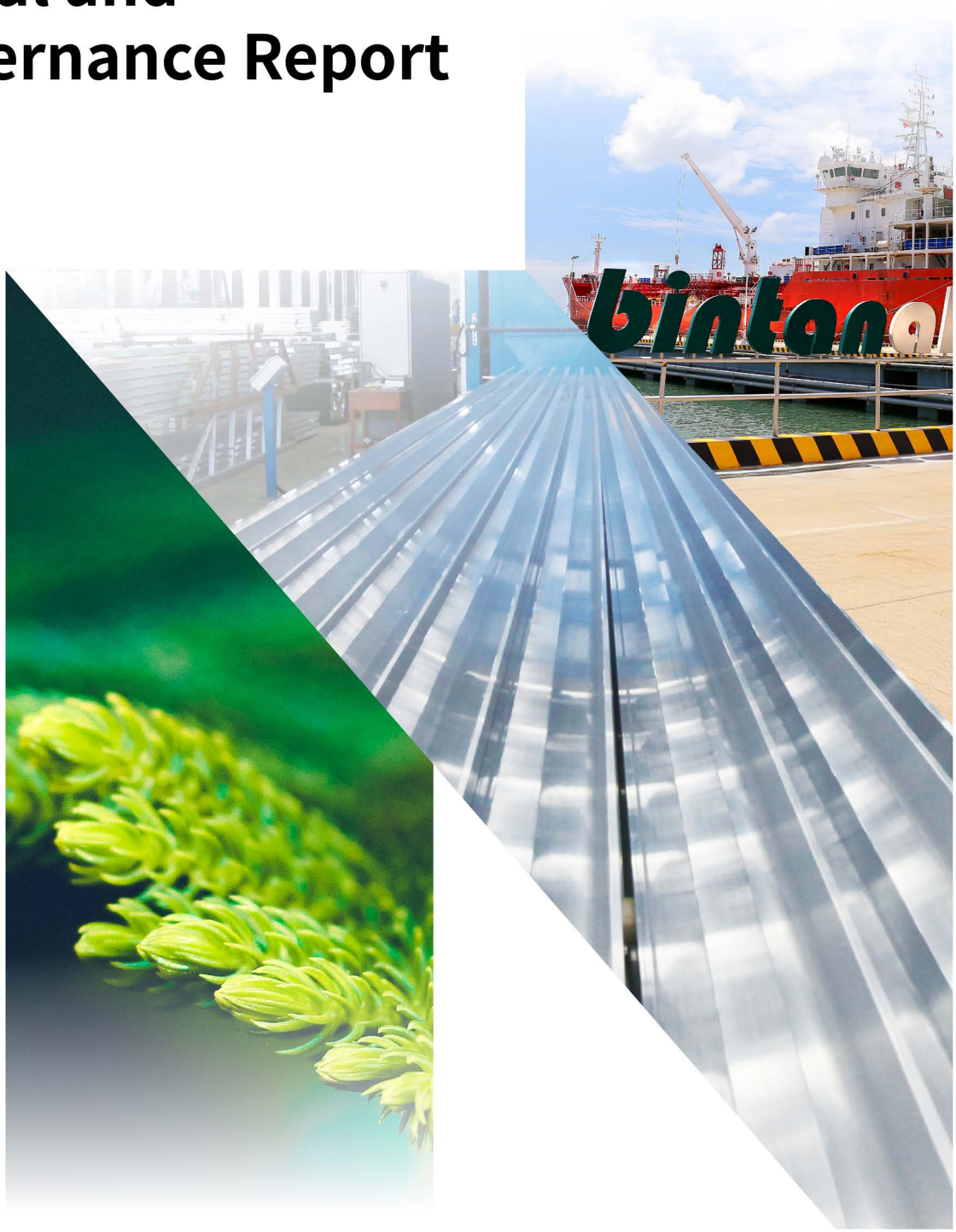
南山铝业
NANSHAN ALUMINUM

2024

Environmental, Social and Governance Report



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About This Report

Report Description

This Report is the full version of the 15th Environmental, Social and Governance Report (hereinafter referred to as "ESG Report" or "this Report") issued by Shandong Nanshan Aluminium Co., Ltd.,[1] which is an annual report focusing on the management, practice and performance of the Company in respect of environment, society and governance (ESG).

Organisational Scope of the Report

The Report is about Shandong Nanshan Aluminium Co., Ltd. and its subsidiaries, including Longkou Donghai Alumina Co., Ltd. (hereafter referred to as "Alumina Company"), Nanshan Aluminium Branch of Shandong Nanshan Aluminium Co., Ltd. (hereafter referred to as "Electrolytic Aluminium Company"), Nanshan Aluminium Rolling New Material Co., Ltd. (hereafter referred to as "Aluminium Rolling Company"), Medium-thick Plate Branch of Shandong Nanshan Aluminium Co., Ltd. (hereafter referred to as "Medium-thick Plate Company"), Yantai Donghai Aluminium Foil Co., Ltd. (hereafter referred to as "Aluminium Foil Company"), Aluminium Profile Plant of Nanshan Aluminium (hereafter referred to as "Aluminium Profile Plant"), Yantai Nanshan Aluminium New Material Co., Ltd. (hereafter referred to as "Aluminium New Material Company"), Longkou Nanshan Recycled Aluminium Co., Ltd. (hereafter referred to as "Recycled Aluminium Company"), Donghai Thermal Power Plant, American factory, and Indonesian factory. For details on the statistic scope of environmental data, please refer to the footnotes in each chapter. In this Report, "we", "the Company" and "Nanshan Aluminium" all refer to "Shandong Nanshan Aluminium Co., Ltd.". Unless otherwise specified, all currencies mentioned in this Report refer to RMB.

Report Time Horizon

The report covers the period from January 1st, 2024 to December 31st, 2024 (hereinafter referred to as the "report period"), some dating back to previous years and covering the first quarter of 2025.

Basis of Preparation

Prepared with reference to the *Guidelines No. 14 of Shanghai Stock Exchange for Self-regulation of Listed Companies - Sustainability Report (Trial)* and other relevant documents, this Report also considers the United Nations Sustainable Development Goals (UN SDGs), Morgan Stanley Capital International Environmental, Social, and Governance rating (MSCI ESG rating), and other rating indicators.

[1] In 2024, in accordance with the *Guidelines No. 14 of Shanghai Stock Exchange for Self-regulation of Listed Companies-Sustainability Report (Trial)*, we renamed this report to the "Environmental, Social and Governance Report" (ESG Report). Prior to 2023, we had already published ESG disclosures in the form of Environmental, Social and Governance Reports, Social Responsibility Reports, or Sustainability Reports. The 2024 edition thus marks the 15th ESG Report released by Nanshan Aluminium since its listing.

Data Source & Reliability Assurance

The information and data disclosed in this Report are from statistical reports and official documents of the Company and have been audited by relevant departments. The Company guarantees that this Report does not involve any false records and misleading statements and will be liable for the authenticity, accuracy and integrity of the contents. This Report is available in both Simplified Chinese and English versions for readers to consult. In instances where there may be confusion or differences in interpretation between the two texts, the Simplified Chinese version shall prevail. Should there be any disparities between the full and summary versions of the ESG report, the former shall prevail.

Report Preparation Process

The preparation process of this Report covers establishment of work team, data collection, interviews with and questionnaire inquiry on stakeholders, framework determination, report preparation, report design, audit by department and senior management, etc.

Confirmation and Approval

This Report was audited and approved by the Board of Directors and senior leadership of the Company on March 23th, 2025.

Report Acquisition

This Report is available for consulting and downloading on the Company's website:www.600219.com.cn.

For further inquiries, comments or suggestions on this Report, please contact the Company by: Email: 600219@nanshan.com.cn

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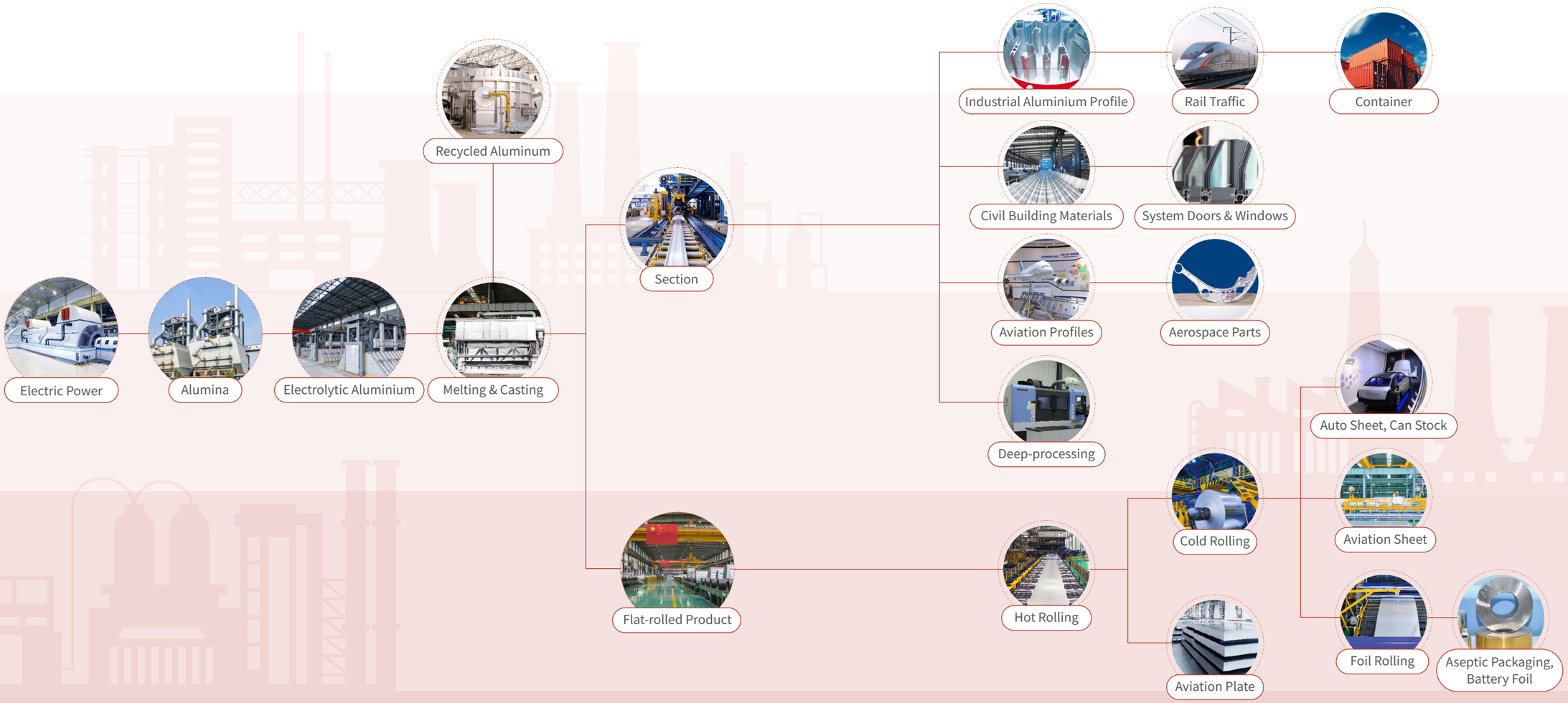
About Nanshan Aluminium

Since our establishment, we have closely aligned with the steady and positive development trends of China's aluminium processing industry. Leveraging our strengths in product quality and technological expertise, we have deepened our presence across aviation, automotive, rail transportation, shipbuilding, and other diversified sectors. By upholding innovation while embracing collaborative transformation, we contribute "Nanshan wisdom" to drive the high- quality, efficient growth of China's aluminium industry.

Industrial Development

We adhere to a development strategy of "premium positioning + integrated industrial chain". Built on a comprehensive aluminium processing value chain, encompassing thermal power, alumina, aluminium electrolysis, casting, aluminium profiles/hot rolling-cold rolling-foil rolling, and scrap aluminium recycling (renewable utilisation), we fully leverage synergistic effects across industrial segments to extend value-added opportunities. This enables us to advance steadily on the path of high-end manufacturing.



Nanshan Aluminium Industrial Chain Overview

In 2024, we capitalised on the strengths of our integrated industrial chain while pursuing balanced growth through organic expansion and strategic external initiatives. While continuing to optimise production capacity for high-value-added products such as automotive and aviation sheets, we advanced downstream extension plans for overseas projects, including the alumina facility at our Indonesian plant. By refining and diversifying our premium aluminium offerings, we have energised our long-term development trajectory.

Our Premium Aluminium Products

Automotive Sheets

Leveraging our forward-development capabilities in lightweight automotive aluminium solutions, we have aligned with market demands to steadily advance Phase III of our automotive sheet project. Through breakthroughs in R&D innovation, product certification, market expansion, and capacity scaling, we are systematically building a platform-driven portfolio of automotive sheet products.

Aviation Plates

To address critical core technology challenges, we conduct foundational, forward-looking, and innovative research. Our inclusion in the approved supplier lists of leading domestic aircraft manufacturers, such as COMAC, reinforces our role in advancing the aviation plate industry.

Aluminium Foil Products

We are targeting the new energy and aseptic packaging markets, consolidating our packaging industry foundations while strategically positioning ourselves in high-tier new energy product segments from a strong starting point.

- New Energy Market: As a key domestic supplier of high-performance battery foils, we pursue niche market breakthroughs through technological upgrades, delivering high-margin products to establish a premium brand presence.
- Aseptic Packaging Market: Capitalizing on our dominant position in China's aseptic packaging sector, we maintain long-term strategic partnerships with multinational flexible packaging corporations.

Can Body & End stock

We adhere to a dual-track development strategy—high-end domestic manufacturing and global expansion—simultaneously strengthening our competitive edge in can body and end stock across both domestic and international markets.

- Domestic Market: We solidify our leadership by nurturing strategic alliances with industry giants such as COFCO, ORG Packaging, Shengxing Pacific and Baosteel.
- International Market: Focusing on competitive pricing, supply reliability, and service excellence, we expand into emerging markets while collaborating with clients to accelerate technological innovation and develop market-driven premium products.

Recycled Aluminium Products

By extending our aluminium processing chain, we collaborate with downstream partners and academic institutions to advance R&D in "scrap aluminium - pre-treatment - recycled aluminium - re-alloying - new aluminium alloy products" technologies.

Industrial Aluminium Products

We expand the application scope of industrial profiles, targeting sectors like shipping containers, while developing mid-to-high-end aluminium profiles for aerospace, high-speed rail, and automotive manufacturing.

Architectural Aluminium Products

As a renowned building materials provider, we precisely identify market needs, actively penetrate home renovation retail and system door/window markets, earning strong recognition from downstream clients.

Our current primary production bases encompass alumina production facilities, aluminium electrolysis plants, aluminium rolling mills, plate processing complexes, Donghai Thermal Power Plant, and recycled aluminium facilities. We have branches or offices in Beijing, Shanghai, Shenzhen, Nanjing, Changchun, etc. Along with subsidiaries or affiliates in the United States, Australia, Singapore, Germany, Indonesia, and other countries.

Looking ahead, we will continue to keep pace with global trends, consolidating our traditional industrial strengths while accelerating downstream value chain extensions. By targeting and expanding into overseas markets such as Indonesia, we aim to establish a dual-track domestic- international development framework, generate new impetus for high-quality growth.

Corporate Strategy

Building on decades of technical expertise and robust production capabilities, we adhere to a development philosophy of "consolidating core product strengths, advancing premium product offerings, and driving green industrial practices". Rooted in our traditional leadership in can stock materials, we are expanding into high-end automotive and aviation sheet markets to build a diversified product portfolio. Simultaneously, we deepen and continuously extend strategic collaborations with downstream partners, aligning with green and high-end trends to embed quality-driven innovation into our long-term growth.

With a global vision, we are resolutely implementing overseas aluminium industry base strategies, driving overseas project expansions and regional market penetration to broaden our operational horizons. During the reporting period, our 2-million-ton alumina project in Indonesia achieved full production capacity, demonstrating strong and sustained profitability.

Recognition

In 2024, Nanshan Aluminium continued to pioneer innovation and explore sustainable models for the aluminium industry. Our outstanding achievements in environmental, social, and governance practices have earned broad acclaim and support from stakeholders across society.

Ranked 11th among the "Top 100 Comprehensive Enterprises in Shandong Province"

Shandong Provincial Department of Industry and Information Technology

The patents, including "*Key Technologies and Engineering Applications for Residual Stress Control in Large-Scale Aviation Aluminium Alloy Plates*" and "*Green Recycling Technology and Equipment for High-End Aluminium Alloys (Invention)*", won the First Prize for Science and Technology in the Nonferrous Metals Industry (2024)

China Non-ferrous Metals Industry Association

The project "*Development and Promotion of National Standards for Recycled Aluminium Raw Materials*" won the Second Prize for Science and Technology in the Nonferrous Metals Industry (2024)

China Non-ferrous Metals Industry Association

Eighth China Industrial Grand Award – Commendation Award

China Federation of Industrial Economics (CFIE)

CQC Excellence in Quality Award

China Quality Certification Centre (CQC)

19th China Listed Companies Golden Roundtable Award – "Outstanding Board of Directors"

Magazine: *Directions & Boards*

Best ESG Disclosure Award

Magazine: *New Fortune*

Best Investor Relations Relations (JDM Awards)

Magazine: *New Fortune*

Tianma Award – Investor Relations Management

Newspaper: *Securities Times*

Outstanding IR Awards – "Best Value Creation" & "Best ESG"

TV Program: *Roadshow China*

Sunshine Board Secretary Award

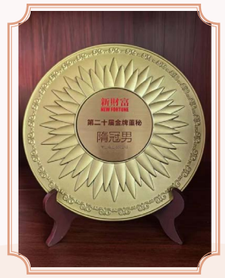
Newspaper: *Securities Times*

Outstanding Case Award for Environmental Management Practices

Newspaper: *China Times*

China Association for Public Companies (CAPCO): "Outstanding Case Award for ESG Environmental Management Practices"

CAPCO: "2024 Outstanding Practice Cases for Board Offices of Listed Companies"



New Fortune:"Gold Board Secretary"Award

China Securities Journal: Golden Bull Award "ESG Top 100 Companies"

Stockstar: "ESG New Benchmark Enterprise Award"

CAPCO: "Outstanding Case for ESG Environmental Management Practices"

CAPCO: 2024 Exemplary Board Office Practices

Key 2024 Honours and Awards of Nanshan Aluminium

Statement from the Chairman

The year 2024 marked a critical phase in advancing the objectives of China's 14th Five-Year Plan. Against the backdrop of accelerating global green transformation, the deepening implementation of China's "Carbon Peaking and Carbon Neutrality" strategy, and the dual challenges of tight supply - demand balance in the aluminium industry and rising international trade barriers, Nanshan Aluminium remained steadfast in aligning with the nation's development priorities of "premiumization, digitalization, and green transition". Adhering to our strategic pillars of "innovation-driven growth, high-end manufacturing, and intensive processing", we focused on "stabilizing and strengthening supply chains while enhancing quality and efficiency". We actively integrated into China's carbon peak initiatives and the national carbon market development, accelerating the establishment of a full-lifecycle green closed loop encompassing "alumina - electrolytic aluminium - high-end manufacturing - recycled aluminium". At the intersection of "Carbon Peaking and Carbon Neutrality" responsibilities and market opportunities, we fortified our competitive edge through technological breakthroughs and reshaped the industrial ecosystem with green intelligent manufacturing. Our efforts yielded transformative outcomes that balanced economic performance with social value, earning us the "ESG New Benchmark Enterprise Award" for the second consecutive year by *Stockstar* and recognition as an "Outstanding Case for ESG Environmental Management Practices" by China Association for Public Companies (CAPCO)—contributing a Chinese blueprint to global aluminium industry sustainability.

Chairman of Nanshan Aluminium

Lyu Zhengfeng

Reflecting on 2024, the construction and growth of our Indonesia plant stood out as a milestone, solidifying our leadership in global expansion. Our 2-million-ton alumina project in Indonesia has achieved full-capacity production, with a new 2-million-ton expansion now underway. This initiative not only elevates our competitiveness in the global aluminium value chain but also injects robust momentum into Indonesia's local economy. Through localized operations, Nanshan Aluminium leverages Indonesia's abundant bauxite and coal resources while creating substantial employment opportunities, enabling efficient resource utilization and sustainable development. This has spurred synergistic growth across upstream and downstream industries. Our international strategy has not only unlocked new growth avenues for the company but also set a benchmark for Chinese enterprises deepening their presence in Southeast Asia.

We have consistently strengthened our ESG management system. We have established a well- defined ESG governance framework, laying an organizational foundation for enhancing our ESG performance. In 2024, we introduced a double materiality assessment, identifying 24 sustainability topics critical to our operations. Among these, responding climate change, product and service quality & safety, and environmental compliance management emerged as issues of dual materiality, while circular economy and technological innovation were recognized as financially material. We fully acknowledge the pivotal role these topics play in our business growth and their far-reaching impacts on the economy, society, and environment. By integrating financially material ESG topics into our internal management framework and embedding risk management into daily operations and strategic decision- making, we ensure comprehensive implementation of related initiatives, solidifying the foundation for long-term sustainability and success.

Compliance is the lifeline of our high-quality development. Guided by the core philosophy of "law- based governance and ethical operations", we have built a robust compliance management system spanning the entire value chain, anchored in our corporate governance structure. We reinforce an anti- corruption culture through integrity training, monitoring mechanisms, and a zero-tolerance disciplinary system. Digital tools empower precise risk identification and management, while our ISO 27001 certification in information security safeguards corporate and personal data.

Quality is our unwavering priority. We have implemented a rigorous quality management system with quantifiable targets, ensuring end-to-end control from raw materials to finished products. Building on the ISO 9001 framework and industry-leading standards, we enforce a full-lifecycle quality management protocol covering procurement, production, and delivery. Smart and digital systems enable granular process monitoring and real-time traceability, eliminating potential defects at the source to guarantee consistent product performance. Concurrently, we maintain open channels for customer feedback, continuously elevating service experiences and satisfaction.

We remain steadfast in our strategic orientation of "innovation-driven development, premium manufacturing, and precision processing". Leveraging our globally competitive integrated industrial chain spanning from alumina and electrolytic aluminium to high-end manufacturing, we have established a comprehensive R&D system centred around our national-level technology centre that deeply integrates industry, academia, and research. This has enabled us to assemble a specialized talent team led by top industry experts. Through sustained increases in R&D investment, we have achieved breakthrough advancements in high-end aluminium products for the aviation, automotive, and rail transportation sectors - successfully transitioning from being a technology follower to keeping pace with global leaders, and ultimately emerging as an industry frontrunner.

We firmly establish the business philosophy of "green, energy-saving, emission reduction and efficiency". In 2024, aligning with China's "Carbon Peaking and Carbon Neutrality" goals and global low-carbon trends, we integrated climate considerations into corporate governance and strategic planning. We formulated the *Greenhouse Gas Emission Targets and Implementation Plan*, defining near-to-mid-term emission reduction targets per unit product, along with concrete pathways and measures. Furthermore, we enhanced our environmental management framework to ensure full compliance with local regulations across all operations, minimizing ecological footprints throughout production.

We innovate and implement green and low-carbon production and operation mode. The application and development of circular economy in the aluminium industry chain is emphasized. By advancing projects such as high-grade recycled aluminium closed-loop utilization, we have established a sustainable production system that enhances aluminium alloy recycling efficiency through technological innovation and resource integration. This ensures optimal resource utilization from raw material procurement and processing to product recycling and reuse. Our completed high-quality recycled aluminium project transforms automotive manufacturing scrap and used beverage cans into premium alloy molten aluminium, which is directly supplied to downstream partners. This initiative drives energy conservation, emission reduction, and cleaner production throughout the industrial chain.

"Talent is the foremost resource" remains our core philosophy. We are committed to building a global talent hub for the aluminium industry. By implementing a comprehensive workplace safety responsibility system and incentive mechanisms for middle-to-senior management, we have fortified the foundation of corporate health and safety. Through optimized compensation structures, enhanced career development pathways, and robust skills training, we provide employees with a platform to "grow with the company and advance with the industry". Nanshan Aluminium is not only an industry leader but also a trusted "career partner", empowering every individual to realize their value and aspirations in the era of green intelligent manufacturing.

We steadfastly uphold our mission to "share developmental achievements with society." Integrating sustainability into full lifecycle supply chain management, we collaborate with upstream and downstream partners to build a green responsibility ecosystem. With the vision of a "zero-carbon supply chain," we empower suppliers in their low-carbon transitions, jointly setting industry benchmarks. Concurrently, we actively contribute to community development, fulfilling our responsibilities as a corporate citizen.

In 2024, guided by China's "Carbon Peaking and Carbon Neutrality" strategy, Nanshan Aluminium emerged as a global leader in green competitiveness. Our Indonesia plant has expanded Belt and Road Initiative collaborations, while breakthroughs in recycled aluminium technologies are reshaping industrial ecosystems. Through high-end intelligent manufacturing, we strengthened national resource security, delivering balanced economic and social outcomes. In 2025, as global aluminium industry transformation accelerates amid deepening decarbonization and shifting trade dynamics, we will align closely with national strategies—grounded in green development, driven by innovation, and propelled by openness. We will deepen zero-carbon transitions across the entire value chain, elevate our Indonesia plant as an international cooperation exemplar, accelerate domestic substitution of aviation and new energy materials, overcome critical technology bottlenecks, and build a global recycled aluminium resource network to export "China Standards" for green aluminium.

Even mountains and seas cannot distance people with common aspirations. We will retain our pioneering spirit and relentless drive to collaborate with global partners in forging sustainable futures. Together, we will elevate China's stature in the global aluminium industry and propel national industry from "manufacturing strength" to "innovative leadership" with Nanshan's unwavering contribution!

Topic

Deepening Global Expansion Strategy, Building a New "Nanshan Aluminium"

From barren marshland in 2015 to a modern industrial complex today, Nanshan Aluminium has authored an extraordinary narrative of growth—transforming nothingness into strength through visionary resolve and operational excellence. With foresighted planning, we capitalized on Indonesia's abundant bauxite and energy resources to establish a fully integrated industrial chain spanning ports, power facilities, alumina production, and electrolytic aluminium operations.

In Indonesia, we adopted green production processes and renewable energy, embracing low-carbon principles while generating substantial employment opportunities and supporting community welfare initiatives. This multi-dimensional approach has delivered economic, environmental, and social synergies. We aspire for the Indonesia facility to serve not only as a hallmark of our global strategy but also as a vital bridge for China-Indonesia economic collaboration, designed to benefit broader populations.

Resource Empowerment, Chaining the Future

As a pivotal node of the Belt and Road Initiative in Southeast Asia, Indonesia has emerged as a critical hub for global aluminium industry development, leveraging its unparalleled natural resources and strategic geographic position. With 1.9 billion tonnes of bauxite reserves (accounting for over 70% of Southeast Asia's alumina capacity) and 37 billion tonnes of coal reserves (ranked third globally), Indonesia offers exceptional advantages for vertical integration in alumina production. Recognizing this potential, we proactively aligned with China's Belt and Road Initiative to establish alumina projects in Indonesia. This initiative not only secures stable resource supplies for our operations but also fortifies the sustainable development of China's aluminium industry.

Since launching the Bintan Alumina Project, we invested in establishing PT Bintan Alumina Indonesia (BAI) and developed the Bintan Nanshan Industrial Park through our Singapore-based overseas entity. In October 2017, the park was officially designated as the Galang Batang Special Economic Zone by the Indonesian government—the nation's 12th Special Economic Zone and the first managed by a Chinese enterprise. This milestone solidified our localized operational capabilities in Indonesia.

To date, we have successfully commissioned a 2-million-ton annual production capacity alumina plant in Indonesia, complemented by supporting infrastructure including power plants, coal gasification facilities, and a port with 20-million-ton annual throughput. These developments optimize global resource allocation and elevate our international competitiveness. By directly leveraging Indonesia's abundant bauxite and coal resources, we achieve cost-efficient alumina capacity expansion, significantly enhancing profitability and risk resilience.

Our globalization strategy has evolved from product exports to capacity exports and ultimately localized operations—marking our entry into the "Globalization 3.0" phase. This strategic progression not only unlocks new growth avenues but also sets a benchmark for Chinese aluminium enterprises in global expansion. By capitalizing on Belt and Road opportunities, we actively advance international production partnerships, export China's advanced capacities, equipment, and technologies, and inject renewed vitality into sustainable development across the global aluminium industry.

