



2021 Environmental, Social and Governance Report



2021 Environmental Social and Governance Report



Good morality towards perfection,
Accumulated hills towards mountain.

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Address from Chairman of Board



LU ZHENGFENG

Nanshan Aluminium

Chairman of Board

In 2021, the aluminium supply chain faced profound challenges because of the depressing COVID-19 pandemic overseas quite discouraging COVID-19 pandemic control, unbalanced global economy resurgence, and the superpower games. However, the low-carbon aluminium industry has embraced opportunities for development thanks to steady improvement and sustained recovery of China's overall economy and comprehensive and environmental-friendly transformation of economic and social development under the strategy of "carbon neutrality" and "carbon emissions peak".

Having always adhered to the sustainable development idea of "green manufacturing, building a bright future for enterprises", Nanshan Aluminium actively responds to the national strategy for peak carbon emissions and carbon neutrality with the requirements of the 14th Five-year Plan, continues to fulfill corporate social responsibilities from the three dimensions of environmental, society and governance, strives to build a responsible aluminum industry chain, setting a leading example for promoting the high-quality development and green growth of China aluminum industry.

Sound Governance System

The Company is committed to creating a fair and equitable business environment. We promote the healthy development of production and operation with a sound corporate governance structure and risk management system. At this point, we have completed the transformation from only considering short-term economic benefits to pursuing long-term comprehensive value by setting up the ESG governance structure with work teams as the core, identifying related and significant ESG issues through regular communication with stakeholders, and following up objectives and performance of corresponding issues during daily management.

Improve Product Quality

Nanshan Aluminium adheres to the quality management system with high standards, strengthens product quality control, and implements the concept of "Quality is the life of enterprise" into the whole process of production. Paying attention to customer experience and being customer-oriented, the Company has established perfect customer feedback and after-sales service mechanism. Meanwhile, the Company attaches strategic importance to scientific research and innovation, and continues to improve the management level through industrial informatization. We have won a wide range of external recognition in aspects of brand competitiveness, product quality, independent innovation, etc.

Promote Green Production

As the first enterprise in aluminium industrial chain to obtain the Aluminium Stewardship Initiative (ASI) certification in China, Nanshan Aluminium takes measures for energy saving and consumption reduction actively and build green plants and enterprises that coexist harmoniously with the environment through positive environmental management policies. The newly-added aluminium resource recycling project, as a model of secondary aluminium recycling, has significant social benefits in resource-saving, energy conservation, emission reduction and environmental protection, which not only effectively responds to the objectiveness of national strategy of "carbon neutrality" and "carbon peak", but also alleviates the impact of climate change on society.

Safeguard Employees' Rights and Interests

Nanshan Aluminium protects the legitimate rights and interests of every employee in aspects of employment, salary and welfare, career development, etc. earnestly. On the basis of existed human resource management system, we provide every employee with an inclusive and open development platform, various and diversified training system, convenient and efficient communication channels and mutual-aid and friendly work environment continuously by optimizing the three-pillar structure of human resource.

Promote Social Development

Having created a perfect supply chain management system, we improve the social responsibility performance of supply chain gradually through systematic and standardized management process. Playing a positive and valuable role, we actively cooperate with multiple parties, and the industry and the surrounding community for mutual and beneficial development, and joint creation of harmonious and prosperous business environment.

Based on the present while looking for the future, we will never forget why we started and continue to move forward with unique advantages of industrial chain integration and high-end products, including fulfilling social and economic responsibilities, promoting industrial distribution, providing high-quality products, and making unremitting efforts to fulfill the strategy of "carbon neutrality" and "carbon emissions peak", green cycling and sustainable development with all the stakeholders.

About This Report

Report description

This Report is the 12th Environmental, Social and Governance Report (ESG) 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).



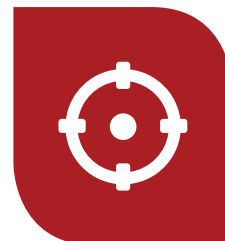
Data source and reliability assurance

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.



Organizational scope of the Report

This Report is about Shandong Nanshan Aluminium Co., Ltd. and its subsidiaries. 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 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, review by department and senior executives, etc.



