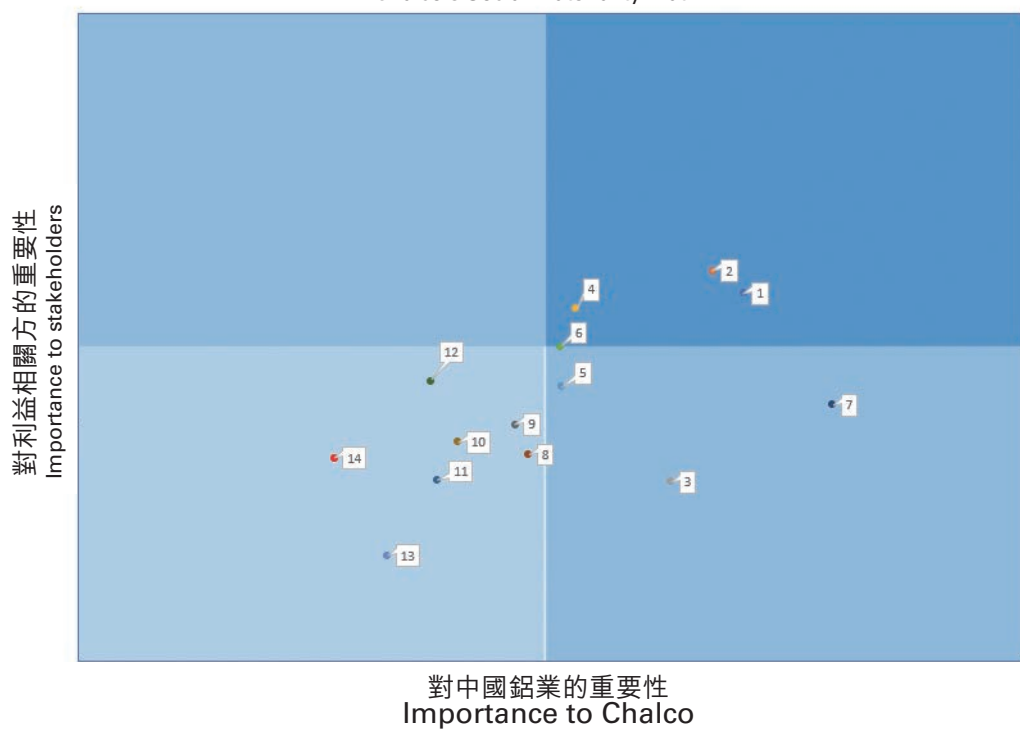
### 環境層面重要性議題

1. 廢氣、廢水、固體廢棄物的產生、排放與管理
2. 環境修復和礦山復墾
3. 危機廢棄物的處置與管理  
中國鋁業社會層面重要性  
議題矩陣

### Environmental Material Issues

1. Generation, discharge and management of waste gas, wastewater and solid waste
2. Environmental restoration and mine reclamation
3. Disposal and management of hazardous waste

中國鋁業社會層面議題重要性分析  
Chalco's Social Materiality Matrix



- |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• 1. 員工健康與安全<br/>Employee health and safety</li> <li>• 2. 員工待遇和福利<br/>Employee benefits</li> <li>• 3. 利潤的可持續增長<br/>Sustainable profit growth</li> <li>• 4. 員工發展與培訓<br/>Employee training and development</li> <li>• 5. 投資注重環保及國家政策傾向<br/>Investment on environmental protection and following national policy</li> <li>• 6. 企業管治<br/>Improve corporate governance</li> <li>• 7. 企業內部反腐倡廉<br/>Anti-corruption within the enterprise</li> </ul> | <ul style="list-style-type: none"> <li>• 8. 公平競爭<br/>Fair competition</li> <li>• 9. 供應鏈管理<br/>Supply chain management</li> <li>• 10. 財務、非財務信息的透明度<br/>Transparency of financial and non-financial information</li> <li>• 11. 積極參與行業標準的制定<br/>Participate in industry standards development</li> <li>• 12. 環境、社會及管治工作的宣傳<br/>Communication on ESG work</li> <li>• 13. 與利益相關方的溝通<br/>Communication with stakeholders</li> <li>• 14. 社區參與及貢獻 (精準扶貧)<br/>Community engagement and contribution</li> </ul> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## 社會責任管治(續) SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

### 社會層面重要性議題

1. 員工健康與安全
2. 員工待遇和福利
3. 利潤的可持續增長
4. 員工發展與培訓
5. 投資注重環保及國家政策傾向
6. 企業管治
7. 企業內部反腐倡廉

針對識別出的重要性議題，本公司在本報告中進行了重點回應，對應報告中的具體章節如下：

### Social Material Issues

1. Employee health and safety
2. Employee benefits
3. Sustainable profit growth
4. Employee training and development
5. Investment on environmental protection and following national policy
6. Improve corporate governance
7. Anti-corruption within the enterprise

In response to the material issues, the Company has made key responses in this report, and the specific chapters in the corresponding report are as follows:

層面 Aspect	議題 Topics	對應章節 Responding Section
環境層面 Environmental Aspects	廢氣、廢水、固體廢棄物的產生、排放與管理 Generation, discharge and management of waste gas, wastewater and solid waste	7.2 環境管理與措施 Environmental Management And Measures
	環境修復和礦山復墾 Environmental restoration and mine reclamation	7.4 倡導綠色運營 Advocating Green Operation
	危險廢棄物的處置與管理 Disposal and management of hazardous waste	7.2 環境管理與措施 Environmental Management And Measures



## 社會責任管治(續) SOCIAL RESPONSIBILITY GOVERNANCE (Continued)

層面 Aspect	議題 Topics	對應章節 Responding Section	
社會層面 Social Aspects	員工健康與安全 Employee health and safety	6 保障健康安全 Ensuring health and safety	
	員工待遇和福利 Employee benefits	8 打造幸福職場 Creating a joyful workplace	
	利潤的可持續增長 Sustainable profit growth	9 促進產業共贏 Promoting a win-win situation throughout the industry chain	
	員工發展與培訓 Employee training and development	8.2 助力員工成長 Empowering Employee	
	投資注重環保及國家政策傾向 Investment focuses on environmental protection and national policy preferences	9 促進產業共贏 Promoting a win-win situation throughout the industry chain	
	企業管治 Improve corporate governance	4.1 完善治理架構 Improving the Governance Structure	
	企業內部反腐倡廉 Anti-corruption within the enterprise	4.2 崇尚商業道德 Advocating Business Ethics	

- 6 保障健康安全  
ENSURING HEALTH AND  
SAFETY
- 6.1 安全管理體系  
SAFETY MANAGEMENT  
SYSTEM
- 6.2 安全管理措施  
SAFETY MANAGEMENT  
MEASURES
- 6.3 安全管理成果  
SAFETY MANAGEMENT  
ACHIEVEMENTS





## 保障健康安全 ENSURING HEALTH AND SAFETY

中國鋁業高度重視生產安全，將安全生產作為本集團營運生產的第一要務，秉持「一切風險皆可控，一切事故皆可防」的健康安全環境管理(HSE)理念，深入推進職業健康安全環保精準管理體系(CAHSE體系)運行，開展「兩抓兩查嚴監管」，嚴格執行安全生產管理和員工職業健康管理，以期將生產運營中的人身傷亡和經濟損失降至最低。

Chalco attaches great importance to production safety and regards production safety as the first priority of the Group's operation and production. Chalco adheres to the health, safety and environmental management (HSE) concept of "all risks can be controlled and all accidents can be prevented", and further promotes the operation of the Occupational health, safety and environmental protection precision management system (CAHSE system). Through the implementation of "two grasps, two surveys and stringent supervision", Chalco strictly implements safety production management and employee occupational health management, with a view to minimizing personal injuries and economic losses in production operations.

中國鋁業CAHSE體系覆蓋本集團所有分子企業，體系包含10個一級要素、39個二級要素、215個三級要素。中國鋁業建立精準職業健康安全管理體系考評標準，每年依據此標準對分子企業進行CAHSE審核並考評。

The Chalco CAHSE system covers all the subsidiaries of the Group. The system includes 10 first-level elements, 39 second-level elements, and 215 third-level elements. Chalco has established a precise occupational health and safety management system evaluation standard, and annually conducts CAHSE audits and evaluations on molecular enterprises based on this standard.

## 保障健康安全(續)

## ENSURING HEALTH AND SAFETY (Continued)

### 6.1 安全管理體系

#### 6.1.1 體系建設

本集團嚴格把控生產各個環節安全落實情況，把安全管理重心放在基層，同時我們出臺了《強化安全監督管理規定》，明確了各分子公司主要領導為安全生產第一責任人，履行安全主體責任；分管領導及相關部門對分管業務範圍內安全工作進行監管，履行直線管理責任；安全總監和安監部門對安全監督負責，對各級主體責任，直線責任落實情況進行監督，公司所屬生產企業均已建立環境管理體系(GB/T24001-2016&ISO14001:2015)並獲得中國船級社認證證書，做到了生產企業全覆蓋。本報告期，中國鋁業共有23家企業獲得ISO45001職業健康安全管理体系認證。

中國鋁業負責安全相關戰略和績效的最高管理機構為職業健康安全和環境委員會，相應的出臺了《中國鋁業股份有限公司職業健康安全和環境委員會工作規則》。

### 6.1 SAFETY MANAGEMENT SYSTEM

#### 6.1.1 System Construction

The Group strictly controls the implementation of safety in all aspects of production, and places the focus of safety management at the grassroots level. At the same time, we have issued the document "Strengthening Safety Supervision and Management Regulations", which clarified that: the primary leaders of all companies as the first responsible persons for safe production shall fulfill the responsibility of safety subjects; relevant leaders and relevant departments that supervise safety work within the scope of the business shall perform straight. The Company's production enterprises have established an environmental management system (GB/T24001-2016&ISO14001:2015) and obtained China Classification Society certification, achieving full coverage of production enterprises. During the reporting period, a total of 23 companies of Chalco obtained ISO45001 Occupational Health and Safety Management System Certification.

The highest management agency responsible for safety-related strategies and performance of Chalco is the Occupational Health, Safety and Environment Committee, and the "Working Rules of the Occupational Health, Safety and Environment Committee of Aluminum Corporation of China Limited" has been issued accordingly.



## 保障健康安全(續) ENSURING HEALTH AND SAFETY (Continued)

### 6.1.2 制度建設

中國鋁業作為負責任的企業公民，嚴格遵守《中華人民共和國安全生產法》《中華人民共和國職業病防治法》《中華人民共和國礦山安全法》等相關法律法規，重視保障員工的安全和職業健康。本報告期，公司未發生違反與職業安全相關的任何對本集團有重大影響的法律法規，因工傷損失工作日數為30,000天。

#### 安全制度建設


本年度，中國鋁業完善了安全生產制度和標準，進一步提升了管理效率。中國鋁業的安全生產表現與管理層績效考核掛鉤，最終考核結果將影響其薪酬的發放，制定出臺了《能源企業安全生產考核和獎懲規定》《煤炭企業安全責任期考核管理辦法》等系列考核和獎懲制度。此外，中國鋁業不斷完善制度建設，強化責任監督，出臺了《煤礦安全生產標準化管理辦法》《本部職業健康安全環保責任制度》等相關制度，保障生產安全，提升管理效率。

### 6.1.2 Policy Construction

As a responsible corporate citizen, Chalco strictly abides by the relevant laws and regulations such as the “People’s Republic of China Work Safety Law”, the “People’s Republic of China Occupational Disease Prevention Law” and the “People’s Republic of China Mine Safety Law”. Chalco attaches great importance to guaranteeing the safety and occupational health of its employee. During the reporting period, the Company did not violate any laws and regulations related to occupational safety that had a significant impact on the Group, and the number of lost working days due to work-related injuries was 30,000 days.

#### Safety policy construction

This year, Chalco improved the safety production system and standards, and further improved management efficiency. Chalco’s safety production performance is linked to management’s performance appraisal, and the final appraisal results will affect their pay. Chalco has formulated a series of assessment, reward and punishment systems such as the “Regulations on the Assessment, Reward and Punishment of Energy Enterprises’ Safety in Production”, and the “Measures for the Management of the Assessment and Management of the Safety Responsibility Period of Coal Enterprises”. In addition, Chalco has continuously improved system construction, strengthened responsibility supervision, and introduced related systems such as the “Coal Mine Safety Production Standardization Management Measures” and “Headquarters Occupational Health, Safety and Environmental Responsibility System” to ensure production safety and improve management efficiency.



## 保障健康安全(續)

## ENSURING HEALTH AND SAFETY (Continued)

本年度，本公司對各類安全生產標準進行了統一，編製印發《車間主任及班組長安全履職指導手冊》《班組安全活動標準流程劇本》系列制度，強化了基層管理人員管理能力。此外，本公司組織全面修訂三大規程，把經常開展的操作、維護、檢修等當前的臨時作業納入相應規程範圍，將相關工作規範化。本年度，本公司共完成規程修訂約10,000項。

此外，本公司進一步規範了員工安全工作標準。本公司所屬企業所有崗位全部制定了《崗位安全作業標準》，實現作業前安全確認，進一步規範、加強了員工作業前風險確認和管控。

This year, the Company unified various safety production standards, compiled and issued the “Workshop Director and Team Leader’s Safety Performance Instruction Manual” and “Squad Safety Activity Standard Process Script” series of systems, thereby strengthening the management capabilities of grassroots managers. In addition, the Company organized a comprehensive revision of the three major regulations, and included current temporary operations such as frequent operations, maintenance, and overhauls into the scope of the corresponding regulations, thus standardizing related work. During the year, the Company completed a total of about 10,000 revisions to regulations.

In addition, the Company further regulated employee safety work standards. All working positions of the Company’s affiliated companies have formulated the “Post Safety Operation Standards” to realize safety confirmation before work, which further standardizes and strengthens the risk confirmation and control of employees before work.





## 保障健康安全(續) ENSURING HEALTH AND SAFETY (Continued)

### 安全文化建設

保證生產安全，為員工營造安全文化既是本公司的責任，也是本公司員工和承包商的職責。為保障員工的身體健康，本公司建立了職業健康制度管理體系，逐級落實職業健康安全措施，定期組織員工健康體檢，並建立員工健康檔案，為職工提供安全舒適的作業條件和防護設備，做好員工職業健康管理工作。此外，本公司緊緊圍繞「安全生產月」活動主題，認真組織動員，開展了一系列行之有效的安全活動，確保了「安全生產月」活動深入紮實開展，促進了公司安全管理水平的進一步提升。

### Safety cultural construction

To ensure production safety and create safety culture for employees is not only the responsibility of the Company, but also the responsibility of the employees and contractors. To guarantee employees' physical health, the Company has established the system of occupational health management and gradually carried out occupational health and safety measures. Meanwhile, the Company provides regular physical examinations for employees, sets up employee health files, and provides employees with safe and comfortable working conditions and protective equipment. The Company has focused on and combined the theme of the "Safety Production Month". The employees have been seriously mobilised, and the Company has carried out a series of effective safety activities to ensure the deepened promotion of "Safe Production Month", which promoted the further improvement of the Company's safety management level.

## 保障健康安全(續)

## ENSURING HEALTH AND SAFETY (Continued)

### 6.2 安全管理措施

### 6.2 SAFETY MANAGEMENT MEASURES

#### 6.2.1 目標設定

#### 6.2.1 Targets Setting

本年度，中國鋁業實現了包括承包商在內的2020年較大及以上生產安全事故為零的安全生產目標。同時，中國鋁業也在本年度制定了更為詳盡的2021年安全生產目標：

This year, Chalco achieved the safety production goal of zero major and above production safety accidents in 2020, including contractors. At the same time, Chalco also formulated more detailed safety production targets for 2021 this year:

- 公司較大及以上生產安全事故為0；
- 企業生產安全工亡事故為0；
- 20萬工時損工率與2020年同比降低10%以上；
- 接觸職業危害因素作業員工職業健康體檢實檢率98%以上；
- 全員安全持證上崗率100%；
- 所有煤礦安全生產標準化提高一個等級。

- The production safety accident of the Company's larger and above is 0;
- The production safety accident of the Company is 0;
- The loss rate of 200,000 working hours will be reduced by more than 10% compared with the same period in 2020;
- The actual inspection rate of occupational health physical examination for employees exposed to occupational hazards is over 98%;
- The rate of full safety certificate holders is 100%;
- All coal mine safety production standardization is raised by one level.



## 保障健康安全(續) ENSURING HEALTH AND SAFETY (Continued)

### 6.2.2 管理措施

為達成以上目標，本公司在安全生產以及職業健康管理方面主要採取了以下措施：

#### 安全措施

本年度，本公司開展了重要危險源排查工作，針對所有重要危險源點，均制定了技術和管理措施，確定了危險源負責人，明確了重要危險源管控責任，並組織了一次對重要危險源的全面督查。在此基礎上，編製了重要危險源負責人責任清單範本，進一步明確了每個重要危險源的負責人及專業部門、分廠、車間各級管理責任和管控措施，制定了針對性的責任落實檢查表，使重要危險源安全管控責任進一步明晰並促進了各項管理及技術措施有效落地。

### 6.2.2 Management Measures

In order to achieve the above targets, the Company adopts the following measures in terms of safety production and occupational health management:

#### Safety measures

This year, the Company carried out investigation of important hazards, formulated technical and management measures for all important hazard sources, identified the person in charge of the hazard source, clarified the management and control responsibilities of the important hazard source, and the Company organized a comprehensive inspection of the important hazard source. On this basis, the Company compiled a template of the responsibility list of the responsible persons of important hazards, thereby further clarifying the responsible persons of each important hazard source and the management responsibilities and control measures at all levels of professional departments, branches and workshops. The comprehensive responsibility implementation checklist further clarifies the safety management and control responsibilities of important hazards and promotes the effective implementation of various management and technical measures.

## 保障健康安全(續)

### ENSURING HEALTH AND SAFETY (Continued)

中國鋁業進一步推進煤礦智慧化、標準化安全體系建設。本年度，本公司所屬寧夏能源編製了《中鋁寧夏能源集團有限公司「智慧礦山」建設工作方案》，以王窪二礦和銀星一井為試點單位，以點帶面，重點突破，分步實施，逐步推進，力爭用3-5年時間達到國內煤炭行業先進水平。

此外，中國鋁業進一步加強了安全生產工作的監督檢查力度。本年度，中國鋁業召開了8次視頻會對13家下屬企業指導開展「兩抓兩查嚴監管」工作。

#### 案例：CAHSE體系審核工作

2020年11月9日至12月5日，本公司共組織8個審核組分2個批次對20家企業進行2020年度CAHSE體系審核，並對公司年度安排的7項安全專項工作進行督導核查，推動CAHSE體系有效運行和重點安全工作有效落地。

Chalco promotes the construction of a smart and standardized safety system in coal mines. This year, Ningxia Energy, a subsidiary of the Company, compiled the "Work Plan for the "Smart Mine" Construction of China Aluminum Ningxia Energy Group Co., Ltd." The company takes Wangwa No. 2 Mine and Yinxing No. 1 Well as the pilot units, with point-to-surface, key breakthroughs, step-by-step implementation, and gradual progress, striving to reach the advanced level of the domestic coal industry in 3-5 years.

In addition, Chalco has further strengthened the supervision and inspection of safety. This year, Chalco held 8 video conferences to guide 13 subordinate companies to carry out the "two grasps, two surveys and stringent supervision" work.

#### Case: CAHSE system audit work

From November 9th to December 5th, 2020, the Company organized a total of 8 audit groups and 2 batches to conduct the 2020 CAHSE system audits on 20 companies. It also supervised and checked the Company's 7 annual special safety tasks. This has promoted the effective operation of the CAHSE system and the effective implementation of key safety tasks.



## 保障健康安全(續) ENSURING HEALTH AND SAFETY (Continued)

### 安全文化管理措施

本集團亦通過開展「安全生產月」活動大力開展安全宣教活動，不斷提高員工安全意識與事故應變能力。本年度，中國鋁業參加健康安全相關培訓的人次為787,98人次。

### 承包商安全管理

針對承包商安全主體責任，本集團制定了《承包商安全管理標準化落地舉措》，重點強調本集團各部門對承包商的主體監管責任，同時把承包商納入本集團管理，加強承包商落實安全主體責任，承包商安全管理水準不斷提高。

### Safety culture management measures

The Group also carries out “Safe Production Month” and vigorously carried out safety education activities to continuously improve employees’ safety awareness and accident response capabilities. This year, Chalco participated in health and safety related training for 787,98 person-times.

### Contractor safety management

Regarding the main responsibility of contractors’ safety, the Group formulated the “Measures for the Implementation of Standardization of Contractor’s Safety Management”, which emphasized the main supervisory responsibilities of the various departments of the Group for contractors, and at the same time included contractors into the management of the Group, with the purpose of strengthening contractors implement the main responsibility of safety, so that the contractor’s safety management level is continuously improved.