Green Development, Harmonious Coexistence

Guided by the philosophy of "Green Development, Harmonious Coexistence", we have significantly reduced energy consumption and carbon emissions through the adoption of internationally advanced production technologies and clean energy solutions, achieving efficient resource utilization and environmentally sustainable development. From implementing green production processes and renewable energy plans to efficiently treating wastewater and emissions, and recycling solid waste, our Indonesia plant demonstrates a profound commitment to environmental stewardship at every operational stage. The plant strictly complies with local Indonesian environmental regulations, conducts regular environmental audits and assessments, and continuously improves environmental performance, setting a benchmark for green transformation in the global aluminium industry.

Environmental Management

Our Indonesia plant rigorously adheres to local environmental laws and regulations. We have established and enforced internal policies such as the *Environmental Protection Management System*, continuously refining our environmental governance framework. A dedicated environmental management structure is in place, with the Safety and Environmental Protection Department overseeing compliance, conducting inspections, and ensuring accountability. Regular environmental audits and performance evaluations further drive continuous improvement, securing the project's sustainable development.

Environmental Audits and Assessments

- ANDAL (Environmental Impact Analysis Report).
- The biannual PKL-RPL (Environmental Management and Monitoring Plan) was carried out as scheduled and the monitoring data were compliant in all periods.
- Monthly inspections of wastewater and air emissions by accredited third-party agencies, with all tested parameters meeting regulatory requirements.

To address the risks associated with sustainability, our Indonesia plant has set environmental short-, medium- and long-term environmental objectives and conducts relevant performance appraisals, linking the results to senior management's compensation performance.

Environmental Management Objectives

Atmospheric Pollutants: Particulate Matter (PM), Nitrogen Oxides (NO_x), Sulphur Dioxide (SO_x), etc.

By 2025, reduce SO_x emission intensity by **50%** compared to the 2022 baseline year

By 2025, reduce NO_x emission intensity by **15%** compared to the 2022 baseline year

By 2025, reduce PM emission intensity by **50%** compared to the 2022 baseline year

Solid Waste

100%
proper disposal rate for solid waste

By 2025, reduce solid waste generation intensity by **2%** compared to the 2022

Wastewater Treatment

100%
industrial wastewater recycled into production systems

100%
compliance discharge rate for domestic sewage

By 2025, maintain wastewater generation intensity at or below 2023 baseline levels

We employ electrostatic precipitators, baghouse filters, and other technologies to treat atmospheric pollutants such as dust and particulate matter, reducing their emission levels and mitigating impacts on local air quality. Concurrently, all wastewater generated during production and rainwater collected from workshop perimeter drains undergo treatment before being pumped back into production systems via water recycling infrastructure, striving for zero discharge of production wastewater. Furthermore, we implement targeted treatment measures for different waste types, ensuring compliance while minimizing environmental impacts on surrounding ecosystems.

Red Mud Disposal at Indonesia Plant

Red mud, a primary by-product of alumina production, is managed under strict compliance with local environmental regulations such as *Regulations on the Management Procedures and Requirements for Hazardous and Toxic Waste*. At our Indonesia plant, we employ a dry stacking method for red mud disposal. Through filter pressing and sun drying, we reduce moisture content to minimize environmental contamination risks and enhance dam foundation stability. Water spraying is implemented to suppress dust, ensuring environmental safety.

Additionally, we conduct regular emergency drills to enable swift response measures—such as rescue operations during dam failure scenarios—to minimize environmental damage and casualties. The plant has established detailed dam failure prevention and mitigation protocols, including adjusting discharge outlets, mobilizing emergency rescue teams, and deploying engineering machinery and geomembranes to seal breaches. As of the end of the reporting period, we are collaborating with partners to develop red mud reuse projects, advancing sustainable resource utilization.

Green & Low-Carbon

Energy-saving and decarbonization upgrades in the non-ferrous metals industry are pivotal to achieving global carbon goals. We drive comprehensive energy conservation and emission reduction through three core pathways: energy efficiency improvements, energy reuse, and renewable energy substitution.

Energy Efficiency Improvements	Optimizing processes, upgrading equipment, and retrofitting facilities to enhance energy utilization efficiency
Energy Reuse	Maximizing energy reuse through waste heat recovery and cascade utilization systems to minimize energy waste
Renewable Energy Substitution	Implementing clean energy projects to progressively reduce fossil fuel reliance and accelerate low-carbon transition

Process Optimization

We continuously enhance energy efficiency and reduce consumption through process optimization, equipment upgrades, and facility retrofitting. This includes implementing the Alumina Evaporation Feed Flash Process Retrofit to improve thermal efficiency in evaporation processes and lower steam usage. Additionally, our Indonesia plant's captive power plant has adopted coal gasification fly ash co-firing to increase the co-firing ratio, thereby reducing coal consumption.

Power Plant Boiler Economizer Soot Blower Retrofit

- Improved boiler efficiency by approximately 1.6%, saving 7,360 tons/year of standard coal.

Reverse Preheating System for Steam Turbine Three-Stage Extraction Heating Pipes

- Optimized cylinder preheating control, achieving annual savings of 10.8 tons of standard coal per unit and additional power generation of 37,500 kWh per unit, thereby enhancing operational efficiency and reducing energy consumption.

Energy Reuse

We minimize energy loss and waste across production-to-consumption cycles, enhancing efficient and rational energy utilization to reduce greenhouse gas emissions. As a critical approach to energy conservation in the aluminium industry, we implement cascade waste heat recovery from alumina calcination furnaces, effectively reducing steam consumption.

Alumina Calcination Furnace Waste Heat Recovery

- Based on operational data analysis, full-capacity waste heat recovery from both furnaces achieves annual steam savings of 40,195 tons. Calculated at a standard coal consumption rate of 108 kg per tons of steam, this translates to 4,341 tons/year of standard coal saved.

Clean Energy Utilisation

Leveraging renewable energy is pivotal to Nanshan Aluminium's low-carbon transition. In 2024, our Indonesia plant initiated a clean energy development plan by integrating photovoltaic (PV) resources with grid peak-shaving capacity. Short-term efforts include deploying PV systems across approximately 30 hectares of available land, with plans to progressively increase renewable energy adoption in alignment with future industrial park expansions.

Carbon Inventory & Tracking

During the reporting period, the Indonesia plant established a Greenhouse Gas Task Force, completing energy-sector carbon inventories for six captive power plant units and five diesel generators. With third-party support, we finalized feasibility studies on greenhouse gas reduction and carbon trading, alongside an Emission Monitoring Plan for the plant. Detailed greenhouse gas data are outlined in the "Responding Climate Change" section.

Community Co-Development, Shared Growth

Friendship, which derives from close contact between peoples, holds the key to sound state-to-state relations. We steadfastly uphold our corporate philosophy of "openness, integration, coordination, and development", alongside a people-centric management approach. We actively fulfil social responsibilities to deliver tangible benefits to local communities.

Localised Talent Development

Throughout recruitment and employment practices, we respect Indonesian cultural norms and rigorously prohibit discrimination based on ethnicity, religion, gender, age, marital status, or other factors, as well as the use of child or forced labour. We organize job fairs and campus recruitment drives to boost local employment.

In 2024, our Indonesia plant partnered with regional labour authorities to host a large-scale comprehensive job fair, integrating local resources to bridge employers and job seekers efficiently. This initiative deepened collaboration with universities and technical institutions, with plans to expand multi-level school-enterprise cooperation projects in diverse formats.

Participation in Local Recruitment Event

Campus Recruitment Programs at Indonesian Universities

Strengthening local talent development is the driving force for our sustainable growth in Indonesia. Our Indonesia plant actively explores pathways for rapid skill advancement among local employees. We organise professional training programmes in China for Indonesian staff, pairing them with experienced Chinese mentors through "apprenticeship initiatives" to build skill enhancement platforms, cultivating a large pool of local technical and managerial talent.

Indonesian Employees' Training in China

In 2024, our Indonesia plant significantly enhanced Sino-Indonesian collaboration and integration through cultural exchange and skills development. The plant dispatched 72 Indonesian employees to our headquarters in China for systematic training. This cultural exchange programme not only improved participants' Mandarin proficiency and understanding of traditional Chinese culture but also strengthened their adaptability in cross-cultural environments. Trainees acquired advanced technical skills, fostering a diverse, high-calibre talent pool for the company. These initiatives collectively elevated our global competitiveness and achieved synergistic integration of culture and technology.

Group Photo of Sino-Indonesian Employee Fellowship

We prioritise employee well-being by providing complimentary comfortable dormitories and fully equipped gyms, fostering a supportive living environment and healthy workplace. Our initiatives ensure holistic care for employees' physical and mental health, embodying our people-centric management philosophy and enduring commitment to staff welfare.

Nanshan Aluminium Indonesia Plant's First Swimming Competition

Occupational Health & Safety

Our Indonesia plant strictly complies with Indonesian regulations including *Occupational Health and Safety in the Work Environment* and *Workplace First Aid for Occupational Injuries* issued by the Ministry of Labour. We have established management systems such as the *Work Safety Responsibility System* and *Work Safety Inspection Protocol* to standardise safety practices. New employees undergo mandatory safety training at four levels: corporate, plant, workshop, and team. Only upon passing all levels are they certified for operational duties. Annual in-role safety training is conducted per plan to ensure every employee's operational safety.

During the reporting period, our Indonesia plant obtained ISO 45001 Occupational Health and Safety Management System certification and actively promoted the development of safety management systems and internal audits through the Occupational Health and Safety Management System (SMK3) review task force. We closely collaborated with Indonesian government safety and environmental regulators to ensure full compliance in safety, environmental protection, occupational health, and hygiene. These efforts have enabled us to BPJS[2] (Badan Penyelenggara Jaminan Sosial Ketenagakerjaan) Social Security Compliance Award, Local Government Participation and Support for K3[3] (i.e., Safety, Health, and Occupational) Safety Activities Award, and many other awards.

ISO 45001 Occupational Health and Safety Management System

[2] BPJS (Badan Penyelenggara Jaminan Sosial Ketenagakerjaan) is Indonesia's Social Security Administering Body for Employment.

[3] K3 stands for Keselamatan (Safety), Kesehatan (Health), and Kerja (Occupational) in Indonesian, representing the core elements of workplace safety management.

Community Co-Development

We encourage employees to actively engage in public welfare initiatives such as volunteer services and blood donation drives, consistently supporting educational assistance programs and community festival outreach activities. These efforts spread warmth and compassion while enhancing local material, cultural, and living standards, fostering a positive image of Chinese enterprises in Indonesia. During heavy rainfall and flood disasters on Bintan Island, we promptly prepare and distribute food and daily necessities to affected villagers. For Muslim traditional festivals, we conduct charitable outreach activities at elderly care homes, orphanages, and neighbouring communities, delivering essential supplies.

A Combined Primary and Secondary School Donated by Us in Bintan Island

Charitable Outreach Programs

Construction of Galang Batang Public Hospital

Recognizing local healthcare shortages, we collaborated with Indonesian authorities to build the non-profit Galang Batang Hospital, featuring nearly 20 departments including surgical outpatient clinics, CT rooms, ECG facilities, ultrasound units, and operating theatres. This initiative elevates regional medical standards and public well-being.

Blood Donation Activity with Indonesian Red Cross Bintan Branch

Propelled by the Belt and Road Initiative, the PT Bintan Nanshan Industrial Park now thrives as a vital green channel for Sino-Indonesian trade and investment. It deepens bilateral collaboration in equipment, technology, standards, and management. Moving forward, we remain committed to strengthening our Indonesia operations, striving to become a benchmark for China-Indonesia cooperation.

We have deeply integrated sustainability into our corporate governance framework, advancing ESG governance practices. We actively engage with stakeholders, proactively identify and manage ESG risks, and lay a robust foundation for sustainable transformation, steering the company toward a green, low-carbon, and sustainable future.

01 / Governance Excellence

Building Brilliance Through Sustainability

1.1

ESG Governance Framework

We have established an ESG governance framework led by the Board of Directors. Under the Board, we formed a Sustainability (ESG) Committee and publicly disclosed the *Sustainability (ESG) Committee Operating Guidelines* on our official website. These guidelines clearly define the organizational structure and responsibilities at all levels, ensuring systematic progress in sustainability initiatives.

The Chair of the ESG Committee is held by the company's Chairman, with Vice Chairs jointly appointed by Directors, Supervisors, Deputy General Managers, and the Head of the Control Centre. Committee members consist of heads of departments and subsidiaries. This governance structure brings together multidisciplinary expertise, ensuring that decisions on sustainability strategic planning and initiatives are deeply informed by industry trends and operational experience, enabling the formulation of actionable and effective work plans.

Under the ESG Committee, nine dedicated ESG working groups are established to execute Committee resolutions, regularly review and update mid-to-long-term sustainability goals within the management system, and effectively implement strategies. Each working group is co-led by heads of relevant departments or subsidiaries, forming efficient collaborative mechanisms. We set annual objectives for each ESG topic and link quality, environmental, occupational health, and safety performance to senior management compensation and evaluations.

Through biannual communication between the ESG working groups and the Committee, we ensure comprehensive oversight of sustainability progress, with major strategic matters elevated to the Board for review. During the reporting period, we engaged third-party institutions to deliver specialized training for ESG professionals and senior management on critical topics including ESG trends, green product development, climate change mitigation strategies, and ESG competency enhancement, ensuring alignment with global best practices.

Board of Directors	• As the highest authority on ESG matters, it is responsible for formulating, reviewing, and approving ESG-related policies, strategies, and objectives
Sustainability (ESG) Committee	• To monitor ESG-related policies, regulations, standards, trends, and stakeholder demand • To assesses material ESG issues and provides advisory recommendations to the Board for deliberation • To oversee ESG implementation, strategic execution, and progress toward goals, proposing improvements for subsequent phases
ESG Working Groups	• Nine specialized groups: Quality Assurance, Technological Innovation, Labor Rights Protection, Safety & Environmental Protection, Energy Conservation & Emissions Reduction, Information Security, Supply Chain Resilience, Business Ethics, Capital Market Engagement • Responsible for implementing the relevant resolutions of the Committee, regularly reviewing and updating the medium- and long-term planning milestones for the sustainable development of the management system, and effectively implementing various implementation plan

Nanshan Aluminium ESG Governance Structure

Sustainability (ESG) Committee Governance Framework

1.2

Stakeholder Communication

We remain steadfast in fostering effective communication with stakeholders. In accordance with management systems such as the *Information Exchange, Consultation and Communication Control Procedures*, we systematically conduct both proactive and responsive stakeholder engagement. We have established diversified communication channels to regularly disclose corporate information with transparency, while enabling stakeholders to initiate direct contact through these platforms. Our key stakeholders encompass government and regulatory bodies, investors and shareholders, suppliers, customers, research institutions, the public, and employees.

Stakeholder Categories, Key Concerns, and Engagement Methods

Stakeholder Categories	Key Concerns	Engagement Methods
Government/ Regulators	• Compliance Operations • Business Ethics & Anti- Corruption • Fair Competition • Economic Growth & Social Development • Green & Low-Carbon Transition & Capacity Planning • Environmental Compliance Management • Pollutant & Waste Management • Biodiversity Protection	• Information Reporting • Official Document Exchange • Institutional Visits • Government Meetings • Regular Corporate Disclosures • Policy Briefings
Investors/ Shareholders	• Compliance Operations • Revenue Performance • Corporate Governance & Risk Management • Business Ethics & Anti- Corruption • Stakeholder Engagement • Product & Service Safety & Quality • Technological Innovation	• Shareholders' Meetings • Corporate Roadshows/Reverse Roadshows • Periodic Reports & Earnings Briefings • Investor Hotline & Email • SSE (Shanghai Stock Exchange) Interactive Platform
Suppliers	• Fair Competition • Industry Standard Setting • Supply Chain Management Development	• R&D Capability Enhancement • Strengthening Supply Chain Management & Collaboration • Supplier Support Program • Industry Engagement
Customers	• Technological Innovation • Product & Service Safety & Quality • Data Security & Customer Privacy Protection • Green & Low-Carbon Transition & Capacity Planning • Renewable Energy • Supply Chain Management Developments	• Customer Feedback Collection • Customer Complaint Resolution • Customer Satisfaction Surveys
Research Institutions	• Science & Technology Innovation • Industry Standard Setting • Green & Low-Carbon Transition & Capacity planning	• Industry-Academia- Research Partnerships
Society/Public	• Driving Economic Growth & Social Development • Social Contributions • Pollutant & Waste Management • Biodiversity Conservation	• Government & NGO Engagement • Public Complaint Email
Employees	• Employee Compensation & Benefits • Employee Development & Training • Occupational Health & Safety • Business Ethics & Anti- Corruption	• Staff Representative Meetings • Employee Training Programs • Employee Feedback Collection & Response • Internal Whistleblowing Channels

1.3

ESG Double Materiality Assessment

To effectively address challenges arising from internal and external factors, we have conducted a double materiality assessment in accordance with the *Shanghai Stock Exchange Self- Regulatory Guidelines for Listed Companies No. 14 - Sustainability Reporting (Provisional)*, the *Sustainability Reporting Guidelines*, and the Global Reporting Initiative's *GRI Standards 2021*. This process identifies sustainability topics that may have financial materiality and impact materiality for our company, establishing an issue database and implementing double materiality assessment. Throughout the identification and assessment process, we have fully incorporated feedback from key stakeholders, with the annual determination results being reviewed and approved by the Board of Directors.

The materiality determination process of Nanshan Aluminium is as follows:

Materiality Issue Identification

- Based on business operations and changes in internal/external environments, with reference to regulatory requirements, industry standards, and stakeholder consultations, we identify potential material ESG issues.

Materiality Assessment & Prioritization

- Prioritization of identified material issues is conducted based on expert opinions, peer benchmarks, and feedback from management, investors, and employees.

Materiality Assessment Dimensions

Impact Materiality:

- Definition: For positive impacts - determined by scale, scope, and likelihood; for negative impacts - evaluated by severity, scope, likelihood, and irremediability.
- We establish thresholds to assess impact significance and rank material issues.

Financial Materiality:

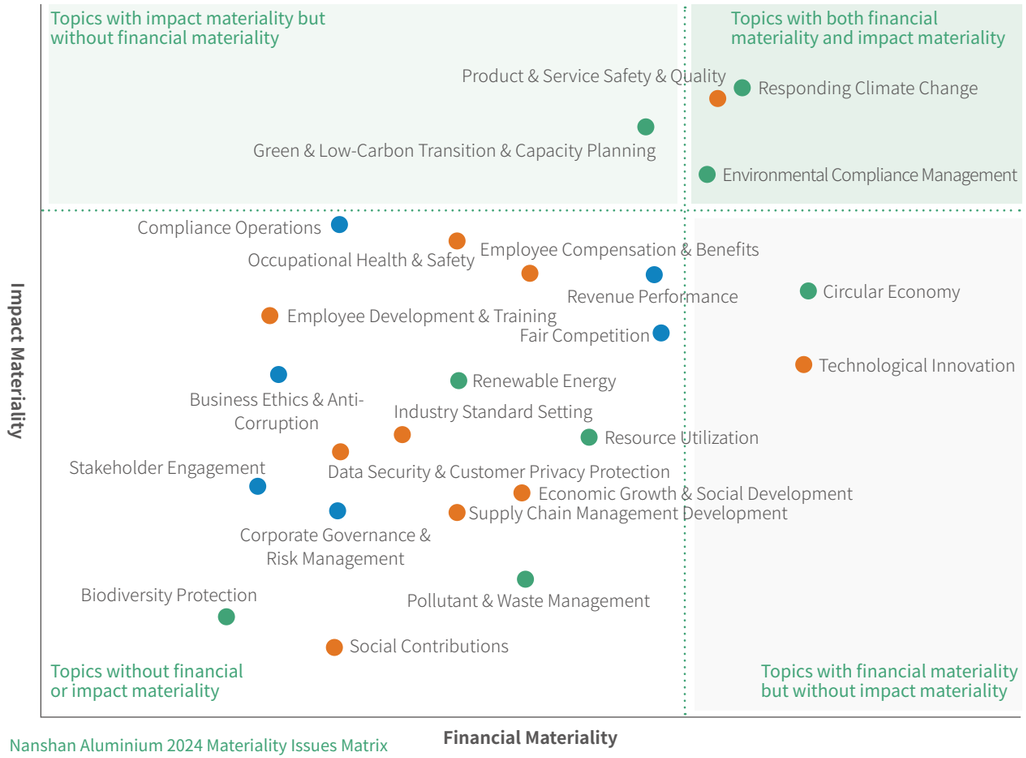
- Definition: For both positive/negative financial impacts - determined by continuity of resource use and relevance to sustainable operations.
- We set thresholds to evaluate financial significance and prioritize material issues.

In 2024, through questionnaire surveys conducted with internal and external stakeholders including investors, customers, suppliers, employees, and regulatory authorities, combined with analysis of our industry characteristics, development stage, business model, and value chain position, we identified 24 sustainability topics relevant to our operations. Among these, responding climate change, product and service quality & safety, and environmental compliance management were determined to have double materiality. Additionally, circular economy and technological innovation were identified as financially material, while green & low-carbon transition and capacity planning were assessed as impact-material topics.

We fully recognize the critical role these material topics play in business development and their profound implications for economic, social, and environmental outcomes. For financially material topics, this report provides analysis and disclosure structured around four core components: "Governance - Strategy - Impact, Risk and Opportunity Management - Metrics and Targets".

Topic Categories	Topic Names	Topic Categories	Topic Names
Corporate Governance	Compliance Operations	Social	Economic Growth & Social Development
	Fair Competition		Social Contributions[4]
	Revenue Performance		Industry Standard Setting
	Corporate Governance & Risk Management		Supply Chain Management Development[5]
	Business Ethics & Anti- Corruption	Environmental	Responding Climate Change
	Stakeholder Engagement		Renewable Energy
Social	Employee Compensation & Benefits		Green & Low-Carbon Transition & Capacity Planning
	Employee Development & Training		Environmental Compliance Management
	Occupational Health & Safety		Pollutant & Waste Management
	Technological Innovation		Biodiversity Protection
	Product & Service Safety & Quality		Resource Utilization
	Data Security & Customer Privacy Protection		Circular Economy

Material topics for 2024[6]



Nanshan Aluminium 2024 Materiality Issues Matrix

[4] The social contribution initiatives encompass public welfare activities such as rural revitalization.

[5] Supply chain management includes two key aspects: supply chain security and equitable treatment of small and medium-sized enterprises.

[6] In accordance with the topic selection recommendations in the *Sustainability Reporting Guidelines*, our company does not involve technology ethics and therefore has no material topics in this area.

1.4

ESG Impact, Risk and Opportunity Management

The identification, assessment, management and oversight of sustainability-related risks and opportunities are essential safeguards for our high-quality development. During the reporting period, for topics identified as potentially financially material to our business operations, we systematically analysed their potential impacts, risks and opportunities on the company. Focusing on our core business and commercial model, we established management strategies for each ESG risk and opportunity to strategically fulfil our long-term sustainable development mission.

Impact Assessment

In accordance with the *Shanghai Stock Exchange Self-Regulatory Guidelines for Listed Companies No. 14 - Sustainability Reporting (Provisional)* and *Sustainability Reporting Guidelines*, we conducted comprehensive ESG risk and opportunity assessments aligned with corporate strategy. Our four- dimensional approach enhances management capabilities to better seize opportunities and address challenges, creating long-term value for stakeholders: (1) Impact evaluation; (2) Response measures formulation; (3) Financial impact analysis; (4) Integration of sustainability risk and opportunity management into internal governance.

For impact assessment, we analysed risks and opportunities across three time-horizons[7] considering strategic development, industry characteristics, investment cycles and external policy trends. By incorporating stakeholder concerns, business operations and value chain impacts, we quantified the likelihood and magnitude of ESG risks/opportunities to determine their materiality to corporate performance.

To ensure the effectiveness of our management strategies, we have established clear strategic objectives and corresponding management actions for each identified issue, based on the ESG double materiality assessment results and current internal management practices. These measures integrate risk and opportunity management into operational responsibilities, minimizing the impact of ESG risks on both internal and external stakeholders.

We conduct financial impact analyses to assess how ESG risks and opportunities may affect our financial condition and operational performance, thereby mitigating potential adverse effects on our financial results from inadequate ESG risk management.

For high-priority risks and opportunities, we have developed specialized management systems and workflows. In accordance with our corporate governance framework, designated teams are authorized to conduct regular monitoring and documentation of risk levels, as detailed in the "Integration into Internal Management" section.

[7] Based on the current stage of our development plan, we define short-term as less than 1 year, medium-term as 1 to 5 years, and long-term as more than 5 years.

Integration into Internal Management

Guided by our *Risk and Opportunity Control Procedures*, we prioritize integrating financially material ESG topics into our internal management framework. We have established comprehensive ESG risk and opportunity management processes, including regular review and updates of identified risks and opportunities, monitoring of management procedures, and implementation of targeted measures to mitigate operational impacts. These practices are embedded in daily operations and strategic decision- making to strengthen our competitiveness and ensure full execution of sustainability initiatives, building a solid foundation for long-term success.

In managing climate-related risks and opportunities, we follow the TCFD (Task Force on Climate- related Financial Disclosures) framework. For financially material topics such as technological innovation, circular economy, environmental compliance, and product/service safety and quality, specific management approaches are detailed in the "Product Quality", "Innovation and R&D", "Environmental Management", and "Circular Economy" sections respectively.

Review of Risks and Opportunities checklists

- Analyze ESG risks and opportunities based on domestic and international policy trends and industry peer practices.
- Engage in discussions with responsible departments regarding the identified ESG risks and opportunities.

Risk and Opportunity Analysis

- Define company- specific risks and opportunities through industry analysis and input from stakeholders and external experts.
- Develop management strategies and implementation plans to address these risks and opportunities.

Risk and Opportunity Management Evaluation

- Assess the likelihood, impact, adaptability, and resilience of identified risks and opportunities to prioritize management strategies.
- Conduct regular reviews to ensure alignment with the company's current situation.

ESG Risk and Opportunity Management Procedure

1.5

Commitment to UN SDGs

We are dedicated to aligning our material business issues with the United Nations Sustainable Development Goals (UN SDGs) to contribute to global sustainable development.

Promote electricity decarbonization through renewable energy procurement and application

Install 96MW photovoltaic systems across domestic plants (107 million kWh generated in 2024), with plans for PV expansion in Indonesia

Implement "multi-purpose, graded, and cascaded" water usage principles to enhance water use efficiency

Use desalination equipment to produce freshwater for power plants, reducing freshwater consumption

Continuously monitor pollutant emissions to achieve 100% compliant wastewater discharge

Reject gender discrimination in hiring and adhere to equal employment and promotion principles

Build special facilities like clinics, nursing rooms, and maternity lounges to support female employees

Establish a "Government-Industry-Academia-Research" support system with universities and research institutes to promote green innovation in the industry

Leverage Nanshan Training Institute's resources to develop customized training programs for skill, leadership, academic qualifications, and obtain professional certifications

Provide comprehensive care and benefits including various subsidies, accommodation, and recreational facilities to enhance employee happiness and satisfaction

Prioritize occupational health and safety with regular preventive health checkups

Continuously improve working conditions and create a safe and secure working environment for all workers

Eliminate child labour and forced labour practices at the source and take remedial measures for labour violations that have occurred

Continuously promote localized hiring to provide jobs for residents in the locations where we operate and contribute to the development of the local economy

Strengthen technological innovation through improved R&D infrastructure and talent development

Deepen integration between IP management and product R&D to facilitate patent commercialization

Build multicultural teams with zero tolerance for discrimination based on race, gender, religion and so on

Provide equal employment opportunities during Indonesia operations under Belt and Road Initiative

Actively engage in in-depth communication with indigenous communities and local institutions to ensure the rational development and utilization of mineral resources, water resources, and other local natural resources based on full respect and prior consent from indigenous peoples

Organize a volunteer fire brigade at the Indonesia plant to participate in local community wildfire prevention and response efforts

Implement responsible raw material procurement in accordance with the ASI Aluminium Industry Management Initiative, strictly refusing to purchase any conflict minerals

Improve aluminium scrap recycling rates through waste material recovery and reuse initiatives

Achieve full lifecycle management of hazardous chemicals and all waste materials, ensuring 100% compliant disposal

Periodically disclose corporate sustainability-related information and practices

Conduct climate risk and opportunity assessments, actively exploring ways to integrate these factors into corporate strategic planning

Develop climate risk emergency response plans for operational sites and procure corresponding climate risk mitigation equipment

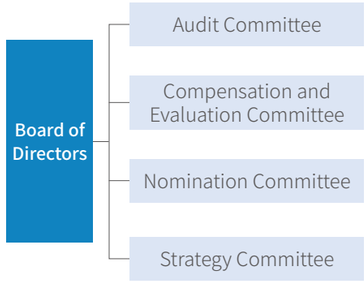
Perform internal carbon audits and based on evaluation results, formulate and publicly disclose the *Greenhouse Gas Emission Targets and Implementation Plan*, specifying clear emission reduction targets along with detailed pathways and measures

We consistently regard compliance operations as the lifeline of high-quality corporate development. Building upon a sound corporate governance framework, we continuously strengthen our anti- corruption culture, implement effective risk identification and management processes, and rigorously safeguard corporate and personal information security and privacy. Through collaboration with all sectors of society, we are committed to fostering an upright and healthy business environment.