Report time frame

The report covers the period from January 1st, 2021 to December 31st, 2021 (hereinafter referred to as the "Report Period"), some dating back to previous years and covering the first quarter of 2022.



Confirmation and approval

This Report was audited and approved by the Board of Directors and senior leadership of the Company on March 30, 2022.



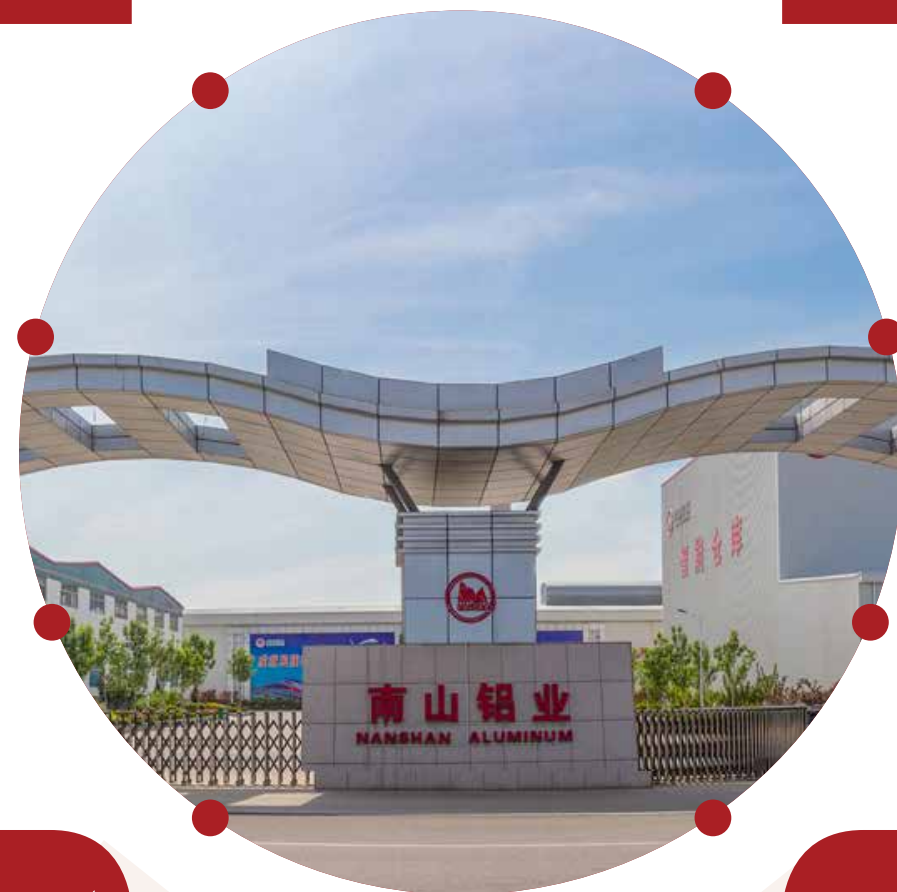
Basis of preparation

This Report is prepared not only with reference to documents, including the *Guideline for the Preparation of the 'Report on Performance of Corporate Social Responsibility'* promulgated by the Shanghai Stock Exchange and the *Opinions concerning Enhancing the Social Responsibility of Listed Companies and the Promulgation of 'Guidelines of Shanghai Stock Exchange for Environmental Information Disclosure of Listed Companies'*, but also with reference to and response to evaluating indicators, such as the United Nations Sustainable Development Goals (SDGs), Environmental, Social and Governance ("ESG") Ratings initiated by Morgan Stanley Capital International (i.e., MSCI ESG Ratings), etc.



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
Tel.: 0535-8666352
Address: Nanshan Village, Dongjiang Town, Longkou, Yantai City, Shandong Province



¹Before 2021, Nanshan Aluminium issued a responsibility report or sustainable development report. In 2021, the upgrade of comprehensive ESG disclosure and the preparation of the 2021 ESG Report of Nanshan Aluminium were completed.

Highlight the Performance

Sustainable Development Green manufacturing for bright future.

- Identified **21** ESG issues and **7** key issues

Corporate Governance Strive for continuous governance and corporate enhancement.