## 保障健康安全(續)

### ENSURING HEALTH AND SAFETY (Continued)

中國鋁業印發了《中國鋁業股份有限公司生產領域業務外包管理規定》《中國鋁業股份有限公司關於增加業務外包合同安全剛性約束條款的通知》等承包商安全管理制度，明確要求各分子企業應當依照國家法律法規、中鋁集團、中國鋁業關於承包商安全管理和安全管控的相關規定，把承包商納入本企業安全生產管理體系，應履行「領導責任、直線責任、屬地責任、監管責任」。中國鋁業要求各分子公司對承包商的管理要按照安全管控「七步法」的要求同步管理，即：設定安全底線、評估安全能力、簽訂安全協定、開展安全培訓、實施安全交底、強化施工監管、實行安全考核，同時要求所有項目施工過程必須做到安全五必須。

Chalco issued the “Provisions on the Management of Outsourcing in the Production Field of Aluminum Corporation of China Limited” and “Notice of the Aluminum Corporation of China Limited on Increasing the Safety Rigid Constraint Clauses of Outsourcing Contracts” and other contractor safety management systems, which clearly require all branches and subsidiaries of the Company should follow national laws and regulations, Chinalco Group and Chalco’s relevant provisions on contractor safety management and safety management and control, that is, include contractors into the company’s safety production management system, and at the same time should perform “leadership responsibility, direct responsibility, territorial responsibility and supervisory responsibility”. Chalco requires all subsidiaries to manage contractors in accordance with the requirements of the “seven-step method” of safety management and control, namely: setting safety bottom lines, assessing safety capabilities, signing safety agreements, conducting safety training, implementing safety disclosures, and strengthening construction supervision, implementation of safety assessment, and requirements for all project construction processes must meet the five must be safe.



## 保障健康安全(續) ENSURING HEALTH AND SAFETY (Continued)

### 案例：中國鋁業供應商 培訓案例

廣西分公司高度重視承包商現場作業的安全措施和勞保用品穿戴，檢修作業前進行安全交底；組織內部開展業務外包管理制度和管理提升技能培訓等。

### Case: Chalco Supplier Training Case

The Guangxi branch attaches great importance to the safety measures for contractors' on-site operations and the wearing of labor protection supplies, and requires safety clarifications before maintenance operations. In addition, it organizes internal business outsourcing management systems and management improvement skills training.



## 保障健康安全(續)

## ENSURING HEALTH AND SAFETY (Continued)

貴州華錦為加強承包商安全管理，結合精準管理要求，把承包商納入正式員工管理模式。本報告期，華錦公司商務部外委業務主管牽頭、組織安環部、生產部門聯合組織公司承包商開展集中安全教育培訓「公司級」培訓工作。承包商共24家單位，約170人參加培訓並考試。

In order to strengthen the safety management of contractors, Guizhou Huajin incorporated the contractors into the formal employee management mode in accordance with the requirements of precise management. During the reporting period, the business supervisor of the Foreign Affairs Committee of the Ministry of Commerce of Huajin Company took the lead and organized the safety and environmental protection department and the production department to jointly organize the company's contractors to carry out centralized safety education and training "company-level" training. There were a total of 24 contractors, and about 170 people participated in the training and examination.



山西新材料召開規範業務外包承包商安全管控專題會，貫徹總部業務外包視頻會議精神。

Shanxi New Materials held a special meeting on regulating the safety management of business outsourcing contractors to implement the spirit of the headquarters business outsourcing video conference.







## 保障健康安全(續) ENSURING HEALTH AND SAFETY (Continued)

### 6.3 安全管理成果

本年度，中國鋁業的安全主責意識進一步增強，安全生產基礎不斷夯實，安全管理水平全面提升。本公司堅持綠色、安全發展理念，強化安全管理技能、自主安全意識和現場安全評價，將安全工作重心、重點下沉到生產線，深入到作業現場；深入推進職業健康安全環保精準管理體系運行，加大「兩抓兩查嚴監管」工作力度，建立公司級重大安全風險臺賬；組織開展三年安全生產專項整治行動，夯實安全基礎管理，提升安全生產能力和水平。

### 6.3 SAFETY MANAGEMENT ACHIEVEMENTS

Further enhanced the main responsibility awareness of safety and environmental protection, continuously consolidated the foundation of safety production, and comprehensively improved the level of environmental protection management. The Company adhered to the concept of green and safe development, strengthened safety management skills, independent safety awareness and on-site safety evaluation, and mainly put safety work to the production lines and penetrate into the operation site. The Company further promoted the implementation of the precise management system for occupational health, safety and environmental protection, strengthened the work of “two grasps, two surveys and stringent supervision” and established a company-level standing book for material safety risk. The Company also organized and carried out three-year special rectification actions for safe production to consolidate the basic safety management and improve the safe production ability and level.

## 保障健康安全(續) ENSURING HEALTH AND SAFETY (Continued)

過去三年每年因工亡故的人數  
及比率：

Number and rate of deaths due to work in each of the  
past three years:

年度	Year	員工亡故人數 員工亡故比率 <sup>1</sup>		承包商
		Number of deaths of employees	Employee <sup>1</sup> death rate	亡故人數 Contractor deaths
2020年	2020	4	0.006	1
2019年	2019	8	0.012	3
2018年	2018	2	0.003	2

<sup>1</sup> 因工傷造成的死亡比率以每100  
名勞動人員計算，分母為各年  
員工總數。

<sup>1</sup> The death rate due to work-related injuries is calculated per  
100 workers, and the denominator is the total number of  
employees in each year °



- 7 強化環境保護  
STRENGTHENING ENVIRONMENTAL  
PROTECTION
- 7.1 應對氣候變化  
ADDRESSING CLIMATE CHANGE
- 7.2 環境管理與措施  
ENVIRONMENTAL MANAGEMENT  
AND MEASURES
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ENVIRONMENTAL PERFORMANCE



## 強化環境保護

# STRENGTHENING ENVIRONMENTAL PROTECTION

中國近年越來越注重生態文明觀念，全面加強生態環境保護和氣候變化應對，推動污染防治。中國鋁業高度重視自身生產運營對環境的影響，致力於實現綠色可持續發展。同時環境保護作為本集團五大社會責任領域之一，也是本集團實現可持續發展的重要途徑。

In recent years, China has paid more and more attention to the concept of ecological civilization, comprehensively strengthened ecological environmental protection and climate change response, and promoted pollution prevention and control. Chalco attaches great importance to its production process impact on the environment and is committed to achieving green and sustainable development. At the same time, environmental protection, as one of the five major social responsibility areas of the Group, is also an important way for the Group to achieve sustainable development.

## 7.1 應對氣候變化

## 7.1 ADDRESSING CLIMATE CHANGE

### 7.1.1 氣候變化影響與應對

### 7.1.1 Climate Change Impact And Response

當前，全球氣候變化愈演愈烈，機遇與風險並存。中國政府支持《巴黎協定》並積極推動應對氣候變化的國際合作，更是在本報告期向國際社會做出「中國力爭二氧化碳排放2030年前達到峰值、2060年前實現碳中和」的莊嚴承諾。作為一家負責任的中央企業，中國鋁業積極擁護並用實際行動推動中國政府應對氣候變化目標。

At present, global climate change is becoming more and more intense, and opportunities and risks coexist. The Chinese government supports the Paris Agreement and actively promotes international cooperation to address climate change. In this reporting period, the Chinese government has made a solemn commitment to the international community that “China strives to reach a peak in carbon dioxide emissions by 2030 and achieve carbon neutrality by 2060”. As a responsible central enterprise, Chalco actively supports and uses practical actions to promote the Chinese government’s goal of addressing climate change.

中國鋁業高度重視減緩氣候變化工作，嚴格遵守和落實《中華人民共和國節約能源法》等相關法律

Chalco attaches great importance to climate change mitigation, and strictly abides by and implements the “Energy Conservation Law of the People’s Republic of China” and other



## 強化環境保護(續) STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

法規，根據國家節能減排和企業降本增效的要求，制定並出台了《火電機組運行優化指導意見》《火電機組節能降耗指導意見》等系列政策、辦法和指導意見，在降低主導產品能源消耗和能源成本、完善能源管理體系、降低發電成本等方面設立年度目標，落實相關節能減排項目的實施，並及時對項目進行驗收與評估。本年度，本集團通過技術改造，更換設備，優化系統運行等措施節約能源約8,566噸標煤。

中國鋁業於2020年年初下達主要產品能耗指標，採用每月跟蹤落實機制，氧化鋁、電解鋁等主導產品能耗水平大幅優化。

relevant laws and regulations. In accordance with the national requirements for energy conservation, emission reduction and enterprise cost reduction and efficiency enhancement, Chalco formulated and issued a series of policies, methods and guidance such as the “Guiding Opinions on Optimizing the Operation of Thermal Power Units” and “Guiding Opinions on Energy Saving and Consumption Reduction of Thermal Power Units”. Chalco has set annual targets for reducing energy consumption and energy costs of its leading products, improving energy management systems, and reducing power generation costs, and implements the implementation of related energy-saving and emission-reduction projects, and conducts acceptance and evaluation of projects in a timely manner. During the year, the Group saved approximately 8,566 tons of standard coal through measures such as technological transformation, replacement of equipment, and optimization of system operation.

At the beginning of the reporting year, the Company issued strict energy consumption indicators for major products, and tracked them monthly in a timely manner. The Company’s leading products such as alumina and electrolytic aluminum have significantly optimized in energy consumption levels.

## 強化環境保護(續)

## STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

表：中國鋁業2020年度  
能耗目標及完成情況

Table: Chalco's 2020 Annual Energy  
Consumption Targets and Performance

指標名稱	Indicators	單位 Unit	2020年計劃 2020Targets	2020年 實際能耗 2020 Performance
萬元產值能耗(2015年價)	Energy Consumption per RMB10,000 of production value (2015 price)	噸標煤/萬元 Metric Tons of Standard Coal per RMB10,000	2.72	1.97
鋁錠綜合交流電耗	Aluminium electrolytic AC power consumption	千瓦時/噸 kWh per Metric Ton	13,180.82	13,069.74
氧化鋁綜合能耗	Total Energy Consumption for Alumina	千克標煤/噸 Kilogram of Standard Coal per Metric Ton	402.42	357.40
供電標煤耗	Standard Coal Consumption for Electricity Supply	克標煤/千瓦時 Grams of Standard Coal per kWh	334	333.26
炭素綜合能耗	Total Energy Consumption for Carbon	噸標煤/噸 Metric Tons of Standard Coal per Metric Ton	1.03	1.02



## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

#### 7.1.2 節能減排策略與措施

為應對氣候變化，中國鋁業不斷完善自身應對氣候變化相關策略機制，進一步明確了由中國鋁業本部生產質量管理部負責總體事宜並向中國鋁業職業健康和環境委員會進行匯報的氣候變化和碳減排管治架構，層層落實碳排放的管理責任，不斷提升碳排放管理水準，增強適應氣候變化的能力。中國鋁業從「理念降碳、生產降碳、管理降碳、科技降碳、生活降碳」五個方面全面提高能源使用效率和降碳技術和管理水準，同時積極了解和研究國際領先的碳減排和碳捕捉技術。

#### 7.1.2 Energy Saving And Emission Reduction Strategies And Measures

In order to cope with climate change, Chalco continuously improved its own strategy and mechanism to deal with climate change, further defined the governance structure of climate change and carbon emission reduction, that is, Chalco's production quality management department is responsible for the overall matters and reports to Chalco's occupational health, safety and Environment Committee. Chalco implements the management responsibilities of carbon emissions at all levels, continuously improves the level of carbon emissions management, and enhances the ability to adapt to climate change. Chalco has comprehensively improved energy use efficiency and carbon reduction technology and management level from the five topics of "Carbon Reduction through Principles, Carbon Reduction through Production, Carbon Reduction through Management, Carbon Reduction through Technology, Carbon Reduction through Life Style". At the same time, the Company actively understands and studies the international leading carbon emission reduction and carbon capture technology.

## 強化環境保護(續)

# STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

### 理念降碳

中國鋁業按照中鋁集團相關要求，積極引導廣大員工牢固樹立降碳理念，大力營造節能降碳濃厚氛圍，使「綠色製造，低碳發展」、「使用節能產品，宣導綠色消費」、「少用化石能源，發展清潔能源」等理念深入人心。



### 管理降碳

中國鋁業積極推進生產標準化管理，利用信息化手段，大力推進現代化管理。本公司推廣綠色辦公，減少能源消耗；鼓勵下屬企業多創造和積累碳資產，實現開源降碳；優化物資採購，從源頭控制高能耗物資流入；優化調整物流配送，減少運輸距離，實現採銷降碳等。

### Carbon Reduction through Principles

In accordance with the relevant requirements of the Chinalco Group, Chalco actively guides its employees to firmly establish the concept of carbon reduction, vigorously create a strong atmosphere for energy saving and carbon reduction, and make "green manufacturing, low-carbon development", "use energy-saving products and promote green consumption", "the concept of using less fossil energy and developing clean energy" is deeply rooted in the hearts of the people.



### Carbon Reduction through Management

Chalco actively promotes production standardization management, and uses information technology to vigorously promote modern management. The Company promotes green office and reduces energy consumption; encourages its subsidiaries to create and accumulate more carbon assets to achieve open source and carbon reduction; optimizes material procurement and controls the inflow of energy-intensive materials from the source; optimizes and adjusts logistics and distribution, reduces transportation distances, and reduces procurement and sales carbon etc.





## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

#### 案例：中國鋁業管理降碳 典型案例

中國鋁業下屬企業中州鋁業以用能點、設備、生產線為節能的主要方向，建章立制，形成了「用能有責任、管理有標準、節能有措施」的系統化能源管理制度。

此外，中州鋁業建立了能源管理平台，開展能耗定額管理、評價能源績效，對能源使用全過程進行監控，對能源使用進行優化調度。

#### 生產降碳

中國鋁業積極推廣節能技術、節能裝備和節能產品，提高設備利用率，降低能源消耗；加大金屬回收利用、餘熱發電力度，實現資源綜合回收降碳。

#### Case: A typical case of Chalco's management of carbon reduction

Zhongzhou Aluminum, a subsidiary of Chalco, takes energy use points, equipment, and production lines as the main direction of energy conservation, established rules and regulations, and formed a systematic energy management system that "responsible for energy use, has standards for management, and has measures for energy conservation."

In addition, Zhongzhou Aluminum has established an energy management platform to carry out energy consumption quota management, evaluate energy performance, monitor the entire process of energy use, and optimize energy use.

#### Carbon Reduction through Production

Chalco actively promotes energy-saving technologies, energy-saving equipment and energy-saving products to increase equipment utilization and reduce energy consumption; increase metal recycling and waste heat power generation efforts to achieve comprehensive resource recovery and carbon reduction.

## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

#### 案例：中國鋁業生產降碳 典型案例

##### 生產過程清潔化

中國鋁業下屬企業中州鋁業自公司成立之時，就引入了綠色發展理念，全面推進設備管理、物料供應、生產過程管理標準化，減少生產活動對環境的影響。中州鋁業投用的通用設備全部避開國家工信部公佈的高耗能設備；專用設備選用上，在保證工藝控制要求的前提下，採用具有新型節能工藝的裝備，保證了設備的能源消耗、資源消耗水準處於行業先進水準。

##### 能源利用最優化

中州鋁業圍繞能源輸入儲存、加工轉換、輸送分配三個環節，把節能要求和每個工作崗位的職責對應聯繫起來，保證了用能設備高效穩定運行。

#### Case: Typical cases of carbon reduction in aluminum production in China

##### Clean production process

Since the establishment of the company, Zhongzhou Aluminum, a subsidiary of Chalco, has introduced the concept of green development to comprehensively promote the standardization of equipment management, material supply, and production process management to reduce the impact of production activities on the environment. All general-purpose equipment put into use by Zhongzhou Aluminum avoided the high-energy-consuming equipment announced by the Ministry of Industry and Information Technology of the People's Republic of China; the selection of special equipment, under the premise of ensuring process control requirements, adopts equipment with new energy-saving technology to ensure the energy consumption and resources consumption level of the equipment is at the advanced level of the industry.

##### Optimization of energy use

Zhongzhou Aluminum focuses on the three links of energy input and storage, processing and conversion, transmission and distribution, and links energy-saving requirements with each job position, thus ensuring the use of the equipment can operate efficiently and stably.



## 強化環境保護(續) STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

中國鋁業下屬廣西分公司通過對鍋爐進行技術改造、開展勞動競賽等措施，成功回收利用了低溫煙氣餘熱，提高了蒸汽產量，為企業帶來了可觀的經濟效益，回收使用的餘熱相當於年節約標煤7,800多噸。

### 科技降碳

本報告期，中國鋁業繼續加大節能減排技術研發和推廣力度，利用節能技術創新等科技手段實現有效降碳，發揮科技進步對節能減排降碳和企業轉型升級的驅動作用。

#### 案例：無炭渣陽極技術助力減少電解鋁碳排放

鄭州研究院堅持科技助力減碳，圍繞影響鋁電解過程中影響電耗的因素，開發了無炭渣陽極技術，提高炭陽極質量，降低等效電壓，達到節能降耗的目的。對於年產能100萬噸的電解鋁企業，採用無炭

The Guangxi branch of Chalco successfully reclaimed and utilized the waste heat of low-temperature flue gas and increased the steam output through the technical transformation of the boiler and the first-level labor competition. This has brought considerable economic benefits to the enterprise. The recovered waste heat is equivalent to annual savings of more than 7,800 tons of standard coal.

### Carbon Reduction through Technology

During the reporting period, Chalco continued to increase the research and development and promotion of energy-saving and emission-reduction technologies, using energy-saving technological innovation and other scientific and technological means to achieve effective carbon reduction, and to play the driving role of scientific and technological progress in energy-saving, emission-reduction and carbon-reduction as well as the transformation and upgrading of enterprises.

#### Case: Cinder-free anode technology helps reduce carbon emissions from electrolytic aluminum

Zhengzhou Research Institute insists on technology to help reduce carbon. Focusing on the factors that affect power consumption in the aluminum electrolysis process, it has developed a carbon slag-free anode technology, which can improve the quality of carbon anodes and reduce the equivalent voltage, thereby achieving energy saving. For electrolytic aluminum enterprises

## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

渣陽極技術生產的炭陽極，將減少二氧化碳排放約4.2萬噸。

#### 案例：FHEST技術<sup>2</sup>推廣應用

本報告期，在遵義鋁業、包頭鋁業等5家公司累計推廣FHEST技術50萬噸產能，本年度節電0.87億度。

FHEST技術繼續在遵義鋁業、包頭鋁業、山西新材料、青海分公司應用，目前在運行且進入正常期的676台推廣槽（非正常期30台）。原鋁液交流電耗 $\geq 13,000\text{kWh/t-Al}$ 系列，累計平均節電 $471\text{kWh/t-Al}$ ，原鋁液交流電耗 $< 13,000\text{kWh/t-Al}$ 系列，平均實現 $12,459\text{kWh/t-Al}$ 。

2 「新型穩流保溫電解槽節能技術」（簡稱「FHEST技術」），該技術可使原噸鋁直流電耗 $\geq 13,000\text{kWh/t-Al}$ 的系列平均實現電能節約 $500\text{kWh/t-Al}$ 以上，並顯著降低二氧化碳排放。

with an annual production capacity of 1 million tons, carbon anodes produced by carbon slag-free anode technology will reduce carbon dioxide emissions by approximately 42,000 tons.

#### Case: Promotion and Application of FHEST<sup>2</sup> Technology

During the reporting period, five companies including Zunyi Aluminum and Baotou Aluminum have promoted a total of 500,000 tons of FHEST technology, which saved 87 million kWh of electricity this year.

FHEST technology continues to be applied in Zunyi Aluminum, Baotou Aluminum, Shanxi New Materials, and Qinghai Branch. There are currently 676 promotion tanks in operation and entering the normal period (30 in the abnormal period). The AC power consumption of the raw aluminum liquid  $\geq 13,000\text{ kWh/t-Al}$  series, the cumulative average energy saving is  $471\text{ kWh/t-Al}$ , and the raw aluminum liquid AC power consumption  $< 13,000\text{ kWh/t-Al}$  series, achieving an average of  $12,459\text{ kWh/t-Al}$ .

2 “Flow Heat Energy Saving Technology” (referred to as “First technology”), this technology can make the series of original ton aluminum DC power consumption  $\geq 13,000\text{ kWh/t-Al}$  average power and save more than  $500\text{ kWh/t-Al}$ , and significantly reduce carbon dioxide emissions.