02 / Compliance as Foundation for Sustainable Growth

2.1 Corporate Governance

We have established a comprehensive governance structure comprising the Shareholders' Meeting, Board of Directors, Supervisory Board, and specialized committees, in full compliance with the *Company Law*, *Corporate Governance Guidelines for Listed Companies*, and *Shanghai Stock Exchange Listing Rules*. Our Board of Directors oversees four specialized committees to implement governance responsibilities through a top-down approach, providing institutional safeguards for scientifically sound daily operations. In 2024, we organized and carried out 4 general meetings of shareholders, and considered and passed a total of 24 motions, held 8 meetings of the Board of Directors, with 100% attendance of directors, and considered and passed a total of 59 motions.



Nanshan Aluminium Board of Directors and Committees

We place high importance on board diversity and decision-making independence as we build a board with diverse backgrounds and forward-looking perspectives to strongly support our compliant operations and high-quality decision-making. In fostering diversity, we focus on both professional expertise and gender representation, incorporating experts from fields such as accounting, law, and aviation to introduce differentiated perspectives. Since 2023, we have appointed one female director to bring balanced insights to our decision-making processes. To ensure independence, we continuously optimize our board structure, standardize director election procedures, conduct independence reviews for candidates, and provide working conditions and information support to independent directors.

As of the end of the reporting period, our board comprises one female director and three independent directors, with independent directors representing 33% of the total board membership.

Board Diversity

- We continuously enhance the diversity of our board composition across multiple dimensions, including gender, age, educational background, industry experience, and skill sets, to ensure diverse perspectives in board decision-making

Board Independence

- We strictly comply with the *Regulations on the Administration of Independent Directors of Listed Companies*, clearly defining the qualifications, responsibilities, and operational protocols for independent directors
- We reinforce the independent decision-making authority of board members, minimizing external influences and conflicts of interest to safeguard the independence of board resolutions

Compliance in Board Operations

- We maintain a two-way communication mechanism between the company and directors, particularly external directors, enabling directors to stay informed about corporate operations and facilitating prompt discussions with management on identified issues
- During independent directors' operations, the company board, management, and relevant staff provide timely and detailed materials and explanations to ensure they remain updated on operational developments, supporting effective communication with minority investors
- In 2024, independent directors not only attended board committee meetings, board meetings, and shareholders' meetings but also conducted on-site inspections of production facilities. They reviewed management reports on operations, project progress, internal control systems, and implementation of board resolutions, closely monitoring governance practices and business performance

We leverage training programs organized by third-party institutions such as the Shanghai Stock Exchange (SSE) and Shandong Listed Companies Association to keep directors and senior management updated on industry trends and regulatory developments. This enables continuous improvement in governance capabilities, strengthening talent foundations to safeguard shareholder rights and support sustainable growth.

Information Disclosure & Investor Engagement

Guided by the *Company Law*, *Securities Law*, and *internal Information Disclosure Management Procedures*, we rigorously advance sustainability disclosures to ensure truthful, complete, accurate, and timely communication of operational developments and strategic plans to investors.

We maintain diversified engagement channels including corporate websites, SSE websites, SSE "e" Interactive Platform, social media, hotlines, and dedicated emails to facilitate constructive dialogue, particularly with retail investors. Through investor roadshows, analyst conferences, and site visits, we enhance market understanding and recognition of our corporate vision. In 2024, we pioneered the "Nanshan Brilliance: Sailing to Indonesia" virtual investor event, offering overseas investors insights into our international operations through video engagement for the first time. During the reporting period, we organized over 193 institutional investor meetings (online and offline) and 69 analyst conferences and roadshows to enhance market understanding.

In 2024, we focused on key investor priorities including the optimization of legacy electrolytic aluminium capacity, existing capacity upgrades, green power initiatives, and recycled aluminium projects, proactively implementing investor engagement that earned widespread acclaim. During the reporting period, we received nearly 20 awards related to information disclosure and investor relations, including the "Outstanding ESG Environmental Management Practice Case" and "2024 Excellence in Board Office Practices" from the China Association for Public Companies, the "Golden Roundtable Award" and "Outstanding Board of Directors" at the 19th China Listed Companies Board of Directors Awards, as well as the "Gold Board Secretary Award" and "Best ESG Disclosure Award" from New Fortune.

During the reporting period

We organized institutional investor meetings (online and offline)

over 193

Analyst conferences and roadshows to enhance market understanding

69

2.2

Ethical Operations

We have always regarded ethical operations as the cornerstone of corporate development. We are working to integrate compliance principles with corporate strategy through robust anti-corruption management and whistleblowing mechanisms, continuously advancing ethical business culture and practices. Together with stakeholders, we strive to foster a transparent and upright business environment. During the reporting period, there were no incidents involving the dismissal or disciplinary action of directors, management, or employees due to commercial bribery or corruption, nor any investigations by authorities, contract terminations with partners, or litigation related to such misconduct.

Guided by authoritative certifications such as ASI and RBA 8.0, and in compliance with laws including the *Anti-Unfair Competition Law*, *Anti-Monopoly Law*, and *Transparency International Anti- Corruption Principles for Enterprises*, we have formulated an internal *Anti-Corruption Policy* to govern daily operations. The Board-established Supervision and Inspection Committee oversees integrity compliance among key personnel, conducts unannounced audits of suppliers and clients, and promptly investigates and addresses violations to eliminate corruption, bribery, money laundering, and unfair competition.

In 2024, we strengthened information-based management and refined internal control processes, particularly in capital management, aligned with operational needs. We also intensified internal and external business ethics audits to comprehensively identify and assess compliance risks across Nanshan Aluminium and subsidiaries, ensuring unwavering adherence to ethical standards.

Business Ethics Audit Initiatives by Nanshan Aluminium in 2024

RBA[8] Code of Conduct Audits

- We regularly conduct internal audits of the RBA Code of Conduct at our plate processing subsidiary to monitor compliance with business ethics

- We regularly invite TÜV Rheinland to verify and certify RBA 8.0 certification audits for plate processing subsidiary, covering areas such as business integrity, anti-unfair competition, fair business practices, advertising and competition standards, intellectual property protection, identity protection and anti-retaliation mechanisms, responsible mineral sourcing, and privacy
- In October 2024, the plate processing subsidiary successfully passed the on-site recertification audit under the updated RBA 8.0 standards, achieving scores that met client requirements and securing a 24-month certification cycle

ASI[9]PS[10] Internal Audits

- We prioritize compliance across subsidiaries by conducting regular ASI PS internal audits covering our alumina production, electrolytic aluminium, plate processing, aluminium rolling, and aluminium foil subsidiaries. These audits systematically identify risks and drive corrective actions to ensure alignment with international sustainability benchmarks

[8] RBA: Responsible Business Alliance.
[9] ASI: Aluminium Stewardship Initiative.
[10] PS: Performance Standard.

To ensure compliance in daily operations, we have established accessible and diversified whistleblowing channels, including dedicated hotlines and email addresses, to promptly investigate misconduct reported by employees, clients, suppliers, and other stakeholders. We strictly adhere to whistleblower confidentiality principles, protecting the identity and information of reporters. A zero- tolerance policy is enforced against any retaliation or information leaks targeting whistleblowers.

Nanshan Aluminium Complaint Handling Process

We consider the cultivation of business ethics as a fundamental element of our compliance management framework. Through comprehensive training programs covering ethical standards and workplace conduct, we systematically promote a culture of compliance among all employees, including full-time and part-time staff as well as contractors. Directors, senior management, and key functional personnel are required to sign and strictly adhere to the *Integrity Self-Discipline Commitment* concerning business ethics matters, thoroughly embedding the principle of "zero tolerance for corruption" throughout the organization.

Supplier Business Ethics

We extend our stringent compliance requirements throughout the supply chain. In accordance with ASI PS certification, RBA guidelines, and our internal *Supplier Code of Conduct*, we require all suppliers to comply with applicable local laws and regulations, sign both the *Supplier RBA Commitment and Adherence to Business Ethics Agreement*, and establish their own anti-corruption policies with corresponding monitoring procedures. We conduct regular audits of suppliers' anti-corruption compliance, working collaboratively to establish and maintain an ethical supply chain environment.

Anti-Unfair Competition

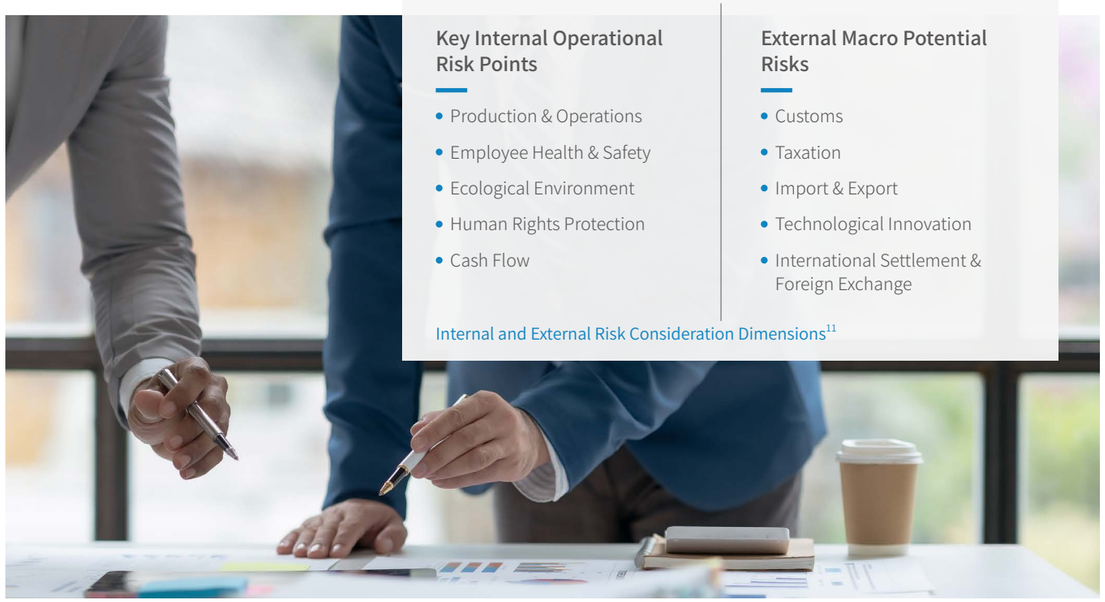
We strictly conduct business activities in compliance with laws and regulations such as the *Anti-Unfair Competition Law of the People's Republic of China*, maintaining a zero-tolerance stance toward risks and behaviours including trade secret infringement, false advertising, unauthorized disclosures, and monopolistic practices. We mandate that all business activities adhere to principles of fairness, integrity, transparency, and good faith, prohibiting actions that seek improper gains at the expense of collective or client interests. Through implementing relevant measures, conducting regular training and awareness campaigns on anti-unfair competition, and fostering a compliance-oriented culture, Dahua collaborates with stakeholders to uphold ethical business practices. During the reporting period, the company encountered no litigation or regulatory penalties related to trade secret violations, false publicity, improper disclosures, or monopolistic conduct.

2.3

Risk Management

We integrate risk management into all aspects of corporate operations, dedicated to building a comprehensive, systematic and efficient risk prevention and control system. Guided by internal regulations such as the *Risk and Opportunity Control Procedures*, we coordinate cross-departmental efforts involving finance, procurement, sales, physical assets, and budgeting departments to conduct company-wide risk identification and control, collectively safeguarding our stable development.

We have established and continuously improved our internal control system, focusing on operational, market, financial and legal risks, while regularly conducting risk identification and potential hazard screening to implement comprehensive risk control measures. Based on our actual development situation, we analyse and evaluate identified risks to determine their levels and potential impacts, then formulate and implement targeted risk control solutions. We also fully leverage the supervisory function of the internal audit department to regularly review risk management policies and procedures, ensuring clear division of responsibilities among all participating departments, continuously improving risk control measures, achieving closed-loop management of internal control processes across business units, and progressively enhancing corporate risk management effectiveness.



Key Internal Operational Risk Points

- Production & Operations
- Employee Health & Safety
- Ecological Environment
- Human Rights Protection
- Cash Flow

External Macro Potential Risks

- Customs
- Taxation
- Import & Export
- Technological Innovation
- International Settlement & Foreign Exchange

Internal and External Risk Consideration Dimensions[11]

[11] See Nanshan Aluminium's 2023 Annual Report for more details:
http://www.sse.com.cn/disclosure/listedinfo/announcement/c/new/2024-02-29/600219_20240229_MM2F.pdf

2.4

Information Security & Privacy Protection

We place great importance on information security and privacy protection, considering them essential components of our operations. In compliance with laws and regulations such as the *Personal Information Protection Law* and the *Cybersecurity Law*, we have established internal systems including the *Data Security Management System*, *Information Management System*, and *Implementation Details for Business Secret Management*. In 2024, we updated and revised our safety management systems and business processes, including the *Network Information Management System* and the *Network Information Center Rules and Regulations*, to provide a solid institutional foundation for our information security and privacy protection efforts.

We prioritize information security management and have integrated it into the overall company strategy. In 2024, considering business needs and technological developments, we fully updated and optimized our cybersecurity organizational structure. This new structure, with the Network Information Centre as the responsible body and the cybersecurity team as the execution arm, ensures that network security management responsibilities are implemented from top to bottom, facilitating efficient cybersecurity operations.

Network Information Center	• Responsible for developing, supervising, and managing our overall cybersecurity strategy, ensuring that our network security system aligns with business development goals
Cybersecurit Team	• Responsible for the specific implementation, monitoring, and emergency response of cybersecurity, taking effective measures to curb the escalation of security incidents

At the same time, we actively continue to advance and implement cybersecurity-related certifications and evaluations, ensuring the protection of both domestic and international business development through a compliant and effective information management system, and building a trustworthy brand image.

Main Certifications and Awards Achieved by Nanshan Aluminium in 2024 in the Field of Network Information Security

ISO 27001 Certification

- The aluminium foil division completed the 2024 ISO 27001 recertification audit.
- The medium and heavy plate division organized an ISO 27001 information security audit.

TISAX Certification

- Achieved the Trusted Information Security Assessment Exchange (TISAX) AL2 label

Network Information Security Protection

We actively adopt the best and most practical information security protection technologies, strengthen cooperation with cybersecurity vendors, regularly conduct cybersecurity inspections and special governance tasks, and implement effective privacy protection measures to strengthen our network security defence. As of the end of the reporting period, we have not experienced any network security violations, such as customer information leakage.

Nanshan Aluminium's Network Information Security Protection Measures

Adopting Information Security Protection Technologies	• Actively adopt Green Shield encryption DLP[12] technology and have completed system upgrades and expansions • Regularly conduct equipment maintenance and security checks • Use technical means to block malicious domains and hosts involved in unauthorised access • Review and assess the use of externally facing public network systems, closing or adopting alternative access methods to reduce the exposure of internet-facing business operations
Regularly Conducting Cybersecurity Inspections	• Regularly perform cybersecurity inspections, using methods such as vulnerability scanning and situational awareness to conduct security checks on our network servers and business systems
Undertaking Cybersecurity Special Governance	• Deploy firewalls, intrusion detection systems, and other protective measures • Require employees to use genuine software to avoid security risks posed by pirated software • Log and retain audit records for key network equipment, servers, email systems, and other critical business system assets • Deploy email security gateways and improve email filtering strategies to prevent phishing emails
Implementing Privacy Protection Measures	• Implement unified management of corporate email accounts, prohibiting the use of external email accounts, and ensure that employee accounts are promptly deactivated upon resignation • Protect the computers of personnel involved with confidential products, such as medium and heavy plates, by using encryption software • Require employees to sign confidentiality agreements and undergo privacy protection training upon joining the company • Strictly regulate customer information management, applying customer data anonymisation during business communications to eliminate the risk of sensitive information leakage

Cybersecurity Culture Promotion

We continue to advance cybersecurity culture promotion efforts, establishing a cybersecurity knowledge base website and regularly conducting cybersecurity training and emergency drills for all employees to ensure the importance of information security is deeply ingrained. During the reporting period, we held a total of 4 cybersecurity awareness meetings, 2 cybersecurity emergency drills, and 12 cybersecurity special inspections.

Cybersecurity Training and Culture Promotion Projects Conducted by Nanshan Aluminium in 2024

Cyberattack Emergency Drills

We organised emergency drills simulating cyberattacks and network equipment failures, replicating potential network risks that could occur during operations. These drills were aimed at strengthening the network risk awareness and response capabilities of all employees, including the cybersecurity emergency team

Network and Information Security Meetings

We held cybersecurity meetings focusing on topics such as network security awareness and business system standards. These meetings were designed to enhance employees' awareness of data and information security and provide guidance for cybersecurity protection efforts

Internal Network Security Inspections

Monthly routine cybersecurity inspections were carried out, and special activities, such as "weak password checks", were organised. During the reporting period, a total of 361 weak passwords and business system security vulnerabilities were identified and rectified

[12] Data Leakage Prevention (DLP) refers to a strategy that uses specific technical measures to prevent designated data or information assets from leaving the company in a manner that violates security policy regulations. The concept of DLP originates from abroad and is one of the most mainstream information security and data protection methods internationally.

We work to provide high-quality products and services to global customers, starting from a high benchmark. By driving product upgrades through technological innovation, we maintain a strong focus on quality, continuously pushing boundaries in our business areas. We provide comprehensive communication, feedback, and complaint handling mechanisms to better listen to our customers' voices, enhance product quality, improve service experience, and create greater value for our clients.

03 / Craftsmanship and Quality Innovation Driving Development

3.1 Product Quality

Quality is our top priority. We precisely understand customer needs and adhere to a commitment to excellence, building a trusted Aluminium brand. We have established and improved a quality management system, set quantitative targets related to product quality, and regularly identify, assess, and monitor potential product quality issues. We focus on achieving full lifecycle quality control from raw materials to finished products.

Governance

We regard quality governance as an essential pillar for the sustainable development of the company. A three-tier vertical quality management structure has been established, encompassing decision-makers, management, and execution levels. This system forms a governance framework with a quality risk management pre-control mechanism at its core, which is regularly assessed to ensure alignment with market demands, relevant regulations, and our corporate strategy, enabling us to consistently deliver high-quality products to customers.

Level	Governance Body	Functions	Reporting Method
Decision-Making Level	Board of Directors	• As the highest decision-making body, it determines quality objectives and strategic development direction • Identifies and assesses quality risks in the operational process • Supervises the implementation of quality objectives	/
Management Level	Sustainability (ESG) Committee Quality Assurance Working Group	• Responsible for quality management throughout the entire product lifecycle • Monitors market trends and customer needs, providing recommendations to the Board of Directors	Once every six months
Execution Level	Nanshan Aluminium Quality Management Department	• Oversees the operation of quality management systems across subsidiaries	Monthly reports

In the product production process, our management team comprehensively considers factors such as management policies, project scale, and commercial value, translating strategic directives into specific quality management objectives and action plans. Progress is closely monitored, with feedback provided to the decision-making level. The execution team strictly adheres to quality management goals, continuously implements quality management measures, and monitors their effectiveness, ensuring product quality and safety throughout the entire lifecycle.

Strategy

We are guided by a development strategy of "innovation-driven, high-end manufacturing, and intensive processing", focusing on building a competitive advantage centred on quality. We ensure that every stage of production and delivery meets the highest quality standards, providing customers with high- reliability, high-performance products and services.

Risk, Opportunities, and Impact Analysis

Potential Risk Identification & Assessment

Risk	Risk Description	Time Horizon	Business Impact	Financial Impact
Regulatory and Standard Changes	Changes in industry regulations and standards may require adjustments to production processes to ensure product quality and safety, affecting delivery to customers	Short, Medium, Long	Failure to timely understand regulatory changes and adjust production could lead to delayed customer deliveries or reduced orders	Increased compliance costs, rising operational costs, decreased revenue (if orders are not delivered on time)
Failure to Adopt Technological Innovations	Failing to adopt new technologies in a timely manner may result in products not meeting market demand	Short, Medium, Long	Affects company development and ability to meet market demand	Decreased revenue
Incomplete Supply Chain Management	An inadequate supply chain management system may ead to difficulty in identifying and controlling quality risks within the supply chain, causing defective products to reach the market	Short, Medium, Long	Defective products entering the market could harm the Company's reputation	Decreased revenue
Market Demand Changes	Continued increases in downstream customer requirements for product quality, necessitating ongoing optimization of production processes to maintain competitiveness	Short, Medium, Long	Failure to quickly respond to market demand changes could lead to reduced product orders, affecting revenue	Decreased revenue

Potential Opportunity Identification and Assessment

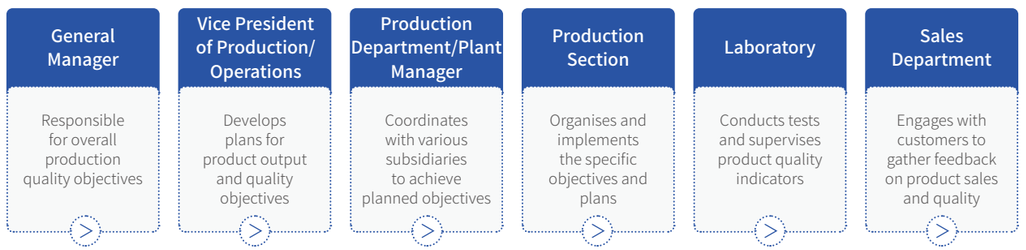
Opportunity	Opportunity Description	Time Horizon	Business Impact	Financial Impact
Digital Transformation	Leveraging IoT, big data, and AI technologies to achieve intelligent and digital management of product quality during production	Short, Medium, Long	Intelligent and digital management can enhance product quality monitoring while improving production efficiency	Increased revenue, reduced production costs
Brand Building	Strengthening brand building to improve product quality and service image, increasing market share and customer loyalty	Short, Medium, Long	Increased market share and enhanced customer loyalty	Increased revenue

Management Strategies

Building upon the identification and assessment of potential risks and opportunities, we have deeply implemented the "Enhance Quality, Increase Efficiency, and Emphasize Returns" development plan. We stay abreast of the latest legal and regulatory requirements, establish a robust quality management system, and promote quality certifications and audits to provide customers with high-quality, high- value-added products. Simultaneously, we seize market opportunities, leveraging digital empowerment as a driving force to achieve in-depth business development and enhance customer loyalty.

Quality Management Processes & Digital Empowerment

We adhere to the ISO 9001 quality management system standards, covering aspects from organizational environment, leadership roles, risk management, and resource management to operational management and performance evaluation. This comprehensive approach significantly reduces potential quality risks. Additionally, we have introduced advanced digital management systems, including: BMS (Building Management System), PMS (Production Management System) and EMS (Environmental Management System). These digital systems not only enable meticulous management and real-time tracking of production processes but also monitor energy consumption and environmental emissions. By integrating environmental management with quality management, we ensure the stability and reliability of product performance.



Product Quality Management System Process

We leverage digital empowerment as our driving force, utilizing the Manufacturing Execution System (MES[13]) and intelligent high-rack warehouses[14] These initiatives have led to significant achievements in intelligent manufacturing. In June 2024, we were honoured to be included in the 2024 Shandong Province Intelligent Manufacturing Scenarios list, reflecting our commitment to technological advancement.

[13] A Manufacturing Execution System (MES) is a software system used to monitor, control, and optimize manufacturing processes, enabling comprehensive management of product production from start to finish.

[14] An intelligent high-rack warehouse utilizes automation technology and intelligent management systems to achieve efficient storage and retrieval of goods, enhancing warehouse operations.

Quality System Certifications

Seizing the opportunities presented by the improving domestic economic environment and favourable external trade policies, we continue to strengthen our position in traditional aluminium products. We maintain strategic collaborations with clients in sectors such as can bodies, can lids, and packaging foils. Concurrently, we adopt a market-oriented approach, utilizing multi-system quality certifications to expand into high-end industrial profiles and architectural profiles. Our focus includes developing high- end products like automotive and aerospace plates.

As the first company in China to achieve dual certification under the ASI Performance Standard (PS) and Chain of Custody (CoC) Standard, we and our subsidiaries[15] have obtained international quality management system certifications across various domains. These include ISO 9001, IATF 16949, AS 9100, and ISO/TS 22163. These certifications not only highlight our excellence in quality management but also set a high standard for development within the industry.

Quality Management System Certification	Nanshan Aluminium Certified Body
ISO 9001 Quality Management System	Shandong Nanshan Aluminium Co., Ltd. and PT Bintan Alumina Indonesia
IATF 16949 Automotive Quality Management System	Shandong Nanshan Aluminium Co., Ltd (Flat- Rolled Product Division), Yantai Donghai Aluminium Foil Co., Ltd., Aluminium Profile Plant of Nanshan Aluminium
AS 9100 Aerospace Management System	Shandong Nanshan Aluminium Co., Ltd (Flat- Rolled Product Division), Aluminium Profile Plant of Nanshan Aluminium
ISO/TS 22163 Railway System Quality Management System	Aluminium Profile Plant of Nanshan Aluminium
GB/T 29490 Enterprise Intellectual Property Management System	Shandong Nanshan Aluminium Co., Ltd.
NADCAP Aviation Products and Special Process Certification	Shandong Nanshan Aluminium Co., Ltd (Flat- Rolled Product Division), Aluminium Profile Plant of Nanshan Aluminium

Quality System Certification

During the reporting period, we obtained three new certifications, including the expansion of the EU CE certification. We completed 13 certificate renewals and 16 annual supervisory audits. By the end of the reporting period, we held over 20 international authoritative certifications, covering quality control across the entire industry chain.

Nanshan Aluminium Leads the Domestic High-End Aluminium Extrusion Profile Market

In the aerospace sector, we boast the most complete aluminium extrusion chain in China. We have become the leading base for high-end aluminium extrusion profiles, including aerospace plates and aircraft seat extrusion materials. With a focus on lean manufacturing principles, we strictly adhere to international aerospace quality standards and implement quality management across the entire production process. This ensures that products for large domestic aircraft, Boeing, Airbus, and other companies maintain stable and reliable performance, breaking the monopoly of foreign giants in these fields.

Nanshan Aluminium 150MN Extrusion Production Line

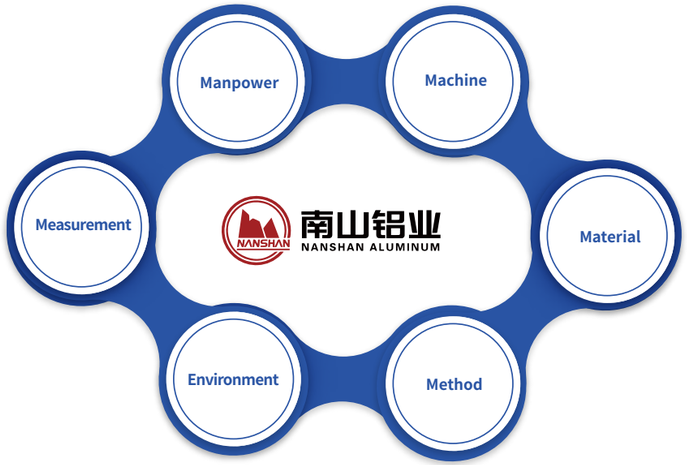
[15] Our Indonesian plant obtained the ISO 9001 Quality Management System certification in February 2024, significantly enhancing the market recognition of our products.

Quality Joint Review

We conduct regular joint reviews, involving teams from the Production Equipment Management Department, Quality Management Department, System Certification Department, Lean Management Department, and the Metrology and Testing Centre. The team supervises and inspects all aspects of "manpower, machine, material, method, environment, and measurement" that affect quality, and organizes corrective actions and follow-up verification for any identified issues. Additionally, in October 2024, the Aluminium Foil Company underwent a flight audit based on customer requirements, which passed smoothly.

2024 Quality Review of Nanshan Aluminium

Indicator	Unit	2024 Data
Number of Internal Quality Audits	Times	36
Number of Third-Party Quality Audits	Times	32
Number of Customer Audits	Times	47
Total Rectifications for Quality Improvements	Items	301



Quality Training & Quality Culture

We have established a regular quality training system, continuously reinforcing the foundation of our quality culture. By considering our current state and the training needs of various units, we focus on areas such as standard knowledge, quality awareness, skills, tools, and regulations. This approach deepens the understanding of quality culture at all levels, effectively improving the quality expertise of personnel at every level.

During the reporting period, we organized 12 company-wide training sessions, including *Preparation of Two-Level Quality Management Monthly Reports*, with a total of 785 participants. Additionally, the company organized 66 specialized training sessions on the *ISO 9001 Quality Management Manual*, accumulating 144 hours of training, with over 1,200 participants.

On-site Quality Management Training

Impact, Risks, and Opportunities Management

Amidst the dual backdrop of the green transformation of the aluminium industry and global competition, we have extended the boundaries of quality management from the production side to the entire value chain. Our goal is to build a high-quality brand that customers can trust. We have established a comprehensive quality risk pre-control mechanism, proactively identifying and managing potential risks such as raw material quality and equipment failure. Keeping pace with digital transformation, we have developed product inspection plans, implemented error-proofing devices, and ensured product traceability from multiple angles. These efforts aim to build a brand that our customers can rely on. During the reporting period, the customer quality complaint rate decreased by 27% compared to the previous year.

Indicators & Targets

We focus on quantifiable goals to drive quality performance and provide guidance for the efficient implementation and optimization of our corporate strategy. We aim to improve key indicators, such as customer satisfaction, and compare the progress of goal achievement year on year.

During the reporting period, our quality management-related indicator status was as follows:

Indicator	2024 Target	Actual Achievement	Year-on-Year Change
Customer Satisfaction	⩾ 92	94.5	↑ 2.7%
Proportion of Employees Receiving Quality Training	100%	100%	No change
Number of Major Safety and Quality Incidents Related to Products and Services	0	Achieved	/

At the same time, we conduct audits both internally and externally, ensuring quality safety throughout the production process from multiple angles, injecting lasting power into our high-quality development. We also implement RCCA (Root Cause Corrective Action), a tool used to address quality issues, to achieve a "dual zero" in both processes and management, ensuring the effectiveness of quality management.

3.2

Innovation and R&D

Technological progress is a crucial factor in enhancing a company's core competitiveness. As a traditional industry, the aluminium processing sector is transitioning towards high-quality development in line with the demand for new productive forces. To this end, we are committed to creating a favourable environment for innovation, continuously increasing support for technological innovation, improving R&D conditions, and strengthening talent development. At the same time, we are deeply integrating intellectual property work with product development and technological innovation, effectively transforming patent achievements into real productive capacity. This ongoing process enhances our technological innovation ability and core product competitiveness, providing strong momentum for the industry's high-quality development.

Governance

We have established a three-tier innovation-driven governance structure, composed of the Board of Directors, the Technological Innovation Working Group, and the Technology Management Department of the Control Centre, ensuring that the Board and management have oversight, guidance, and support for related work.

Level	Governing Body	Responsibilities	Reporting Frequency
Decision-Making Level	Board of Directors	• Serve as the highest decision-making body, determining the strategic direction for innovation • Identify and assess innovation risks • Allocate resources • Supervise the implementation of innovation strategies	/
Manage-ment Level	Technical Innovation Working Group of the ESG Committee	• Responsible for the full lifecycle of product technology research and innovation, enhancing independent innovation capabilities and establishing intellectual property for key product technologies • Manage the entire process of technological innovation projects, including initiation, process management, and acceptance • Monitor market trends and demands, providing recommendations to the Board of Directors	Biannually
Execution Level	Technology Management Department of the Control Centre	• Allocate resources based on project priorities • Establish and train the technological research and development team • Address technical issues encountered during research and production	Monthly

We adhere to an "innovation-driven, technology-led" approach, leveraging platforms such as the National Enterprise Technology Centre, Academician Workstation, and Postdoctoral Research Station to enhance research and development in key technological areas, aiming to advance industrial technology and application research. The R&D teams are composed of individuals with solid academic backgrounds and extensive project experience. Regular internal and external professional training sessions are organized, and active participation in industry conferences is encouraged to stay abreast of industry and academic advancements. This proactive engagement facilitates the sharing of our research outcomes, contributing to the broader industry's development.

Prior to investing in innovation projects, our decision-making and management teams conduct comprehensive evaluations considering factors such as scientific validity, commercial value, return on investment, environmental impact, and social value. We implement compliance management in R&D and intellectual property, utilizing external databases for reference to thoroughly assess associated risks and opportunities. This balanced approach ensures informed decision-making regarding investments.

Strategy

We continuously strengthen our R&D and innovation management capabilities. To ensure the orderly progress of R&D projects and improve the success rate of R&D, we combine external factors with our strategic business direction to identify and assess risks and opportunities in areas such as product innovation and intellectual property. This approach helps clarify the impact on business operations and the resulting financial consequences, enabling the formulation of appropriate management strategies. These strategies aim to optimise resource allocation and significantly enhance decision-making quality.

Risk, Opportunity, and Impact Analysis

Potential Risk Identification & Assessment

Risk	Risk Description	Time Horizon	Business Impact	Financial Impact
Product Innovation Risk	Industry technology iteration is accelerating. If R&D directions fail to meet mid-term market demands (e.g., low-carbon aluminium materials, lightweight trends), it may result in a decline in technological competitiveness	Medium, long	Decreased market competitiveness	Reduced revenue
	Innovative products (e.g., new aluminium alloys) may face long customer validation periods and low market recognition in the short term	Short	Extended R&D cycle	Increased R&D costs
Intellectual Property Risk	The company fails to effectively protect its intellectual property	Short, medium	Infringement by competitors	Reduced revenue
			Engaging in intellectual property disputes and lawsuits or arbitration	Increased management costs

Potential Opportunity Identification & Assessment

Opportunity	Opportunity Description	Time Horizon	Business Impact	Financial Impact
Market Competitiveness	By developing lightweight, high-strength new aluminium alloys (e.g., aluminium for automotive lightweighting), quickly responding to the urgent demands from industries like new energy vehicles and aerospace, market share can be increased in the short term	Short, medium	New products directly bring new market share, enhancing brand value and core competitiveness	Increased revenue
Leading Industry Standards	Leading or participating in the formulation of industry technical standards for aluminium materials (e.g., recycled aluminium standards), enhancing industry influence	Long	Companies that control standard-setting are often seen as industry leaders, leading to significant improvements in brand influence and customer trust, helping secure high-value orders	Products that meet industry standards tend to have higher market recognition, allowing for premium sales and improved gross profit margin

Management Strategy

We adhere to the development strategy of "innovation-driven, high-end manufacturing, and intensive processing". We are focused on improving and refining upstream production processes, as well as researching and developing breakthrough downstream product technologies. We are actively positioning ourselves in key core technologies and Trinity of Disruptive, Visionary and Groundbreaking Technologies. Our focus is on automotive lightweighting and the domestic production of aerospace materials. We aim to address the production and application of high-end aluminium products such as automotive panels, aerospace panels, and aerospace profiles, breaking the monopoly supply of developed companies for products like automotive outer panels and aerospace wing spars.

In 2024, as a leading enterprise in China's aluminium processing industry, we focus on the transportation and aerospace sectors and set clear R&D strategic goals. In automotive lightweighting, we focus on overcoming dependence on a number of key core technologies and equipment from developed countries and build a system of independent innovation for key technologies, particularly tackling the production technology barriers for high-end products such as automotive outer panels, ensuring full independence and control over core technologies. In the domestic production of aerospace materials, we will comprehensively advance the research and development of full specifications and all-alloy aerospace plates, focusing on breakthroughs in the production technologies for key aerospace components such as wing spars, and establish a complete aerospace materials certification system. By continuously increasing R&D investment, we will build a "inner circle" of internationally competitive technological innovation, strengthen our leadership in high-end industries, and become the core scientific force supporting the construction of a strong aviation nation in the new era.

Nanshan Aluminium Awarded the 8th China Industrial Award

In July 2024, the China Federation of Industrial Economics announced the list of candidates for the 8th China Industrial Award, Recognition Award, and Nomination Award. We were honoured with the 8th China Industrial Award Recognition Award. The China Industrial Award, approved by the State Council, is the highest award in China's industrial sector. It aims to recognize companies and projects that adhere to the scientific outlook on development and follow the path of new-type industrialization with Chinese characteristics. It highlights the direction, path, and spirit of China's industrialization and showcases the highest level of industrial development. It also acknowledges significant contributions to enhancing national strength and promoting economic development.

Innovation and R&D System

At Nanshan Aluminium, we are working to enhance our R&D management system. We accelerate scientific and technological innovation through internal research projects, industry- academia collaborations, and partnerships across the industry value chain.

High-Tech Enterprise Certification Boosts Technological Innovation

Since first receiving the "High-Tech Enterprise" designation in 2009, we have steadfastly prioritized technological innovation, increased R&D investments, and optimized our products and services. Our highly skilled R&D team has achieved numerous core technological breakthroughs. We place great emphasis on industry-academia collaborations, working closely with universities and research institutions to advance the industry. This certification acknowledges our comprehensive strengths in intellectual property, achievement transformation, high-tech revenue proportion, R&D management, growth potential, and talent structure. Currently, we operate the only National Engineering Research Centre for Aluminium Alloy Pressure Processing in China's aluminium processing industry, along with the National Aluminium Alloy Material Testing Centre and other R&D and testing platforms.

Nanshan Aluminium National Engineering Research Centre for Aluminium Alloy Pressure Processing

Collaborative Establishment of Shandong Provincial Key Laboratory for Aluminium Alloy Material Preparation and Forming

To advance scientific research in high-performance aluminium alloy materials and promote the development of Shandong Province's aluminium processing industry, we have partnered with Qilu University of Technology and Nanchang University to jointly establish the Shandong Provincial Key Laboratory for Aluminium Alloy Material Preparation and Forming. As the leading entity, we are responsible for the laboratory's application, construction, evaluation, and daily operations. We provide technical support for the laboratory's long-term development, strategic positioning, and independent innovation, conducting key technology development and application research on high-performance aluminium alloy materials.

Shandong Provincial Key Laboratory for Aluminium Alloy Material Preparation and Forming

Aerospace materials represent the pinnacle of aluminium processing, demanding exceptional performance, stringent manufacturing processes, and complex production management. During the reporting period, we completed certification and production for multiple models of thick plates and initiated alloy development projects. Moving forward, we will continue collaborating with clients on the development of wing panels and sheet materials, aiming for comprehensive coverage across all models and sizes to enhance our competitiveness in the aerospace aluminium plate market.

Nanshan Aluminium's Contribution to China's Large Aircraft

As the only domestic enterprise supplying aluminium aerospace materials to globally renowned manufacturers such as Boeing, Airbus, and COMAC, we have overcome critical challenges in aluminium alloy melt purification and large-scale ingot homogenization. This has led to the localization of several key aluminium alloy materials for large civil aircraft, breaking the long-standing reliance on imports for high-end aerospace aluminium materials like wing bent profiles and wing panels. In recent years, our R&D has focused on high-end aluminium alloy plates and profiles.

In the development of C919 aircraft aluminium profiles, we have achieved certification for multiple alloy models of 2-series and 7-series series thick and thin plate products, now in mass production. These products are primarily used in fuselage frames, partitions, wing panels, spars, and ribs. Notably, our 7xxx series aluminium alloy thick plates have been utilized in the production of C919 and ARJ21 aircraft models. Currently, we are also involved in the development of certain products for the C929 aircraft.

During the reporting period, our leading role in compiling the *Key Technologies and Engineering Applications for Residual Stress Control of Large Aerospace Aluminium Alloy Plates* was recognized with the First Prize in the 2024 Nonferrous Metals Industry Science and Technology Awards.

Intellectual Property Management

We strictly adhere to relevant laws and regulations, including the *Patent Law of the People's Republic of China*, the *Anti-Unfair Competition Law of the People's Republic of China*, the *Enterprise Intellectual Property Management Regulations, and the Guidelines for Intellectual Property Management in Industrial Enterprises*. We have established a *Management System Manual* for intellectual property protection, outlining trademark and copyright protection application procedures. Risk assessments and registrations for trademarks and copyrights are conducted based on business needs, promoting comprehensive creation, protection, utilization, and management of intellectual property. During the reporting period, we successfully obtained the GB/T 29490 Enterprise Intellectual Property Management System supervision audit.

Preparation Phase
- Regularly monitor the market for intellectual property (IP) related to the company. Before engaging in international trade, investigate the IP laws, policies, and enforcement practices of the destination country. Understand relevant industry litigations, analyze potential disputes and their possible impact on the company, and develop preventive plans.

Contract Signing
- For outsourced business activities, sign written contracts that specify IP ownership and confidentiality clauses. The Company's legal department reviews and archives these contracts.

Interde-partmental Coordination
- During product procurement, sales, research and development, or other business processes, monitor for potential IP infringements. If issues are identified, report them to the IP department for handling. When necessary, the legal department may pursue administrative and judicial avenues to protect the Company's IP rights.

Proactive Monitoring
- Actively renew trademarks upon expiration and combat malicious trademark imitations. Proactively defend against market infringements.

Collaborative Management
- Coordinate with affiliated companies to clearly delineate ownership boundaries, reducing trademark conflicts and minimizing gaps in IP rights.

Intellectual Property Management Measures

Additionally, we offer specialized training on IP and incentive measures for employees to apply for patents, continuously enhancing their IP awareness and independent innovation capabilities. Employees are rewarded with RMB 1,000 after submitting a patent application, and RMB 9,000 for each successfully granted patent. During the reporting period, we conducted six internal IP- related training sessions and two external training sessions.

Employees are rewarded with

RMB 1,000
after submitting a patent application

RMB 9,000
for each successfully granted patent

Intellectual Property Internal and External Training

In November 2024, we attended an intellectual property seminar hosted by the Longkou Market Supervision Administration. The seminar covered overseas IP risks and prevention strategies, as well as how intellectual property can promote enterprise innovation and development.

Industry Collaboration & Co-construction

We adhere to the principles of cooperation, openness, and mutual benefit. Through diversified collaboration channels, we deeply participate in the development of various industry associations. We actively engage in in-depth discussions with peer companies about industry development trends and technological innovation, and work to implement tangible results within industry associations to promote overall industry innovation and development. During the reporting period, we served as a council member or member unit of several industry associations, including the China Nonferrous Metals Industry Association, and worked alongside industry peers to promote the high-quality and sustainable development of the nonferrous metals sector.

Industry Association Name	Position as a Business
China Nonferrous Metals Industry Association	Vice President Business
China Nonferrous Metals Fabrication Industry Association	Vice Director-General Business
Shandong Advanced Materials Industry Association	Vice President Business
Shandong Aluminium Industry Association	Vice President Business

Exhibition at the 2024 Aluminium Industry Exhibition in Germany

From October 8 to 10, 2024, we made our third attendance at the ALUMINIUM 2024 exhibition in Germany, showcasing ourselves as a global leader in providing high-end aluminium products with a focus on green and low-carbon technologies.

Through physical displays, promotional brochures, video presentations, and on-site consultations, we demonstrated our products in various categories including sheets, strips, foils, profiles, and deep-processing products in fields such as aviation, automotive, rail transport, packaging, and new energy vehicles. The exhibition highlighted our strength as a well-known company in the Chinese non-ferrous metal processing industry, attracting attention from visitors both domestically and internationally.

Nanshan Aluminium Exhibition Booth

On-site Staff Explaining Product Features

While continually enhancing our independent innovation capabilities, we are actively collaborating with government departments, peer companies, universities, and other institutions. We aim to drive supply-side structural reforms in the industry and contribute to the healthy and sustainable development of the sector. This reflects our commitment as an outstanding representative of the industry. We continue to invest in the research and development of green materials, establish a "government-industry-university-research" support system with universities and research institutes, expand communication channels across the industry's upstream and downstream sectors, accelerate technological cooperation and innovation among enterprises, and work with industry partners to promote green innovation and development within the sector.

- We collaborated with Shandong University and the Shandong Academy of Sciences Institute of New Materials on the project: *Aluminium-Based Traffic Lightweight Technology Demonstration Engineering*.
- We partnered with Yantai Nanshan College on the research project: *Key Technologies for the Industrialization of High-Strength, High-Toughness 7xxx Aluminium Alloy Ultra-Thick Plates.*
- We cooperated with Harbin Institute of Technology (Weihai) Innovation and Entrepreneurship Park Co., Ltd. on the project: *Key Technologies for High-Performance, Precision Manufacturing of Large-Scale 7xxx Aluminium Alloy Ring Components.*
- We joined forces with Shandong University and CRRC Qingdao Sifang Co., Ltd. on the project: *Key Technologies for the Preparation and Intelligent Processing of Lightweight Alloys and Composite Materials for Key Industries*.

2024 External Industry-University-Research Project Highlights

Impact, Risk, and Opportunity Management

To ensure the effectiveness of our management strategy, we assess and quantify the feasibility and impact of potential R&D innovation risks, determining their management priority based on the assessment results. For higher-priority risks, we have established targeted management systems and workflows, and have authorized dedicated teams to regularly monitor and record risk levels. Additionally, we implement risk management measures to minimize the impact of R&D innovation risks on both internal and external stakeholders. For more details, please refer to "ESG Impact, Risk, and Opportunity Management" section.

Indicators & Targets

We continue to improve our R&D innovation performance system to ensure the effective implementation of R&D strategies and the achievement of strategic objectives. The performance of our senior management is closely linked to the progress and outcomes of R&D projects, encouraging them to focus on project developments, ensure the availability of resources, and actively participate in R&D work.

R&D Investment

- In 2024, we employed **2,148** R&D personnel, accounting for **13.06%** of the total workforce. R&D investment reached RMB **1.389** billion, accounting for **4.15%** of revenue.
- We launched **31** new product development projects and **19** new technology applications.

Annual Patent Achievements

- In 2024, we were granted **18** invention patents and **19** utility model patents.
- The total number of granted invention patents reached **103**, and utility models amounted to **141**, with **31** trademarks.

National and Industry Standard Formulation

- In 2024, we participated in revision **10** national standards and **20** industry standards, with **1** national standard and **4** industry standards led by the company.
- We participated in formulating, revising and releasing **9** national standards and **5** industry standards, including **1** national standard led by the company.

3.3

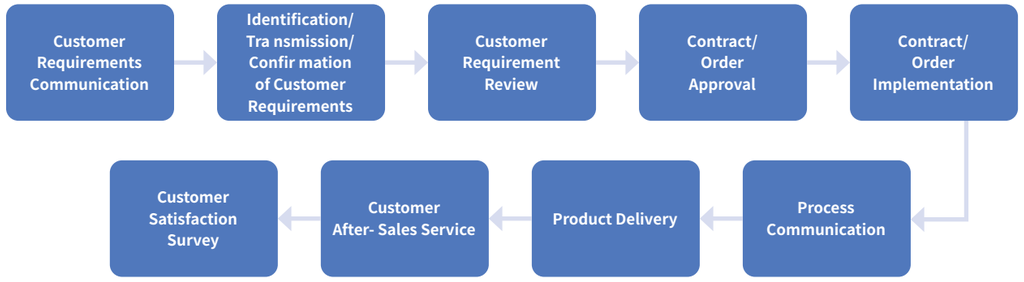
Customer Service

We adhere to a customer-centric approach, actively innovating service models and improving service quality. Through efficient, professional, and considerate service, we continuously enhance the customer experience and satisfaction. We ensure smooth communication channels for customers, safeguard customer privacy, and are committed to providing efficient and convenient service experiences.

Quality Service

We follow relevant laws and regulations such as the *Consumer Rights Protection Law of the People's Republic of China*, as well as internal policy guidelines including the *Process Control Procedures Related to Customers, After-Sales Service Control Procedures, Customer Satisfaction Measurement Procedures*, and *Product Service Management Regulations*, focusing on creating standardized and regulated customer service processes.

We have built and continue to maintain a variety of communication channels, including in- person visits, telephone visits, written correspondence, fax, virtual meetings, and email, to keep close contact with customers. This allows us to promptly understand and respond to customers' daily needs regarding order details, delivery schedules, shipping plans, and payment status. In addition, we conduct regular product mock recall drills for products such as can body materials, can end stock, and aluminium foil, in line with food safety system requirements, to continuously improve customer satisfaction.



Customer Service Process

Customer Complaints

We have established a comprehensive customer complaint management process, strictly implementing internal systems such as the *Product Service Management Regulations and After- Sales Service Control Procedures*. We use various communication channels, including on-site visits, telephone calls, written correspondence, fax, virtual meetings, and emails, to quickly respond to any quality objections raised by customers during the entire purchasing and usage process, within 24 hours. We provide full quality assurance from pre-sale to post-sale. In 2024, we addressed customer complaints regarding product quality, packaging quality, and logistics transport promptly, providing feedback and generating improvement plans to prevent recurring issues. The timeliness of complaint handling reached 100% in 2024.

The timeliness of complaint handling reached in 2024

100%

- Upon receiving customer feedback or complaints regarding quality issues, we make every effort to understand the specifics of the complaint, including the material's performance, issue patterns, performance of materials from the same batch, and performance from other suppliers during the same period, through channels such as phone calls, emails, WeChat, or on-site visits

- Relevant samples and photos are collected and sent to the production and technical departments for investigation and analysis. Based on the investigation's findings, we collaborate with the customer to determine a solution. During this process, on-site follow-up may be needed to trace the causes further or attempt to resolve the issue by reusing the materials

- Once a solution is determined, a processing agreement is created and sent to the customer after approval. For solutions that require returns or exchanges, the logistics department will arrange for the return of goods, which will then undergo quality control and warehouse re-checking for weight, in accordance with the agreement

- For other customer requirements such as material performance improvement, specification changes, or new products, sales personnel will relay the information to the technical department. The technical department will review the customer's request and, if approved, arrange for testing. The sales and product service departments will assist in understanding material usage and improvement effects, and provide feedback to the technical department to finalize the production approach for the subsequent products

Customer Complaint Service Process

Product Recall

We adhere to a "prevention first, rapid response" management approach and continuously implement product recall and response mechanisms. We monitor product quality in real time to minimize potential product quality risks. At the same time, when product issues are identified, we quickly respond to customer feedback, promptly confirm and locate the production batch and distribution path of the problematic product, and provide clear solutions and compensation measures, effectively safeguarding consumer rights and brand reputation. During the reporting period, we did not experience any product recall incidents due to quality issues or customer complaints.

Satisfaction Survey

In accordance with the *Customer Satisfaction Measurement Procedure*, we conduct annual customer satisfaction surveys covering various aspects such as product quality, on-time delivery, service levels, price competitiveness, packaging design, and logistics transportation. For items that receive low satisfaction scores in the surveys, we collaborate with relevant internal departments to jointly rectify the issues and continuously monitor the effectiveness of the improvements, ensuring that problems are fundamentally addressed and customer satisfaction is enhanced.

Customer Satisfaction Survey Results

2024

Flat Products Division: Customer satisfaction survey score of

96 points

Consumer Materials Division: Customer satisfaction survey score of

98.37 points

Responsible Marketing

We adhere to the concept of responsible marketing and regularly develop and continuously optimizes annual marketing plans and management systems that align with our development, based on market dynamics and the actual conditions of various products. We implement cultural promotion related to marketing and work together with customers and stakeholders to create a fair and transparent marketing environment.

Key Initiatives in Responsible Marketing in 2024

Responsible Marketing Training

- We conduct monthly specialized training for all marketing staff, focusing on improving their professional capabilities and comprehensive qualities in areas such as product knowledge, project management, customer management, marketing systems, and business etiquette.

Responsible Marketing Auditing

- During business operations, we focus on auditing the implementation of marketing policies, management systems, sales contracts, and behavioral norms. We carry out internal audits and inspections to promptly address any identified risks.

To further ensure marketing compliance, we have implemented a series of institutional standards related to business personnel's ethical practices, including the Integrity *Management Procedures, Marketing Management System, and Salesperson Code of Conduct*. Subsidiaries conduct self-checks and self-corrections, while also cooperating with our audit department for reviews. We require sales staff to adhere to the signed *Integrity Agreement* during the cooperation process. If any violations occur, we will hold the responsible personnel accountable based on the severity of the breach. Additionally, we have established a marketing training program, organizing monthly special training sessions for all marketing staff aimed at improving the overall literacy and professional capabilities of the sales team.

We adhere to the core philosophy of "harmonious coexistence, safeguarding clear waters and green mountains" and strive to advance our green transformation. We are dedicated to reducing energy consumption and minimizing greenhouse gas emissions, actively fulfilling our environmental responsibilities. At all our domestic and international operations, we strictly comply with environmental protection laws and regulations, actively respond to international calls for addressing climate change, and strive for harmony between production activities and the natural environment, co-creating a new chapter of harmonious development.

04 / Natural Harmony

Co-creating a New Ecological Era

4.1

Responding Climate Change

We deeply understand that addressing the risks and opportunities associated with climate change is critical to our global development strategy. We actively align with the global low- carbon transition trend and, in accordance with *China's National Climate Change Adaptation Strategy 2035*, integrate climate change factors into our governance structure and strategic planning. As a member of the Aluminium Stewardship Initiative (ASI), we are dedicated to becoming a model for high-quality green development in China's non-ferrous metals industry.

Governance

We have established a three-tier climate change response structure consisting of the Board of Directors, the Sustainability Committee, and the Control Centre to ensure that the Board and management provide oversight, guidance, and support for related initiatives.

Through a regular reporting mechanism, we ensure that the ESG Committee's Energy Conservation and Carbon Reduction Working Group is kept informed about our climate change management status. Key work such as climate strategy, carbon reduction goals, and low-carbon transition progress is periodically reviewed by the Board to ensure that sustainable development strategies are effectively communicated.

Additionally, to ensure the effective implementation of these efforts, under the leadership of the Control Centre, we link the achievement of energy conservation and carbon reduction goals with the performance of our senior management and subsidiary leaders.

Our Organizational Structure for Responding Climate Change

Level	Governance Body	Functions	Reporting Frequency
Decision-Making Level	Board of Directors	• As the highest decision-making body, determine the climate change response development strategy. • Identify and assess climate risks and opportunities. • Make resource allocation decisions. • Oversee the implementation of climate change response measures.	/
Management Level	Sustainability (ESG) Committee Energy Conservation and Carbon Reduction Working Group	• Supervise various units, lead and organize the implementation of ISO 50001 energy management system, ISO 14064 greenhouse gas emission standards, and ISO 14067 product carbon footprint standards. • Manage safety production, occupational health, waste emissions, life cycle assessment, and green manufacturing. • Fully implement tasks related to addressing climate change and energy conservation and carbon reduction.	Every 6 months
Execution Level	Control Centre	• As the execution body, responsible for daily energy conservation and emission reduction checks. • Break down management objectives and supervise related work of production units through periodic assessments. • Ensure daily work meets ISO 50001 energy management system and ISO 14064 greenhouse gas emission standards. • Assist with carbon inventory-related work.	Monthly

Strategy

We regularly identify climate risks and opportunities, and update and refine our development strategies and risk management initiatives. Against the backdrop of green transformation, we actively implement energy conservation and emission reduction management measures, steadily advancing towards a sustainable development path.

Risk, Opportunity, and Impact Analysis

As an energy-intensive industry, aluminium processing and manufacturing is profoundly affected by the challenges of climate change, which are reshaping the operational landscape of both the aluminium industry and our company. To strengthen our ability to withstand the impacts of climate change, we are actively conducting a comprehensive assessment of climate risks and opportunities, aiming to organically integrate the risk factors and development opportunities identified in this process into our long-term strategic planning.

Nanshan Aluminium Climate Change Risk Identification & Response Measures

Nanshan Aluminium Climate Risk List

Climate Risks	Risk Description	Time Horizon	Business Impact	Financial Impact	Risk Response Measures
Severe Natural Factors (e.g., Typhoons, Tsunamis, Extreme Heat, Extreme Cold, Wildfires)	Extreme weather such as typhoons and snowstorms may affect our business operations in specific regions or globally, and may also impact our suppliers, leading to operational disruptions.	Long - term	Extreme weather may cause equipment damage or disrupt production and the supply chain; Extreme heat may cause heatstroke and affect employee safety.	Asset impairment Increased operational costs	• Fulfill environmental protection responsibilities and minimize adverse impacts on ecology and climate. • Establish an emergency response command center and develop emergency plans, conduct regular drills, and equip all plants with flood bags and non-slip sandbags. • Dynamically set up safety stock and strengthen emergency supply capabilities of suppliers.
Laws & Regulations	With countries continually strengthening environmental regulations, the aluminium industry faces increased pressure from environmental protection and carbon tariffs (CBAM).	Short - term, Medium - term, Long - term	The Donghai Thermal Power Plant is included in the government's carbon quota management; The electrolytic aluminium industry also faces stricter carbon emission limits.	Fines risk Increased operating costs	• We follow ISO 14001 Environmental Management System and ISO 50001 Energy Management System to systematically manage and advance greenhouse gas emission targets and implementation plans, increasing the proportion of clean energy. • Pay attention to changes in laws and regulations in various countries and respond promptly.