## 強化環境保護(續) STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

青海分公司大修槽採用新型磷生鐵陰極節能技術及FHEST槽技術，對電解槽的內襯結構及陰極組裝形式進行升級改造，每噸鋁可節電450kWh。

### 生活降碳

中國鋁業提倡低碳綠色生活，並把生活降碳理念和方法推向企業所在社區。本公司日常生活和工作的地方開始宣導節約用水，減少食品浪費；推廣節能建築及節能生活設施，隨手關燈關閥，節約用電；提倡綠色出行，支持發展共用交通工具，少用塑膠包裝和一次性餐具等。

### 案例：更換節能照明設備

中州鋁業通過調研選定五種照明燈型，通過實地實驗，獲取了切實的數據，通過對比，選擇了性價比最高的一種LED節能燈後，將企業站站場燈橋，交接站站場燈塔，產品發運區域廠房的金屬氯化物燈具全部更換為LED節能燈。

The Qinghai branch's overhaul tank adopts new phosphorous pig iron cathode energy-saving technology and FHEST cell technology, and upgrades the lining structure and cathode assembly form of the electrolytic cell, which can save 450kWh of electricity per ton of aluminum.

### Carbon Reduction through Life Style

Chalco advocates low-carbon and green life, and promotes the concept and method of life carbon reduction to the communities where the Company is located. The Company's daily life and work places began to promote water conservation and reduce food waste; promote energy-saving buildings and energy-saving living facilities, turn off lights and valves at will, save electricity; promote green travel, support the development of shared transportation, and use less plastic packaging and disposable tableware, etc.

### Case: Replacement of energy-saving lighting equipment

Zhongzhou Aluminum selected five types of lighting lamps through research and field experiments to obtain tangible data. Through comparison, after choosing the most cost-effective LED energy-saving lamp, the company's station yard light bridge and handover station yard lighthouse were used. All the metal chloride lamps in the workshops in the product delivery area were replaced with LED energy-saving lamps.

## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

#### 增加碳匯

中國鋁業積極開發研究各類其他的降碳措施，其中植樹造林、礦區復墾、建設綠色礦山等增加碳匯行動作為中國鋁業一項主要的措施，進行廣泛的開展，為減緩溫室效應積極發揮碳匯的作用。中國鋁業礦區復墾土地11,042畝，截止本報告期末，本公司已累計復墾約8.98萬畝，復墾率達到94%；此外，中國鋁業積極推動綠色礦山創建工作，組織各企業制定綠色礦山建設方案，印發《關於做好2020年度綠色礦山申報的通知》，在公司已有7座礦山獲得國家綠色礦山稱號的基礎上，截止本報告期末，新增貴州貓場鋁礦，目前累計國家綠色礦山8座。另外賈西、段村、雷溝、白坪、香草窪、罈罐窰、麥壩、仙人巖、川主廟9座礦山進入所在省綠色礦山公示。

#### Increase Carbon Sink

Chalco is actively developing and researching various other carbon reduction measures. Among them, afforestation, mining area reclamation, construction of green mines and other actions to increase carbon sinks are Chalco's main measures, which are carried out extensively to actively play carbon sinks in order to slow down the greenhouse effect. The role of 11,042 mu of land has been reclaimed in the Chalco mining area. As of the end of the reporting period, the Company has reclaimed a total of 89,800 mu, with a reclamation rate of 94%. In addition, Chalco actively promotes the creation of green mines and organizes various companies to formulate green mine construction plans. The Company issued the "Notice on Doing a Good Job in the 2020 Green Mine Declaration". Based on the Company's 7 mines that have been awarded the title of National Green Mine, as of the end of the reporting period, Guizhou Maochang Aluminum Mine has been added, and there are currently 8 national green mines. In addition, 9 mines in Jiayi, Duancun, Leigou, Baiping, Vanillawa, Tan Guanyao, Maiba, Xianrenyan, and Chuanzhumiao have entered the province's green mines for public announcement.



## 強化環境保護(續)

# STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)



中國鋁業廣西分公司綠色礦山  
建設造福地方

**Green mine construction of  
the Guangxi  
branch of Chalco will benefit  
the place**

### 新能源佈局與利用

中國鋁業深知實現「碳達峰」和「碳中和」的主要舉措便是加快調整優化產業結構、能源結構，大力發展光伏發電、風電等可再生能源發電。本報告期，中國鋁業風電發電量2,610MWh，太陽能發電量334MWh，新能源產業不斷壯大，風力發電裝機容量為1,605.8MW，太陽能發電裝機容量為203.33MW；此外，中國鋁業持續加大清潔能源使用力度，積極開展新能源置換，優化產業布局等，降低碳排放量。



中國鋁業貴州分公司創建綠色礦山  
促進和諧發展

**Guizhou Branch  
creates green mines  
to promote  
harmonious development**

### New Energy Layout And Utilization

Chalco knows that the main measures to achieve “carbon peak” and “carbon neutrality” are to accelerate the adjustment and optimization of the industrial structure and energy structure, and vigorously develop photovoltaic power generation, wind power and other renewable energy power generation. During the reporting period, Chalco wind power generated 2,610MWh and solar power generated 334MWh. The new energy industry continued to grow. The installed capacity of wind power generation was 1,605.8MW and the installed capacity of solar power generation was 203.33MW. In addition, Chalco continued to increase the use of clean energy, actively carried out the replacement of new energy, optimized the industrial layout, etc., to reduce carbon emissions.

## 強化環境保護(續)

## STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

**案例：新能源使用讓中國鋁業電解鋁生產有了「綠色認證」**

中國鋁業青海分公司作為我國的大型電解鋁企業之一，在電解鋁生產過程中積極使用綠色電力，2020年累計使用的綠色電力可減少火電用量50.1億千瓦時，相當於減少標準煤消耗61.57萬噸，減少二氧化碳排放113.38萬噸。

蘭州鋁業積極開展發電權新能源置換，清潔能源使用量50億千瓦時，清潔能源佔比89.59%，大幅降低碳排放量。

**Case: The use of new energy makes Chalco's electrolytic aluminum production "green certification"**

As one of the country's large electrolytic aluminum companies, Chalco Qinghai Branch actively uses green power in the production of electrolytic aluminum. The cumulative use of green power in 2020 can reduce thermal power consumption by 5.01 billion kWh, which is equivalent to reducing standard coal consumption by 61.57. 10,000 tons, reducing carbon dioxide emissions by 1,133,800 tons.

Lanzhou Aluminum is actively carrying out the replacement of new energy for power generation rights. Clean energy uses 5 billion kWh, and clean energy accounts for 89.59%, which greatly reduces carbon emissions.

## 7.2 環境管理與措施

## 7.2 ENVIRONMENTAL MANAGEMENT AND MEASURES

### 7.2.1 環境管理體系

### 7.2.1 Environmental Management System

中國鋁業環境相關具體事宜最高管理機構為職業健康和環境委員會，並建立了從技術研究應用到環境監督管理為一體的環境管理體系，其中中國鋁業科技與發展部負責技術研究與應用，安全環保健康部負責環境相關日

The highest management body for specific environmental-related matters of Chalco is the Occupational Health, Safety and Environment Committee. Chalco has established an environmental management system that integrates technology research and application to environmental supervision and management. Among them, the Ministry of Science and Technology and Development





## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

常管理與監督工作。中國鋁業節能減排相關目標的完成度與管理層績效考核相掛鉤，並最終影響其薪酬發放；同時，本公司為鼓勵和監督員工及管理層環保工作落實情況，制定並出台了《安全環保獎勵實施細則》。中國鋁業／T24001-2016&ISO14001：2015建立有環境管理體系，並按照體系運行要求運行體系，並得中國船級社品質認證中心認證證書。此外，中國鋁業貫徹中鋁集團CAHSE精準安全環保管理體系要求，落實精準環保管理，堅持每年一次的CAHSE精準管理體系審核，促進環保管控及環保績效持續提升。

本報告期，中國鋁業繼續嚴格遵守國家及營運所在地各類環保法律法規，如：《中華人民共和國環境保護法》《中華人民共和國清潔生產促進法》等，同時認真梳理國內外

of Chalco is responsible for technology research and application, and the Ministry of Safety, Environmental Protection and Health is responsible for the daily management and supervision of environment-related work. The achievement of Chalco's energy conservation and emission reduction targets is linked to the performance appraisal of the management, and ultimately affects its salary payment. At the same time, in order to encourage and supervise the implementation of environmental protection work by employees and management, the Company formulated and promulgated the "Safety and Environmental Protection Award Implementation Rules". Chalco has established an environmental management system in accordance with T24001-2016&ISO14001:2015, and operates the system in accordance with the system operation requirements, and has obtained the certificate of China Classification Society Quality Certification Center. In addition, Chalco implements the requirements of Chinalco's CAHSE precision safety and environmental protection management system, implements precision environmental management, adheres to the annual CAHSE precision management system review, and promotes environmental protection management and continuous improvement of environmental performance.

During the reporting period, Chalco continued to strictly abide by various environmental protection laws and regulations of the country and the place where it operates, such as the "Environmental Protection Law of the People's Republic of China" and "The Cleaner Production Promotion Law of the People's Republic of

## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

鋁工業先進環保標準，調研國內同行及公司綠色生產現狀，分析研究國家最新環保政策及其發展趨勢，制定了公司環保領先戰略，明確了做行業標桿企業的目標。本集團結合公司所屬企業區域和環保設施狀況，明確了環保A、B、C分類標準管理思路，制定了公司環保領先「一企一策」實施方案，建立週匯報制度，督促企業抓緊實施環保改造，每週向公司管理層匯報項目進展。本報告期，中國鋁業累計投資11.71億元，實施了55個環保提標改造項目，有效避免了因環保問題影響公司正常生產經營的現象。

針對中央第四生態環境保護督察組督察中鋁集團時對包頭鋁業粉塵、噪聲、搬遷等問題的公開通報，公司和包頭鋁業高度重視，對所涉及問題進行分析、與地方政府和當地居民進行積極溝通。截至2020年底，所涉及問題已完成整改61%，粉塵、噪聲污染得到有效控制，居民搬遷工作在當地政府組織下進展順利。

China". At the same time, it carefully sorted out the advanced environmental protection standards of the aluminum industry at home and abroad. Investigate the status quo of domestic counterparts and the Company's green production, analyze and study the country's latest environmental protection policies and development trends, formulate the Company's environmental leadership strategy, and clarify the goal of becoming a benchmark enterprise in the industry. The Group has clarified the management thinking of environmental protection A, B, and C classification standards based on the Company's corporate area and the status of environmental protection facilities, formulated the Company's environmental protection leading "one company, one policy" implementation plan, established a weekly reporting system, and urged companies to implement environmental protection reforms, and report the project progress to the Company management every week. During the reporting period, Chalco has invested a total of 1.171 billion yuan and implemented 55 environmental protection improvement projects, effectively avoiding the phenomenon of environmental protection affecting the Company's normal production and operation.

In response to the public notification of Baotou Aluminum's issues around dust, noise, relocation, etc., released during the inspection of Chinalco by the central fourth environmental protection supervision, the Company and Baotou Aluminum attached great importance to the issues involved, analyzed the issues, and communicated with local governments and local residents proactively. As of the end of 2020, 61% of the problems involved have been rectified, dust and noise pollution have been effectively controlled, and the relocation of residents has been progressing smoothly under the organization of the local government.



## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

本報告期，中國鋁業制定了更加詳細的2021年環保目標：

1. 較大及以上突發環境事件為零；
2. 生態環境隱患整改計劃完成率100%；
3. 年度主要污染物排放計劃完成率100%；
4. 建設項目環保「三同時」合格率100%；
5. 環保標誌性項目完成率100%；
6. 固廢處置合規率100%。

During the reporting period, Chalco formulated more detailed environmental protection targets for 2021:

1. No major or above environmental emergencies;
2. The completion rate of rectification plan of ecological environment hidden danger is 100%;
3. The completion rate of annual major pollutant discharge plan is 100%;
4. "Three Simultaneities" qualification rate of construction project environmental protection is 100%;
5. The completion rate of environmental landmark projects is 100%;
6. The compliance rate of solid waste disposal is 100%.

#### 7.2.2 大氣污染防治

節能減排作為中國鋁業發展的永恒主題，本公司一直堅持走節能減排的可持續發展之路，積極加大環境保護投入，打造低消耗、低排放、高投入產出比的綠色生產企業。本集團嚴格遵守《中華人民共和國大氣污染防治法》等相關法律法規和地方政

#### 7.2.2 Prevention and Control of Air Pollutants

Energy saving and emission reduction is the eternal theme of Chalco's development. The Company has been adhering to the sustainable development road of energy saving and emission reduction. By actively increasing investment in environmental protection, we build a green production enterprise with low consumption, low emission and high input-output ratio. The Group strictly abides by the law of the "People's Republic Of China On The Prevention And

## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

策，遵照《中國鋁業集團有限公司環境保護管理辦法》等規章制度，完善環境管理體系，加大環保投入力度，實行新技術改造，以提高能源使用效率，促進清潔生產。本報告期，本集團未發生任何違反污染物排放以及能源相關的對本集團有重大影響的行為。與2019年度相比，2020年度公司環保罰款支出大幅減少，二氧化硫、氮氧化物、煙塵排放量大幅降低。

本報告期，中國鋁業大力開展超低排放改造，有效降低大氣污染物的排放：

- ✓ 完成位於重點區域氧化鋁企業共計21台焙燒爐煙氣脫硝特別排放限值改造，實現減排氮氧化物602噸。

Control Of Air Pollution” and other relevant laws, regulations and local policies, as well as the rules and regulations such as the “Administrative Measures for Environmental Protection of China Aluminum Group Co., Ltd”. In order to improve energy use efficiency and promote clean production, the Group constantly improves the environmental management system, increases environmental protection investment and implements new technology transformation. During the reporting period, the Group has not committed any violation of pollutant emission and energy related behaviors that have a significant impact on the Group. Compared with 2019, the Company’s environmental protection fines is significantly reduced in 2020, and the emissions of sulfur dioxide, nitrogen oxides, and smoke are greatly reduced.

During the reporting period, Chalco vigorously carried out ultra-low emission transformation to effectively reduce the emission of air pollutants:

- ✓ Completed the transformation of a total of 21 roaster flue gas denitrification special emission limits for alumina enterprises located in key areas, thereby reducing nitrogen oxide emissions by 602 tons.



## 強化環境保護(續) STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

- ✓ 截止2020年底，位於「2+26」區域的中鋁山東和中州鋁業在運熟料窯煙氣顆粒物和氮氧化物全部達到特別排放限值；位於汾渭平原的山西新材料在運熟料窯煙氣顆粒物已全部達到特別排放限值。
- ✓ 完成中鋁山東煤氣爐脫硫改造、石灰爐脫硫改造及廣西分公司石灰爐脫硫改造，2020年減排二氧化硫1,010噸。
- ✓ 中州鋁業完成精細氧化鋁系統和氧化鋁系統無組織揚塵治理，2020年減排顆粒物98噸。
- ✓ 完成寧夏能源馬蓮台發電廠封閉煤場項目，2020年減少粉塵排放460噸。
- ✓ By the end of 2020, all the flue gas particulates and nitrogen oxides of the clinker kilns transported by Chalco Shandong and Zhongzhou Aluminum located in the “2+26” area have reached special emission limits; the particulates in the flue gas from the clinker kiln of Shanxi New Material located in Fenwei plain, have all reached the special emission limit.
- ✓ Chalco Shandong completed the transformation of gas furnace desulfurization and lime furnace desulfurization; Guangxi branch completed the transformation of lime furnace desulfurization; and achieved a reduction of 1,010 tons of sulfur dioxide in 2020.
- ✓ Zhongzhou Aluminum completed the fine alumina system and the unorganized dust control of the alumina system, and achieved 98 tons of particulate matter reduction in 2020.
- ✓ Ningxia Energy has completed the closed coal yard project of Maliantai Power Plant, which reduced dust emissions by 460 tons in 2020.



## 強化環境保護(續)

## STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

- ✓ 完成中鋁礦業赤壁炭素12萬噸炭素罐式煨燒爐煙氣脫硫、除塵改造項目，赤壁炭素12萬噸炭素環式焙燒爐煙氣脫硫、除塵改造項目，赤壁炭素固體瀝青熔化煙氣淨化提標改造項目，2020年減排量粉塵8.7噸，SO<sub>2</sub> 86.2噸。
- ✓ Chalco Mining has completed the 120,000-ton carbon tank furnace flue gas desulfurization and dedusting transformation project of Chibi Carbon and the upgrading and upgrading of Chibi Carbon solid pitch melting flue gas purification project, achieving emission reductions of 8.7 tons of dust and 86.2 tons of SO<sub>2</sub> in 2020 .
- ✓ 完成包頭鋁業電解三、四廠煙氣脫硫脫氟除塵改造項目，12萬噸炭素焙燒煙氣脫硫除塵脫硝改造項目，2020年減少SO<sub>2</sub>排放1,306噸，減少顆粒物81噸。
- ✓ Baotou Aluminum has completed the flue gas desulfurization, defluorination and dust removal renovation project of the third and fourth electrolysis plants and the 120,000 tons of carbon roasting flue gas desulfurization and dust removal and denitrification renovation project, achieving a reduction of 1,306 tons of SO<sub>2</sub> emissions and a reduction of 81 tons of particulate matter in 2020.





## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

此外，中國鋁業在大氣污染減排與治理方面提前佈局污染治理新技術研發，做好新技術儲備，以應對越來越嚴格的監管要求。

In addition, Chalco has advanced the research and development of new technologies for pollutant treatment in terms of air pollution emission reduction and treatment, and has prepared new technology reserves to cope with increasingly stringent regulatory requirements.

#### 7.2.3 固體污染物防治

中國鋁業高度重視危險廢棄物的合規處理，遵守《中華人民共和國固體廢棄物污染環境防治法》《危險廢棄物轉移聯單管理辦法》等相關規定，從安全存儲、合規轉移、合理處置等方面嚴格管理危險廢棄物。目前，中國鋁業氧化鋁生產產生廢棄物主要是赤泥、粉煤灰等無害廢棄物，目前處理方法主要是堆填；電解鋁生產產生廢棄物主要是鋁灰、炭渣和廢槽襯等有害廢棄物，目前處理方法主要是無害化處理、迴用、堆填或交第三方廠商處理。

#### 7.2.3 Prevention And Control of Solid Pollutants

Chalco attaches great importance to the compliance treatment of hazardous waste, and abides by the “Law of the People’s Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes” and “Management Measures for the Transfer of Hazardous Wastes” and other relevant regulations. Chalco strictly manages hazardous waste in terms of safe storage, compliant transfer, and reasonable disposal. At present, the main waste generated from alumina production in Chalco is non-hazardous waste such as red mud and fly ash, and its disposal method is mainly landfill. Aluminum ash, carbon slag and overhaul slag and other hazardous wastes generated from aluminum electrolytic aluminum production in Chalco are mainly treated by harmless treatment, reuse, landfill, or disposal by third-party manufacturers.

## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

為切實減少固體污染物的排放，中國鋁業圍繞源頭減排和資源化利用，推動固體廢棄物減排和資源化利用的科技研發與應用。一是實施了無炭渣陽極生產技術工業試驗，在源頭上減少了炭渣的產生量。二是完成了廢陰極資源化利用技術第二階段工業試驗，實現了資源的全量化回收，所產石墨碎產品達到電煨石墨化焦一級品質量要求。三是完成了高鐵赤泥大規模分質利用技術的實驗室及擴大試驗，生產出水泥鐵質料、建陶矽鋁粉2大系列產品，可實現赤泥100%減排利用。

**案例：**中鋁山東將部分氧化鋁赤泥作為水泥原料使用，2020年綜合利用赤泥6萬噸；同時在積極開展利用改性後氧化鋁赤泥作為路基使用方案。

In order to effectively reduce the discharge of solid pollutants, Chalco focuses on source emission reduction and resource utilization, and promotes the scientific research and application of solid waste emission reduction and resource utilization. First, Chalco has implemented industrial trials of carbon slag-free anode production technology, which has reduced the amount of carbon slag produced at the source. Second, Chalco has completed the second-stage industrial test of waste cathode resource utilization technology, and realized the full quantified recovery of resources. The graphite shredded products produced meet the first-class quality requirements of electro-grilled graphitized coke. The third is that Chalco has completed the laboratory and expanded tests of high-speed rail red mud large-scale utilization technology, and produced two series of cement iron materials and ceramic silica alumina powder, which can achieve 100% emission reduction utilization of red mud.

**Case:** Chalco Shandong uses part of the alumina red mud as a raw material for cement, and comprehensively utilizes 60,000 tons of red mud in 2020. At the same time, Chalco Shandong is actively developing the use of modified alumina red mud as a roadbed use plan.