Nanshan Aluminium Climate Risk List

Climate Risks	Risk Description	Time Horizon	Business Impact	Financial Impact	Risk Response Measures
Market Demand for Carbon Footprint	Customers in automotive sheet and packaging materials require the company to conduct product lifecycle assessments.	Medium - term, Long - term	We need to carry out carbon footprint assessments and lifecycle analysis for key products.	Increased operating costs Decreased revenue (if products lack relevant certifications and lose orders)	• Based on continuous carbon footprint certification for core products, the company collaborate with upstream and downstream partners to develop carbon reduction plans covering the entire product lifecycle.

Nanshan Aluminium Climate Change Opportunity Identification & Response Measures

Nanshan Aluminium Climate Opportunity List

Climate Opportunities	Opportunity Description	Time Horizon	Business Impact	Financial Impact	Opportunity Response Measures
Development of Low-Emission Products	Increasingly, downstream customers will require low-carbon aluminium processing products.	Medium - term, Long - term	Low-carbon products will attract high- quality customers who focus on sustainability.	Increased R&D expenditure Higher operating costs Increased revenue (if successful in developing low-carbon products, will capture market share)	• We have been certified through ASI performance standards and supply chain monitoring to ensure that our products in China meet COC requirements from raw materials to finished products, offering aluminium that complies with ASI standards. • Continuously reduce CO_2 emissions in the aluminium casting process.
Resource Recycling & Utilisation	Emphasis on resource recycling will drive the company to carry out equipment modifications and actively promote recycling.	Long - term	Resource recycling will reduce reliance on raw materials and improve resource utilisation efficiency.	Increased investment Decreased operating costs (once recycling technology for scrap aluminium matures, it may reduce raw material procurement costs)	• We actively communicate with downstream customers to recycle external scrap for smelting. The 100,000-ton recycled aluminium project has been successfully completed and put into use. • Simultaneously, 100% of internal scrap is recycled, and all waste generated in the production of aluminium sheets and foils is recycled and re-melted back into the furnace.
Energy Saving & Emission Reduction	Energy-saving and emission reduction renovations will improve our energy efficiency.	Long - term	We continue to carry out process improvements and increase the proportion of new energy.	Increased investment Reduced operating costs (in the long term, after technological improvements, energy procurement expenses will decrease)	• We actively explore new technologies, new equipment, new materials, and new processes for energy management, increasing the proportion of green electricity. • Transparently disclose our progress towards achieving greenhouse gas emission reduction targets.

Management Strategy

After systematic evaluation and in-depth analysis, we have further examined the impact of climate change-related risks and opportunities on our operations. Through carbon footprint accounting and product carbon footprint management, we assess the status of our greenhouse gas management. We then implement carbon reduction actions in line with low-carbon development plans, continuously focusing on efficient energy and equipment management to better address risks and seize climate opportunities.

Carbon Footprint Accounting & Product Carbon Footprint

We invite professional institutions each year to assist in conducting internal carbon footprint accounting. Following the *Greenhouse Gas Accounting Management System*, we carry out internal carbon emission assessments across the company, systematically evaluating the carbon emissions of each business unit. In accordance with ASI disclosure requirements, we regularly disclose our greenhouse gas emissions and the use of various energy types. At the same time, through data collection and tracking verification mechanisms, we ensure that the overall greenhouse gas plan and carbon reduction mechanisms are effectively implemented. In 2024, we continued conducting ISO 14064 organizational carbon audits, with the audit boundary covering the following:

Coverage Scopea

- Alumina Company
- Electrolytic Aluminium Company
- Medium-thick Plate Company
- Aluminium Rolling Company
- Aluminium Foil Company
- Aluminium Profile Plant

Nanshan Aluminium ISO 14064 - based Organizational Carbon Emission Assessments

We actively respond to the global consensus on carbon reduction and the explicit demands from downstream customers for greenhouse gas emissions reduction. We have commissioned third- party organizations to conduct product carbon footprint certification for several of our products. In 2024, we successfully completed carbon footprint certification for 15 products, providing strong support for the development of a low-carbon aluminium metal supply chain.

Electrolytic Aluminium Company	Electrolytic aluminium water, remelt aluminium ingots
Aluminium Rolling Company	Beverage can body material, can lid material, aluminium foil stock, battery casing material
Aluminium Foil Company	Packaging foil, battery foil
Medium-thick Plate Company	Aluminium automotive plate, aluminium aerospace plate
Aluminium Profile Plant	Aluminium alloy building profiles, aluminium alloy industrial profiles, aluminium alloy extruded bars (round and square), aluminium alloy aerospace profiles, aluminium alloy PV frames

Product Carbon Footprint Certifications

In accordance with our *Greenhouse Gas Emissions Targets and Implementation Plan*, we have implemented precise strategies to enhance our ability to respond to climate change risks. Focusing on three main areas—electricity decarbonization, direct emissions reduction, and recycling—we have deeply integrated these efforts into various stages of production operations. Supported by measures such as increasing renewable energy usage and energy-saving technological upgrades, we aim to achieve the annual absolute reduction in greenhouse gas emissions and meet our medium-to-short-term emissions control targets.

Carbon Reduction Implementation Plan

We rely mainly on electricity as the main energy source for production. Therefore, we are actively undertaking energy-saving and carbon-reduction upgrades on electrical equipment and optimizing production processes to minimize carbon emissions resulting from energy consumption in the production flow. Additionally, we are committed to accelerating the electricity decarbonization process through two key pathways: green electricity procurement and renewable energy application. While ensuring production efficiency, we strive to achieve a more environmentally friendly and sustainable electricity supply model, providing strong momentum for the company's green development.

Green Electricity Procurement

We actively enhance the use of green electricity in our production processes by purchasing green electricity certificates, thereby promoting the absorption of green energy by local power grids and increasing the proportion of clean energy used. In 2024, we successfully purchased 200,000 green certificates, equivalent to 200 million kWh of green electricity, which represents a tenfold increase compared to the previous year.

Green Electricity Certificates

Renewable Energy Generation

We have installed photovoltaic (PV) power generation equipment with a total installed capacity of 96 MW across our various plants. In 2024, the generated electricity amounted to 107 million kWh, which is expected to reduce carbon emissions by approximately 100,000 tonnes of CO_2e. The specific construction details of the PV projects are as follows:

Donghai Thermal Power

Aluminium Profile Plant

Nanshan Park

Additionally, the renewable energy generation plans for the Indonesia plant are detailed in the section on "Green and Low-Carbon Initiatives".

Continuous Advancement of Energy-Efficient Cell Transformation Project

Since 2022, our Electrolytic Aluminium Company has been collaborating with the Design and Research Institute of Northeastern University to steadily promote the energy-efficient cell transformation project. In 2024, a total of 93 cells were upgraded. As a result, the overall AC consumption for aluminium liquid was reduced by 70 kWh/t, the anode consumption decreased by 1.2 kg/t, and carbon emissions were reduced by 31,400 tonnes.

Due to the substantial energy-saving and carbon-reduction benefits this project has brought to the company, the National Development and Reform Commission specially provided RMB 15 million in renovation funds to support the continued transformation of the electrolytic cells.

Energy Equipment Management

We strictly adhere to the *Energy Conservation Law* and the ISO 50001 standard. The Production Equipment Management Department coordinates and rigorously supervises the energy-saving efforts of all subordinate units to ensure that carbon reduction measures are effectively implemented. During the reporting period, core production and operational sites, including the Donghai Thermal Power Plant and the Alumina Company, successfully passed ISO 50001 external audits and were awarded certification.

- Nanshan Aluminium Production Equipment Management Department
- Energy Group Leaders and Deputy Leaders of Subordinate Production and Operation Units
- Heads of Various Functional Departments and Workshops

ISO 50001 Energy Management System Certificate

Optimization of Post-Leach Additive Process at Alumina Company

Our Alumina Company completed the optimization of the post-leach additive process in 2024. This technology reduces thermal losses from the final stage of flash steam, thereby decreasing the overall steam consumption of the plant. After the modification, 64,800 tonnes of steam were saved in 2024.

Addition of Heat Exchangers in the Electrolytic Aluminium Company's Calcination Workshop

During the reporting period, our Electrolytic Aluminium Company implemented a heat exchanger addition project. New heat exchange stations and units were constructed to use plant steam for hot water heat exchange. At the same time, we optimized the pipeline layout to introduce return water from the Donghai Thermal Power Plant into the heat exchange units, achieving efficient heat exchange between the return water and steam. After the completion of the project, it is expected to save 64,000 tonnes of desalinated water annually, with cost savings of RMB 960,000; steam consumption is reduced by 28,800 tonnes annually, saving RMB 5.76 million, with total annual savings amounting to RMB 6.72 million.

Energy-saving Retrofit of Dry Slag Machines at Donghai Thermal Power Plant

Our Donghai Thermal Power Plant initiated a slag removal machine retrofit, upgrading the original water-based slag removal system to a wind-cooled dry slag machine. After the retrofit, the average flue gas temperature decreased by approximately 15.5 °C , coal consumption was reduced by 6,888 tonnes annually, and electricity generation costs were reduced by about RMB 10.95 million.

Energy-saving Retrofit at our Indonesia Plant

Our Indonesia plant installed two waste heat recovery devices. Once fully operational, the equipment is expected to save approximately 40,195 tonnes of steam annually and reduce standard coal consumption by 4,341[16] tonnes per year.

Additionally, our Indonesia plant added soot-blowing systems to the economizers of six boilers in our power plant. After the retrofit, the average flue gas temperature of the boilers dropped by 15.52°C , improving boiler efficiency by about 1.6%, and saving approximately 7,360 tonnes of standard coal annually.

Waste Heat Recovery Device

In 2024, we conducted a total of 31 energy-saving and emission reduction training sessions for employees, including training on *Energy Laws and Regulations and Energy Target and Indicator Training*. The training content covered energy laws and regulations, target-setting methods, energy metering device management, and daily energy usage control techniques, aiming to enhance employees' energy management capabilities and ensure the successful achievement of energy-saving and emission reduction goals.

Energy-saving and Emission Reduction Training Participation Photo

Honours & Recognition

As of the end of this reporting period, we have participated in the Carbon Disclosure Project (CDP) climate change questionnaire disclosure for three consecutive years, receiving a C-level rating in 2024. We will continue to follow best practices in the global metal processing industry, actively adhere to the CDP questionnaire disclosure requirements, and continuously enhance our competitiveness in green, low-carbon, and sustainable business and management development.

[16] The conversion assumption here is: steam standard coal consumption is 108 kg/t.

Impact, Risk, and Opportunity Management

We integrate climate change responses into our corporate risk management system, strengthening climate governance by adhering to internal risk control procedures such as the *Risk and Opportunity Control Procedures*. Through meticulous processes for identifying, monitoring, and managing climate-related risks and opportunities, we comprehensively identify potential climate-related risks and implement targeted measures to mitigate their impact on operations. These measures include conducting product carbon footprint certifications, improving emergency management systems, and implementing energy-saving projects. Additionally, we seize climate-related opportunities by developing high-quality recycled aluminium projects and actively adopting clean energy, aiming to establish ourselves as a green benchmark enterprise in the aluminium processing industry and contribute to the sustainable development of the global aluminium sector.

Indicators & Targets

Greenhouse Gas Indicators & Targets

Based on an in-depth analysis of our overall emission profile and extensive consultation with experts, we have published our *Greenhouse Gas Emission Targets and Implementation Plan*. This document sets annual carbon emission targets for its alumina, aluminium rolling, plate, and foil divisions, outlines full lifecycle carbon emission goals for electrolytic aluminium products, and details the pathways and measures to achieve these targets. During the reporting period, Donghai Thermal Power Plant fulfilled 8.07 million tonnes of carbon quotas in accordance with pilot carbon market requirements and completed carbon transactions of 480,000 tonnes by the end of 2024. We did not participate in the national Certified Emission Reduction (CCER) carbon credit trading.

Emission Targets

Achieving Carbon Peak by 2030 → Achieving Carbon Neutrality by 2050

Product Emission Intensity Targets (Domestic)

Unit	2022 Target Emission (tCO_2e/t Product)	2023 Target Emission (tCO_2e/t Product)	2024 Target Emission (tCO_2e/t Product)	2025 Target Emission (tCO_2e/t Product)
Alumina Company	1.89	1.85	1.83	1.81
Aluminium Foil Company	1.09	1.07	1.06	1.05
Aluminium Rolling Company	0.79	0.78	0.77	0.76
Medium-thick Plate Company	1.90	1.89	1.88	1.87

Electrolytic Aluminium Product Carbon Footprint (Domestic)

Unit	2022 Target Emission (tCO_2e/t Product)	2023 Target Emission (tCO_2e/t Product)	2024 Target Emission (tCO_2e/t Product)	2025 Target Emission (tCO_2e/t Product)
Bauxite to Electrolytic Aluminium Product Carbon Footprint	17.24	16.64	16.44	16.24

Indicator[17]	Unit	2022	2023	2024
GHG Emission Indicators (Aluminium Products)				
Total GHG Emissions (Scope 1 + Scope 2)	tCO_2e	9,630,182	9,087,064	8,455,178
Scope 1 GHG Emissions	tCO_2e	1,504,469	1,534,661	1,517,431
Scope 2 GHG Emissions	tCO_2e	8,125,713	7,552,403	6,937,747
Carbon Emission Intensity				
Alumina Company	tCO_2e/t product	2.22	1.90	2.01
Aluminium Rolling Company	tCO_2e/t product	0.57	0.79	0.74
Medium-thick Plate Company	tCO_2e/t product	1.09	1.89	1.63
Alumina Company	tCO_2e/t product	17.19	16.64	15.99
Aluminium Foil Company	tCO_2e/t product	1.25	1.09	1.07
GHG Emission Indicators (Electricity)				
Donghai Thermal Power Plant GHG Emissions (approximate)	tCO_2e	10,099,000	9,656,270	8,060,000
GHG Emission Indicators (Overseas Plants)				
Total GHG Emissions				
U.S. Plant	tCO_2e	41,088	34,559	36,839
Indonesia Plant	tCO_2e	769,070	1,909,740	2,070,320
Carbon Emission Intensity				
U.S. Plant	tCO_2e/t product	0.45	0.45	0.46
Indonesia Plant	tCO_2e/t product	0.66	1.01[18]	0.98

[17] The data encompasses emissions from our subsidiaries, including the Electrolytic Aluminium Company, Alumina Company, Aluminium Rolling Company, Aluminium Foil Company, and Medium-thick Plate Branch. Emissions related to the power industry and overseas factories are presented separately in the following table.

[18] In 2023, the Indonesian factory, in light of its actual production and operation conditions, revisited and expanded the statistical scope for total greenhouse gas (GHG) emissions and emission intensity. For the first time, it comprehensively incorporated emission sources such as coal-to-gas processes into its GHG and energy statistics and management. Moving forward, the factory will continue to carry out GHG and energy management work based on this expanded scope.

In 2024, our subsidiaries achieved the following greenhouse gas emission reduction targets per unit of product:

Subsidiary	Expected Carbon Emission Reduction Target for 2024 (⩽ tCO_2e/t product)	Actual Achievement in 2024 (tCO_2e/t product)	Completion Status
Alumina Company	1.89	1.67	Achieved
Aluminium Rolling Company	0.78	0.76	Achieved
Medium-thick Plate Company	1.85	1.69	Achieved
Aluminium Foil Company	1.07	1.07	Achieved
Electrolytic Aluminium Company	13.15	12.44	Achieved

Additionally, the carbon footprint reduction target for electrolytic aluminium products was completed as follows:

Subsidiary	Expected Carbon Emission Reduction Target for 2024 (⩽ tCO_2e/t product)	Actual Achievement in 2024 (tCO_2e/t product)	Completion Status
Bauxite to Electrolytic Aluminium Product Carbon Footprint	16.44	15.99	Achieved

Energy Management Indicators & Targets

As of the end of the reporting period

The ISO 50001 Energy Management System coverage rate for our manufacturing subsidiaries, excluding the newly established Recycled Aluminium Company, is

100%[19]

[19] This data currently includes only our subsidiaries operating within China. We will continue to enhance the management of our overseas subsidiaries, promote the adoption of the ISO 50001 Energy Management System, and, when appropriate, include their energy system coverage rates in our internal data statistics.

Energy Consumption				
Energy Consumption Indicator[20]	Unit	2022	2023	2024
Indirect Energy Consumption				
Purchased Electricity	kWh	4,884,915,500	2,127,629,400	2,195,841,200
Purchased Steam	MJ	-	-	-
Direct Energy Consumption				
Diesel	tonnes	3,699	4,011	4,728
Raw Coal	tonnes	5,195,290	5,050,233	4,084,426
Natural Gas	10,000 m^3	31,162	27,163	29,356
Comprehensive Energy Consumption[21]	tonnes of standard coal	4,183,717	3,789,111	3,541,851
Procured Green Energy	kWh	30,000,000	20,000,000	200,000,000
Self-Generated Solar Electricity	kWh	18,804,047	69,542,205	107,000,000

[20] The data scope includes our main production plants in China: Donghai Thermal Power Plant, Nanshan Electrolytic Aluminium Plant, Nanshan Aluminium Profile Plant, Alumina Company, Aluminium Rolling Company, Aluminium Foil Company, Nanshan New Materials Company, and Medium-thick Plate Branch.

[21] We calculate the Company's annual overall energy consumption (in units of tonnes of standard coal) based on the ISO 50001 Energy Management System.

4.2

Environmental Management

We continue to enhance our environmental management framework and systems. Leveraging a comprehensive pollutant control mechanism, we have established a full-cycle management system encompassing wastewater treatment, air purification, solid waste classification, and hazardous waste management. This ensures that all processes comply with local regulations and minimizes environmental impacts during production.

Governance

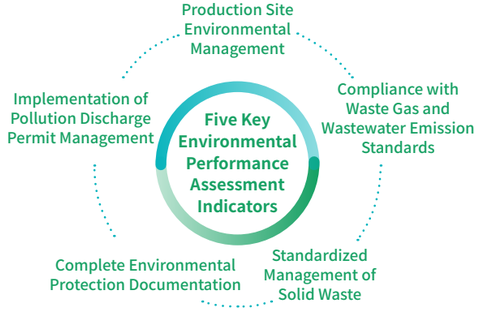
We strictly adhere to environmental protection laws and guidelines in our operating regions. We have implemented internal policies such as the *Environmental Protection Management Measures* and the *Nanshan Aluminium Environmental Information Disclosure System* to provide clear standards and guidance for environmental management.

We have established a robust environmental management system, with the ESG Committee— comprising the Chairman and senior management—as the highest decision-making body responsible for overall environmental planning and decisions. The Safety and Environmental Protection Working Group under the ESG Committee is tasked with executing and supervising environmental initiatives, ensuring effective implementation of environmental measures.

Nanshan Aluminium Environmental Management Structure

Level	Governing Body	Functions	Reporting Frequency
Decision-Making	Board of Directors	• Serve as the highest decision-making body, determining our environmental management strategy • Make resource allocation decisions • Oversee the implementation of environmental management initiatives	/
Management Level	Sustainability (ESG) Committee's Safety and Environmental Protection Working Group	• Review environmental policies, regulations, standards, trends, and stakeholder concerns; propose environmental management objectives and policies to the Board • Supervise and guide units in managing emissions, conducting life cycle assessments, and implementing green manufacturing practices; implement ISO 14001 environmental management system	Once every six months
Operational Level	Emergency Management Department	• Supervise units in managing emissions, conducting life cycle assessments, and implementing green manufacturing practices • Implement ISO 14001 environmental management system • Break down management objectives and supervise production units through periodic assessments	Weekly

We strictly adhere to the *Environmental Protection Management Measures* and focus on the eight core management areas and five key assessment indicators established by the Company. We conduct regular, comprehensive, and in-depth on-site inspections and evaluations of all our subsidiaries. The results of these evaluations are directly linked to the performance of senior management, motivating relevant personnel to effectively implement and continually optimize environmental management practices.



Strategy

To comprehensively enhance our environmental management capabilities and accurately identify environmental risks and opportunities, we systematically conduct environmental risk and opportunity assessments. Through in-depth analysis, we clarify the business and financial impacts of various risks and opportunities on the company. Based on these assessments, we develop targeted management strategies to support our sustainable development.

Risk, Opportunity, and Impact Analysis

Nanshan Aluminium Environmental Management Risk List

Environmental Management Risks	Risk Description	Time Horizon	Business Impact	Financial Impact	Risk Responding Measures
Compliance Risk	Stricter environmental regulations globally may lead to increased costs or production stoppages for rectification.	Short, Medium, Long	Increased compliance costs; non-compliant emissions may lead to production interruptions	Environmental fines, Increased cost remodelling	• Establish regulatory monitoring mechanisms. • Implement management measures to meet compliance requirements. • Conduct training for all employees on environmental regulations. • Proactively reduce emissions
Environ mental Litigation Risk	Potential environmental pollution may lead to class-action lawsuits from surrounding communities.	Short, Medium, Long	Legal disputes causing work stoppage for rectification or compensation expenses. Litigation may result in reputational impact on the Company	Lawsuit expenses. Compensation surrounding residents.	• Install online monitoring equipment. • Establish communication mechanisms with surrounding communities.

Nanshan Aluminium Environmental Management Opportunity List

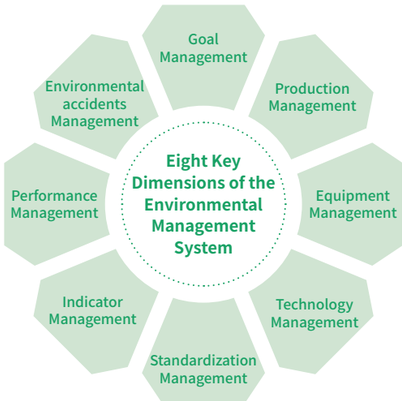
Environmental Management Opportunities	Opportunity Description	Time Horizon	Business Impact	Financial Impact	Opportunity Responding Measures
Brand Reputation Opportunity	Recognition from government environmental awards or customer acknowledgment due to excellent environmental management practices.	Short, Medium, Long	Focus on environmental policies and innovations in environmental technology, improve environmental performance, earn customer brand reputation recognition and government funding support	Increased orders leading to higher revenue. Tax benefits or government environmental funding support.	• Regular disclosure through ESG reports, official website, and other channels to enhance environmental information disclosure and strengthen the ESG brand image. • Actively respond to environmental policies, and promote green production and sustainable operations.

Management Strategy

In response to the identified risks and opportunities, we have clarified the core direction for environmental management. We optimize the management framework base on the ISO 14001 Environmental Management System, and regularly hire third-party professional organizations for environmental management audits and guidance to ensure comprehensive compliance with environmental regulations. In addition, we actively conduct employee training and procedural drills to continuously enhance employees' environmental awareness, ensuring they can proficiently master the key skills required in daily operations.

Environmental Management System

In terms of environmental protection management, we adhere to the principle of "complying with regulations, protecting the environment, saving energy and reducing consumption, and continuous improvement". We strictly fulfill our environmental management responsibilities. Furthermore, we follow the ISO 14001 Environmental Management System, clarifying the eight key dimensions of the environmental management system, and conducting rigorous internal management. During the reporting period, we successfully passed all external audits for the ISO 14001 Environmental Management System certification and completed the certificate renewal process.



Normalised Environmental Management

We place high importance on ecological environmental protection. We regularly conduct detailed checks of the environmental management facilities, online monitoring equipment, and other systems in each workshop, in reference to environmental impact assessment approval documents, pollution discharge permits, and process flows. This ensures that pollutants are effectively collected and disposed of in compliance with regulations, and guarantees the full implementation of environmental protection requirements. For details on our key efforts in emissions, waste, water resource management, and ecosystem protection during the reporting period, please refer to the "Protecting Nature" section.

At the same time, we focus on the impact of pollutant emissions on local community residents. If any feedback or concerns are raised by the community, we quickly set up a special team to investigate. If any non-compliance is confirmed, immediate corrective actions are implemented, and we ensure that relevant updates are communicated back to the residents. During the reporting period, no major environmental impact was caused to residents or communities, and all environmental feedback was effectively and promptly resolved.

Additionally, we have appointed professional third-party agencies to act as environmental guardians. These agencies strictly follow the operational laws and regulations such as the *Pollution Discharge Permit Management Regulations*, *Air Pollution Prevention and Control Law,* and *Solid Waste Pollution Prevention and Control Law*. They conduct comprehensive on- site environmental audits at our subsidiaries, including the Electrolytic Aluminium Plant, Aluminium Arterials Factory, Medium-thick Plate Company, Aluminium Rolling Company, Aluminium Foil Company, Alumina Company, and Donghai Thermal Power Plant, at varying frequencies such as weekly, monthly, quarterly, and annually.

During the reporting period, third-party agencies conducted regular risk identification based on environmental protection regulations, environmental impact assessment documents, and pollution discharge permits. They carried out a total of 478 special inspections across various dimensions such as file management, pollutant management, online equipment operation, and waste gas treatment facilities. These inspections took place at least 6 times per week on average. As a result, 722 areas for improvement were identified and promptly addressed with corrective notices. We ensured a 100% completion rate for these corrections, strengthening the foundation of our environmental protection efforts and establishing a solid environmental defence.

The cumulative number of special inspections carried out

478 times

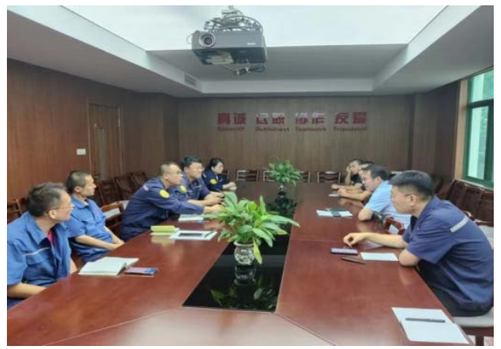
The final completion rate of rectification achieved

100 %

Environmental Protection Training

We actively conduct various environmental protection training and drills to enhance employees' understanding of local regulations and company policies. This ensures that employees complete environmental tasks in accordance with relevant management standards and achieve pollution discharge compliance and reduction.

In 2024, we invited external expert teams to organize 12 training sessions on local laws and regulations for our subsidiaries, covering a total of 216 employees. Additionally, each subsidiary conducted 134 independent environmental protection training sessions, with 7,200 participants in total. This greatly enhanced the environmental management awareness and professional skills of our environmental management staff.



Environmental Protection Specialized Training

In addition, we have invited professional third-party agencies to conduct 4 emergency drills, covering simulated emergency response procedures for situations such as hazardous waste leakage, failure of environmental protection facilities, and sewage pipeline leaks. These drills comprehensively improve employees' ability to handle emergency events.

Honours & Recognition

We have joined the Shandong Province "Zero Waste City" initiative, continually reduced waste discharge levels and striving to become a model enterprise for waste management in Shandong. During the reporting period, the Medium-thick Plate Company was recognized for its excellent waste management results and was awarded the titles of "Yantai City-level Zero Waste Factory" and "Shandong Province-level Zero Waste Factory".

Impact, Risk, and Opportunity Management

We place great importance on environmental risk management, strictly adhering to the laws and regulations of the locations where we operate. We regularly conduct environmental risk identification and assessment. In the event of any violations, we immediately activate our response mechanism and quickly implement remedial and corrective actions. For identified high-risk items, we implement regular risk monitoring to ensure that these risks remain under control, actively reducing environmental risks and fulfilling our environmental responsibilities.

In the process of project application, initiation, and research and development, we thoroughly consider the environmental and social impacts as well as the interests of stakeholders. The assessment dimensions include energy conservation and emission reduction, resource utilization, environmental impact evaluation, and compliance with environmental regulations. This approach aims to ensure the sustainable development of projects while maximizing their economic and social benefits.

Compliance with Environmental Regulations

Ensure that the project complies with national and local environmental regulations and standards to avoid legal risks and costs arising from violations of environmental protection regulations.

Environmental Impact Assessment

During the project application and initiation phases, an environmental impact assessment will be conducted to analyze the potential environmental impacts of the project and develop corresponding prevention and response measures.

Resource Utilization

Assess the efficiency and sustainability of the project's use of natural resources. By optimizing resource usage, reducing resource waste, and ensuring that the project's resource consumption meets the requirements of sustainable development.

Energy Conservation and Emission Reduction

In the design and implementation phases of the project, special attention will be given to the application and promotion of energy-saving and emission-reduction technologies. Using energy-efficient equipment and processes, energy consumption and carbon emissions will be reduced to minimize environmental impact.

Environmental Risk Assessment & Management Dimensions

Indicators & Targets

We strictly adhere to the pollution discharge management requirements set by regulatory authorities in both domestic and international operating locations. In accordance with the ISO 14001 Environmental Management System, we implement compliance management for waste gas, wastewater, and solid waste, and actively carry out pollution prevention and control measures at all production stages. We follow the philosophy of "promoting clean production and achieving sustainable development". Based on ensuring compliance with discharge standards, we focus on reducing emissions at the source and promoting recycling, striving to minimize the environmental impact. During the reporting period, we did not experience any environmental incidents or violations, nor was the company subject to any environmental penalties.

As of the end of the reporting period

Except for the newly established Recycled Aluminium Company, the ISO 14001 Environmental Management System coverage for our manufacturing subsidiaries was

87.5%[22]

Environmental Management Objective[23]

Air Pollutants (Particulate Matter, Nitrogen Oxides, Sulphur Dioxide, etc.)

Reduce air pollutant emissions by 2% by 2026, using 2021 as the baseline.

Solid Waste

Ensure 100% compliant disposal of solid waste, recycle aluminium scraps and blocks through remelting and regeneration, and utilize aluminium slag to produce aluminium ingots, focusing on waste reduction.

Wastewater Treatment

Achieve 100% compliant wastewater discharge, increase the reuse of treated wastewater, and reduce consumption of fresh water resources.

Our Long-Term Environmental Management Objectives

Building upon our short-term goals, we aim to achieve **ultra-low emissions** of waste gases and "**zero discharge, full recycling**" of wastewater across our subsidiaries. This will be accomplished through comprehensive upgrades and transformations of our wastewater and waste gas treatment facilities.

In 2024, we successfully met our environmental management targets, achieving 100% compliant emissions for waste gases, wastewater, and solid waste. Concurrently, we are advancing our long-term environmental objectives by implementing various emission reduction initiatives, as detailed in the "Protecting Nature" section.

[22] This data scope currently includes only our subsidiaries operating in China. We will continue to strengthen the management of our overseas subsidiaries, promote strict adherence to the ISO 14001 Environmental Management System for environmental management, and will incorporate their environmental management system coverage into our internal data reporting scope in due course.

[23] For the environmental management objectives of Nanshan Aluminium's Indonesian subsidiary, please refer to the section titled "Feature: Deepening Global Expansion Strategy – Building a New 'Nanshan'".

4.3

Protecting Nature

We work to enhance our environmental protection efforts, striving to minimize the environmental impact of our production processes. We rigorously assess and address the effects on ecological diversity, ensure the compliant disposal of wastewater, waste gases, solid waste, and hazardous waste, promote the efficient recycling of water resources, and actively engage in ecosystem conservation. These initiatives contribute to the development of an environmentally friendly society.

Emissions and Waste

Our primary pollutants include nitrogen oxides, sulphur dioxide, particulate matter, COD, ammonia nitrogen, total phosphorus, total nitrogen, as well as scrap aluminium and discarded packaging materials. We have established comprehensive environmental monitoring programmes in accordance with environmental impact assessments and pollution discharge permits. At the end of the reporting period, we conducted a thorough review of these programmes and risk management measures, finding no significant deficiencies. Additionally, we have not faced major administrative penalties or criminal liabilities due to pollutant emissions.

Waste Gas Management

We strictly adhere to the *Law on Air Pollution Prevention and Control* and the *Comprehensive Emission Standard of Air Pollutants*, as well as relevant overseas regulations in areas where we operate. We have developed an *Air Pollutant Emission Control Procedure* to guide our units in effectively managing waste gas emissions and ensuring full compliance.

All our units are equipped with online monitoring systems, enabling continuous assessment of emissions to ensure they remain within permissible limits. Furthermore, we enforce stringent monitoring of unorganised emission points at production sites, ensuring that any spillage is promptly recovered, thereby preventing secondary pollution.

Our Donghai Thermal Power Plant complies with the *Emission Standards for Thermal Power Plants* and actively employs advanced waste gas treatment facilities to minimise emissions. In 2024, the plant's self-monitoring results met all required standards.

We are dedicated to reducing emissions of volatile organic compounds, particulate matter, nitrogen oxides, sulphur dioxide, and other harmful gases. In 2024, we invested in new waste gas treatment facilities, including dust collectors, dry powder injection systems, zeolite rotors, activated carbon adsorption units, SCR[24] denitrification systems, pulse bag filters, RTO[25], RCO[26], and DTO[27], to further reduce emissions. Our Indonesian plant installed monitoring equipment for carbon dioxide and mercury content, utilising IoT technology to monitor emissions in real-time and adjust processes accordingly.

[24] SCR: Selective Catalytic Reduction.

[25] RTO: Regenerative Thermal Oxidizer.

[26] RCO: Regenerative Catalytic Oxidizer.

[27] DTO: Direct Thermal Oxidizer.

Upgrades to Fluorocarbon Spraying Production Line Equipment

In 2024, we proactively embraced environmental protection principles by upgrading our fluorocarbon spraying production line equipment, installing environmental treatment facilities such as comprehensive zeolite rotors, four-stage filtration, and RTO. At low temperatures, the zeolite rotors capture VOC molecules from organic waste gases, allowing for direct discharge of the treated air. The zeolite rotors, which adsorb significant amounts of VOCs, are purified through high-temperature desorption and thermal oxidation processes, resulting in purified gases that can also be directly emitted. The implementation of these new devices has significantly reduced waste gas emissions from our production line.

Waste Gas Treatment Equipment

During the reporting period, our waste gas emissions consistently met compliance standards. Detailed waste gas emission indicators are presented in the table below:

Waste Gas Emission Indicators[28]				
Emission Indicator	Unit	2022	2023	2024
Nitrogen Oxides (NO_x)	Tonnes	3,484	3,698	3,707
Sulphur Dioxide (SO_2)	Tonnes	7,801	6,386	1,407[29]
Non-Methane Total Hydrocarbons (NMTHC)	Tonnes	143	59	47
Sintering Furnace Flue Gas Particulate Matter	Tonnes	72	342.14[30]	316
Particulate Matter (PM)	Tonnes	838	419	349

Solid Waste Management

We strictly adhere to national laws and regulations such as the *Solid Waste Environmental Pollution Prevention and Control Law* and the *Technical Specifications for the Collection, Storage, and Transportation of Hazardous Wastes*, while also considering the environmental protection requirements of our overseas operations. We have established a series of internal management systems, including the *Nanshan Aluminium Solid Waste Standardized Management Measures*. Upholding the environmental core concept of "source reduction, in- process control, end-of-pipe treatment, and recycling", we follow the fundamental principles of "reduction, resource utilization, and harmlessness" to meticulously classify and efficiently handle solid waste, ensuring compliance at every stage.

Furthermore, we are dedicated to the recycling and circular utilization of non-hazardous waste. Through processes such as melting and regeneration, we transform waste materials like aluminium scraps, aluminium blocks, and aluminium dross, as well as externally collected waste cans, into valuable recycled aluminium ingots, thereby reducing the generation of solid waste at the source. In 2024, we successfully completed the high-quality recycled aluminium project, achieving an annual recycling and reduction of 106,900 tonnes of scrap aluminium, resulting in a production capacity of 100,000 tonnes of aluminium water per year and significantly lowering downstream production costs.

[28] The data encompasses Donghai Thermal Power Plant, Nanshan Electrolytic Aluminium Plant, Nanshan Aluminium Profile General Plant, Alumina Company, Aluminium Rolling Company, Aluminium Foil Company, Aluminium New Materials Company, Medium-thick Plate Branch, as well as major operational plants in Indonesia and the United States.

[29] In 2024, our Indonesian plant continued to enhance investments in environmental management and pollutant reduction. With the expansion of our large-scale production, the plant's power facility improved SO_2 emission data accuracy through stable operation of desulfurization equipment and real-time online monitoring. Consequently, SO_2 emissions saw a significant decrease in 2024, as previous figures for 2022 and 2023 were estimated based on guidelines rather than direct measurements.

[30] Particulate matter from sintering furnace flue gases primarily originates from the Indonesian plant's sintering furnace. In 2024, we adjusted our calculation method to reflect actual production time, leading to a revision of 2023 data. Due to ongoing capacity expansion at the Indonesian plant, emissions in 2023 and 2024 showed a slight increase compared to 2022.

General Waste

Waste aluminium chips, desulfurisation gypsum, red mud, etc.

- Recycling of aluminium chips and edge materials via melting furnace.
- Establishing red mud stacking sites for dry storage of red mud.

Hazardous Waste

Aluminium ash, waste lubricating oil, emulsion-containing waste, waste diatomaceous earth, etc.

- Pre-treatment of hazardous waste for comprehensive utilisation or emission reduction.
- Remaining hazardous waste entrusted to qualified units for compliant disposal.

Domestic Waste

- Entrusted to sanitation departments for regular collection and classified disposal.

In 2024, our solid waste emission indicators are as follows:

Solid Waste Generation and Utilisation[31]				
Total Solid Waste Generation	Unit	2022	2023	2024
Total Solid Waste Generation	Tonnes	5,263,747	3,886,574[32]	3,351,212
General Solid Waste Generation	Tonnes	5,117,328	3,800,439	3,238,201
Total General Solid Waste Recycled	Tonnes	3,828,615	3,792,642	3,180,447
Hazardous Waste Generation	Tonnes	86,419	86,221	170,702[33]
Total Hazardous Waste Recycled	Tonnes	85,928	86,315[34]	170,846

[31] The data encompasses Donghai Thermal Power Plant, Nanshan Electrolytic Aluminium Plant, Nanshan Aluminium Profile General Plant, Alumina Company, Aluminium Rolling Company, Aluminium Foil Company, Aluminium New Materials Company, Medium-thick Plate Branch, as well as major operational plants in Indonesia and the United States.

[32] We comply with the local laws and regulations of our operating locations for the disposal of red mud. The quantity of red mud generated is not included in the total solid waste statistics. Based on this principle, we have adjusted the total solid waste figures for 2023.

[33] In 2024, the increase in hazardous waste generation was due to the following reasons: 1) We disposed of some waste emulsified liquids from the sealed construction zone as hazardous waste; 2) The company introduced new process technologies, increasing the concentration of vanadium compounds in bauxite, which were then directed to the red mud repository, resulting in better red mud reduction.

[34] As the hazardous waste surplus from 2022 was recycled in 2023, the amount of recycled hazardous waste exceeded the amount generated.

Wastewater Emission Management

We strictly adhere to the *Water Pollution Prevention and Control Law* and other relevant local laws and regulations, and have established internal management systems such as the *Wastewater Emission Control Procedures*. Each of our production units has built internal wastewater treatment facilities in line with their respective production processes, ensuring compliance with wastewater discharge standards. In addition to treating conventional pollutants such as ammonia nitrogen, COD, and BOD, we have also incorporated technologies such as activated carbon filtration and multi-media filtration to conduct advanced treatment of special pollutants, including heavy metals and waste oils, effectively reducing the pollutant concentration in the emissions.

Our management goal for wastewater is "zero discharge, full recycling". We not only ensure compliant wastewater discharge but are also committed to improving the rate of wastewater recycling. In 2024, our Indonesia plant achieved zero discharge of production wastewater, and industrial wastewater, red mud reservoir wastewater, and wastewater from the Donghai Thermal Power Plant were all treated and reused in alumina production.

During the reporting period, we began constructing a 6,500 cubic meter wastewater treatment plant, which is expected to be completed in May 2025 and put into use by the end of the same year. Once completed, this project will be able to treat the brine, domestic wastewater, industrial wastewater, and acid-alkali wastewater discharged by subsidiaries in our Donghai park, thereby improving our capacity to manage polluted wastewater and reducing the discharge of wastewater pollutants.

During the reporting period, we achieved 100% compliance in wastewater discharge, with the relevant indicators shown in the table below:

Wastewater Emission Data [35]				
Emission Item	Unit	2022	2023	2024
Wastewater Discharge	10,000 tonnes	97	87	81
Filter Press Water	10,000 tonnes	239	518	699[36]
Wastewater Recycled	10,000 tonnes	130	456	476
COD	kg	57,392	23,953	21,719
Ammonia Nitrogen	kg	615	807	761

Water Resource Management

Water resources are an indispensable key element in aluminium processing, and their proper planning and management are crucial for the production operations of us. We strictly follow the *Water Law* and the *Water Withdrawal Permit and Water Resource Fee Management Regulations*, placing water resource risk prevention and control as a priority. Through scientific management, we comprehensively mitigate the potential risks that water resources may pose to production operations.

[35] The data encompasses Donghai Thermal Power Plant, Nanshan Electrolytic Aluminium Plant, Nanshan Aluminium Profile General Plant, Alumina Company, Aluminium Rolling Company, Aluminium Foil Company, Aluminium New Materials Company, Medium-thick Plate Branch, as well as major operational plants in Indonesia and the United States.

[36] The Company's alumina production growth led to a significant increase in filter press water.

Water Resource Risk Management

We regularly conduct water resource risk assessments for our subsidiaries, evaluating dimensions such as the probability of occurrence, severity of impact, and risk level. The assessment covers the Nanshan Industrial Park and Donghai Industrial Park. By analysing water consumption, we precisely identify high-water-consuming processes, from which we develop and implement targeted water-saving measures. We continually optimise the water resource usage loop to ensure stable and efficient water supply for production operations. Based on the evaluation results, we have prepared the 2024 water balance report.

Pre-event

- Proactively issue water resource risk warnings and announcements.
- Conduct transparent and compliant assessments and research on potential water resource risks.

During-event

- Continuously monitor water discharge and water quality, controlling the likelihood of potential water resource risks through proactive water resource risk control measures.

Post-event

- Regularly disclose water pollution discharge monitoring results and reduction plans, ensuring transparent management of water resource risks.

Key Focus Areas of Water Resource Management: Pre-event, During-event, and Post- event

The Indonesian plant conducts daily monitoring of water quality indicators and hires a third- party organization to conduct monthly water quality tests. The water quality is continuously tracked to ensure it remains within the required range. The water supply system has two independent lines, with one acting as a backup, significantly reducing the risk of water supply interruptions in the park.

The US plant primarily uses municipal water, and after a careful evaluation by an expert team, no water resource risks have been identified.

Water Resource Consumption

In our operations, we strictly adhere to the relevant local laws and regulations, always placing great emphasis on the rational use and management of water resources. We are highly dedicated to the conservation and efficient use of water resources, incorporating this principle throughout the entire production process. Our water usage comes from municipal water, rainwater, and wastewater recycling.

To continuously reduce the use of fresh water and improve water efficiency, we have set annual water usage targets and guided each production unit to break them down into monthly water usage plans. The Indonesian plant has reduced its per-unit water consumption while successfully meeting its water usage targets, thanks to the promotion of water resource recycling and water conservation awareness.

To ensure stable water supply for the East China Power Plant's generators and effectively prevent supply risks and production stoppages, we have actively introduced seawater desalination equipment, which alleviates the pressure on the local water supply network. In 2024, the seawater desalination equipment operated for a cumulative 28,615 hours, producing approximately 3.65 million tonnes of freshwater, with a capacity utilization rate of about 33%. This provided strong water resource support for production. Furthermore, the East China Power Plant upgraded the 330,000-unit hydraulic slag removal system to a dry air-cooling slag removal system, further reducing water consumption.

In terms of water conservation and recycling, we continue to implement a comprehensive strategy, always adhering to the principles of "multiple uses of water, hierarchical use, and cascading use." Through technological upgrades and recycling, we are promoting the rational use of water resources. During the reporting period, we continuously optimized and upgraded our internal water circulation system, significantly reducing the consumption of fresh water by achieving rainwater and wastewater recycling.

Power Plant Wastewater Recycling

- The East China Power Plant recycles wastewater from the power plant's reuse water pool for alumina production, providing 1,000 tonnes of water per day, which reduces the use of approximately 350,000 m^3 of fresh water annually.

Rainwater Collection at Indonesian Mining Site

- The Indonesian plant has installed rainwater collection equipment at the local alumina mining site, enabling the collection and reuse of approximately 100,000 m^3 of rainwater annually.

The water resource consumption indicators of Nanshan Aluminium during the reporting period are shown in the table below:

Water Resource Consumption Indicators[37]				
Indicator	Unit	2022	2023	2024
Total Water Withdrawal	10,000 m^3	482	737	715
Total Water Consumption	10,000 m^3	493	760	745
Total Volume of Recycled and Reused Water	10,000 m^3	11	23	30

[37] The data encompasses Nanshan Electrolytic Aluminium Plant, Nanshan Aluminium Profile General Plant, Alumina Company, Aluminium Rolling Company, Aluminium Foil Company, Aluminium New Materials Company, Medium-thick Plate Branch, as well as major operational plants in Indonesia and the United States. The Company's total water consumption withdrawals do not involve surface or groundwater withdrawals.

Ecosystem Protection

We strictly adhere to the *Wildlife Protection Law* and fully refer to the *China's Biodiversity Protection White Paper* in formulating the *Nanshan Aluminium Biodiversity Protection Management Procedures*. We manage and control production and daily activities to ensure that production and operations do not impact the ecosystem or harm biodiversity, making every effort to safeguard precious biological resources and leave a thriving green home for future generations. As of the end of the reporting period, we have not been involved in production activities or held facilities within ecological protection red lines, nature reserves, or other areas with important ecological functions or sensitive and fragile environments.

We conduct annual biodiversity risk assessments, evaluate the affected areas, and develop corresponding preventive measures. We issue advance warnings and take preventive actions for potential risks, continuously protecting the local ecological environment. In 2024, we conducted comprehensive biodiversity risk assessments for the Alumina Company, Electrolytic Aluminium Company, Aluminium Rolling Company, Medium-thick Plate Company, and Yantai Donghai Aluminium Foil Company, and compiled the *2024 Shandong Nanshan Aluminium Co., Ltd. Biodiversity Risk Assessment Report*, which details the affected species and potential risk sources at each site. For identified risks, we developed response plans and implemented targeted ecosystem protection and management to lay a solid foundation for local ecological protection.

In the planning and construction of new projects, we strictly comply with relevant government laws and regulations on ecosystem protection. Through biodiversity assessments, we fully consider the surrounding biological environment and issues such as animal passageways. During the reporting period, we conducted a biodiversity assessment for the newly constructed 2-million-tonne alumina and supporting projects at our Indonesian plant, ensuring that the project would not negatively impact the surrounding environment. In daily operations, we strictly ensure the compliance of related wastewater and waste gas emissions and actively encourage employees to raise awareness of biodiversity protection. We have established strict regulations against the hunting of wild animals and reduced human disturbances, such as fishing, grazing, and logging.

- All construction projects at Nanshan Aluminium must entrust qualified units to conduct environmental impact assessments and identify the substantial impacts on biodiversity
- We have developed management procedures for wastewater, waste gas, noise, solid waste, oil products, and chemicals to reduce negative impacts on biodiversity
- A biodiversity action plan has been formulated, publicly released, regularly updated, and shared with stakeholders
- For any invasive species unintentionally introduced through company operations, the safety and environmental departments of each company should assess the risks, implement control measures, and prepare biodiversity assessment reports

Nanshan Aluminium Biodiversity Management Procedures

4.4

Circular Economy

Against the backdrop of achieving the "Carbon Peaking and Carbon Neutrality" goal, green and low-carbon development has become an imperative, and the development of recycled non-ferrous metals is gaining momentum. Aluminium, as a green energy-carrying metal, is an essential material for achieving energy conservation, emission reduction, and a green low- carbon economy. As the first company in China to obtain ASI certification for the entire aluminium industry chain, we place great importance on the application and development of the circular economy within the aluminium value chain. We have established a top-down circular economy governance structure, comprehensively identifying the opportunities and potential challenges under the circular economy framework, and have implemented a series of innovative initiatives to promote the efficient construction of the aluminium industry's circular supply chain. By optimizing resource allocation and improving resource utilization efficiency, we are committed to achieving the goals of the circular economy and contributing to the sustainable development of the industry.

Governance

We have established a circular economy governance structure composed of the Board of Directors, the management team of the Recycled Aluminium Company, and its subordinate departments, ensuring the Board and management team provide oversight, guidance, and support for the relevant work.

In response to the national *14th Five-Year Plan for Circular Economy Development* and to effectively implement the "Carbon Peaking and Carbon Neutrality" policy, we established the Recycled Aluminium Company in 2021 to promote the recycling and utilization of aluminium resources. We primarily focus on recycled aluminium products for upgrading and comprehensive utilization, with the main sources of recovery being can bodies, can lids, factory process waste from automotive sheet production, market-recycled aluminium cans, and additional aerospace material milling scraps.

Level	Governing Body	Functions	Reporting Frequency
Decision-making Level	Board of Directors	• As the highest decision-making body, determines the strategic direction for the circular economy • Identifies and assesses risks related to the circular economy • Makes resource allocation decisions	
Management Level	Management Team of Recycled Aluminium Company	• As the core manager of circular economy activities, establishes internal technical transformation and problem- solving teams to enhance the core competitiveness of recycled aluminium products • Develops action plans, supervises the implementation of circular economy strategies • Allocates resources based on project priorities • Monitors market trends and demand, and provides advice to the Board of Directors	Annual planning conducted bi-annually. Project progress updated monthly. Fast improvement projects planned quarterly
Execution Level	Production Department of Recycled Aluminium Company	• As the core executor of circular economy activities, fully manages the recycled aluminium workshop • Prepares and improves the technical standards for recycling aluminium plant processes • Enhances the internal economic responsibility assessment system to improve economic benefits	Monthly

In terms of professional competence and team building, we have gathered a technical team with a strong professional background, covering multiple fields such as materials science, metallurgical engineering, and environmental engineering, dedicated to tackling and innovating industry-leading technologies. Through collaborations with universities and research institutions, we are exploring integrated technology development for the "scrap aluminium - pretreatment - recycled aluminium - realloying - high-end aluminium alloy products" process, continuously advancing green recycling technologies for high-end aluminium alloy materials.

Strategy

To continuously strengthen the competitiveness of our circular economy and ensure the comprehensive implementation of related initiatives, we conduct circular economy risk identification and assessment, clarifying our business and financial impacts, and formulate management strategies based on the assessment results.

Risk, Opportunities, and Impact Analysis Results

Nanshan Aluminium Circular Economy Risk List

Circular Economy Risks	Risk Description	Time Horizon	Business Impact	Financial Impact	Risk Responding Measures
Supply Chain Adjustment Risk	Reliance on external scrap aluminium recycling channels may result in unstable supply, especially in markets where the scrap aluminium recycling system is not yet mature. The risk of raw material shortages or price fluctuations is higher. Additionally, we need to quickly establish cooperation mechanisms with recyclers and consumers, and coordinating costs and timelines may exceed expectations.	Short	Fluctuations in scrap aluminium recycling channels may lead to shortages or excess supply of raw materials, disrupting production schedules and affecting delivery times and customer satisfaction.	• In immature recycling markets, procurement, sorting, transportation, and storage costs for scrap aluminium may be higher than for primary aluminium, which could increase operational costs in the short term. • Scrap aluminium prices are highly influenced by market supply and demand, policies (such as recycling subsidies), and international commodity prices, potentially causing profit volatility.	• Establish a proprietary recycling network while forming long-term partnerships with multiple scrap aluminium suppliers to diversify supply risks. • Closely monitor policy developments (e.g., recycling subsidies, carbon emission policies) and adjust supply chain strategies in advance. • Build close cooperation with downstream customers (e.g., automotive, packaging industries) to ensure alignment between market demand and supply capacity.
Policy and Regulation Risk	Governments may raise mandatory recycling targets or carbon emission standards. If the company fails to plan, it may face fines or market entry restrictions. Additionally, international "carbon tariff" policies (e.g., EU carbon border adjustment scheme) could impact our export-oriented business.	Short	If policies mandate higher recycling rates for aluminium products, we will need to expand our recycling network or increase technological investments, which may be difficult to achieve in the short term.	• If policies mandate the establishment of a recycling system, we will need to invest heavily in building a recycling network and sorting facilities.	• Establish a dedicated policy research team to closely monitor domestic and international policy trends (e.g., carbon emission policies, recycling regulations) and formulate response strategies in advance. • Accelerate the transition to recycled aluminium business to reduce reliance on primary aluminium production and mitigate the impact of carbon emission policies.
Technology Risk	If the purification technology for recycled aluminium cannot break through, it may limit the development of high-value-added products. Specifically, multiple cycles of aluminium recycling may lead to complex alloy compositions, and in the long term, we may face a "degraded cycle" (unable to be used in high-end fields).	Long	If downstream customers raise performance requirements for recycled aluminium, we may need to reposition our products, facing a market adaptation period or possibly losing customers to competitors.	• If the degraded cycle prevents recycled aluminium from meeting the performance requirements of high-end fields (e.g., aerospace, automotive lightweighting), we may have to rely more on low-value-added products, reducing profit margins.	• Invest in R&D for advanced purification and alloy separation technologies to delay the impact of the degraded cycle, improve the performance of recycled aluminium, and expand high-end application areas. • Establish a refined scrap aluminium sorting and classification system to reduce impurity accumulation and delay the onset of degraded cycles.

Nanshan Aluminium Circular Economy Opportunity List

Circular Economy Opportunities	Opportunity Description	Time Horizon	Business Impact	Financial Impact
Seizing the Green Market Advantage	The demand for low-carbon aluminium in downstream industries (e.g., automotive, packaging) is rapidly growing. By positioning ourselves early in recycled aluminium, we can capture market share in the "green procurement" sector.	Short, medium	• Attract high-quality customers who focus on sustainability, optimizing customer structure, and reducing dependence on traditional low-profit markets. • By offering low-carbon or zero-carbon aluminium, we can stand out in a commoditized market, creating a unique market positioning.	• Increased business revenue: As customers trust our environmental performance in recycled aluminium products, they are more likely to choose Nanshan Aluminium as a partner, leading to higher business revenue. This trust can translate into long-term cooperation agreements, providing a stable income stream for the company. • Enhanced bargaining power: As customer trust grows, we may gain stronger bargaining power in negotiations. This could allow us to secure more favourable contract terms and prices while maintaining service quality, thereby increasing financial returns.
Reducing Raw Material Dependency	By replacing primary aluminium with recycled aluminium, dependency on bauxite imports can be reduced, enhancing resource autonomy. Additionally, the circular economy model can help avoid trade barriers like "carbon tariffs", ensuring long-term export competitiveness in the global carbon-neutral trend.	Medium, long	• By substituting primary aluminium with recycled aluminium, we reduce reliance on bauxite imports and shields ourselves from international price fluctuations and geopolitical risks that impact the supply chain.	• The resource sovereignty practice aligns with the global carbon-neutral trend, helping to mitigate the impact of future policy changes (e.g., carbon tariffs, resource export restrictions) on the business. This reduces the risk of increased sales costs due to policy shifts.

Management Strategy

In exploring the circular economy, we remain vigilant and responsive to the challenges and risks it may bring, while also seizing the opportunities it offers. Our circular economy strategy is centred around establishing a model of recycling and reuse, and through technological innovation and resource integration, we continuously drive the advancement and upgrading of the recycled aluminium industry.

Comprehensive Reuse Model

We are dedicated to building a closed-loop aluminium industry chain with the circular economy as the core concept, promoting comprehensive recycling across the entire aluminium production chain. By integrating technological innovation and resource optimization, we focus on enhancing the efficient circulation of alloys, ensuring the high-efficiency use of resources throughout the entire process—from raw material procurement to production processing and product recycling and reuse. At the same time, we actively take a leading role in the industry, driving the entire aluminium sector toward a greener and more sustainable direction through technological innovation and resource integration, thereby bringing positive impacts to society and the environment and contributing to the full implementation of the circular economy.

Technological Innovation

We continuously invest in the research and development of circular economy projects, exploring more efficient aluminium recycling and reuse technologies to enhance resource recycling rates. Our 100,000-ton recycled aluminium project uses advanced aluminium recycling smelting technology, processing waste materials such as can body scraps, can lid scraps, automotive panel scraps, hard alloy milling chips, and some recycled beverage cans from society. By employing advanced recycling smelting technologies and introducing production equipment such as dual chamber smelting furnaces, multi-chamber furnaces, and sidewall furnaces, we not only recover metal aluminium but also significantly reduce the discharge of solid waste, waste liquids, and waste slag. This ensures both the efficient use of resources and environmental protection.