## 強化環境保護(續) STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

### 7.3 水資源保護

### 7.3 WATER RESOURCES PROTECTION

#### 7.3.1 水資源管理

#### 7.3.1 Water Resources Management

中國鋁業在運營過程中嚴格遵守和執行《中華人民共和國水污染防治法》等相關法律法規，積極探索提高水資源利用效率，在求取適用水源上並無存在任何問題。公司取水水源地主要為黃河、長江及其支流，而且公司擁有完善的工業廢水循環使用系統，所屬鋁冶煉企業均實現工業廢水「零排放」。經過適當處理的工業廢水全部迴用於生產，作為公司的替代水源的一部分。採用循環用水不僅減少新水使用，也是公司降低供水壓力的重要措施。

In the course of operations, Chalco strictly abides by and enforces the “Water Pollution Prevention and Control Law of the People’s Republic of China” and other relevant laws and regulations, and actively explores and improves the efficiency of water use. Chalco does not have any problems in obtaining suitable water sources. The Company’s water sources are mainly the Yellow River, the Yangtze River and their tributaries. The Company has a complete industrial wastewater recycling system, and its aluminum smelting enterprises have achieved “zero discharge” of industrial wastewater. Properly treated industrial wastewater is all reused in the production city as part of the Company’s alternative water source. The use of recycled water not only reduces the use of new water, but is also an important measure for the Company to reduce the pressure on the water supply.

## 強化環境保護(續)

## STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

### 7.3.2 水資源節約

本公司通過「減少新水用量」、「增加循環水用量」、「工業污水零排放」、「蒸發冷凝水梯級應用」、「餘熱綜合利用」、「信息化」等六個方面開展水資源節約工作，具體包括：針對各類產品用水目標，堅持對各類水分類計量，對各工區新水、反滲透水、冷凝水使用情況進行排查；根據排查情況，對部分用水流程進行優化。建立班組用水台賬，下達各工區日用水指標及產品單耗指標，納入日常考核，月底在績效中兌現。通過管理手段倒逼工區及一線崗位採取有效措施降低單耗。使用循環水代替新水用於礦場噴淋水、對於原料磨冷卻水通過使用涼水塔降溫後循環使用。使用低堿洗液替代熱水洗滌赤泥，產品生產

### 7.3.2 Water Resources Conservation

The Company has carried out water resource conservation work in six aspects, including “reducing the consumption of new water”, “increasing the consumption of circulating water”, “zero discharge of industrial sewage”, “cascade application of evaporation and condensation water”, “comprehensive utilization of waste heat” and “informatization”. This specifically includes: In view of the water consumption targets of various products, the Company insists on the classification and measurement of various types of water. The Company conducts investigations on the use of fresh water, reverse osmosis water, and condensate in each work area. Based on the investigation, the Company optimizes part of the water use process. The Company establishes team water accounts and issues daily water consumption indicators and product unit consumption indicators for each work area. The indicators are included in the daily assessment and will be fulfilled in the performance at the end of the month. The Company uses management methods to force work areas and front-line positions to take effective measures to reduce



## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

洗滌優先使用不合格冷凝水等。

**案例：**廣西華磊新材料有限公司實施的「發電廠循環水加酸節能技術研究」項目，通過循環水加酸節能技術，優化循環水處理工藝，解決新水浪費問題，達到節能減排的目的。2020年6月全部完成加酸技改調試並投運，外排水900噸／每小時降至400噸／每小時，2020年下半年平均發電用水耗2.84kg/kWh，同比2019年同期3.07kg/kWh下降0.23kg/kWh，每年節水128.8萬噸。

unit consumption. The Company uses circulating water instead of new water for spraying water in the mine, and at the same time, the cooling water of the raw material mill is cooled by a cooling water tower and then recycled. The Company uses low-basin lotion instead of hot water to wash the red mud, and priority is given to the use of unqualified condensate for product washing.

Guangxi Hualei New Materials Co., Ltd. implemented the “Research on Energy-saving Technology for Circulating Water and Acid in Power Plants”. Through the energy-saving technology of adding acid to circulating water, the circulating water treatment process is optimized to solve the problem of new water waste and achieve the purpose of energy saving and emission reduction. In June 2020, all the technological transformation and commissioning of acid addition will be completed and put into operation. The external drainage will decrease from 900 tons/hour to 400 tons/hour. The average power generation water consumption in the second half of 2020 is 2.84kg/kWh, which is 3.07kg/kWh compared with the same period in 2019 decrease by 0.23kg/kWh, saving 1.288 million tons of water every year.

## 強化環境保護(續)

### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

中鋁山東通過節水活動的開展，分解使用新水和回收冷凝指標，加強檢查和考核，冷水回收量同比2019增加17萬噸，新水用量同比2019年減少112萬噸。

貴州華仁動力工序綜合循環水加大了廠區雨水的收集力度，污水站充分挖掘發揮設備潛能，通過處理回收利用雨水，減少了鑄造循環水補充新水量，減少了工業新水消耗量。

2020年，包頭鋁業熱電廠再生水替代新水項目成功落地，預計新水用量由140萬噸減少到70萬噸，新水使用量減少一半以上。

Through the development of water-saving activities, Chalco Shandong has strengthened inspections and assessments by decomposing and using new water and recycling condensation indicators. The cold water recovery volume increased by 170,000 tons compared with 2019, and the new water consumption decreased by 1.12 million tons compared with 2019.

The comprehensive circulating water of Guizhou Huaren Power Process has increased the rainwater collection in the plant area. The sewage station has fully exploited the potential of the equipment, and through the treatment and recycling of rainwater, it has reduced the amount of new water added to the casting circulating water and reduced the consumption of new industrial water.

In 2020, Baotou Aluminum Thermal Power Plant's renewable water replacement project was successfully implemented. It is estimated that the new water consumption will be reduced from 1.4 million tons to 700,000 tons, and the new water consumption will be reduced by more than half.



## 強化環境保護(續)


### STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

#### 7.4 倡導綠色運營

礦山資源是中國鋁業最重要的自然資源，同時為降低本集團在營運過程中對礦山資源的影響(主要為礦產可持續利用及污染物排放)，本集團一直秉持「負責任開採」的理念，注重生產發展和生態保護之間的平衡。本集團嚴格遵守《中華人民共和國礦產資源法》《中華人民共和國國土資源保護法》等相關的法律法規，科學開採，責任選址，致力於礦山復墾、打造「綠色礦山」，保護礦區生態。本集團制定了《採剝(掘)技術計劃管理辦法》《採場單體設計標準化指導意見》等相關制度推進資源開發工作，以實現高效利用資源，開採方式科學，降低對環境影響。

#### 7.4 ADVOCATING GREEN OPERATION

Mining resources are the most important natural resources of Chalco. In order to reduce the Group's impact on mining resources during the operation (mainly the sustainable use of minerals and pollutant emissions), the Group has always upheld the concept of "responsible mining" and focused on the balance between production development and ecological protection. The Group strictly abides by relevant laws and regulations such as the "Mineral Resources Law of the People's Republic of China" and the "Land and Resources Protection Law of the People's Republic of China", implements scientific mining and responsible site selection, and is committed to mine reclamation, creating "green mines" and mining areas ecology protection. The Group has formulated related systems such as the "Administrative Measures for Mining and Stripping Technology Plan" and "Guidelines for Standardization of the Design of Single-site Mining Units" to promote resource development in order to achieve efficient use of resources, scientific mining methods and reduce environmental impact



## 強化環境保護(續)

## STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

中國鋁業一直致力於構建綠色循環發展的生產體系，注重變廢為寶，強調對資源進行重複利用。加強對包裝材料的循環使用和赤泥的開發利用是幾年來在固廢處理和循環利用方面的重點工作，既能有效節約環境資源，又能減少廢棄物的產生。公司積極宣導綠色發展理念，推進物流技術創新，努力構建低能耗、低排放、低污染為主要特徵的低碳經濟發展模式。在氧化鋁業務中，持續推進氧化鋁包裝優化工作，結合裝卸條件、運輸方式、運輸距離等因素，在符合條件的線路上重點推廣循環袋、汽車散裝、新型幹散箱等包裝優化裝運方式，建立了包裝優化收益的內部分享機制，激勵生產企業與物流企業推廣包裝優化的積極性。公司提倡並積極踐行包裝材料的循環使用，2020年循環袋累計新投入8,500條，總重約55噸。

Chalco has been committed to building a green recycling production system, focusing on turning waste into treasure, and emphasizing the reuse of resources. Strengthening the recycling of packaging materials and the development and utilization of red mud have been the focus of the Group's efforts in solid waste treatment and recycling in the past few years, which can effectively save environmental resources and reduce waste generation. The Company actively promotes the concept of green development, promotes innovation in logistics technology, and strives to build a low-carbon economic development model featuring low energy consumption, low emissions, and low pollution. In the alumina business, the Company continues to promote alumina packaging optimization, taking into account factors such as loading and unloading conditions, transportation methods, and transportation distances, focusing on the promotion of recyclable bags, automobile bulk, new dry bulk containers and other packaging optimization on eligible routes. In this way, an internal sharing mechanism for the benefits of packaging optimization has been established, thereby stimulating the enthusiasm of production companies and logistics companies to promote packaging optimization. The Company advocates and actively implements the recycling of packaging materials. In 2020, a total of 8,500 new recycling bags have been invested. The total weight is about 55 tons.



## 強化環境保護(續)

# STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

### 7.5 透明環境績效

### 7.5 ENVIRONMENTAL PERFORMANCE

本集團2018年至2020年環境相關績效數據詳見下表。

The environmental performance data of the Group from 2018 to 2020 are presented in the table below.

表：中國鋁業2018-2020年排放和資源使用情況

Table: Chalco's emissions and resource usage in 2018-2020

績效指標	Performance Indicators	單位	Unit	2018年 2018	2019年 2019	2020年 <sup>3</sup> 2020 <sup>3</sup>
<b>基本信息</b>	<b>Basic Information</b>					
營業收入	Operating income	萬元	RMB 10,000	18,035,091.20	19,021,539.80	18,599,425.30
氧化鋁生產量	Alumina production	萬噸	10,000t	1,351	1,380	1,453
電解鋁生產量	Electrolytic aluminum production	萬噸	10,000t	417	379	369
<b>排放物</b>	<b>Emissions</b>					
<b>廢氣</b>	<b>Air Emissions</b>					
二氧化硫排放量	The amount of SO <sub>2</sub> emission	萬噸	10,000t	4.44	4.73	3.60
氮氧化物排放量	The amount of NO <sub>x</sub> emission	萬噸	10,000t	1.62	1.33	1.05
煙塵排放量	The amount of PM emission	萬噸	10,000t	0.22	0.57	0.42

3 由於廣西華磊非本集團並表企業，較2018年和2019年，本年度本集團環境數據收集口徑中減少了廣西華磊公司數據。

3 Since Guangxi Hualei is not a consolidated company of the Group, compared with 2018 and 2019, the data of Guangxi Hualei has been excluded in the scope of the Group's environmental data collection this year.

## 強化環境保護(續)

## STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

績效指標	Performance Indicators	單位	Unit	2018年 2018	2019年 2019	2020年 <sup>3</sup> 2020 <sup>3</sup>
<b>溫室氣體<sup>4</sup></b>	<b>GHG Emissions<sup>4</sup></b>					
<b>範圍一</b>	<b>Scope 1</b>					
氧化鋁板塊二氧化碳排放當量	CO <sub>2</sub> emission equivalent of alumina sector	萬噸	10,000t	2,902.78	2,504.07	2,412.86
電解鋁板塊二氧化碳排放當量	CO <sub>2</sub> emission equivalent of electrolytic aluminum sector	萬噸	10,000t	2,801.33	2,535.23	2,120.03
總體 <sup>5</sup> 二氧化碳排放當量	The amount of total <sup>5</sup> CO <sub>2</sub> emission (in CO <sub>2</sub> equivalent)	萬噸	10,000t	7,331.40	6,699.68	6,101.23
<b>範圍二</b>	<b>Scope 2</b>					
氧化鋁板塊二氧化碳排放當量	CO <sub>2</sub> emission equivalent of alumina sector	萬噸	10,000t	103.14	159.67	197.96
電解鋁板塊二氧化碳排放當量	CO <sub>2</sub> emission equivalent of electrolytic aluminum sector	萬噸	10,000t	2,664.19	2,505.48	2,570.20
總體 <sup>6</sup> 二氧化碳排放當量	The amount of total <sup>6</sup> CO <sub>2</sub> emission (in CO <sub>2</sub> equivalent)	萬噸	10,000t	2,795.38	2,695.52	2,802.77

4 本公司2019年年度報告及ESG報告中所披露的排放數據為本集團匯總各分子公司能耗數據後，採用各能耗數據的平均排放因子進行計算的數據。本報告期，本集團各分子公司依據自身實際排放情況和所在地的排放因子進行了更加細緻的分類計算，排放數據有所增大，本集團核對、統計、匯總了各分子公司自行核算的碳排放數據，並對2018年、2019年數據進行了重述。

4 The emission data disclosed in the Company's 2019 annual report and ESG report are calculated by using the average emission factor of each energy consumption data after the Group has aggregated the energy consumption data of each branches subsidiaries. During the reporting period, each branches subsidiaries of the Group carried out more detailed classification calculations based on its actual emissions and local emission factors. The emission data has increased. The Group checked, counted and summarized the carbon emissions data calculated by each branches subsidiaries, and restated the data for 2018 and 2019.

5 包括氧化鋁板塊、電解鋁板塊和其他業務板塊的排放量。

5 Including emissions from the alumina sector, electrolytic aluminum sector and other business sectors.

6 包括氧化鋁板塊、電解鋁板塊和其他業務板塊的排放量。

6 Including emissions from the alumina sector, electrolytic aluminum sector and other business sectors.





## 強化環境保護(續) STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

績效指標	Performance Indicators	單位	Unit	2018年 2018	2019年 2019	2020年 <sup>3</sup> 2020 <sup>3</sup>
<b>溫室氣體排放總量</b>	<b>Total greenhouse gas emissions</b>					
氧化鋁板塊二氧化碳排放當量	CO <sub>2</sub> emission equivalent of alumina sector	萬噸	10,000t	3,005.92	2,663.76	2,610.79
氧化鋁板塊噸產量	CO <sub>2</sub> emission equivalent per ton of production of alumina sector	噸/噸	t/t	2.22	1.93	1.80
電解鋁板塊二氧化碳排放當量	CO <sub>2</sub> emission equivalent of electrolytic aluminum sector	萬噸	10,000t	5,465.52	5,040.71	4,690.23
電解鋁板塊噸產量	CO <sub>2</sub> emission equivalent per ton of production of electrolytic aluminum sector	噸/噸	t/t	13.11	13.30	12.71
總體 <sup>7</sup> 二氧化碳排放當量	The amount of total <sup>7</sup> CO <sub>2</sub> emission (in CO <sub>2</sub> equivalent)	萬噸	10,000t	10,126.78	9,395.20	8,904.00
萬元營業收入總體二氧化碳排放當量	The amount of total CO <sub>2</sub> emission (in CO <sub>2</sub> equivalent) per RMB 10,000 of operating income	噸/萬元	t/RMB 10,000	5.62	4.94	4.79
<b>廢水</b>	<b>Wastewater Discharge</b>					
工業廢水達標排放總量	The amount of industrial wastewater discharged in compliance with relevant standards	萬噸	10,000t	241.38	192.02	76.23
氨氮排放量	The amount of ammonia nitrogen discharged	噸	t	22	7	5.6
廢水循環利用量	The amount of wastewater circulated	億噸	100 million t	25.22	28.98	21.27
<b>一般工業固體廢棄物</b>	<b>General Industrial Solid Wastes</b>					
一般工業固體廢棄物產生總量	The amount of general industrial solid wastes generated	萬噸	10,000 t	3,811.47	3,945.30	3,780.33
萬元營業收入一般工業固體廢棄物產生量	The amount of general industrial solid waste generated per RMB 10,000 of operating income	噸/萬元	t/RMB 10,000	2.11	2.07	2.03
赤泥產生量	The amount of red mud generated	萬噸	10,000 t	2,344.97	2,181.04	2,172.46
赤泥利用量	The amount of red mud utilised	萬噸	10,000 t	193.09	449.18	280.58
粉煤灰產生量	The amount of fly ash generated	萬噸	10,000 t	494.56	505.92	436.23
粉煤灰利用量	The amount of fly ash utilised	萬噸	10,000 t	328.00	358.63	324.61
爐渣產生量	The amount of slag generated	萬噸	10,000 t	141.16	170.99	130.94
爐渣利用量	The amount of slag utilised	萬噸	10,000 t	101.18	143.94	105.27

7 包括氧化鋁板塊、電解鋁板塊和其他業務板塊的排放量。

7 Including emissions from the alumina sector, electrolytic aluminum sector and other business sectors.

## 強化環境保護(續)

## STRENGTHENING ENVIRONMENTAL PROTECTION (Continued)

績效指標	Performance Indicators	單位	Unit	2018年 2018	2019年 2019	2020年 <sup>3</sup> 2020 <sup>3</sup>
<b>有害廢棄物</b>	<b>Hazardous Wastes</b>					
有害廢棄物產生總量	Total amount of hazardous waste	噸	t	-	86,911	112,540
萬元營業收入 有害廢棄物產生量	Amount of hazardous waste generated per 10,000 yuan of operating income	噸/萬元	t/RMB 10,000	-	0.0046	0.0061
廢油(機油、礦物油)產生量	Waste oil (motor oil, mineral oil) generated	噸	t	-	1,667	733
廢油(機油、礦物油)處置量	The amount of disposal of waste oil (motor oil and mineral oil)	噸	t	938	1,667	819
鉛灰產生量	The amount of Aluminium ash generated	噸	t	-	19,007	22,402
鉛灰處置量	The amount of Aluminium ash disposal	噸	t	19,713	11,562	29,181
廢槽襯產生量	The amount of waste tank lining generated	噸	t	-	20,837	39,958
廢槽襯處置量	The amount of disposal of waste tank lining	噸	t	23,554	10,108	37,884
碳渣產生量	The amount of carbon residue generated	噸	t	-	45,400	49,447
碳渣處置量	The amount of carbon residue disposal	噸	t	46,512	26,756	47,493
<b>資源消耗</b>	<b>Use of Resources</b>					
綜合能源消耗量	Comprehensive energy consumption	萬噸標煤	tce	2,039.21	1,956.27	2,058.04
萬元營業收入綜合能源消耗量	Comprehensive energy consumption per RMB 10,000 of operating income	噸標煤/萬元	tce/RMB 10,000	1.13	1.03	1.11
外購電量	The amount of purchased electricity	億度	100 million kWh	398.84	389.26	400.39
總耗煤量	Total coal consumption	萬噸	10,000t	1,495.95	1,368.33	1,551.96
總用水量	Total water consumption	億噸	100 million t	26.15	30.01	22.03
其中：循環用水量	In which: circulating water consumption	億噸	100 million t	25.22	28.98	21.27
新水用水量	Total freshwater consumption	億噸	100 million t	0.93	1.03	0.76
萬元營業收入耗水量	Water consumption per RMB 10,000 of operating income	噸/萬元	t/RMB 10,000	145.00	157.77	118.44
萬元營業收入新水用水量	Freshwater consumption per RMB 10,000 of operating income	噸/萬元	t/RMB 10,000	5.16	5.41	4.09
包裝材料使用量	The amount of packaging material used	萬噸	10,000t	1.23	1.37	1.33

- 8 打造幸福職場  
CREATING A JOYFUL WORKPLACE
- 8.1 維護合法權益  
PROTECTING LEGITIMATE RIGHTS
- 8.2 助力員工成長  
EMPOWERING EMPLOYEE
- 8.3 注重員工關愛  
EMPLOYEE CARE



## 打造幸福職場

# CREATING A JOYFUL WORKPLACE

中國鋁業堅持「人才是第一資源」的人才理念，保障平等就業，保障女職工、少數民族員工、殘疾員工等群體的權益，杜絕使用童工，避免強迫勞動；規範勞動用工制度，實現員工成長與企業發展的和諧共進；暢通與員工的溝通渠道，建立民主管理制度；完善員工職業發展和培訓機制；加強對員工的人文關懷，與員工攜手打造幸福職場。

Chalco adheres to the concept of “talent is the primary resource”, guarantees equal employment, protects the rights and interests of female employees, ethnic minority employees, disabled employees as well as other groups and eliminates child labor and avoids forced labor; standardizes the labor system to achieve the harmonious development of employee growth and enterprise development; establish transparent communication channels with employees and a democratic management system; improve the professional development and training mechanism of employees; strengthen employees’ care, and work together with employees to create a joyful workplace.

## 8.1 維護合法權益

本集團嚴格遵守《中華人民共和國勞動法》《中華人民共和國勞動合同法》《中華人民共和國未成年人保護法》《禁止使用童工規定》《中華人民共和國勞動爭議調解仲裁法》《中華人民共和國婦女權益保障法》《中華人民共和國殘疾人保障法》《中華人民共和國社會保險法》等僱傭相關法律法規，同時參照上述法律法規建立了完善的用人制度和規範，為員工提供平等的就業機會以及具有競爭力的薪酬福利，重視並聽取員工的建議，力求維護員工的合法權益。

## 8.1 PROTECTING LEGITIMATE RIGHTS

The Group strictly complies with the “Labour Law of the People’s Republic of China”, the “Labour Contract Law of the People’s Republic of China”, the “Law of the People’s Republic of China on the Protection of Minors”, “Prohibition on the Use of Child Labor”, the “Labor Dispute Mediation and Arbitration Law of the People’s Republic of China”, the “Law of the People’s Republic of China on the Protection of Women’s Rights and Interests”, the “Law of the People’s Republic of China on the Protection of Disabled Persons”, the “Social Insurance Law of the People’s Republic of China” and other relevant laws and regulations on employment. In accordance with the above laws and regulations, we have established a sound employment system and norms to provide equal employment opportunities and competitive remuneration and benefits for employees, and strive to protect the legitimate rights and interests of our employees.



## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

### 8.1.1 平等僱傭

本集團嚴格遵守各項法律法規，堅持平等僱傭與男女同工同酬的原則，確保所有員工依法享有各項權益和公平公正的待遇，保障不同國籍、種族、性別、文化背景的員工其價值觀、宗教信仰和隱私不受侵犯。同時，本集團也致力於員工組成多樣化，打造不同種族、教育背景、工作經驗、國籍、專長的多元化團隊。本報告期，本集團未發生過違反有關平等機會、多元化、反歧視的法律及規例的行為。

### 8.1.1 Equal Employment

The Group adheres strictly to the laws and regulations, adheres to the principle of equal pay for men and women, ensures that all employees enjoy legitimate rights and interests and fair and just treatment in accordance with laws and regulations, and guarantees that the values, religious beliefs and privacy of employees of different nationalities, races, genders and cultural backgrounds are inviolable. At the same time, the Group is also committed to diversifying its workforce to create diverse teams of people of different races, educational backgrounds, work experience, nationalities and expertise. During the reporting period, the Group did not act in violation of the laws and regulations relating to equality opportunities, pluralism and discrimination.

### 8.1.2 勞工管理

本集團嚴格遵守《中華人民共和國勞動法》《中華人民共和國勞動合同法》《中華人民共和國未成年人保護法》《禁止使用童工規定》等法律法規，僱傭的各類員工入職自願，並按照企業制度流程辦理入職手續，嚴格禁止聘用非法員工，嚴禁招聘使用童工，所有員工年齡亦符合當地法律法規要求，本集團於本報告期間並無發生相關法律法規所規定勞工準則的重大不合規事宜。

### 8.1.2 Labour Management

The Group strictly abides by the “Labour Law of the People’s Republic of China”, the “Labour Contract Law of the People’s Republic of China”, the “Law of the People’s Republic of China on the Protection of Minors”, “Prohibition on the Use of Child Labor” and other laws and regulations. All types of employees are employed voluntarily, and we handle the employees induction process in accordance with the enterprise standard system, which strictly prohibits the employment of illegal employees and child labor, and all employees’ ages are also in line with local laws and regulations. During the reporting period, the Group did not occur any non-compliance issues in labor management.

## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

中國鋁業亦不斷優化各項勞工管理制度，在《中國鋁業股份有限公司勞動合同管理規定》的基礎上，制定出台《關於推進勞動用工制度改革優化三類人員管理指導意見》《關於實體企業勞動用工對標的指導意見》和《關於優化長協外包人員管理的實施意見》，從完善市場化用工機制、優化勞動組織、優化組織機構、優化崗位定員、推進兩化融合、壓減歸併輔業、規範勞務派遣、整頓長協外包、優化人員結構比例等方面提出目標、措施，按照整體推進、重點突破、一企一策、積極穩妥的原則，指導分公司和子公司制定改革實施方案。

Chalco has also continuously optimized various labor management systems, and on the basis of the "Regulations on labor contract management of Chalco", formulated and issued the "Guidance on the Management of Three Types of Personnel to Promote the Reform and Optimization of the Labor System", the "Guidance on the benchmarking of Labor and Employment in Entity Enterprises", and the "Implementation Opinions on optimizing the management of long-term outsourcing personnel". We set up targets and measures from the following aspects, such as improving market-oriented employment mechanism, optimizing labor organization, optimizing the organization of posts, optimizing job-setting, reducing and assisting the industry, regulating the outsourcing of long-term personnel, optimizing personnel composition structure, and in accordance with the principle of overall promotion, key breakthrough, one enterprise, one policy, positivity and soundness, guide branches and subsidiaries to formulate reform plans.

**表：2020年中國鋁業員工情況**

截至本報告期末的  
在職員工總人數

Number of total serving  
employees at the end of  
the Reporting Period 63,007人

按性別劃分的  
員工人數(人)

By gender

男員工

Male 51,748 人

女員工

Female 11,259 人

按年齡劃分的  
員工人數(人)

By age group

24周歲及以下

≤24 2,762 人

25-29周歲

25 - 29 4,025 人

**Table: Chalco's Employment in the year of 2020**



## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

		30-34周歲		
		30 - 34	6,526	人
		35-39周歲		
		35 - 39	6,219	人
		40-44周歲		
		40 - 44	9,644	人
		45-49周歲		
		45 - 49	16,814	人
		50-54周歲		
		50 - 54	12,586	人
		55周歲及以上		
		≥55	4,431	人
按類別劃分的 員工人數(人)	By category	高級管理層		
		Senior		
		management	179	人
		部門主管		
		Department		
		supervisor	994	人
		其他辦公室員工		
		Other office		
		employee	9,250	人
		普通工人、 技術工人		
		General and		
		technical worker	52,584	人
按地區劃分的 員工人數(人)	By region	港澳台地區		
		Hong Kong,		
		Macao and		
		Taiwan regions	0	人
		中國內地		
		China Mainland	63,007	人

## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

類別 Category	人數 Number of people (人) (people)	比率 <sup>8</sup> Rate <sup>8</sup>
截至本報告期末的流失總人數 <sup>9</sup> <b>The total number of turnover as of the end of the reporting period<sup>9</sup></b>	<b>4,442</b>	<b>7.1%</b>
按性別劃分的員工流失人數和比率 <b>Number and rate of employee turnover by gender</b>	男員工 Male	3,455
	女員工 Female	987
按年齡劃分的員工流失人數和比率 <b>Number and rate of employee turnover by age group</b>	24周歲及以下 ≤24	76
	25-29周歲 25 - 29	145
	30-34周歲 30 - 34	356
	35-39周歲 35 - 39	334
	40-44周歲 40 - 44	442
	45-49周歲 45 - 49	789
	50-54周歲 50 - 54	1,100
	55周歲及以上 ≥55	1,200
8 各類別的流失比率=該類別僱員的流失人數/該類別僱員總數	8	Turnover rate (per category)=Employees in the specified category leaving employment/Number of employees in the specified category
9 本報告期，相較於2018年和2019年流失人數統計範圍，本集團將退休人員納入了統計。本集團流失人數統計範圍包括自願離職、解僱、退休和身故的人員。2018年，2019年和2020年本集團的正常退休人員人數分別為525人，2,387人和3,090人。	9	During the reporting period, compared with the statistical scope of the number of turnover in 2018 and 2019, the Group included retirees in the statistics. The scope of the Group's turnover statistics includes voluntary resignation, dismissal, retirement and death. In 2018, 2019 and 2020, the number of regular retirees of the Group was 525, 2,387 and 3,090, respectively.





## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

類別 Category	人數 Number of people (人) (people)	比率 <sup>8</sup> Rate <sup>8</sup>
<b>按類別劃分的員工流失人數和比率</b> Number and rate of employee turnover by category		
高級管理層 Senior management	0	0
部門主管 Department supervisor	0	0
其他辦公室員工 Other office employee	477	5.2%
普通工人、 技術工人 General and technical worker	3,965	7.5%
<b>按地區劃分的員工流失人數和比率</b> Number and rate of employee turnover by region		
港澳台地區 Hong Kong, Macao and Taiwan regions		0
中國內地 China Mainland		7.1%

## 打造幸福職場(續)

### CREATING A JOYFUL WORKPLACE (Continued)

#### 8.1.3 薪酬福利

中國鋁業向員工提供有競爭力薪酬福利，員工薪酬包括基礎工資以及績效工資，公司為員工及時足額繳納社會保險以及住房公積金，並提供各類非薪酬福利，如健康體檢、取暖補貼、崗位補貼、加班補貼、子女入學優惠補貼等。本公司保障員工依法享有帶薪休假、產假等法定假期。另外，本集團為所有員工提供養老金和退休金。

本報告期，中國鋁業組織完成公司員工補充醫療和團體意外保險以及81家子企業年金辦理工作，保障了員工的切身利益。

中國鋁業實施動態薪酬激勵策略和激勵方式，員工工資參照企業人均工作增幅合理增長，使薪酬水平與能力提升相匹配。同時，本公司持續完善多層次激勵保障體系，調動技術人員和管理骨幹的積極性和創造性，靈活開展多種方式的中長期激勵措施，積極開展科技型企業分紅激勵，並探索股權激勵等中長期激勵方式。本報告期，中國鋁業指導所

#### 8.1.3 Compensation and benefits

Chalco provides competitive compensation and benefits to employees, including basic salary and performance pay. The Company pays social insurance and housing provident fund in full amount and on time for employees, and provides various non-remuneration benefits, such as health check-ups, heating subsidies, position subsidies, overtime allowances, subsidies for children's schooling, etc. The Company guarantees that employees enjoy statutory holidays such as paid leave and maternity leave in accordance with the law. In addition, the Group provides age pensions and retirement pensions for all employees.

During the reporting period, Chalco completed the Company's employee supplementary medical and group accident insurance, as well as 81 subsidiaries annuities processing work so as to protect the vital interests of employees.

Chalco implements dynamic compensation incentive strategy and method, and the employee's salary is reasonably increased with reference to the per capita job growth of the enterprise, so that the salary level is matched with the improvement of ability. At the same time, the Company continues to improve the multi-level incentive system, mobilizes the enthusiasm and creativity of technical personnel and management backbone, actively carry out technology-based enterprise dividend incentives, and explores equity incentives as well as other medium and long-term incentives. During the reporting period, Chalco guided 14 subsidiaries



## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

屬14家單戶企業建立《分紅激勵實施方案》。深化「五級工程師」、「五級技師」高技能人才激勵政策，薪酬分配向關鍵崗位及骨幹員工傾斜。

### 案例：企業年金計劃

包頭鋁業健全完善員工薪酬福利體系，保障和提高員工退休後的待遇水準，建立人才長效激勵機制，根據《中華人民共和國勞動法》《集體合同規定》《企業年金辦法》《企業年金基金管理辦法》等法律、法規、規章以國資委相關政策規定，包頭鋁業決定參加中國鋁業集團有限公司企業年金計劃，在《中國鋁業集團有限公司企業年金方案》框架下，建立企業年金。包頭鋁業以每位員工上一年度的稅前月平均工資為基數，個人部分是扣繳其基數的2%，企業給予其基數的8%，合併後計為每位員工的月繳納的企業年金。員工到達法定退休年齡後，可申請辦理企業年金待遇領取業務。

to establish the Dividend Incentive Program, enhanced the “five-level engineers” and “five-level technicians” high-skilled personnel incentive policy, and paid compensation to key positions and key employees.

### Case: Enterprise Annuity Plan

Baotou Aluminum has enhanced its employee salary and welfare system, guaranteed and improved the remuneration level of retired employees, and established a long-term talent incentive mechanism. In accordance with the “Labor Law of the People’s Republic of China”, “Collective Contract Regulations”, “Measures for Enterprise Annuities”, and “Measures for the Management of Enterprise Annuity Funds” as well as other laws, regulations, rules and relevant policies of the SASAC, Baotou Aluminum decided to participate in the Chinalco Annuity Plan, and established company annuity plan under the framework of the “Chinalco Annuity Program”. Baotou Aluminum uses the average monthly salary of each employee before tax in the previous year as the base. The personal part is withheld 2% of the base, the company gives 8% of the base, and the merger is calculated as the monthly enterprise annuity paid by each employee. After employees reach the legal retirement age, they can apply for corporate annuity benefits.

## 打造幸福職場(續)

### CREATING A JOYFUL WORKPLACE (Continued)

#### 8.1.4 民主管理

公司所屬企業工會建立了以員工代表大會為基本形式的民主管理制度，涉及企業重大決策和事項提交職代會審議決定。工會組織開展以員工創新工作室、員工合理化建議、創新創意大賽為主的員工創新創效工作；以勞動技能競賽為主的競賽組織工作。於本報告期末，本公司現有工會會員63,007人。

本公司充分尊重員工的知情權與監督權，建立完善廠務公開機制，通過不同渠道了解和收集員工對公司的政策、工作環境以至發展策略的意見與建議，為員工參與民主決策、民主管理與民主監督創造良好的環境。

##### 案例：維護員工權益

中州鋁業每年召開員工代表大會，進行工資集體協商，在職代會上簽訂《工資協定》，確保員工工資收入逐年穩定增長。每三年簽訂《集體合同》，維護員工合法權益。2020

#### 8.1.4 Democratic Management

The trade union of the Company has established a democratic management system with the employee congress as the basic form, which involves major matters of the Company to be submitted to the congress for consideration and decision. Trade union organizes and carries out employee innovation work such as employee innovation studio, employee dialogues, innovation and creativity contest, and labor skills competition. At the end of this report, the Company currently has 63,007 trade union members.

The Company fully respects the employees' right to know and supervise, establishes and perfects the factory affairs disclosure mechanism, understands and collects employees' opinions and suggestions on the Company's policies, working environment, and development strategies through different channels, and helps create an open environment by engaging employees to participate in democratic decision-making and democratic management.

##### Case: Protecting the rights and interests of employees

Zhongzhou Aluminum holds an employee congress every year to conduct collective wage negotiation, and signs the "Wage Agreement" to ensure a steady increase in employee wage year by year. The enterprise also signs "collective contract" with employees every three years to protect their legitimate rights



## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

年組織召開了二次職代會聯席會議，對涉及員工考核改革和激勵績效的重大事項進行審議，充分徵求廣大一線員工的意見建議，通過民主程序使決定重大事項，維護了員工合法權益。

另外，中州鋁業規範廠務公開工作，建立完善公司、分廠、車間、班組四級廠務公開機制，圍繞績效分配、員工就餐、青年發展、管理改革等，開展多層級網絡問卷調查10餘次，廣泛收集員工意見建議，並分類逐條解答600餘條，為員工解疑釋惑、上下溝通；建立領導接待日制度，每週六下午接待員工來訪，本報告期，共接待來訪29人次，解決員工關切事項11件。

and interests. In 2020, a second joint meeting of the employee congress was organized to deliberate on major issues related to employee appraisal reform and incentive performance, fully solicit the opinions and suggestions of front-line employees, and make decisions on major issues through democratic procedures.

In addition, Zhongzhou Aluminum regulates the disclosure of factory affairs, establishes and perfects the four-level factory affairs disclosure mechanism of the company, plant, workshop, and team, and conducts multi-level online questionnaire surveys around performance distribution, employee dining, youth development, management reform, etc. The enterprise conducted multi-level online questionnaires more than ten times, which extensively collected opinions and suggestions from employees, answered more than 600 items one by one, resolved doubts, and communicated with employees; established a management reception day to receive employee visits every Saturday afternoon. During the reporting period, a total of 29 visiting were received and solved 11 employees' concerns.

## 打造幸福職場(續)

## CREATING A JOYFUL WORKPLACE (Continued)

中州鋁業亦落實員工的知情權、監督權，組織員工代表70餘人次參加幹部選拔、考核、福利招標、勞保用品招標等活動，深層次推進企業民主管理。

Zhongzhou Aluminum also implements the employees' right to know and supervise, and organizes more than 70 employee representatives to participate in cadre selection, assessment, welfare bidding, labor insurance products bidding and other activities to promote democratic management of the enterprise.



中州鋁業召開職代會及接待員工來訪

### Zhongzhou Aluminum held employee congress and received visits from employees

## 8.2 助力員工成長

本集團關注員工長期的職業發展與成長，高度重視員工培訓和人才梯隊建設，為各類人才建立清晰透明的職業發展路徑，並通過績效考核、培訓、崗位選拔等方式激勵員工持續成長。

### 員工發展與培訓

中國鋁業堅持實施「人才強企」戰略，高度重視員工的職業發展與教育培訓工作，並不斷加強針對年輕幹部的培訓和培養。本公司不停探索構建領導力發展模型，開展人才測評和人格分析，逐步構建針對優秀年輕幹部的教練式輔導體系，制定針對性培養方案，構建優

## 8.2 EMPOWERING EMPLOYEE

The Group pays attention to the long-term career development and growth of employees, attaches great importance to staff training and talent pipeline building, establishes a clear and transparent career path for all types of talents, and encourages the continuous growth of employees through performance appraisal, training, position selection as well as other means.

### Employee development and training

Chalco adheres to the strategy of "talent-strong enterprise", attaches great importance to employee career development and training, and continuously strengthens the training targeted at young management teams. The Company continues to explore the construction of leadership competency model, talent assessment and personality analysis, and gradually builds a coaching system as well as an online and offline training system for outstanding young



## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

秀年輕幹部「線上+線下」培訓體系。本報告期，中國鋁業針對新冠疫情防控形勢，探索利用中國大學MOOC平台，組織「鋒刃計劃」、「飛躍計劃」的291名優秀年輕幹部開展網絡學習；下半年配合中鋁集團人力資源部在中國大連高級經理學院和浙江大學組織開展了6期「鋒刃計劃」和7期「飛躍計劃」培訓班。

cadres with customized training programs. During the reporting period, Chalco explored the use of MOOC platform of Chinese universities to organize 291 outstanding young cadres from “Blade Program” and the “Leap Plan” to attend online learning, and in the second half of the year, in cooperation with the Human Resources Department of Chinalco, we organized 6 “Blade Program” and 7 “Leap Plan” training courses on the China Business Executives Academy at Dalian and Zhejiang University.



### 案例：中州鋁業「許文斌創新工作室」

「許文斌創新工作室」以「中州鋁業電工首席技師」許文斌為帶頭人，以電氣系統高技能人才培養和解決電氣系統疑難問題，開展技術交流和新技術應用為主要職責，結合企業生產實踐和員工的技能需求，制定詳細培訓計劃，以師帶徒的模式開展技能培訓，技術交流和分享等活動。2019-2020年共開展各種形式的技能培訓項目128項，培訓2,045人次，培訓考試合格率達到100%，為企業人才儲備作出了貢獻。

### Case: “Xu Wenbin Innovation Studio”, Zhongzhou Aluminum

“Xu Wenbin Innovation Studio” is led by “Zhongzhou Aluminum Chief Electrician” Xu Wenbin, and takes high-skilled personnel training, solving difficult problems of electrical systems, technical exchanges and new technology applications as the main responsibility. It combines with enterprise production practices and staff skills needs, develops detailed training plans, carries out skills training, technical exchanges and sharing activities. A total of 128 skills training projects in various forms were carried out during 2019 and 2020, with 2,045 training participants and a 100% pass rate for training examinations, which contributing to the building of enterprise talents pool.

## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)



許文斌對員工進行「小電流接地選線系統」培訓

### **Xu Wenbin conducted employees "small current grounding line selection system" training**

案例：包頭鋁業「打造一流人才隊伍，推進一流企業建設」

包頭鋁業重視員工培訓發展，致力於全力打造經營管理、專業技術、生產操作三支一流人才隊伍。通過企校合作，包頭鋁業舉辦中高層管理人員專業理論知識培訓班，組織舉辦「現代電解鋁理論與技術」讀書會，參加高技能人才國際認證引育工程研修班以及各類技能競賽活動，為人才培養提供良好環境。

**Case: Baotou aluminum – "build a first-class talent team, promote first-class enterprise construction"**

Baotou Aluminum attaches great importance to staff training, and is committed to building three first-class team which are management, technology and production operation. Through the cooperation with schools, Baotou Aluminum holds training courses on theoretical knowledge for middle and senior management, organizes "Modern Electrolytic Aluminum Theory and Technology" reading sessions, and participates in international certification and engineering courses for highly skilled personnel, as well as various skill competitions, to provide a good environment for talent training.





## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)



員工培訓現場  
Employee Training

### 榮譽獎項：

1. 遵義鋁業被評選為「2020年度遵義市構建和諧勞動關係先進企業」
2. 包頭鋁業被內蒙古自治區評為「和諧勞動關係單位」，納入社會法人公共信用記錄體系
3. 廣西分公司礦業公司工會榮獲廣西壯族自治區總工會「全區模範員工之家」、「模範員工小家」榮譽稱號

### Honors and Awards:

1. Zunyi Aluminum was selected as “Outstanding Enterprise for Building Harmonious Labor Relations in Zunyi City in 2020”
2. Baotou Aluminum was rated as a “Harmonious Labor Relations Unit” by the Inner Mongolia Autonomous Region and incorporated into the public credit record system of social legal persons
3. The labor union of the Guangxi Branch won the honorary titles of “Region Model Staff Home” and “Model Staff Home” by the Guangxi Zhuang Autonomous Region Federation of Trade Unions

## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

表：2020年中國鋁業員工受訓情況

Table: 2020 Chalco Employees' Training Performance

		受訓人數(人) Number of employees being trained	受訓員工百分比(%) Percentage of trained employees (%)	受訓平均時數(小時) Average trained hours (h)
<b>按員工類別劃分的受訓情況</b> Training by category				
高級管理層	Senior management	179	0.3%	120
部門主管	Department supervisor	994	1.9%	110
其他辦公室員工	Other office employee	9,250	17.6%	90
普通工人、技術工人	General and technical worker	42,129	80.2%	47.2
<b>按性別劃分的受訓情況</b> Training by gender				
男員工	Male	44,580	84.8%	57.7
女員工	Female	7,972	15.2%	41.1



## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

### 8.3 注重員工關愛

中國鋁業切實服務企業，真誠關愛員工；堅持以人為本，紮實細緻地做好涉及員工切身利益的事情。

中國鋁業所屬企業工會始終注重員工關愛，開展以困難員工解困脫困、普惠慰問和精準扶貧、勞模管理服務和女員工特殊權益保障為主的維權服務工作。於本報告期內，中國鋁業下屬企業全年幫扶資金共1,097萬元，幫扶對象由9戶企業158人減少至1戶6人。

另外，中國鋁業下屬企業職代會、工代會代表不斷落實女性代表比例要求，鼓勵女性員工積極參與勞動和技能競賽，在各類評先評優活動中，充分考慮女員工比例。部分下屬企業為困難員工、勞模、女性員工等給予公用住房加分或減免公用住房租金等政策傾向。

### 8.3 EMPLOYEE CARE

Chalco sincerely cares for employees, adheres to the people-oriented approach, deals with matters involving the immediate interests of employees meticulously.

The trade unions of subsidiaries of Chalco always pay attention to employee care, and carry out rights protection services focusing on the relief of difficult employees, inclusive solicitude, poverty alleviation, labor model management services, and protection of the special rights and interests of female employees. During the reporting period, Chalco's subsidiary companies invested a total of 10.97 million yuan in funding for the whole year, and the number of assistance recipients decreased from 9 families with 158 people to 1 family with 6 people.

In addition, employee congress and worker congress of Chalco's subsidiary companies continue to implement the requirements for the proportion of female representatives, encourage female employees to actively participate in labor and skill competitions, and give full consideration to the proportion of female employees in various evaluation activities. Some subsidiary companies give employees in need, model workers, and female employees public housing bonus points or reduce or exempt public housing rents.

## 打造幸福職場(續)

### CREATING A JOYFUL WORKPLACE (Continued)

各級工會依法保障員工集體福利和節日慰問，堅持春送健康、夏送清涼、秋送助學、冬送溫暖。公司重視員工職業健康並提供全員體檢福利，結合疫情防控實際，廣泛開展網絡觀燈、書畫攝影、讀書徵文、詩歌朗誦、居家健身、廚藝展示等線上活動，廣泛組織健步、拔河、跳繩、健身操等小型活動，同時舉辦心理健康、健康急救等專題講座，為保障員工身心健康搭建平台。

#### 案例：真情關愛打造「健康中州」

中州鋁業積極推進「健康中州」計劃，增加體檢頻率，提升體檢質量，確保參檢員工滿意。2019年以來，中州鋁業將員工健康體檢頻次由兩年改為一年，並增加4項體檢項目，2020年體檢總計15個成員單位，男員工3,733人次，女員工1,933人次。

Trade unions at all levels guarantee employee collective welfare and holiday benefits in accordance with the law, and constantly provide benefits across four seasons. The Company attaches great importance to the occupational health of employees and provides physical check-ups for all employees. Due to the epidemic prevention and control, the Company has extensively carried out online activities such as online light viewing, painting, calligraphy and photography, essays and poetry reading, home fitness, and cooking activities. We also held small activities such as walking, tug-of-war, rope skipping, aerobics, special lectures on mental health, health first aid, etc., to build a platform to protect the physical and mental health of employees.

#### Case: Creating a “Healthy Zhongzhou”

Zhongzhou Aluminum actively promotes the “Healthy Zhongzhou” plan, increases the frequency of physical examinations, improves the quality of physical examinations, and ensures the satisfaction of the employees participating in the examinations. Since 2019, Zhongzhou Aluminum has changed the frequency of employee health examinations from once in two years to once per year, and added 4 new physical examination items. In 2020, the enterprise completed physical check-ups of 15 member units with 3,733 male employees and 1,933 female employees.



## 打造幸福職場(續) CREATING A JOYFUL WORKPLACE (Continued)

根據體檢結果，中州鋁業工會製作《健康中州，你我同行》電子手冊，針對員工容易出現的急慢性病的防治進行科普講座，告知防治措施。同時，中州鋁業發出《關於適度加強體育鍛煉、增強身體素質的倡議》，教育員工樹立正確的健康新觀念。此外，中州鋁業與中州鋁廠員工醫院簽訂了醫療服務協議，為員工購買了生產急救與保障、巡迴醫療、車間常用急救藥品及大型檢修、試車、應急演練及其他大型活動現場醫療救護等服務。

According to the results of the physical examination, the Zhongzhou Aluminum Trade Union produced an electronic manual of "Healthy Zhongzhou, You and I Together", conducted lectures on the prevention and treatment of acute and chronic diseases that employees are prone to, and informed prevention and treatment measures. At the same time, Zhongzhou Aluminum issued the "Initiative on Strengthening Physical Exercise and Physical Fitness" to educate employees to establish new concepts of health. In addition, Zhongzhou Aluminum signed a medical service agreement with the employee hospital, which purchased production first aid and protection service, medical care, common first-aid drugs in the workshop, and large-scale maintenance, commissioning, emergency drills, and other large-scale activities on-site medical rescue services for employees.

- 9 促進產業共贏  
PROMOTING A WIN-WIN  
SITUATION THROUGHOUT  
THE INDUSTRY CHAIN
- 9.1 提升產品質量  
IMPROVING PRODUCT QUALITY
- 9.2 提升運營效益  
IMPROVING OPERATIONAL EFFICIENCY
- 9.3 打造可持續供應鏈  
ESTABLISHING A SUSTAINABLE  
SUPPLY CHAIN
- 9.4 推動行業發展  
PROMOTING INDUSTRY  
DEVELOPMENT





## 促進產業共贏

# PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN

本集團嚴格遵守國家法律法規及行業質量標準，在不斷提升產品質量並保障產品安全的同時，帶動上下游供應商打造可持續供應鏈；雖然面對突如其來的疫情挑戰，中國鋁業及時採取積極的應對措施，不斷提升運營效率；中國鋁業作為行業龍頭企業積極促進行業交流，推動行業產業共同發展。

The Group strictly complies with national laws, regulations and industry quality standards. While continuously improving product quality and ensuring product safety, the Company also drives upstream and downstream suppliers to build a sustainable supply chain. Despite the sudden challenge of the epidemic, Chalco has taken a proactive approach in a timely manner. Responding measures to continuously improve operational efficiency; as a leading company in the industry, Chalco actively promotes industry exchanges and promotes the common development of the industry.

## 9.1 提升產品質量

## 9.1 IMPROVING PRODUCT QUALITY

本集團始終將產品質量放在首位，堅持為客戶提供優質且安全的產品與服務，致力於打造「要好鋁找中鋁」的質量品牌。通過建立完善的質量管理體系與制度，持續提升產品質量，通過交流訪談、問卷調查等形式進行客戶滿意度調查，努力為消費者創造更多價值。本報告期，本集團客戶滿意率為100%。

The Group always puts product quality in the first place, insists on providing customers with high-quality and safe products and services, and is committed to building a quality brand of “Good aluminum, find Chalco”. Through the establishment of a sound quality management system and regulations, we will continue to improve product quality. And we will perform customer satisfaction survey through communication, interviews, questionnaires and other forms, creating more value for customers. During the reporting period, the customer satisfaction rate of the Group was 100%.

### 9.1.1 質量管理

### 9.1.1 Quality Management

中國鋁業制定並出台了《質量管理辦法》，規定本集團應當採用自檢、互檢、專檢的方式控制中間產品和最終產品的質量，確保生產產品符合相關質量標準和合同要求。同時，對出現問題的產品，公司《質量管制辦法》規定：當發生質量異議時，

Chalco formulated and promulgated the “Quality Management Measures”, which stipulates that the Group should use self-inspection, mutual inspection, and special inspection to control the quality of intermediate products and final products to ensure that their products meet relevant quality standards and contract requirements. At the same time, for products that have problems, the Company’s “Quality Control Measures” stipulates that when a

## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

企業應當迅速並積極回應顧客，並按企業質量異議的處置辦法或合同約定的處理辦法積極處理。質量異議的處理應當充分體現尊重和理解顧客的思想，不能以「產品符合國標要求」作為搪塞顧客要求的理由。

本報告期，本集團為進一步提升冶金級氧化鋁產品質量水平，加強制度保障，出台並正式實施《中國鋁業股份有限公司冶金級氧化鋁優質優價管理規定》。本公司已通過GB/19001-2016 & ISO9001：2015質量管理體系認證。

quality objection occurs, the Company should promptly and actively respond to customers, and actively deal with it in accordance with the Company's quality objection handling method or contractual handling method. The handling of quality objections should fully embody the idea of respecting and understanding customers, and "the product meets the requirements of the national standard" should not be used as a reason to prevaricate customer requirements.

During this reporting period, in order to further improve the quality of metallurgical-grade alumina products and strengthen institutional guarantees, the Group promulgated and formally implemented the "Aluminum Corporation of China Limited Metallurgical-grade Alumina Quality and Price Management Regulations." The Company has passed GB/19001-2016 & ISO9001:2015 quality management system certification.



嚴把產品質量關生產高質量產品

**Strictly control product quality, produce high-quality products**





## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

#### 9.1.2 產品安全

本集團參考國際標準制定了產品健康與安全的政策和制度，如質量管制體系認證，環境管理體系認證，職業健康安全管理体系認證等。同時，針對客戶需求在生產過程中做好安全健康控制的相關工作，例如開展科研攻關，通過對原料端進行控制，去除高純鋁產品中的重金屬。公司所屬企業嚴格按照國家安全生產及環保要求，產品元素含量嚴格執行國家標準，並提供「質證書」，杜絕鉛、汞、砷等有害元素的添加，保證終端消費者的健康。本報告期，本集團未有任何違反與產品和服務健康與安全相關的對本集團有重大影響的法律法規的行為，同時本集團提供的產品未有因安全及健康等原因而回收的案例。

#### 9.1.2 Safety of Products

The Group has established policies and systems for product health and safety with reference to international standards, such as quality control system certification, environmental management system certification, occupational health and safety management system certification, etc. At the same time, in response to customer needs, the Company makes the safety and health control during the production process and other related work. Such as the frontier scientific research of removing heavy metals in high-purity aluminum products, through the control of the raw material end. Companies affiliated to Chalco strictly comply with national safety production and environmental protection requirements. The content of product elements strictly implements national standards and provides "Quality certificates" to eliminate the addition of harmful elements such as lead, mercury, and arsenic to ensure the health of end consumers. During this reporting period, the Group did not have any violations of laws and regulations related to the health and safety of products and services that have a significant impact on the Group. At the same time, there were no cases of recall of products provided by the Group due to safety and health reasons.

## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

#### 9.1.3 客戶隱私保護

本集團嚴格遵守《中華人民共和國保守國家秘密法》《中央企業商業秘密保護暫行規定》等相關法律法規，且本集團在相應的營銷方案中規定：「各級營銷人員要自覺遵守公司保密規定，強化銷售信息和市場信息保密意識，嚴禁洩露公司商業機密」。同時，本集團致力於加強銷售業務方面的保密工作，在與客戶簽訂的購銷合同中，都會有相應的保密條款。本報告期，本集團未發生任何違反與客戶隱私、商業機密保護、產品廣告及商標相關的法律法規的行為，且未收到任何與上述事項相關的舉報案例。

#### 9.1.3 Customer Privacy Protection

The Group strictly complies with the “Law of the People’s Republic of China on Guarding State Secrets ”and “Interim Provisions on the Protection of Trade Secrets of Central Enterprises ”and other relevant laws and regulations. The Group stipulates in the corresponding marketing plan: “Marketing personnel at all levels must consciously abide by the Company’s confidentiality regulations, strengthen the awareness of confidentiality of sales information and market information, and strictly prohibit leaking company business secrets.” At the same time, the Group is committed to strengthening the confidentiality of the sales business. There will be corresponding confidentiality clauses in the purchase and sales contracts signed with customers. During the reporting period, the Group did not violate any laws and regulations related to customer privacy, protection of trade secrets, product advertisements and trademarks, and did not receive any reports related to the above matters.



## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

#### 9.2 提升運營效益

本報告期，面對複雜的經營環境、多變的市場形勢和突如其來的疫情挑戰，本集團堅持「以市場為導向」、「以效益為中心」，強化市場分析，改革營銷機制，創新管理措施，持續降低採購成本，提升本集團運營效益。

#### 積極應對疫情，確保供應和銷售


2020年年初疫情發生後，針對物資供應緊張、產品市場消費停滯等問題，本集團通過採取開闢供應管道、調整產品結構、疏通運輸環節等措施，有效緩解了煤炭緊張、原料到貨不足等狀況。另外，中國鋁業迅速制訂《石油焦應急保供方案》，採取「鐵路運送、分點就近」措施，為下屬企業運輸貨物5萬餘噸，有效緩解庫存緊張問題。

#### 9.2 IMPROVING OPERATIONAL EFFICIENCY

During the reporting period, facing the complex operating environment and changing market situation and sudden epidemic challenges, the Group adhered to “Market-oriented” and “Efficiency-centric”, strengthened market analysis, reformed marketing mechanisms, and innovated management measures. The Group continues to reduce procurement costs and improves the operating efficiency of the Group.

#### Actively responding to the epidemic and ensuring supply and sales

After the outbreak of the epidemic at the beginning of 2020, in response to the tight supply of materials and stagnant product market consumption, the Group adopted measures such as opening up supply pipelines, adjusting product structure, and dredging transportation links, which effectively alleviated coal shortages and insufficient raw material arrivals. In addition, Chalco quickly formulated the “Petroleum Coke Emergency Supply Plan” and adopted the measures of “railway transportation, based on points and adjacency” to transport more than 50,000 tons of goods for its subsidiaries, which effectively alleviating the problem of tight inventory.



## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

#### 搶抓復工複產市場機 遇，積極維護市場價 格

疫情期間，中國鋁業積極研判市場，指導下屬企業調整合金產品結構，加快鋁棒銷售，2020年4、5月份鋁棒銷量同比增加14.9%。中國鋁業適時加大氧化鋁外部採購量，累計外採氧化鋁211.1萬噸，同比增加12%，切實保障內部企業生產需求以及外部合同的穩定執行。

#### Seizing market opportunities for resumption of work and production, and actively maintaining market prices

During the epidemic, Chalco actively studied and judged the market, guided its subsidiaries to adjust the alloy product structure, and accelerated the sales of aluminum rods. Aluminum rod sales in April and May of 2020 increased by 14.9% year-on-year. Chalco increased its external procurement of alumina in a timely manner, with a total of 2.111 million tons of externally mined alumina, with an increase of 12% year-on-year, effectively guaranteeing the stable implementation of internal enterprise production demand and external contracts.



## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

#### 加強銷售統籌管理， 提高市場佔有率和增 盈能力

本報告期，中國鋁業積極關注市場運行動態，指導下屬企業開發市場，以貿易為載體和手段，通過優化貿易資源配置，鞏固長期戰略客戶，大力拓展新客戶，加大主要產品銷售力度，推進產品精細化、高品質化結構調整，增加產品創效能力，提高市場佔有率。此外，中國鋁業不斷加強產品銷售監管，優化內部資源配置，並要求和督促下屬企業進一步減少價格折讓，提高銷售價格，並加強監督檢查，及時糾正違規行為，切實防範了風險。

#### Strengthening overall sales management, increasing market share and increase profitability

During this reporting period, Chalco actively paid attention to the market operation dynamics, guided its subsidiaries to develop the market, using trade as the carrier and means, by optimizing the allocation of trade resources. This method consolidated long-term strategic customers, vigorously expanded new customers, increased the sales of major products, advanced product refinement, high-quality structural adjustment, and increased product efficiency and increase market share. In addition, Chalco has continuously strengthened product sales supervision, optimized internal resource allocation, and required and urged its subsidiaries to further reduce price discounts, increase sales prices, strengthen supervision and inspection, and correct violations in a timely manner to effectively prevent risks.

## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

#### 9.3 打造可持續供應鏈

本公司制定了《中國鋁業股份有限公司供應商管理辦法》對供應商的准入、退出、評估等進行了規定。公司管理供應商實行供應商分類分級、總量控制原則、供應商資格預審制原則、動態量化考核原則和資質年度評審原則獎懲原則。截至本報告期末，本集團共有3,729家生產原材料類供應商，其中全部來自中國內地。

本集團選擇供應商時會考慮：

- 是否具備合法有效的基本證明檔；
- 涉及危險化學品和特種製造行業的供應商是否具備相應的資質證明；
- 是否能提供完善的質量保證體系；
- 有無違法記錄或者是重大法律糾紛；
- 是否具備履行合約的能力，良好的經營業績和售後服務能力等。

#### 9.3 ESTABLISHING A SUSTAINABLE SUPPLY CHAIN

The Company has formulated the “Aluminum Corporation of China Limited Supplier Management Measures” which stipulates the access, withdrawal, and evaluation of suppliers. The Company manages suppliers to implement the principles of classification and grading of suppliers, the principle of total control, the principle of supplier qualification pre-examination, the principle of dynamic quantitative assessment and the principle of reward and punishment in the annual qualification review. As of the end of the reporting period, the Group had 3,729 suppliers of production raw materials, all of which were from Mainland China.

When selecting suppliers, the Group will consider:

- Whether there are legal and effective basic documents;
- Whether the suppliers involved in hazardous chemicals and special manufacturing industries have the corresponding qualification certificates;
- Whether it can provide a complete quality assurance system;
- Whether there are illegal records or major legal disputes;
- Whether have the ability to perform contracts, good business performance and after-sales service capabilities, etc.



## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

根據《中國鋁業股份有限公司供應商管理辦法》，中鋁物資嚴格從源頭上控制污染，要求供應商生產企業在原材料的產品製造、使用、回收再利用以及廢料處理等環節中，充分利用能源和節約資源，減少環境污染；查看供應商相關環保資質，保證採購供應廠商是符合國家環保要求的正規廠家。《中國鋁業股份有限公司供應商管理辦法》中，供應商准入管理規定，准入公司的供應商應符合公司社會責任管理體系政策之要求，在社會上或行業內沒有明顯違背社會責任有關規定的不良記錄；社會責任表現較差，並且已經在社會上造成一定惡劣不良影響的供應商予以降級；社會責任表現很差，並且已經在社會上或行業內造成嚴重惡劣不良影響的供應商，予以終止交易，限期整改，並在公司ERP系統中做凍結處理。

According to the “Supplier Management Measures of Aluminum Corporation of China Limited”, Chalco Materials strictly controls pollution from the source and requires supplier manufacturers to make full use of energy in the production, use, recycling, and waste treatment of raw materials, and save energy and resources and reduce environmental pollution. The Company checks the supplier’s relevant environmental protection qualifications to ensure that the purchasing supplier is a regular manufacturer that meets the national environmental protection requirements. In the “Supplier Management Measures of Aluminum Corporation of China Limited”, according to the section of supplier Access Management Regulations that the suppliers of the access company shall meet the requirements of the Company’s social responsibility management system policy, and there is no obvious violation of social responsibility in the society or the industry. Suppliers who perform poorly in social responsibility and have caused a certain adverse influence in the society will be downgraded; suppliers who perform poorly in social responsibility and have caused serious and adverse influence in society or the industry will be terminated and rectified within a time limit, and freeze processing in the Company’s ERP system.

## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

#### 案例：中鋁物資「2020年中國鋁業重點供應商市場研討會」

2020年12月4日，中鋁物資承辦的2020年中國鋁業重點供應商市場研討會在河南鄭州順利召開，中國鋁業有關部門和各成員企業相關負責人、重點供應商代表出席會議。會議表彰了35家優秀供應商及單項獎單位，鼓勵先進；邀請了知名專家作主題報告；召開了煤炭、燒鹼和石油焦等8場主題研討，集思廣益；舉辦了1場高峰論壇，共話未來。重點供應商研討會是中國鋁業和社會各界加強溝通交流、增進理解信任、開展戰略合作的重要平台，促進了中國鋁業與廣大上下游企業的共同發展。

#### Case: Chalco Materials "2020 Chalco Key Supplier Market Seminar"

On December 4, 2020, the 2020 China Aluminum Key Supplier Market Seminar hosted by Chalco Materials was successfully held in Zhengzhou, Henan. Relevant persons in charge of relevant departments and member companies of Chalco and representatives of key suppliers attended the meeting. The meeting commended 35 excellent suppliers and individual award units, and encouraged advancing; well-known experts were invited to give keynote speeches; there are 8 theme seminars including coal, caustic soda and petroleum coke were held to brainstorm ideas; a summit forum was held to discuss about the future. The key supplier seminar is an important platform for Chalco and all sectors of society to strengthen communication, enhance understanding and trust, and carry out strategic cooperation, and promote the common development of Chalco and the majority of upstream and downstream enterprises.







## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

#### 9.4 推動行業發展

作為國家有色金屬行業龍頭企業，中國鋁業一直致力於在實現自身快速發展的同時，以先進的科學技術，優質的產品及服務，完善的公司管治架構以及可持續發展理念，帶動產業鏈上各利益相關方的共同發展，從而帶領並促進全產業鏈的可持續發展。

本報告期，中國鋁業持續堅持科技創新引領行業發展，通過創新研發不斷改進生產技術和設備，鼓勵員工深入持久地開展創新性改革。同時，中國鋁業作為肩負行業創新引領者使命的國有控股企業，持續以完善的科技創新體系為保障，不斷增強研發能力，擴大產品推廣應用，在努力建設具有全球競爭力的世界一流鋁業公司的同時，為國家安全和民生經濟保駕護航。本報告期，本集團申請專利數量195件，重大專項項目38件，被授權專利數量197件，主導制(修)訂團體以上標準18項。截至本報告期末，本公司擁有有效專利1,404件。

#### 9.4 PROMOTING INDUSTRY DEVELOPMENT

As a leading company in the national non-ferrous metal industry, Chalco has always been committed to achieving its own rapid development, while driving the industry chain with advanced science and technology, high-quality products and services, a complete corporate governance structure, and the concept of sustainable development. The common development of all stakeholders will lead and promote the sustainable development of the entire industry chain.

During the reporting period, Chalco continued to insist on leading the development of the industry through technological innovation, improve production technology and equipment through innovative research and development, and encourage employees to carry out in-depth and lasting innovative reforms. At the same time, as a state-owned holding company with the mission of being a leader in industry innovation, Chalco continues to strengthen its research and development capabilities, expand its product promotion and application, strive to build a world-class aluminum industry with global competitiveness, and protect national security and people's livelihood and economy as well. During this reporting period, the Group applied for 195 patents, 38 major special projects, 197 authorized patents, and led the establishment (revision) of 18 standards above the group. As of the end of the reporting period, the Company has 1,404 valid patents.

## 促進產業共贏(續)

### PROMOTING A WIN-WIN SITUATION THROUGHOUT THE INDUSTRY CHAIN (Continued)

此外，本集團重視知識產權的保護，嚴格按照知識產權管理有關制度要求，管理公司內部商標、專利等知識產權，全面保障公司科技研發的持續發展。此外，本集團印發施行了商標管理辦法，對商標進行日常監測，出現被侵權情況立即採取相應措施維權，同時授權所屬企業在一定區域內進行商標打假活動，確保商標專用權唯一性。


#### 案例：「2020年第十二屆中國鋁用炭素年會暨產業上下游供需對接會」

2020年9月21日，由中國有色金屬工業協會鋁用炭素分會主辦、中鋁物資協辦的「2020(第十二屆)中國鋁用炭素年會暨產業上下游供需對接會」在河南洛陽順利召開，中國鋁業相關部門及電解鋁、炭素企業代表均參加會議，另國內鋁用炭素行業80%以上企業參加會議，會議從生產技術交流、供需合作探討、市場合理發展等方面進行了交流，為國內鋁用炭素行業的健康發展及戰略佈局進行充分的溝通。


Moreover, the Group attaches great importance to the protection of intellectual property rights, strictly in accordance with the requirements of the intellectual property management system. The Group manages the Company's internal trademarks, patents and other intellectual property rights, and comprehensively guarantees the sustainable development of the Company's scientific research and development. In addition, the Group has issued and implemented trademark management measures, conducted daily monitoring of trademarks, and immediately took corresponding measures to protect rights in cases of infringement. At the same time, the Company authorized its subsidiaries to conduct trademark counterfeiting activities in certain areas to ensure the uniqueness of trademark exclusive rights.

#### Case: "2020 the 12<sup>th</sup> China Aluminum Carbon Annual Conference and Industry Upstream and Downstream Supply and Demand Matchmaking Conference"

On September 21, 2020, the "2020 (the Twelfth) China Aluminum Carbon Annual Conference and Industry Upstream and Downstream Supply and Demand Matchmaking Conference" hosted by the Aluminum Carbon Branch of China Nonferrous Metals Industry Association and co-organized by Chalco Materials went successfully in Luoyang, Henan. The relevant departments of Chalco and representatives of electrolytic aluminum and carbon companies participated in the meeting. In addition, more than 80% of the domestic aluminum carbon industry companies participated in the meeting. The meeting included production technology exchanges, supply-demand cooperation discussions, and reasonable market development. Exchanges with other parties were conducted to fully communicate the healthy development and strategic layout of the domestic aluminum carbon industry.

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- 10 共創美好社會  
CREATING A BETTER SOCIETY
  - 10.1 貫徹精準扶貧  
IMPLEMENTING PRECISION  
POVERTY ALLEVIATION
  - 10.2 回饋社區民生  
GIVING BACK TO THE LIVELIHOOD  
OF THE COMMUNITY
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IMPLEMENTATION OF ANTI-EPIDEMIC  
AND RESUMPTION OF PRODUCTION





## 共創美好社會

## CREATING A BETTER SOCIETY

中國鋁業支持並積極參與社區發展，貫徹國家精準扶貧的號召，持續開展援藏援青、定點扶貧、公益捐贈等項目；融入「一帶一路」國家戰略，履行海外開發項目的社會責任，與當地共享發展成果；有力有效開展疫情防控工作，快速復工復產，保障人員健康與安全，為共創美好社會貢獻力量。

Chalco supports and actively participates in community development, implements the national call for precision poverty alleviation, and continues to carry out aid to Tibet and Qinghai, precision poverty alleviation and charity donations projects; integrates into the “One Belt and One Road” national strategy, and fulfills its social responsibilities to develop the overseas projects and share development results with the local area; powerfully and effectively carries out epidemic prevention and control work, quickly resumes work and production, ensures the health and safety of personnel, and contributes to the creation of a better society.

### 10.1 貫徹精準扶貧

中國鋁業作為負責任有擔當的中央企業，一直以來都在積極回應國家精準扶貧號召，制定出台了《中國鋁業股份有限公司對外捐贈管理辦法》和精準扶貧相關政策，持續開展援藏援青、定點扶貧等項目，在幫助貧困地區進行基礎設施建設、人民脫貧增收、貧困學生入學、困難家庭救助等方面取得了顯著成果。

### 10.1 IMPLEMENTING PRECISION POVERTY ALLEVIATION

As a responsible state-owned enterprise, Chalco has been actively responding to the country’s call for precision poverty alleviation, formulating and promulgating the “Administrative Measures for Outward Donations of China Aluminum Corporation Limited” and precision poverty alleviation policies, continuing to provide assistance to Tibet and Qinghai, and fixed-point poverty alleviation and other projects. The Company has achieved remarkable results in helping poor areas with infrastructure construction, people’s poverty alleviation and income increase, enrolling in schools for students with poverty, and assistance for families in need.



## 共創美好社會(續) CREATING A BETTER SOCIETY (Continued)

本報告期，中國鋁業全面貫徹落實《中鋁集團2020年度脫貧攻堅工作計劃》，中國鋁業廣西分公司、寧夏能源、青海分公司、中鋁山東、中州鋁業和遵義鋁業針對定點扶貧村的幹部選派和幫扶工作下發了管理文件。公司附屬企業共選派41名扶貧工作人員前往定點扶貧村開展幫扶工作，在村容村貌整治、基礎設施建設、集中種植、家畜養殖、耕地恢復、農產消費、貧困學生入學等方面發揮了重要作用，在推動貧困村脫貧攻堅和美麗鄉村建設方面取得了突出業績。

### 案例：廣西分公司打贏脫貧攻堅收官戰

在駐村書記、駐村工作隊員的積極帶動及村民齊心努力下，廣西分公司幫扶工作成效顯著，獲得地方各級政府好評。本報告期，廣西分公司定點幫扶的三個貧困村圓滿完成脫貧攻堅任務，所有貧困戶順利實現脫貧摘帽。三個定點幫扶村圓滿完成各級脫貧攻堅大普查和脫貧成效考核工作，順利實現決戰決勝脫貧攻堅目標。

During this reporting period, Chalco fully implemented the “Chalco Group’s 2020 Poverty Alleviation Work Plan”. Guangxi Branch, Ningxia Energy, Qinghai Branch, Chalco Shandong, Zhongzhou Aluminum and Zunyi Aluminum issued management documents for the selection of cadres and assistance work in designated poverty alleviation villages. A total of 41 poverty alleviation staffs from the subsidiaries were sent to designated poverty alleviation villages to carry out assistance work. They played a role in village appearance improvement, infrastructure construction, centralized planting, livestock breeding, farmland restoration, agricultural consumption, and the enrollment of poverty students. They also achieved outstanding performance of promoting poverty alleviation in poverty-stricken villages and the construction of beautiful villages.

### Case: Guangxi Branch Won the Final Battle against Poverty

With the active driven of the village secretary, the village workers and the concerted efforts of the villagers Guangxi Branch’s assistance work has achieved remarkable results and won praise from local governments at all levels. During the reporting period, the three poverty-stricken villages targeted by the Guangxi Branch successfully completed the task of poverty alleviation, and all households live in poverty successfully achieved poverty alleviation. The three fixed-point assistance villages successfully completed the general survey of poverty alleviation at all levels and the evaluation of poverty alleviation effectiveness, and successfully achieved the goal of decisive victory in poverty alleviation.

## 共創美好社會(續) CREATING A BETTER SOCIETY (Continued)



廣西分公司扶貧捐贈定點幫扶村

### Guangxi Branch Poverty Alleviation Donation Designated Villages

#### 案例：寧夏能源精準扶貧彰顯 央企擔當

2019年以來，寧夏能源出資購買的農機具，既解決了村民收割青儲飼料的難題，又可為週邊村民提供設備租賃服務，增加集體經濟收入，帶動農戶新增人均收入近1,000餘元，同時促進了週邊地區養殖業、畜牧業的發展。與此同時，為解決該村外出務工人員的就業需求，寧夏能源也將幫扶村的勞務用工列入扶貧計劃，從源頭上解決了貧困人口的收入問題。在消費扶貧幫扶方面，截至2020年6月底，寧夏能源所屬各單位合計購買了66.6078萬元的農副產品，圓滿完成消費扶貧幫扶購買計劃，為西吉縣脫貧攻堅工作作出積極貢獻。此外通過就業扶貧幫助解決西吉縣用工183人。

#### Case: Ningxia Energy's Precision Poverty Alleviation Work Demonstrates the Responsibility of Central Enterprises

Since 2019, the agricultural machinery purchased by Ningxia Energy has not only solved the problem of villagers harvesting green fodder, but also provided equipment rental services for surrounding villagers to increase collective economic income, and driving farmers to increase per capita income by nearly 1,000 yuan, promoting the development of aquaculture and animal husbandry in the surrounding areas. At the same time, in order to meet the needs of migrant workers in the village, Ningxia Energy also included the village's labor employment in the poverty alleviation plan, solved the source problem of income issues for people with poverty. In terms of consumption poverty alleviation and assistance, as of the end of June 2020, all units of Ningxia Energy have purchased a total of 666,078 yuan of agricultural and sideline products, successfully completing the consumption poverty alleviation assistance purchase plan, and making positive contributions to the poverty alleviation work of Xiji County. In addition, through employment poverty alleviation, 183 people were helped to be employed in Xiji County.



## 共創美好社會(續) CREATING A BETTER SOCIETY (Continued)

### 10.2 回饋社區民生

本集團始終高度關注營運所在地的社區民生工作，將提高社區利益、回歸當地民生視為實現企業價值的重要途徑。中國鋁業開展各類公益活動，包括為社區修建道路，改善廠區週邊社區環境，開展對口幫扶和便民服務，同時鼓勵廣大員工共同參與，培養並增強員工的社會責任感。公司現有6,000餘名註冊志願者和251個志願組織，志願者進社區、進村鎮、進福利院，開展環境整治、義務勞動、愛心支教、扶貧幫困、無償獻血等志願活動，全年志願服務總時長6萬餘小時。

### 10.2 GIVING BACK TO THE LIVELIHOOD OF THE COMMUNITY

The Group always pays great attention to the livelihood of the communities where it operates, and regarding improving community interests and returning to the local people's livelihood as an important way to realize corporate value. Chalco carries out various public welfare activities, including building roads for the community, improving the surrounding community environment in the factory area, developing counterpart assistance and convenient services, and encouraging employees to participate together to cultivate and enhance their sense of social responsibility. The Company currently has more than 6,000 registered volunteers and 251 voluntary organizations. Volunteers enter communities, villages and towns, and orphanages to carry out environmental improvement, voluntary labor, volunteering teaching, poverty alleviation and assistance, and voluntary blood donation activities. There are total 60,000 services hours throughout the year.

## 共創美好社會(續) CREATING A BETTER SOCIETY (Continued)

公司堅決貫徹落實國家環保政策，結合地方政府環保標準和企業實際情況，系統研究並有序推進環保改造項目。本報告期，公司持續實施電解煙氣淨化脫硫、焙燒爐脫硝除塵、噪聲治理、污水處理等各類環保項目，有效支持了企業環保攻堅行動，共實施各類環保項目55個，總投資11.71億元，改善了員工作業環境。公司位於京津冀週邊「2+26」城市和汾渭平原區域的8家企業中，7家均已達到特別排放限值標準。

公司多家下屬企業為增進週邊社區、員工家屬對企業文化、生產經營和員工工作環境的瞭解，組織了社區居民、員工家屬進企業的開放日活動。部分企業為弘揚勞模精神，營造尊重勞動、尊重知識、尊重人才、尊重創造的良好氛圍，組織了勞模家屬進企業開放日活動，在社區居民和員工家屬中反響良好。

The Company resolutely implements the national environmental protection policy, combines local government environmental protection standards and the actual situation of the enterprise, systematically studies and promotes environmental protection transformation projects in an orderly manner. During this reporting period, the Company continued to implement various environmental protection projects such as electrolytic flue gas purification and desulfurization, roaster denitrification and dust removal, noise control, sewage treatment, etc., effectively supporting corporate environmental protection actions. The Company implemented 55 fragmented environmental protection projects with a total investment of 1.171 billion yuan, improved the working environment of employees, ameliorated the surrounding environment of the company. 7 of 8 enterprises have reached the special emission limit standards, which located in the "2+26" cities around the Beijing-Tianjin-Hebei region and in the Fenwei Plain area.

Many of the Company's subsidiaries have organized open days for community residents and employees' family members in order to enhance the understanding of the corporate culture, production and operation, and employees' working environment. In order to promote the spirit of model workers and create a good atmosphere that respects labor, knowledge, talents, and creation, some enterprises have organized an open day event for their families to enter the enterprise, received positive response among community residents and employees' families.





共創美好社會(續)  
CREATING A BETTER SOCIETY (Continued)



青海分公司一家屬參觀企業文化室  
Qinghai Branch – Family members visited  
the corporate culture room



蘭州鋁業在馬尾村等3個村開展金秋助學  
Lanzhou Aluminum, launching the  
Golden Autumn Scholarship in  
3 villages including Mawei Village



中鋁礦業社會公益活動－綠色礦山創建  
Chalco Mining's Social Welfare Activities-Green Mine Creation

### 10.3 落實抗疫復產

中國鋁業及下屬企業在疫情發生的第一時間下發了《疫情防控通知》《新冠病毒防護手冊》，堅持「零報告」制度，壓實企業屬地管理責任。積極開展宣傳引導，指導企業開展群防群控，實施「一企一策」，建立全員「健康卡」、異常人員跟蹤臺賬等，疫情防控實現了公司全覆蓋，人員全覆蓋。同時部署了疫情防控的具體措施，對廠區、食堂、通勤車和週邊社區開展定時消殺，加強廠區和宿舍區進出管控，為員工發放一次性防護口罩、消毒液、酒精等防護物資，確保了年初企業復工復產和全年生產經營平穩運行。

### 10.3 IMPLEMENTATION OF ANTI-EPIDEMIC AND RESUMPTION OF PRODUCTION

Chalco and its subsidiaries issued the “Notice on Epidemic Prevention and Control” and “COVID-19 Virus Protection Manual” as soon as the epidemic occurred, adhering to the “zero report” standard and consolidating corporate territorial management responsibilities. The Company actively carried out publicity and guidance, guided enterprises to carry out group prevention and group control, implemented “one company, one policy”, and established a “health card” for all employees, to track records for abnormal personnel, etc. And the Company achieved full coverage of the Company for epidemic prevention and control. At the same time, the Company had deployed specific measures for epidemic prevention and control, and regularly disinfected the factory area, canteens, commuter cars and surrounding communities, strengthened the control of entry and exit in the factory area and dormitory area. We also distributed protective materials such as disposable protective masks, disinfectant, and alcohol to employees to ensure, which ensured the resumption of work and production and the production at the beginning of the year, and operation and ran smoothly throughout the year.



## 共創美好社會(續) CREATING A BETTER SOCIETY (Continued)

本報告期，中國鋁業向新冠肺炎疫區捐款1,000萬元，下屬企業向所在地國資委、紅十字會、青少年發展基金會、醫療機構和學校等抗疫捐贈共計433.35萬元，公司19,072名黨員抗疫捐贈金額共計271.52萬元，分別出資1,450萬元和350萬元作為集團援藏和援青資金。

除捐贈資金外，本集團積極捐贈酒精、消毒液、口罩、防護服等各類防疫物資。部分下屬企業與所在地政府組成聯防聯控指揮部，配合地方政府落實好疫情防控措施，利用消防車對週邊村鎮道路進行消毒，並為企業週邊村鎮和防控點無償提供防疫物資。

During the reporting period, Chalco donated 10 million yuan to the COVID-19 epidemic areas, and its subsidiaries donated a total of 4.3335 million yuan to the local SASAC, the Red Cross, the Youth Development Foundation, medical institutions and schools to fight the epidemic. The Company has 19,072 Party members, who donated 2.15 million yuan to fight the epidemic amounted to, respectively 14.5 million yuan and 3.5 million yuan were used as the group's aid to Tibet and Qinghai.

In addition to donating funds, the Group actively donated various anti-epidemic materials such as alcohol, disinfectant, masks, and protective clothing. Some subordinate companies and local governments formed a joint prevention and control headquarters to cooperate with local governments to implement epidemic prevention, to assist the local government to implement prevention and control, such as using fire trucks to disinfected roads in surrounding villages and towns, and provided free epidemic prevention materials to surrounding villages and towns and the prevention and control points.



廣西華昇對進入現場人員進行體溫檢測  
**Guangxi Huasheng conducts body temperature testing for people entering the site**



貴州華錦向防疫檢查人員送去慰問品  
**Guizhou Huajin sent condolences to the epidemic prevention inspectors**

## 共創美好社會(續) CREATING A BETTER SOCIETY (Continued)

### 榮譽獎項：

1. 中州鋁業榮獲：中國青少年發展基金會捐贈證書；河南省慈善總會捐贈證書「編號：JS5WB1W502」；2020年焦作市希望工程圓夢行動證書
2. 中鋁幾內亞被國資委黨委授予「中央企業抗擊新冠肺炎疫情先進集體」榮譽稱號

### 案例：中鋁山東按下「加速鍵」打贏「雙戰役」

面對新冠肺炎疫情，中鋁山東積極履行央企社會責任，在一手控疫情，一手抓生產，堅決打贏「雙戰役」的同時，根據各級指示要求，結合企業自身實際，穩步有序推動企業復工復產，努力按下項目建設「加速鍵」，為加快企業轉型升級，實施新舊動能轉換，促進提質增效爭取了有利時機。

面對疫情期間返程人員不能如期上崗而造成的人員短缺等困難，中鋁山東積極發揮黨建政治優勢，充分利用企業內部資源，在全員抗擊疫情、穩定生產的基礎上，黨員幹部衝鋒在

### Honorary Awards:

1. Zhongzhou Aluminum: China Youth Development Foundation Donation Certificate; Henan Charity Federation Donation Certificate "No.: JS5WB1W502"; 2020 Jiaozuo City Hope Project Dream Realization Action Certificate
2. Chalco Guinea was awarded the honorary title of "Advanced Group of Central Enterprises in Fighting the New Coronary Pneumonia Epidemic" by the SASAC Party Committee

### Case: Chalco Shandong presses the "accelerator button" to win the "dual battles"

In the face of the COVID-19 epidemic, Chalco Shandong actively fulfilled the social responsibilities of a central enterprise. It controlled the epidemic on one hand and focused on production on the other hand. While resolutely winning the "dual battles", it also steadily and orderly resumed work and production, and strived to press the "accelerator button" for project construction. The enterprise has won a favorable opportunity to accelerate the transformation and upgrading of enterprises, and to promote the improvement of quality and efficient development.