Resource Integration

We continuously expand and improve our procurement system, enhancing business cooperation with downstream canning companies, automotive companies, and other clients, while establishing a multi-channel procurement network to fully ensure the supply of recycled aluminium raw materials. Additionally, we have formed in-depth cooperation with several downstream clients to jointly develop green products and solutions, driving the development of a circular economy across the entire industry chain.

Improve the Traceability System of the Recycled Aluminium Circular Process

- Enhance the traceability and transparency of recycled aluminium to ensure the efficiency and environmental sustainability of the entire recycling and reuse process.

In-depth Exploration of Alloy Design and Testing

- By collaborating with customers to explore innovative alloy designs, we can better meet market demand while improving the quality and performance of recycled aluminium products.

Complete Directed Recycling and Full-loop Commercial Pilot

- Effectively increase resource recovery rates while creating more economic value for our partners and promoting sustainable development across the entire industry.

During the reporting period, in conjunction with our relevant capabilities in circular reuse technology, we have essentially completed the determination of intentions and the establishment of cooperation frameworks with strategic clients regarding closed-loop comprehensive utilization. This includes pre-sorting of pre-consumer scrap aluminium, exploration and co-construction of commercial operation models, and the introduction and testing of low-carbon alloys.

In addition to practices aimed at pre-consumer aluminium recycling, we have also conducted multiple rounds of discussions with industry partners regarding the feasibility of recycling post-consumer scrap from vehicles and aircraft dismantling. Currently, our automotive sheet recycling has been implemented, with an actual utilization rate of over 65%. We have also begun aluminium recycling business with Boeing for aircraft sheet scrap. Meanwhile, our completed high-quality recycled aluminium preservation and comprehensive utilization project utilizes waste from automotive manufacturers and scrap aluminium cans from society to produce alloy aluminium water, which is directly supplied to downstream companies, contributing to energy-saving, emission reduction, and clean production throughout the industry chain.

Industry Leadership Contribution

We actively participate in the formulation of industry standards for recycled aluminium, driving the entire aluminium industry towards a circular economy model. We facilitated the full production cycle verification of food safety risks under a 100% recycled aluminium ratio. The success of this verification contributed to the release of the group standard *T/CNLIC 0091-2023 Recycled Aluminium Alloys Sheets and Metal Containers for Food Contact*. Additionally, due to our outstanding contributions to the development of national standards for recycled aluminium, Nanshan Aluminium has been awarded the First and Second Prizes in the 2024 Nonferrous Metal Industry Science and Technology Awards, highlighting our leading position in industry technological innovation and standardization efforts.

Our collaborative project titled *Green Recycled High-End Aluminium Alloy Industrialization Technology and Equipment, and Its Application (Invention)* with Beijing University of Science and Technology and other institutions, has been honoured with the first-class award in the 2024 Nonferrous Metals Industry Science and Technology Awards.

Another joint initiative, *Development and Promotion of National Standards for Recycled Aluminium Raw Materials*, in collaboration with the Nonferrous Metals Technology Economy Research Institute and other entities, has received the second-class award in the same category.

Recycled Aluminium Industry Standards Development

Hosting the 2024 China Renewable Nonferrous Metals Science and Technology Conference

In July 2024, the China Renewable Nonferrous Metals Science and Technology Conference was successfully held in Longkou City, Shandong Province. The conference was organized by the China Nonferrous Metals Society, with support from Nanshan Aluminium and other entities. Under the theme "Green, High-Value, Recycling", the conference focused on developing new productive forces in recycled nonferrous metals and aimed to enhance the overall level of the nonferrous metals industry. It provided a platform for experts, scholars, and industry professionals engaged in scientific research, development, and industrialization of recycled nonferrous metals to exchange ideas and promote the industry's role in national economic and social development.

Hosting the 2024 China Renewable Nonferrous Metals Science and Technology Conference

Impact, Risk, and Opportunity Management

To ensure the effectiveness of our management strategies, we assess and quantify the feasibility and impact of circular economy risks. Based on the evaluation results, we prioritize these risks and establish targeted management systems and workflows. We also authorize dedicated teams to regularly monitor and document risk levels. Additionally, we implement risk management measures to minimize the impact of circular economy risks on both internal and external stakeholders.

Indicators & Targets

We work to promote the green transformation of the aluminium industry chain. The company has defined two key indicators: the amount of scrap aluminium directly processed through recycled aluminium and the percentage of pre-consumer and post-consumer scrap aluminium in the total comprehensive processing volume. We strive to achieve breakthroughs in renewable resource usage and utilization rates, continuously contributing to the global aluminium industry's circular economy.

Circular Economy Targets	2024 Circular Economy Target Completion
Amount of scrap aluminium directly processed through recycled aluminium (excluding UBC remelt ingot[38])	>70,000tonnes
Percentage of pre-consumer/post-consumer[39] scrap aluminium in total comprehensive processing volume	28%

[38] UBC remelt ingots are aluminium ingots produced by recycling used beverage cans (UBC) and remelting them.

[39] According to the definition in ISO 14021, pre-consumer waste aluminium refers to waste generated during the manufacturing process that has not been sold to consumers and is directly recycled and remelted within the factory; post- consumer scrap aluminium refers to aluminium waste discarded after consumption and use.

We at Nanshan Aluminium have always adhered to a people-oriented approach, viewing our employees as the asset of the company. By building a diversified talent system, a comprehensive employee care mechanism, and an all-encompassing safety management system, we aim to create a fair, inclusive, and safe working environment, achieving mutual growth for both our employees and the company.

05 / People-Oriented Building an Inclusive Workplace

5.1

Eager to Attract Talent

We recognise that employees are the driving force behind the company's development. We adhere to fair and just recruitment and employment practices, providing every employee with a platform to realise their self-worth. We focus on creating a talent team that aligns closely with our development needs, working together with our employees to grow and create a shared future.

Equal Employment

We strictly comply with the *Labour Law* and other relevant regulations, as well as the International Labour Organization (ILO) conventions. We have established and regularly update internal systems, including the *Non-Discrimination Management Procedure*, *Protection of Minor Workers Management Procedure*, *Prohibition of Forced Labour Management Procedure*, *Protection of Female Employees Management Procedure*, *Prohibition of Child Labour and Remedial Measures Management Procedure*, and *Rights to Organise Trade Unions and Collective Bargaining Management Procedure*, which clearly outline the principles of fairness in recruitment, promotion, and compensation distribution, providing institutional support for our human resource management practices.

We also use monthly learning sessions, weekly meetings, pre- and post-shift meetings, and evening study sessions as platforms to educate all employees on company rules, regulations, and behavioural norms. This helps internalise static regulations into shared values for both the company and our employees, continuously enriching our diverse cultural core.

We follow a principle of two-way selection in employment, using job requirements and qualifications as the basis. We are dedicated to safeguarding the fundamental rights of every employee in employment, training, promotion, and remuneration, regardless of their gender, age, religion, ethnicity, or other identity background.

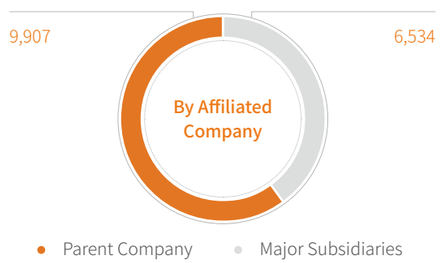
We also strictly manage and review employee identity information through a digital human resource management system, preventing any violations such as child labour or forced labour, and ensuring that our human resource management work is carried out efficiently and with high quality.

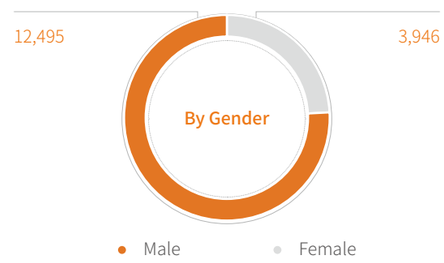
As of the end of the reporting period, with the distribution of employees across different categories as follows:

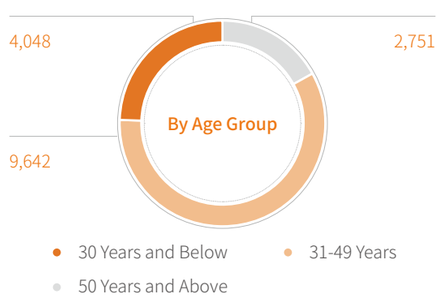
We had

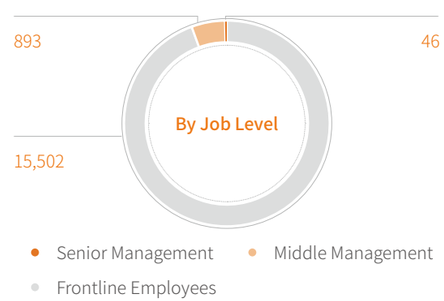
16,441 employees

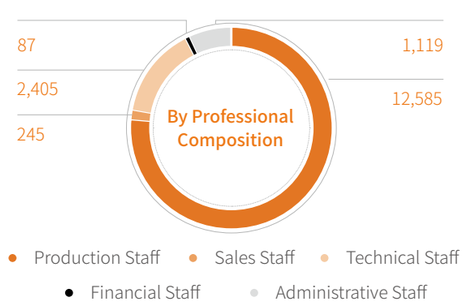
Nanshan Aluminium 2024 Employee Composition[40]

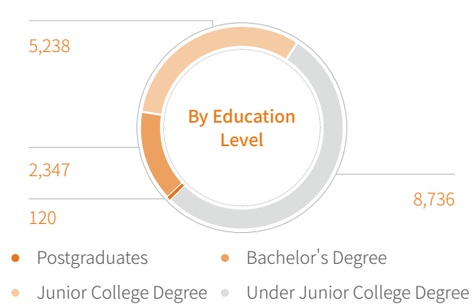












[40] The scope of the following statistics refers to our Chinese employees (including overseas factories).

Talent Attraction

We are dedicated to transforming high-quality talent into an endogenous driving force for the sustainable development of our business. We adopt a dual-track approach combining campus recruitment and social recruitment, as well as online and offline recruitment, to attract top talent. Our focus is on strengthening key positions and specialist roles, building a team of highly skilled and professional individuals.

In the recruitment process, we consistently implement a local employment policy, providing job opportunities and good benefits to residents in the areas where we operate, thus enhancing our corporate image. In Indonesia, we primarily rely on both expatriate and local recruitment channels, while simultaneously building a cross-cultural team, effectively promoting local employment.

Campus Recruitment

- In 2024, we actively expanded resources from top-tier universities, reaching agreements with Central South University, Xiangtan University, and other institutions to recruit and sign high-end research and development and process talents. At the same time, we recruited for operational and technical positions on the frontlines of production from more than 30 vocational colleges, further enriching our talent pool.

Leadership & Key Positions Recruitment

- To meet the production and operational needs of various departments, we recruited middle and senior management talent as well as technical experts in research, equipment, and other specializations through head-hunters, online channels, and offline communication sessions. In 2024, we hired more than 40 external management and professional technical talents.

Nanshan Aluminium 2024 Highlight Recruitment Activities

We maximize employee attraction and retention by offering a competitive compensation system, thereby enhancing employee motivation. Our compensation package consists of basic salary, performance-based salary, and piece-rate pay. Based on market salary research data and employee performance evaluation results, we regularly assess and adjust the salary levels for employees at different job levels. Additionally, we offer a variety of benefits and allowances, including seniority allowance, expatriate allowance, transportation subsidy, high-temperature allowance, night shift pays, and perfect attendance award, all of which contribute to enhancing employees' sense of belonging and satisfaction.

Basic Salary

Our salary is based on job value, competency, and performance accumulation to ensure it is scientific and fair.

Performance-based Salary

A certain percentage or fixed amount of the basic salary is used as the base, and employees are paid differentiated compensation based on performance evaluation results.

Piece-rate Pay

The salary is calculated based on the quantity of labour and piece-rate price, according to quality indicators and equipment capacity.

Nanshan Aluminium Compensation Structure

Nanshan Aluminium Employee Performance Evaluation Mechanism by Job Level

Senior Management

The performance of the management team is assessed based on the Company's strategic development, the production and operational situation of each unit, and the leadership responsibilities of each member, with differentiated assessments for each unit's leadership team.

Middle Management

Based on the results of the management team assessment, the Company's operational targets are cascaded down to each plant and workshop, where assessments are conducted accordingly.

Functional and Technical Staff

A "one person, one form" evaluation method is used, where individuals are scored based on their job responsibilities, work content, and actual performance, as well as the completion of set objectives.

Frontline Employees

Each plant and department, in accordance with company regulations and job requirements, establishes standard operating procedures and daily behavioural guidelines. Employees are then evaluated monthly based on the assessment standards.

To further improve overall operational efficiency and optimise talent management mechanisms, employee turnover rate is set as an assessment indicator for leaders at each unit and department. This is aimed at better motivating the executive team to focus on employee retention and foster a positive company culture and working environment. As of the end of the reporting period, the employee turnover[41] rate at Nanshan Aluminium is 12.02%.

Nanshan Aluminium 2024 Employee Turnover Data

As of the end of the reporting period

Employee Turnover Rate

12.02%

By Gender Unit:%

Male	11.98
Female	12.17

By Age Unit:%

30 Years and Below	16.57
31-49 Years	10.03
50 Years and Above	11.34

By Job Level Unit:%

Senior Management	4.26
Middle Management	6.98
Frontline Employees	12.28

[41] Employee turnover rate = (Number of employees who left during the year) / (Number of employees at the beginning of the year + Number of new hires during the year) * 100%.

Talent Development

We place high importance on employee training and development at Nanshan Aluminium. We are dedicated to building a systematic talent development system and clear career development pathways, providing employees with comprehensive growth support. This approach encourages employees to continuously challenge themselves, creating a new dynamic where employee growth and company development resonate in harmony and mutually benefit each other.

Employee Training

To further enhance the talent development system, we leverage the advantages of the Nanshan Training Academy learning platform. Through a combination of online and offline methods, as well as the integration of theory and practice, we offer customized training plans and a wealth of learning resources for employees at different levels. Our focus is on nurturing well-rounded talents that are closely aligned with the Company's strategic objectives.

Nanshan Aluminium's 2024 Employee Training Highlights

Skills and Leadership Training

- We organize management training, online marketing system training, middle and senior management training, and human resources management professional training projects, leveraging the resources of the Nanshan Training Academy. These initiatives aim to enhance the leadership skills of our management team, tailored to the development needs of employees from different departments and levels.

University Graduate Training

- Through initiatives such as the Nanshan Star University Graduate Training programme, we help new graduates integrate quickly into their roles and positions.

Professional Training

- We integrate internal and external resources to offer a combination of online live sessions and in-person training, expanding our talent development channels through mentorship, seminars, classroom training, case studies, live lectures, and book sharing sessions. This approach is designed to continually enhance the business skills of our key employees.
- Excellent trainees from our Indonesia plant are sent to the Nanshan Aluminium headquarters for Chinese language training to improve their ability to adapt to cross-cultural environments and enhance their professional qualifications.
- Our US plant conducts cross-role training for employees, and based on training performance, salary adjustments are made, focusing on cultivating cross-disciplinary talents.

Academic and Professional Qualifications Certification

- In collaboration with the Longkou City Human Resources and Social Security Bureau and the China Nonferrous Metals Association, we are gradually promoting skill enhancement and rating training, and provide bonus subsidies to those holding registered safety certificates. During the reporting period, 40 employees participated in the electrical technician (skilled) training in the Golden Blue Collar programme, 120 employees participated in apprenticeship training for electricians or senior fitters (advanced), and 39 employees passed the nonferrous metals professional title evaluation.
- Taking advantage of the unique educational resources at Nanshan Training Academy, we encourage employees to enhance their academic qualifications through distance education, online learning, or by selecting external educational institutions.

Book Sharing Session

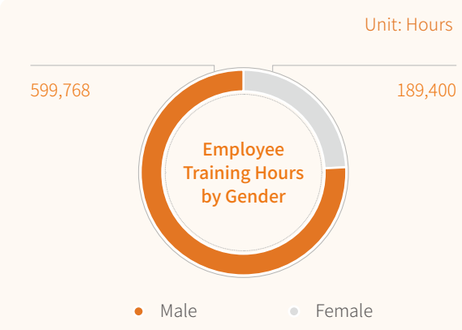
Nanshan Aluminium University Graduate Training Camp

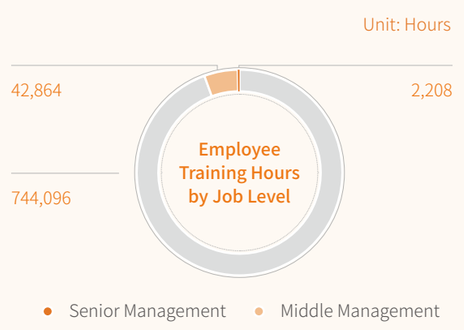
Organisational Goal and Performance Management Practical Training

During the reporting period, we conducted a total of 5,629 training sessions for all employees, with a total training hour count of 789,168 hours. The average training hours per employee amounted to 48 hours.

Nanshan Aluminium 2024 Employee Training Statistics

Annual Training Expenditure	Total Number of Training Sessions	Total Employee Training	Employee Training Coverage Rate
RMB 170 10,000	5,629 Times	789,168 Hours	100%





Employee Promotion

We at Nanshan Aluminium have always regarded employee career development as a key component of our human resource management. We have established a comprehensive career development path for employees, which includes six major sequences: operational, functional, managerial, logistics, marketing, and technical. Based on this framework, we have further subdivided it into 45 job categories, clearly defining job responsibilities and attributes for each category, ensuring that every employee can achieve their career aspirations in a fair and open environment.

5.2

Employee Care

At Nanshan Aluminium, we prioritise the happiness and sense of belonging of our employees. Through detailed employee care and a democratic communication mechanism, we continuously enhance employee satisfaction and create a harmonious and warm corporate culture.

Welfare Care

As a responsible company, we have established a diverse welfare system, offering benefit guarantees to all employees, including both full-time and part-time workers. This system aims to continually improve employees' quality of life and work satisfaction. In addition, we organise cultural and sporting activities, such as knowledge competitions, hiking events, and badminton tournaments. We also collaborate with the Longkou City Federation of Trade Unions to organise skills competitions and the selection of "Worker Pioneer", "Labour Model", and "Longkou Craftsman" awards. These activities provide employees with a rich and varied leisure life, helping them achieve a harmonious balance between work and life.

Nanshan Aluminium Welfare Contents

Statutory Welfare

Paid annual leave, bereavement leave, maternity leave, marriage leave, breastfeeding leave

Supplementary Welfare

Welfare subsidies: Seniority subsidy, overseas assignment subsidy, transportation subsidy, high-temperature subsidy, health care subsidy, holiday welfare, birthday welfare, night shift allowance, perfect attendance reward, meal subsidy, Yantai union card supplementary medical insurance

Performance rewards: Overproduction bonus, project award, excellence award

Welfare housing: Free dormitory and utilities for out-of-town employees, gym, sports facilities, library, and entertainment venues for employees

Free travel: Internal employees can visit the AAAAA-level Nanshan tourist attraction for free

Tug-of-War Competition

Book Sharing Session

Distribution of Spring Festival Supplies to Employees in Need

Alumina Company Badminton Tournament

Nanshan Aluminium Hiking Event

In practising employee care, we place great importance on the fundamental rights of female employees and employees in difficult situations. For female employees, we have developed the *Female Employee Protection Management Procedure*, and based on their actual work and life needs, we provide additional leave such as maternity leave and breastfeeding leave. We have also established basic facilities such as sanitary rooms, rest rooms for pregnant employees, and breastfeeding rooms. Additionally, through activities on International Women's Day, we offer flowers, meal vouchers, and gifts to female employees, demonstrating our humanistic care. For employees facing difficulties, all Nanshan Aluminium employees participate in our Mutual Aid Foundation, accurately identifying the needs of these employees, regularly organising visits and support activities, and spreading love and warmth in small ways.

Democratic Communication

We at Nanshan Aluminium recognise the importance of democratic management and fully respect the freedom of speech and the right of employees to associate freely. Guided by internal systems such as the *Employee Complaint (Appeal) Management Procedure, Employee Representative Management Procedure*, and *Information Communication, Consultation, and Control Procedure*, we have established multiple and accessible communication channels to listen to employees' voices from various dimensions and respond promptly to their reasonable requests.

We continuously improve employee communication channels through various forms such as employee representative meetings, pre- and post-shift meetings, and discussion sessions to understand employees' thoughts and concerns. We encourage employees to fully exercise their sense of ownership and use channels such as suggestion boxes, emails, phones, and direct communication with leadership to offer suggestions for company management and cultural development. We also maintain and support various grievance channels and follow confidentiality protocols to protect the personal information of employees who file complaints.

During the reporting period

The collective agreement signing rate for employees was

100%

The coverage of employee representatives reached

100%

Pre- and Post-shift Communication Interviews

Communication Symposium

Alumina Company Communication Symposium

Nanshan Aluminium Democratic Communication Activities

To further understand employee demands and expectations, we conduct an employee satisfaction survey at least once a year, using anonymous questionnaires. The survey comprehensively considers employee feedback on various aspects, including the work environment, career development, team collaboration, benefits, and company culture. Based on the feedback, we generate a satisfaction survey report, thoroughly analysing any issues identified during operations, making timely corrections, and following up on the feedback results. As of the end of the reporting period, overall employee satisfaction at Nanshan Aluminium reached 89.90%, an increase of 1.36%[42] compared to the previous year.

[42] The overall employee satisfaction rate at Nanshan Aluminium in 2023 is 88.54%.

5.3

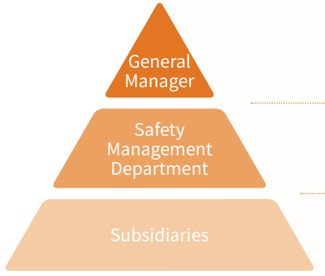
Safety Production

We at Nanshan Aluminium adhere to health and safety boundaries, continuously advancing the construction of our safety management system. We strictly control health and safety management and risk prevention during the production process, organizing diversified occupational health training and safety culture-building activities. Through these actions, we ensure the inherent safety of our operations and move towards long-term objectives.

Safety Management

In line with safety production laws and regulations, such as the *Work Safety Law*, as well as internal systems like the *Safety Management Standards* and the *Employee Safety Production Responsibility System*, we steadily promote safety production at both the Company and subsidiary levels. In 2024, we revised the *Hazard Identification and Control Management System* and made clear provisions regarding the frequency of safety inspections conducted by unit leaders.

We continuously optimize the safety management system, which is coordinated by our general manager, supervised by the safety management department, and implemented by each subsidiary. This system ensures the implementation of safety management work across the company from top to bottom.



- Coordinates relevant departments to carry out safety management work
- Supervises subsidiaries, ensuring they fulfil their safety production responsibilities and safety management system
- Acts as the implementing body, responsible for daily safety management and safety inspections

Nanshan Aluminium Safety Management Structure

Based on a comprehensive safety management structure, we set and continuously track health and safety goals, making them an important component of executive performance evaluations and compensation. We continue to promote the responsibility system for safety production across all employees and the reward and punishment system for middle and senior management, further clarifying safety production responsibilities and reinforcing a management philosophy and atmosphere that prioritise safety production and safeguard occupational health. As of the end of the reporting period, we had no fatalities, fires, explosions, or incidents of occupational diseases.. There were 10 work-related accidents in total, with a work injury rate of 0.75‰ , which is below the target of 1.5‰ set at the beginning of the year. No legal disputes or violations related to occupational diseases occurred.

Nanshan Aluminium 2024 Safety Management Goals and Achievements

Safety Management Goal	Achievement Status
• No fatalities or injuries. • No fire or explosion incidents. • Injury accident rate below 1.5‰ .	• No fatalities or injuries occurred. • No fire or explosion incidents occurred. • Injury accident rate of 0.75‰ , safety management goal achieved.

Safety System Certification

Nanshan Aluminium and its subsidiaries across various locations, are actively advancing the certification of our safety management systems to ensure that our safety practices meet professional standards. By the end of the reporting period, both Nanshan Aluminium and our Indonesian plant had obtained ISO 9001 and ISO 45001 certifications.

As of the end of the reporting period

The coverage rate of the ISO 45001 energy management system across the manufacturing subsidiaries of Nanshan Aluminium is 87.5%[43], excluding the newly launched Recycled Aluminium Company. Additionally, all domestic subsidiaries have passed secondary production standardisation certification. Our Indonesian plant has also achieved ISO 45001 certification.

Safety Risk Prevention and Control

In addressing safety risks, we focus on preventive control, with a three-year safety status assessment cycle. Internal safety risk assessments and audits are regularly conducted. Based on the results of these assessments, safety drills and training plans are updated, and emergency response plans are developed and refined to address new scenarios, needs, and risks, comprehensively preventing potential safety hazards.

A dual prevention and control mechanism has been established, with safety risk identification carried out annually. Each unit is responsible for confirming key risk points through on-site audits. Any non- compliance or overlooked risk points are promptly addressed, with additional risk identification conducted for newly added equipment to ensure that emergency rescue plans are developed and refined as early as possible.

Installation of Safety Production Risk Monitoring and Early Warning System for High-Risk Deep well casting

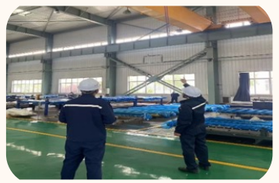
In 2024, we launched a safety production risk monitoring and early warning system for the high-risk deep well casting. Deep well casting is a critical step in metal smelting, involving complex processes and high risks, with the safety of operators being of utmost importance. To ensure operational safety, the installation of an advanced and efficient monitoring system was implemented as a solution, enabling comprehensive real-time monitoring of operational behaviours. This system can accurately detect abnormal operations and potential hazards, providing timely alerts and transmitting information to enhance the level of safety production and management effectiveness.

Installation of Safety Production Risk Monitoring and Early Warning System for High-Risk Deep well casting

[43] This calibre of data currently includes only our operating subsidiaries in China.

In 2024, we conducted internal benchmarking and knowledge exchange activities, focusing on areas such as on-site safety management, management of special hazardous operations, safety education and training, emergency response drills, and the use of safety production funds. A total of 38 improvement suggestions were identified and recorded, and corrective actions were implemented to enhance the overall safety management effectiveness of the company. We also organised 195 safety inspection activities targeting major accident hazards and seasonal safety risks, implementing dedicated corrective measures for any identified safety hazards. By the end of the reporting period, all safety hazards had been addressed.

Post-Spring Festival Return-to-Work Safety Production Inspection



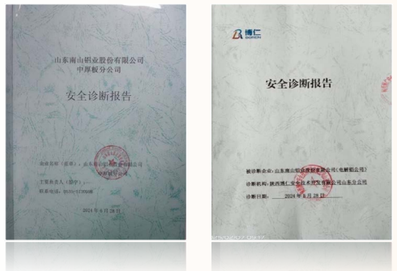
Labour Day and Post- Holiday Safety Inspection Activities

Autumn Natural Gas, Electricity, and Pre- Mid-Autumn Festival Safety Inspection Activities

Nanshan Aluminium Safety Inspection Projects (Excerpt)

In line with the requirements of the *Criteria for Assessing the Degree of Human Injury* and the corrective processes for major safety accidents in the industry, we have developed and refined the safety accident reporting process and regulations. These clearly define the safety management responsibilities across various business areas and the required response times for safety accident reports, further solidifying the primary responsibility for safety management and ensuring the occupational health of our employees.

Each year, we engage professional third-party organisations to conduct a comprehensive safety diagnosis and status analysis of our safety management practices, focusing on high-risk areas, operations, and equipment within the company. Through external diagnostics, we analyse and confirm potential risk points one by one, and, through discussions and simulations, develop safety risk response measures. This continuous process helps to upgrade and improve our overall safety management level.



2024 Nanshan Aluminium Third-Party Safety Diagnosis Report

Safety Culture Promotion

We consistently uphold a "Safety First" corporate culture. We primarily utilise employee training as the vehicle for promoting safety awareness, covering various topics such as laws and regulations, safety rules and procedures, job operation protocols, emergency response plans, occupational health, dual prevention systems, fire safety knowledge, safety expertise, and accident case studies. This multi- layered, comprehensive approach strengthens employees' awareness of safety production responsibilities and enhances their ability to identify and control risks. By the end of the reporting period, we had conducted a total of 3,115 safety training sessions, with an average of no less than 24 training hours per employee.

New Employee Safety Training

First-Day Work Safety Training

Safety Knowledge Competition

Safety Production Month Training

First Aid Knowledge Safety Training

Firefighting Skills Competition

Nanshan Aluminium Organises Various Safety Training Activities

Contractor Safety Management

We consistently prioritise the management of employee health and safety by contractors and actively work towards building a responsible supply chain. In line with ASI requirements, we have developed and continuously improved the *Contractor (Outsourced Construction) Safety Management System*, setting a health and safety goal for contractors to maintain an injury accident rate below 1‰ , and requiring strict adherence to and implementation of this standard. We continuously monitor the safety performance of contractors, assist them in identifying and addressing safety hazards at work sites, and provide targeted training. In 2024, we conducted on-site occupational health and safety audits for four domestic contractors and helped them rectify the identified issues.

Contractor Safety Management Measures

Contractor Tendering	• All approved contractors must fully comply with ASI's safety management requirements • Contractors must sign a safety management agreement with the company, clearly defining the responsibilities and obligations of both parties in safety production management, ensuring that both adhere to safety regulations during construction and maintain a safe working environment
Contractor Daily Management	• Contractors must comply with all safety management regulations in the operating location and actively integrate into and follow local safety management standards • They must actively cooperate with Nanshan Aluminium in safety hazard identification and on-site audits, working together to identify and eliminate potential safety hazards to ensure a safe and harmless working environment • Regular on-site inspections should be conducted to ensure that all safety measures are effectively implemented, thereby minimising accident risks • Strict adherence to the work approval system must be emphasised, with any work requiring thorough approval processes. Work can only be carried out after assessing risks and developing appropriate protective measures
Contractor Training	• Contractors are required to continuously train construction personnel, ensuring that only those who have passed the training are permitted to enter the construction site

Occupational Health

We actively assume the primary responsibility for ensuring the occupational health and safety of our employees, building and continuously improving our occupational health and safety management system. We systematically promote safety culture awareness activities and implement various measures to protect employees from occupational diseases and accidents, effectively reducing occupational health risks in the workplace. During the reporting period, we provided all employees with work injury insurance, safety liability insurance, or both work injury insurance and employer liability insurance, with a total investment in work injury-related insurance amounting to RMB 7.5969 million.

We comply with occupational safety laws and regulations, such as the *Occupational Disease Prevention Law* and *Workplace Occupational Health Supervision Regulations*. Drawing on advanced industry experiences and aligning with the health and safety goals set by the Company, we continuously improve internal systems like the *Infrastructure and Work Environment Management System* and steadily implement occupational disease hazard identification and control measures. In 2024, we successfully passed 14 rigorous inspections and audits from the government and relevant departments, in line with high standards for occupational health management, ensuring the physical and mental well-being of our employees.

Nanshan Aluminium Occupational Health & Safety Protection Measures

Occupational Disease Hazard Identification and Control

- Establish the Safety Production Risk Classification and Control Management System and Special Operations Personnel Management System, clearly defining the standards and basis for risk assessment.
- Continuously advance the classification and control of occupational disease hazards, hazard identification and rectification, risk assessment, and control, achieving regular management of occupational hazard risks.
- Regularly engage third-party testing agencies to conduct occupational hazard detection in the workplace.
- Regularly inspect special equipment.

Improving the Working Environment

- Provide free protective equipment to employees based on front-line business needs.
- Install air conditioning in high-temperature workshops.
- Distribute anti-heat medicines, food, etc., during the summer high- temperature season.
- Conduct on-site occupational hazard factor testing, and strengthen on-site protective facility management based on test data.

Regular Employee Health Checks

- Conduct physical health screenings for employees, and issue health risk notifications to employees with high occupational disease risks.

Implementing Safety Culture Promotion

- Regularly conduct occupational disease prevention training, occupational health awareness weeks, and other cultural promotion activities.
- Distribute standard operating procedure manuals to positions with potential occupational disease risks.

Occupational Health Law Literacy Training

We actively practice the concept of moving forward together, shouldering responsibilities collectively, and building a better future. We are dedicated to creating a fair and transparent partnership with our suppliers. We continuously strengthen supplier management, standardise the raw material procurement process, and work alongside suppliers to fulfil our ESG responsibilities. While actively creating a responsible supply chain, we recognise that giving back to society is essential for the long-term and stable development of our business. We care about public welfare and charitable affairs in the locations where we operate, seeking to engage in mutually beneficial and inclusive relationships with local communities in ways that are within our capacity.

06 / Symbiotic Supply Chain

Building a New Ecosystem Together

6.1

Responsible Supply Chain

We have developed a comprehensive supplier lifecycle management process. Through strict supplier selection and evaluation mechanisms, we ensure that suppliers' practices in areas such as environmental management, health and safety, business ethics, and human rights management align with our sustainable development principles. We are dedicated to creating a clean, transparent, and sustainable procurement environment. At the same time, we continue to optimise supply chain management and layout, establishing supply chain risk management mechanisms and plans, enhancing supply chain resilience, and laying a solid foundation for stable production operations.

Supplier Management

We strictly adhere to laws and regulations such as the *Civil Code* and *Bidding and Tendering Law*. We have formulated internal regulations, including the *Supplier Management Procedures* and the *Supplier (Contractor, Service Provider) ASI Management Implementation Program*, to standardise supplier management requirements. We require cooperating suppliers to comply with national and local environmental, procurement, and human rights laws and regulations to ensure smooth procurement operations. In 2024, we added a "Business Ethics and Integrity" clause to our internal system.

In 2024, we actively carried out the digital transformation of the supply chain and launched the Nanshan Aluminium Supplier Digital System (NC System). The system integrates core functions such as procurement order management and supplier management, enabling efficient management of the entire supplier lifecycle.

Supplier Admission

- Open Tendering on Online Platform
- Self-Nomination is Allowed
- Supplier Classification
- Signing of ASI Social Responsibility Commitment

Supplier Evaluation

- On-Site Inspection
- Supplier Performance Scoring
- Adjusting Supplier Procurement Rating

Supplier Communication and Collaboration

- Supplier Training
- Regular Communication
- Industry Exhibitions and Annual Conferences

Supplier Exit

- Eliminate Unqualified Suppliers Based on Performance Scores

Supplier Full Process Management

Supplier Admission

We have established a dynamic evaluation mechanism covering the entire supplier lifecycle within our supplier management system. Through a three-step screening process of "pre-qualification, sample verification, and on-site audit", we systematically assess suppliers' qualifications, process capabilities, and quality stability. During the reporting period, we innovated and optimised the admission model, significantly shortening the approval cycle while ensuring that technical specifications and compliance requirements were met, thus greatly enhancing supply chain response efficiency.

We have set up an online intelligent tendering platform, enabling transparent management of the entire process, from demand publication and bidding to performance evaluation. All tender information is published on both the Nanshan Official Website and China Tendering and Bidding Network, and a disciplinary and supervisory email address is provided to create a clean ecosystem with multi-party oversight. In 2024, we successfully introduced over 110 new cooperative suppliers, covering emerging fields such as green materials and intelligent equipment.

Qualification Review

- Supplier submission of information
- The Supply Department reviews the business license, three-year financial statements, cooperation contracts, and account opening permissions, etc.
- Supplier and supply information archiving
- Initial review of supplier qualifications
- Small-scale trial run

On-site Investigation

- The Supply Department prepares the investigation plan in advance
- Investigate the supplier's operational status according to the plan
- Regular on-site investigations of successful suppliers
- Completion of the Supplier Admission Evaluation Form

Approval and Entry into the System

- If assessment is passed, the supplier is added to the list of qualified suppliers

Nanshan Aluminium Supplier Admission Process

We refine the classification of suppliers based on the importance of the supplied materials to product processing. Suppliers are divided into Category I, Category II, and Category III, with different tendering and ongoing management methods applied to each category.

20%

Category I Suppliers

- Category I suppliers primarily supply raw and auxiliary materials that are directly involved in the product processing process and have a significant impact on the final product quality. Alternatively, they may supply Category II materials that directly affect product quality, are used in large quantities, and could cause substantial losses if substandard.

40%

Category II Suppliers

- Category II suppliers have a significant impact on the final product quality, but safety performance requirements are not as stringent. We further divide Category II suppliers into Category II Key Suppliers and Category II Important Suppliers.

40%

Category III Suppliers

- Category III suppliers supply materials that directly interact with the final product but have minimal impact on quality and do not have safety performance requirements.

Nanshan Aluminium Supplier Classification

Supplier Evaluation

We have established a comprehensive supplier scoring and evaluation system. Every month, the Purchasing and Quality departments collaborate to assess suppliers based on delivery efficiency, quality level, service attitude, and price reasonableness. At the end of the year, the scores are compiled to form the annual supplier evaluation. Additionally, we regularly conduct on-site audits and inspections, implementing differentiated performance evaluations for different categories of suppliers and promptly eliminating those that do not meet the standards. Based on the scores, we classify suppliers into four levels, prioritising cooperation with higher-level suppliers.

Supplier Performance Evaluation, Rating, and On-Site Audit Frequency

Category I Key Suppliers

- Monthly performance evaluation, annual performance rating, supplier on-site audit (once every three years, or as required by the client)

Category II Key and Category II Important Suppliers

- Monthly performance evaluation, annual performance rating for those with continuous performance over six months, Category II key supplier on-site audit (once every three years, or as required by the client)

Category III General Suppliers

- Monthly performance evaluation, annual performance rating for suppliers with continuous performance over twelve months

Supplier Classification Mechanism

Suppliers with a score of 90 or above (including 90) are classified as Level I suppliers and are prioritised for procurement cooperation.

Suppliers with a score between 80 and 90 (including 80) are classified as Level II suppliers. Annual on-site supervision audits must be conducted, and suppliers are required to make improvements, with ongoing monitoring.

Suppliers with a score between 70 and 80 (including 70) are classified as Level III suppliers. Annual on-site supervision audits must be conducted, and suppliers are required to make improvements, with ongoing monitoring.

Suppliers with a score below 70, and where alternative suppliers providing the same products/processes/services are available to ensure supply, will have procurement terminated, and their qualification as a qualified supplier will be revoked.

Supplier Elimination

We will resolutely eliminate suppliers who consistently deliver poor product quality, refuse to take corrective actions when issues arise, or engage in unethical business practices. This ensures that we collaborate with high-quality, reliable suppliers to jointly promote the sustainable development of the company.

Low Evaluation Scores

Suppliers with a score below 70, and where other suppliers providing the same products/processes/services can fulfill supply demand, will have their procurement terminated, and their qualification as a qualified supplier will be revoked.

Obstructed Cooperation

Suppliers who refuse to cooperate or fail to rectify issues related to quality, delivery time, after-sales service, etc., during cooperation will be eliminated.

Violation of Business Ethics

Suppliers engaging in unethical business practices during cooperation, such as bid rigging, collusion, rotating winning bids, shell companies, falsifying documents, or fabricating qualifications, will be eliminated.

Nanshan Aluminium Supplier Elimination Regulations

Supply Chain Risk Management

We have established a comprehensive supply chain resilience management system. Through intelligent inventory management and strategic supplier collaboration mechanisms, we continuously identify and effectively control potential risks to ensure the stable supply of core resources, fully enhance supply chain resilience, and achieve end-to-end risk penetration management.

Nanshan Aluminium Supply Chain Risk Management Measures

Safety Stock and Emergency Response

- Regularly organize emergency drills for raw material and auxiliary material supply disruptions to address supply interruptions caused by emergencies, ensuring supply chain stability and continuity, and maintaining normal production operations.
- Constantly monitor safety stock to ensure that the Company has sufficient backup supplies that can quickly respond and provide alternative products or services.

Enhance Supplier Strategic Cooperation Management

- Established a Supplier Whitelist Management system to deepen strategic partnerships with high-quality suppliers, ensuring the stability of supply channels through guaranteed delivery times, prices, and quality.
- For bulk materials and other production-critical resources, work closely with 2-3 long-term strategic suppliers. For routine material categories, establish stable relationships with at least five suppliers.

Strengthen Supplier ESG Capability

- Monthly evaluations to understand suppliers' operations, incorporating human rights and social responsibility factors into the assessment, and conducting on-site audits when necessary.
- Enhance suppliers' ESG management capabilities through supplier training, assistance, and initiatives, reducing potential compliance risks.

To further improve the capabilities of procurement personnel, we regularly conduct training sessions. These cover our procurement process and policies, relevant procurement laws and regulations, as well as CPPM[44] procurement courses. In 2024, we held six training sessions and exams for procurement staff to ensure they acquire the necessary skills for their work.

[44] CPPM: Certified Professional Purchasing Manager.

Sustainable Supply Chain

To build a responsible and sustainable supply chain, we encourage and urge suppliers to actively take on the responsibility for sustainable development. We include the suppliers' performance in sustainable development responsibilities in the evaluation scope and provide improvement suggestions based on the results. For suppliers who fail to meet the standards in sustainable development-related assessments, we will issue warnings, reduce cooperation, or even terminate the supply cooperation based on the situation.

Sustainable Supply Chain Management

We classify suppliers and, based on the classification results, strengthen the management of suppliers' quality, environment, occupational health and safety, and labour rights. In 2024, we conducted a total of 240 ESG and social responsibility supplier on-site audits. Additionally, we regularly organize both internal and external audits from ASI and RBA to comprehensively supervise and ensure legal and regulatory compliance regarding labour rights and human rights. During the reporting period, we completed on-site audits of 4 core raw material suppliers and conducted questionnaire surveys with 14 suppliers, without discovering any major violations.

Supplier On-Site Audit Assessment Criteria[45]

Nanshan Aluminium Supplier Sustainable Development Evaluation Dimensions

Evaluation Dimension	Assessment Content
ASI Guidelines Requirements	• Integrating ASI requirements into routine management, requiring relevant suppliers to sign the *ASI Social Responsibility Commitment*, and ensuring compliance with product quality, environmental protection, health and safety, business ethics, human rights, and other related clauses • Regularly conducting on-site audits and assessments of core raw material suppliers, evaluating their QMS, EHS, and CSR practices
Environment, Safety, Labor, and Human Rights	• Compliance with national and local environmental laws and regulations • Prioritizing cooperation with suppliers of green electricity aluminium raw materials, and encouraging suppliers to use clean energy and green packaging • Conducting regular environmental monitoring and inspections of suppliers to ensure compliance and promoting suppliers' active environmental protection efforts to reduce toxic emissions in the supply chain • Ensuring safe production practices and safeguarding employees' occupational health and safety • Prohibiting the employment of child labour, forced labour, or any work that harms physical health
Business Ethics and Integrity	• Compliance with national and local environmental laws and regulations • All cooperating suppliers are required to sign documents of integrity constraints, including the *Sunshine Commitment, Integrity Commitment*, and *ASI/RBA Social Responsibility Acknowledgment*. If any violations occur, we reserve the right to terminate the cooperation or refer the case to judicial authorities
Conflict Minerals	• All core suppliers have signed the *Commitment to Not Use Conflict Minerals* and provided the *Conflict-Free Mineral Investigation Report*

We have innovatively integrated the ASI international sustainable aluminium standards, incorporating ESG elements such as conflict minerals control and carbon footprint tracking into supplier admission clauses. Through compliance reviews, we ensure that raw material sourcing aligns with company regulations. In 2024, we introduced ASI certification requirements to ingot suppliers, providing guidance on overcoming challenges during the ASI certification process and helping them improve their performance in labour and human rights management.

[45] The main areas covered by the on-site audits are as follows: 1) QMS: Auditing the quality management system; 2) EHS: Auditing system management, occupational health, occupational safety, working at heights, chemicals, emergency preparedness, etc.; 3) CSR: Auditing labour rights, human rights, wages and benefits, fair trade, anti-corruption, responsible procurement, supplier management, and management systems.

Supply Chain Integrity

All our suppliers have signed the *ASI/RBA Social Responsibility Commitment, Integrity Commitment, and Sunshine Commitment*, making promises regarding their social responsibility practices. During the reporting period, there were no integrity violations or disciplinary issues involving suppliers or procurement personnel.

Sunshine Commitment

- Commit to and ensure strict compliance with relevant laws and regulations in all business activities with Nanshan Aluminium, adhering to principles of openness, fairness, justice, and integrity, not seeking improper benefits or trading opportunities, and refraining from engaging in improper transactions.
- Commit to and ensure possession of all licenses, qualifications, approvals, permits, certificates, and any other documents required for related business, and that the goods provided meet the technical requirements specified by Nanshan Aluminium, in compliance with relevant laws and regulations.
- Commit to and ensure no discrimination in pricing or sales policies towards Nanshan Aluminium, with transaction prices and sales policies not exceeding those offered to any third party in the market.
- Commit that our company and representatives will keep any commercial information and secrets related to Nanshan Aluminium confidential during the bidding process.

Excerpts from the *Supplier Sunshine Commitment*

Green Supply Chain

We actively respond to the call for low-carbon and environmentally friendly practices, dedicated to promoting carbon reduction within the supply chain to meet downstream customers' green demands. We aim to reduce carbon emissions throughout the entire product life cycle from the source. To this end, we require suppliers to adopt carbon reduction measures, encourage them to develop green products, and prioritize the use of clean energy such as wind and hydropower. At the same time, we advocate for suppliers to use renewable, biodegradable green materials, as well as green processes, technologies, and equipment, contributing together to the construction of a low-carbon, environmentally friendly supply chain system.

Conflict Minerals Management

We have established a comprehensive mineral procurement management system, strictly adhering to the OECD *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas*, and has built a mineral traceability mechanism that covers the entire supply chain. All our core suppliers have signed the *Conflict-Free Minerals Commitment* and provided *Conflict-Free Minerals Investigation Reports*, offering certificates of origin and inspection for the products we purchase, ensuring that suppliers do not use conflict minerals from the Democratic Republic of the Congo and surrounding areas. We are resolute in our stance of not supporting or using any metals sourced from armed conflicts, illegal mining, or poor working conditions.

Nanshan Aluminium's Commitment

We are firmly committed to not supporting or using any metals mined from armed conflicts, illegal mining, or poor working conditions, known as "conflict minerals". Suppliers are required to investigate the presence of metals such as Gold (Au), Tantalum (Ta), Tin (Sn), Tungsten (W), and Aluminium (Al) in their products and confirm the origin of these metals based on the OECD *Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas* [46].

Supplier Support & Communication

We have established a supplier support policy aimed at suppliers with poor after-sales quality performance, those with potential risks in new business development, and strategic cooperation suppliers. This involves a few months of targeted support activities. Through training and guidance, we help suppliers improve product quality, production efficiency, and management operations, and we provide technical support based on the company's product requirements to assist in the development and innovation of high-performance products. If a supplier does not experience recurring issues for three consecutive months, they will exit the support program.

In terms of supplier communication, we actively initiate communication activities with suppliers, aiming to deepen mutual understanding of industry trends and strategic cooperation, and jointly promote progress and development. Suppliers encountering or identifying any issues during the cooperation process can provide feedback through our publicly available "Supplier Complaint Email (group-gysts@nanshan.com.cn)". We will assign a dedicated person to respond, provide feedback, and coordinate in a timely manner to ensure that issues are resolved effectively and efficiently, maintaining smooth and stable cooperation between both parties.

[46] Due Diligence - Organisation for Economic Co-operation and Development.

6.2

Giving Back to Society

We have always upheld our responsibilities as a corporate citizen, actively giving back to society and fulfilling our commitment to public welfare, charity, and community protection through tangible actions. We deeply understand that our development is inseparable from the support and care of society. Therefore, we are dedicated to helping vulnerable groups and spreading warmth to society with a grateful heart. At the same time, we fully protect the community environment, actively build communication channels with the community, and strive to create a harmonious and symbiotic community ecosystem, working together with all sectors of society to create a better future.

Community Protection

We always maintain a responsible attitude, ensuring the rational development and utilization of minerals, water resources, and other local natural resources based on fully respecting and obtaining the consent of indigenous people. To better protect the rights of indigenous people, we have established a dedicated complaint channel for indigenous people based on internal policies such as the *Management Procedure for the Protection and Self-determination, Prior, and Informed Consent Rights of Indigenous Peoples*. We focus on key issues such as labour rights, women's rights, and resettlement, steadily advancing relevant work to provide comprehensive and multi-layered rights protection for indigenous people.

We strictly adhere to internal policies such as the *Local Community Impact Control Procedure* and closely monitor the impact of project planning and construction on the community. We actively communicate and collaborate with indigenous people and local institutions. For projects that may have a negative impact on the local community, we pay close attention, respond quickly, and adjust as needed to ensure that operational development activities and cultural environment protection measures progress in harmony and symbiosis.

Nanshan Aluminium Commitment

We fully respect the basic rights of indigenous people, including but not limited to the right to life, the right to development, the right to use natural resources (such as mines, land, scenic areas, etc.), the right to benefit sharing, and the right to informed consent. We commit to strictly adhering to laws and regulations during the implementation of projects (new, renovation, expansion), closures, decommissioning, divestment, and natural resource expropriation. We will never collude with local governments and will ensure fair compensation or resettlement for expropriated natural resources. We also commit to communicating in advance and treating indigenous people fairly and impartially regarding recruitment, work arrangements, wages, job promotions, and other matters, eliminating any discriminatory practices.

We strictly follow the professional guidance of cultural heritage authorities and the *Regulations on the Protection of Cultural Relics and Religious Sites*. During project implementation, we comprehensively consider environmental, social, and economic benefits, adopting a prudent strategy to avoid, protect, or take necessary relocation measures for cultural sites and religious sanctuaries. For projects with potential impacts on local cultural heritage, we will immediately take corrective actions to ensure the integrity and safety of the heritage.

Nanshan Aluminium Commitment

We fully respect the freedom of religious belief in the operating locations and commits to carrying out cultural heritage and religious site protection work in compliance with laws and regulations during daily operations.

Public Welfare & Care

We have always upheld our commitment to the community, supporting our development. We actively participate in public welfare projects such as educational assistance and holiday outreach, encouraging employees to engage in volunteer services and charitable blood donations, contributing to community building. Through our actions, we give back to society and work hand in hand with the community to create a harmonious and bright future.

Nanshan Aluminium Commitment

We strictly comply with national laws and regulations, actively communicate with local communities, and strive to address any adverse effects caused by our operations on local communities. We make every effort to protect the legal and traditional rights of local communities regarding their land, livelihoods, and the use of natural resources, working relentlessly to promote community development.

Shandong Community Elderly Outreach

We care for the surrounding community and regularly conduct outreach activities for the elderly, organizing employees to visit the community and deliver living essentials such as milk, while also helping with daily needs and emotional support.

Fire Rescue in Indonesia Plant

The Indonesia plant has established a public welfare fire brigade, which is always attentive to the difficulties faced by residents. The brigade quickly responds to disasters such as fires, promptly dispatching firefighting forces and equipment to provide timely assistance to those affected. In 2024, we extinguished fires in nearby communities seven times.

Indonesia Plant Sponsorship of Local Sports Activities

The Indonesia plant continues to carry out rural revitalization public welfare projects. After learning about the lack of educational resources in local impoverished areas, the plant donated funds to build a consistent education system from elementary to middle school in Bintan County, providing necessary educational equipment to improve the teaching environment for both teachers and students. We regularly provide students with school supplies and have established a free campus transportation service to solve transportation difficulties, reduce family economic burdens, eliminate safety hazards, and support students' growth and development.

US Plant Sponsorship of Sports Activities

In 2024, to enhance community engagement, the US plant funded and organized a college student sports event to promote youth sports development. The event was covered by local media.

US Plant Sponsorship of the Lafayette Chamber of Commerce

In June 2024, the US plant actively fulfilled its social responsibility by providing a $1,750 sponsorship to the Lafayette Chamber of Commerce. The Chamber focuses on helping small businesses grow and thrive, representing the commercial interests of Lafayette and the surrounding area. Through the establishment of a funding support mechanism, we work together to promote the sustainable development of local businesses and create shared prosperity.

Appendix

ESG Policies and Key Systems

ESG Governance
Working System of the Sustainability (ESG) Committee of Shandong Nanshan Aluminium Co., Ltd.
Environment
Management Methods for Environmental Protection
Environmental Information Disclosure System of Nanshan Aluminium
Risk and Opportunity Control Procedures
Greenhouse Gas Emission Targets and Implementation Plan
Regulations on the Management and Requirements of Hazardous and Toxic Waste
Standardised Management Measures for Solid Waste of Nanshan Aluminium
Management System for Greenhouse Gas Inspection
Emergency Response Plan of Shandong Nanshan Aluminium Co., Ltd.
Management Procedures for Biodiversity Protection of Nanshan Aluminium
Control Procedures for Sewage Discharge
Control Procedures for Atmospheric Pollutants
Society
Occupational Health and Safety in the Working Environment
Workplace Occupational Injury First Aid
Safety Production Responsibility System
Safety Production Inspection System
Management System Manual for Intellectual Property Protection
Control Procedures for After-sales Service
Process Control Procedures Related to Customers
Control Procedures for Customer Satisfaction Measurement
Product and Service Management Regulations
Integrity Management Procedures
Marketing Management System
Code of Conduct for Sales Personnel
Customer Satisfaction Measurement Procedures
Implementation Rules for Trade Secret Management
Control Procedures for Production Process
Management Procedure for the Prohibition of Discrimination
Management Procedures for Protection of Underage Workers
Management Procedures for Prohibition of Forced Labour
Management Procedures for Prohibition of Child Labour and Remedial Measures
Management Procedure for the Right to Freedom of Organising Trade Unions and Collective Bargaining
Management Procedures for Protection of Women Employees
Safety Production Responsibility System for All Employees
Supplier Management Regulations
Management Procedures for Implementation of ASI by Suppliers (Contractors and Service Providers)
Management Procedures for Prohibiting the Use of Conflict Minerals
Information Exchange, Consultation, and Communication Control Procedures
Employee Complaint (Appeal) Management Procedures
Employee Representative Management Procedures
Safety Management Standard System
Hazard Investigation and Treatment Management System
Contractor (Outsourced Construction) Safety Management System
Infrastructure and Working Environment Management System
Safety Production Risk Classification and Control Management System
Special Operations Personnel Management System
Supplier Whitelist Management
Management Procedures for the Protection of Indigenous Peoples' Rights to Self-determination, Prior and Informed Consent
Control Procedures for Local Community Impact
ISO 9001 Quality Management Manual
Governance
Work System of Independent Directors
Management Procedures for Information Disclosure
Anti-corruption Policy
Standards of Suppliers' Business Conduct
Integrity Self-Discipline Commitment
Supplier RBA Commitment
Whistleblowing Management Policy
Whistleblowing Management Policy
Management System for Data Security
Risk and Opportunity Control Procedures
Network Information Management System
Network Information Center Rules and Regulations

Index of Indicators

Index of *Guidelines No. 14 of Shanghai Stock Exchange for Self-Regulation of Listed Companies—Sustainability Report (Trial)*

Disclosure Requirements	Corresponding Chapter of This Report (For topics not disclosed, provide full explanation in accordance with Article 7 of the Guidelines)
Climate change tackling	Responding Climate Change
Pollutant discharge	Protecting Nature
Waste disposal	Protecting Nature
Ecosystem and biodiversity protection	Environmental Management
Environmental compliance management	Environmental Management
Energy usage	Responding Climate Change
Usage of water resources	Protecting Nature
Circular economy	Circular Economy
Rural revitalization	Giving Back to Society
Contributions to the society	Giving Back to Society
Innovation-driven	Innovation and R&D
Ethics of science and technology	Innovation and R&D
Supply chain security	Responsible Supply Chain
Equal treatment to small and medium-sized enterprises	Responsible Supply Chain Does Not Involve Overdue and Unpaid Accounts Payable to SMEs
Safety and quality of products and services	Product Quality
Data security and customer privacy protection	Information Security & Privacy Protection
Employees	Eager to Attract Talent Employee Care Safety Production
Due diligence	Responsible Supply Chain
Communications with stakeholders	Stakeholder Communication
Anti-commercial bribery and anti-corruption	Ethical Operations
Anti- unfair competition	Ethical Operations
Self-disclosed Topics	/

Reader Feedback Form

Dear readers,

Thanks for your attention and support to the ESG of Nanshan Aluminium. In order to provide more professional and valuable information in environment, society and governance and further improve the ESG report quality, please answer the questions in the Reader Feedback Form.

1. Are you satisfied with the report? Please write down your comments.

2. Do you think our social responsibility has been fully disclosed?

3. Is the information you wish to know fully disclosed in the Report?

4. What improvement suggestions do you have for the Report?

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