Facing with the shortage of personnel caused by the failure of returning personnel to work as scheduled during the epidemic, Chalco Shandong actively leveraged its political advantages in Party building and made full use of internal resources of the company. All of its members were fighting the epidemic and



## 共創美好社會(續) CREATING A BETTER SOCIETY (Continued)

前，深入項目建設生產一線，積極參與項目維保消缺，迅速解了燃眉之急，確保了建設項目的加速推進。

疫情發生後，中鋁山東幹部員工立即響應，聞令而動，全面部署，通過成立防控領導小組，多次召開防疫工作會、加強重點地區人員信息摸排、落實日報告制度、加大防疫知識宣傳和假期返崗人員管控等多重舉措，打響了一場自上而下、凝心聚力、同舟共濟的疫情防控阻擊戰。為做好在建項目的疫情防控和復工復產長遠謀劃，疫情期間，中鋁山東負責人帶領相關人員多次深入現場實地踏勘第二赤泥堆場優化及生態修復、鋁基新材料產業二期項目、科創園標準廠房及科技產業化項目等高質量發展投資項目建設準備情況，現場部署安排項目推進的土地徵收、總圖佈局、場地平整、手續辦理等開工前準備事宜，要求相關部門和單位在堅決打贏疫情防控阻擊戰的背景下，謀劃推進新一年的發展大計，把疫情對項目建設造成的影響降到最低，奮力跑出項目建設加速度，為推進企業高質量發展蓄能。

stabilizing production, and Party members and cadres are in the forefront actively participating in project maintenance, quickly solved the urgent needs and ensured the accelerated progress of the construction project.

After the outbreak, the cadres and employees of Chalco Shandong immediately responded, made a comprehensive deployment. Through the establishment of a prevention and control leading group, the enterprise held several epidemic prevention work meetings, strengthened personnel information collecting in key areas, implemented a daily reporting system, increased epidemic prevention knowledge publicity, and control of personnel returning to work during holidays. In order to do a good job in the prevention and control of the epidemic and the long-term plan for the resumption of production of the projects, during the epidemic, the person in charge led the relevant personnel to the site many times to investigate the optimization of the second red mud storage yard and ecological restoration, the aluminum-based new material industry Phase II project, the standard factory building of the Science and Technology Park and the technological industrialization project as well as other high-quality development investment projects. On-site deployment arrangements include pre-construction preparations such as land acquisition, general map layout, site leveling, and formalities for the project. It requires relevant departments and units to plan to promote the development of the new year under the background of epidemic prevention and control. The Company planned to minimize the impact of the epidemic on project construction, and strived to accelerate project construction and accumulate energy for the promotion of high-quality development of the enterprise.



## 共創美好社會(續) CREATING A BETTER SOCIETY (Continued)

中鋁山東對在建項目的疫情防  
控與復工復產提出了明確要  
求：要進一步提高政治站位，  
嚴格防疫標準，建設項目除  
了對總包單位嚴格要求外，防  
控的觸角要伸及分包隊伍和  
人員，高標準嚴要求，把防疫  
工作當作頭等大事，出現疫情  
就視同發生安全事故。要按  
照公司統一部署，要求各建  
設項目一級承包商、監理等  
各責任主體嚴格執行管控標  
準，防止項目建設期間輸入  
性疫情發生，做好人員管控，  
切實落實主體、屬地、管理、  
監管等各級責任，確保「零  
疫情」。

Chalco Shandong has put forward clear requirements for the epidemic prevention and control of projects under construction and the resumption of work and production: to further improve epidemic prevention standards, in addition to strict requirements on the general contractors, the tentacles of prevention and control must be extended. The team and personnel have high standards and strict requirements, and regard epidemic prevention as a top priority. The occurrence of an epidemic is regarded as a safety accident. In accordance with unified deployment, all responsible entities such as the first-level contractors and supervisors of each construction project must strictly implement management and control standards to prevent imported cases during project construction, strictly controlled personnel flows, and ensured responsibilities of entities, regional, management, and supervision at all levels were taken to achieve "zero case".



展望未來

## LOOKING TO THE FUTURE

### 全面提升價值創造能力

2021年是中國共產黨成立100周年，也是「十四五」開局之年，更是中國鋁業站在成立20周年發展新起點上，擔負新使命，邁步新征程的起航之年。面對複雜嚴峻的外部形勢，我們將堅持以習近平新時代中國特色社會主義思想為指導，立足新發展階段，貫徹新發展理念，構建新發展格局，強化資產運營管理職責，以高質量發展為主題，以提升價值創造能力為統領，以全要素對標為抓手，強化科技戰略支撐，持續優化佈局結構，不斷完善公司治理，加快綠色低碳發展，全面增強競爭力、創新力、控制力、影響力和抗風險能力，奮力譜寫建設世界一流鋁業公司新篇章！

### COMPREHENSIVELY ENHANCE VALUE CREATION CAPABILITIES

2021 is the 100<sup>th</sup> anniversary of the founding of the Communist Party of China and the first year of the “14<sup>th</sup> Five-Year Plan”. It is also the year when Chalco is standing at a new starting point for development at the 20<sup>th</sup> anniversary of its founding, taking on new missions and embarking on a new journey. Facing the complex and severe external situation, we will adhere to the guidance of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, implement the new development concept, build a new development pattern, and strengthen asset operation and management responsibilities. We take high-quality development as the theme, take the enhancement of value creation ability as guidance, utilize all-factor benchmarking, strengthen technological support, continue to optimize the industrial pattern, and continuously improve corporate governance. The Company will accelerate green and low-carbon development, comprehensively enhance capability of competitiveness, innovation, control, impact and anti-risk, and strive to write a new chapter in building a world-class aluminum company. Through all efforts, Chalco will pay tribute to the 100th anniversary of the founding of the Communist Party of China with outstanding reform and development performance.

# 附錄一 聯交所ESG報告指引指標索引表

## APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」

“Comply or explain” Provisions

章節

Section

A. 環境

A. Environment

層面A1：排放物

一般披露

7.1

Aspect A1:

General Disclosure

7.2

Emission

有關廢氣及溫室氣體排放、向水及土地的排污、有害及無害廢棄物的產生等的：

Information on:

(a) 政策；及

(a) the policies; and

(b) 遵守對發行人有重大影響的相關法律及規例的資料。

(b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.

註： 廢氣排放包括氮氧化物、硫氧化物及其他受國家法律及規例規管的污染物。

溫室氣體包括二氧化碳、甲烷、氧化亞氮、氫氟碳化合物、全氟化碳及六氟化硫。

有害廢棄物指國家規例所界定者。

*Note:* Air emissions include NO<sub>x</sub>, SO<sub>x</sub>, and other pollutants regulated under national laws and regulations.

Greenhouse gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulphur hexafluoride.

Hazardous wastes are those defined by national regulations.





## 附錄一 聯交所ESG報告指引指標索引表(續) APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」 “Comply or explain” Provisions	章節 Section
關鍵績效指標 排放物種類及相關排放資料	7.5
A1.1	
KPI A1.1 The types of emissions and respective emissions data.	
關鍵績效指標 溫室氣體總排放量(以噸計算)及(如適用)密度(如以每產量單位、每項設施計算)	7.5
A1.2	
KPI A1.2 Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	
關鍵績效指標 所產生有害廢棄物總量(以噸計算)及(如適用)密度(如以每產量單位、每項設施計算)	7.5
A1.3	
KPI A1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	
關鍵績效指標 所產生無害廢棄物總量(以噸計算)及(如適用)密度(如以每產量單位、每項設施計算)	7.5
A1.4	
KPI A1.4 Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	
關鍵績效指標 描述減低排放量的措施及所得成果	7.2
A1.5	
KPI A1.5 Description of measures to mitigate emissions and results achieved.	
關鍵績效指標 描述處理有害及無害廢棄物的方法、減低產生量的措施及所得成果	7.2
A1.6	
KPI A1.6 Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved.	

# 附錄一 聯交所ESG報告指引指標索引表(續)

## APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

[不遵守就解釋]

“Comply or explain” Provisions

章節  
Section

層面A2：資源使用	一般披露		
Aspect A2:	General Disclosure		
Use of Resources			
	有效使用資源(包括能源、水及其他原材料)的政策。		7.1
	Policies on the efficient use of resources, including energy, water and other raw materials.		7.3
	註：資源可用於生產、儲存、運輸、樓宇、電子設備等。		
	Note: Resources may be used in production, in storage, transportation, in buildings, electronic equipment, etc.		
關鍵績效 指標A2.1	按類型劃分的直接及／或間接能源(如電、氣或油)總耗量(以千個千瓦時計算)及密度(如以每產量單位、每項設施計算)		7.5
KPI A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).		
關鍵績效 指標A2.2	總耗水量及密度(如以每產量單位、每項設施計算)		7.5
KPI A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility).		
關鍵績效 指標A2.3	描述能源使用效益計劃及所得成果		7.1
KPI A2.3	Description of energy use efficiency initiatives and results achieved.		
關鍵績效指 標A2.4	描述求取適用水源上可有任何問題，以及提升用水效益計劃及所得成果		7.3
KPI A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.		
關鍵績效指 標A2.5	製成品所用包裝材料的總量(以噸計算)及(如適用)每生產單位佔量		7.5
KPI A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced		



## 附錄一 聯交所ESG報告指引指標索引表(續) APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」

“Comply or explain” Provisions

章節

Section

層面A3： 環境及天然資源 Aspect A3: The Environment and Natural Resources	一般披露 General Disclosure 減低發行人對環境及天然資源造成重大影響的政策。 Policies on minimising the issuer’s significant impact on the environment and natural resources.	7.4
	關鍵績效指 標A3.1 KPI A3.1	描述業務活動對環境及天然資源的重大影響及已採取管理有關影響的行動 Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.
		7.1 7.2 7.3 7.4

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」

“Comply or explain” Provisions

建議披露

Recommended Disclosures

章節

Section

B. 社會 B. Social 僱傭及勞工常規 Employment and Labour Practices 層面B1：僱傭 Aspect B1: Employment	一般披露 General Disclosure 有關薪酬及解僱、招聘及晉升、工作時數、假期、平等機會、多元化、反歧視以及其他待遇及福利的： Information on:	關鍵 績效指標 B1.1 KPI B1.1	按性別、僱傭類型、年齡組別及地區劃分的總數 Total workforce by gender, employment type, age group and geographical region.	8.1 8.1
---------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------	--------------------------------	---------------------------------------------------------------------------------------------------------	------------

# 附錄一 聯交所ESG報告指引指標索引表(續)

## APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」	建議披露	章節
“Comply or explain” Provisions	Recommended Disclosures	Section
(a) 政策；及	關鍵 績效指標 B1.2	8.1
(a) the policies; and	KPI B1.2 Employee turnover rate by gender, age group and geographical region.	
(b) 遵守對發行人有重大影響 的相關法律及規例的資 料。		
(b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.		



## 附錄一 聯交所ESG報告指引指標索引表(續) APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」 “Comply or explain” Provisions	建議披露 Recommended Disclosures	章節 Section
層面B2：健康與安全 一般披露		6.1
Aspect B2: General Disclosure		6.2
Health and Safety		
有關提供安全工作環境及保障 避免職業性危害的：		
Information on:		
(a) 政策；及	關鍵績效 指標B2.1	因工作關係而死亡的人數 及比率
(a) the policies; and	KPI B.2.1	Number and rate of work related fatalities.
(b) 遵守對發行人有重大影響 的相關法律及規例的資料	關鍵績效 指標B2.2	因工傷損失工作日數
(b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards.	KPI B.2.2	Lost days due to work injury
	關鍵績效 指標B2.3	描述所採納的職業健康與 安全措施，以及相關執行 及監察方法
	KPI B.2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored.
		6.1 6.2 6.3 6.4

## 附錄一 聯交所ESG報告指引指標索引表(續)

### APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

#### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」 “Comply or explain” Provisions	建議披露	章節
層面B3：發展及培訓 一般披露	Recommended Disclosures	Section
Aspect B3: General Disclosure Development and Training		8.2
有關提升履行工作職責的知識及技能的政策。描述培訓活動。	關鍵績效指標B3.1	按性別及類別(如高級管理層、中級管理層等)劃分的受訓百分比
Policies on improving employee knowledge and skills for discharging duties at work. Description of training activities.	KPI B3.1	The percentage of employees trained by gender and employee category (e.g. senior management, middle management).
註：培訓指職業培訓，可包括由僱主付費的內外部課程。	關鍵績效指標B3.2	按性別及類別劃分，每名完成受訓的平均時數
Note: Training refers to vocational training. It may include internal and external courses paid by the employer.	KPI B3.2	The average training hours completed per employee by gender and employee category.



## 附錄一 聯交所ESG報告指引指標索引表(續) APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」 “Comply or explain” Provisions	建議披露 Recommended Disclosures	章節 Section
層面B4：勞工準則 Aspect B4: Labour Standards	一般披露 General Disclosure	8.1
有關防止童工或強制勞工的： Information on:		
(a) 政策；及	關鍵績效 指標 B4.1	8.1
(a) the policies; and	KPI B4.1	
(b) 遵守對發行人有重大影響 的相關法律及規例的資料	關鍵績效 指標 B4.2	8.1
(b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	KPI B4.2	

# 附錄一 聯交所ESG報告指引指標索引表(續)

## APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」 “Comply or explain” Provisions		建議披露 Recommended Disclosures	章節 Section
營運慣例 Operating Practices 層面B5：供應鏈管理 Aspect B5: Supply Chain Management	一般披露 General Disclosure		9.3
	管理供應鏈的環境及社會風險政策。 Policies on managing environmental and social risks of the supply chain.	關鍵績效指標 B5.1 KPI B5.1 按地區劃分的供應商數目 Number of suppliers by geographical region.	9.3
		關鍵績效指標 B5.2 KPI B5.2 描述有關聘用供應商的慣例，向其執行有關慣例的供應商數目、以及有關慣例的執行及監察方法 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	9.3





## 附錄一 聯交所ESG報告指引指標索引表(續) APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」 “Comply or explain” Provisions	建議披露 Recommended Disclosures	章節 Section
層面B6：產品責任 Aspect B6: Product Responsibility	一般披露 General Disclosure	9.1
有關所提供產品和服務的健康與安全、廣告、標籤及私隱事宜以及補救方法的： Information on:	關鍵績效 指標B6.1 KPI B6.1	9.1
(a) 政策；及	關鍵績效 指標B6.2 KPI B6.2	9.1
(a) the policies; and	Number of products and service related complaints received and how they are dealt with	
(b) 遵守對發行人有重大影響的相關法律及規例的資料。		
(b) compliance with relevant laws and regulations that have a significant impact on the issuer	關鍵績效 指標B6.3 KPI B6.3	9.4
	描述與維護及保障知識產權有關的慣例 Description of practices relating to observing and protecting intellectual property rights	
	關鍵績效 指標B6.4 KPI B6.4	9.1
	描述質量檢定過程及產品回收程序 Description of quality assurance process and recall procedures.	
	關鍵績效 指標B6.5 KPI B6.5	9.1
	描述消費者資料保障及私隱政策，以及相關執行及監察方法 Description of consumer data protection and privacy policies, how they are implemented and monitored.	

# 附錄一 聯交所ESG報告指引指標索引表(續)

## APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

	「不遵守就解釋」 “Comply or explain” Provisions	建議披露 Recommended Disclosures	章節 Section
層面B7：反貪污 Aspect B7: Anti-corruption	一般披露 General Disclosure  有關防止賄賂、勒索、欺詐及洗黑錢的： Information on: (a) 政策；及 (a) the policies; and (b) 遵守對發行人有重大影響的相關法律及規例的資料。 (b) compliance with relevant laws and regulations that have a significant impact on the issuer		4.2
		關鍵績效 指標B7.2 KPI B7.2	4.2
		描述防範措施及舉報程序，以及相關執行及監察方法 Describe preventive measures and reporting procedures, as well as related implementation and monitoring methods	



## 附錄一 聯交所ESG報告指引指標索引表(續) APPENDIX 1 HKEX ESG GUIDE CONTENTS INDEX (Continued)

### 主要範疇、層面、一般披露及關鍵績效指標

#### Subject Areas, Aspects, General Disclosures and KPIs

「不遵守就解釋」 “Comply or explain” Provisions	建議披露 Recommended Disclosures	章節 Section
社區 Community 層面B8：社區投資 Aspect B8: Community Investment	一般披露 General Disclosure	10
有關以社區參與來了解營運所 在社區需要和確保其業務活動 會考慮社區利益的政策。 Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities’ interests.	關鍵績效 指標B8.1 KPI B8.1	10
	專注貢獻範疇(如教育、 環境事宜、勞工需求、健 康、文化、體育 Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	10
	關鍵績效 指標 B8.2 KPI B8.2	10
	在專注範疇所動用資源(如 金錢或時間)。 Resources contributed (e.g. money or time) to the focus area.	10

## 附錄二 意見回饋

# APPENDIX 2 FEEDBACK FORM

親愛的讀者：

您好！非常感謝您在百忙之中閱讀本報告。為不斷改進報告編製工作，推動公司在環境、社會及管治方面工作的提升，我們特別希望傾聽您的意見和建議，請您不吝賜教！

1. 相對於中國鋁業，您的身份是？

政府  
Government

員工  
Employee

合作夥伴  
Business Partner

環保相關組織  
Environmental  
Organization

媒體  
Media

社區／公眾  
Community

其他(請註明)  
Others  
(Please specify)

2. 您對本報告的總體評價：

很好  
Very Good

較好  
Good

一般  
Fair

較差  
Poor

很差  
Very Poor

3. 您認為本報告結構安排：

很合理  
Very  
Reasonable

較合理  
Good  
Reasonable

一般  
Fair  
General

較差  
Poor

很差  
Very Poor

4. 您認為本報告板式設計：

很合理  
Very Good

較合理  
Good

一般  
Fair

較差  
Poor

很差  
Very Poor

Dear reader:

Hello! Thank you very much for taking time to read the Report. In order to continuously improve the preparation of the report and promote the Company's work in ESG, we especially hope to listen to your opinions and suggestions, please let us know!

1. What is your identity regarding to Chalco (e.g. investor, employee, etc.)?

合作夥伴  
Business Partner

社區／公眾  
Community

其他(請註明)  
Others  
(Please specify)

2. Your overall assessment to the Report is:

一般  
Fair

較差  
Poor

很差  
Very Poor

3. How do you think of the structure of the Report?

一般  
Fair  
General

較差  
Poor

很差  
Very Poor

4. How do you think of the design of the Report?

一般  
Fair

較差  
Poor

很差  
Very Poor



## 附錄二 意見回饋(續) APPENDIX 2 FEEDBACK FORM (Continued)

5. 您認為本報告的可讀性：

很好  
Very Good

較好  
Good

5. How do you think of the readability of the Report?

一般  
Fair

較差  
Poor

很差  
Very Poor

6. 您認為本報告披露的環境、社會及管治信息質量：

很高  
Very Good

較高  
Good

6. How do you think of the quality of the ESG information in the Report?

一般  
Fair

較低  
Poor

很低  
Very Poor

7. 您更關注本報告披露的哪些議題？(可選3項)

7. Which disclosed issues do you pay attention to in the Report? (please choose 3 issues at most)

- 廢氣、廢水、固體廢棄物的產生、排放與管理  
Generation, discharge and management of waste gas, wastewater and solid waste
- 環境修復和礦山復墾  
Environmental restoration and mine reclamation
- 投資注重環保及國家政策傾向  
Investment on environmental protection and following national policy
- 員工的健康與安全  
Employee health and safety
- 員工培訓和發展  
Employee training and development
- 員工培訓和發展  
Employee training and development
- 其他(請註明)  
Others (Please specify)

- 危險廢物的處置和管理  
Disposal and management of hazardous waste
- 利潤的可持續增長  
Sustainable profit growth
- 企業內部反腐倡廉  
Anti-corruption within the enterprise
- 員工待遇和福利  
Employee benefits
- 員工的健康與安全  
Employee benefits
- 企業管治  
Improve corporate governance

## 附錄二 意見回饋(續)

### APPENDIX 2 FEEDBACK FORM (Continued)

8. 您對環境、社會及管治報告或我們的表現，還有哪些意見或建議？

8. What are your opinions on or suggestions to the ESG Report and our performance?

您可以將上述回饋意見表郵寄以下地址：

You can mail the above feedback form to the following address:

地址：中華人民共和國北京市海淀區西直門北大街62號

Address: No. 62, Xizhimen North Street, Haidian District, Beijing, People's Republic of China

電話：8610-8229 8322

Tel: 8610-8229 8322

傳真：8610-8229 8158

Fax: 8610-8229 8158

電郵：ir@chalco.com.cn

Email: ir@chalco.com.cn

網址：www.chalco.com.cn

Website: www.chalco.com.cn

再次感謝您對我們工作的理解和支持！

Thank you very much for your understanding on and support of our work!

中國鋁業股份有限公司

Aluminum Corporation of China Limited



**中国铝业股份有限公司**  
ALUMINUM CORPORATION OF CHINA LIMITED

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