- Female directors account for **22%** and independent directors account for **33%**
- Business ethics training covers **100%** of employees
- The number of business ethics violations is **0**
- Obtained **GB/T 23001 informatization and industrialization management system certification, Level II Multi-level Protection Scheme (MLPS) evaluation**

Product Quality Craftsmanship for excellent quality.

- Management has passed a number of **System Certifications**: ISO 9001 quality management system, ISO/TS 22163 railway system quality management system, IATF 16949 automobile quality management system, ISO 22000 quality safety management system, ISO/IEC 17025 laboratory management system, GB/T 29490 enterprise intellectual property system, etc
- The products have passed the certification of many **Classification Societies**, National Aerospace and Defense Contractors Accreditation Program (NADCAP) **special process certification** and **PED&AD2000 Pressure Equipment Directive Certification**.
- The **first** responsible enterprise in China that has passed the **ASI aluminum industry chain certification** and obtains the ASI PS performance standard certificate and ASI CoC standard certificate
- Established **5** national and **7** provincial R&D platforms.
- Overall customer satisfaction **96.9%**

Low Carbon Production Green manufacturing towards the peak carbon emissions and carbon neutrality.

- In 2030, the Company's **carbon emission intensity of electrolytic aluminium reaches to be less than 8 t CO₂e /t product**, and **the overall energy consumption of the unit product is less than the energy consumption quota of the non-ferrous industry**.
- Coverage rate of ISO 50001 certification is **66.6%**.
- The direct and indirect greenhouse gas emission carbon footprint of products throughout the full life cycle was transparently disclosed by the responsible company **as the first one in the industry**.
- The carbon emission intensity of Longkou Donghai Alumina Co., Ltd. is **0.55 t CO₂e /t product**.
- The carbon emission intensity of Longkou Nanshan Aluminium Rolling New Material Co., Ltd. is **0.52 t CO₂e /t product**.
- The carbon emission intensity of Plate Company is **0.58 t CO₂e /t product**.

Environment and Ecology Work together to protect the ecology for harmony.

- Target: **100%** rate of waste water discharge
- 100%** rate of waste gas discharge
- 100%** disposal rate of solid waste and **100%** harmless disposal rate of hazardous waste.
- Coverage rate of ISO 14001 certification is **87.5%**. Passed the GB/T 36132-2018 **General Principles for Assessment of Green Factory certification**.
- Continuously investing and propelling ultra-low discharge modification projects and optimizing, **all subsidiaries and production companies of Nanshan Aluminium have fully achieved the goal of ultra-low discharge target for 2021 and far lower than the national and operational basic standard**.
- The carbon emission intensity of Electrolytic Aluminium Branch of Shandong Nanshan Aluminium Co., Ltd. is **13.24 t CO₂e /t product**.
- The carbon emission intensity of plant of Nanshan in USA is **0.45 t CO₂e /t product**.
- Successfully applied and approved the key special projects titled **Solid Waste Utilization under the National Key Research and Development Program of China**.
- The aluminium recycling company **achieved 61,200t annual treatment of aluminium slag crusts and 18,900t production of aluminium ingots**.
- Achieves a **comprehensive solid waste utilization rate of 56%**, hazardous wastes compliance treatment rate of **100%**, reaching the industrial advanced and historically best level.
- Water recirculation** reached the Company's **historically best level**.
- Continuously protect the **ecological environment of the region where the Company are located** and actively **maintain biodiversity and ecological balance**.

Human Resources Diverse talents with inclusive employment.

- The collective agreement signing proportion of the Company is **100%**
- Training coverage of employees is **100%**
- Total training hours reach **821,419** hours
- The Company invested **891** million yuan of the special reserve in 2021
- The coverage of occupational health and safety management system certification such as ISO 45001 and work safety standardization certification reaches **83%**
- Zero** work-related fatalities
- Work-related injury accident (serious injuries and casualties) rate of external construction personnel was **0**
- The qualification rate of dust and harmful gas operation points reaches **100%**

Cooperation Win-win partnership for benefiting cooperation.

- Served as a director and a member of China Nonferrous Metals Industry Association Aluminium Branch and other associations

The Company has ranked 429th on the Top 500 Enterprises in China in 2021.

About

Nanshan Aluminium

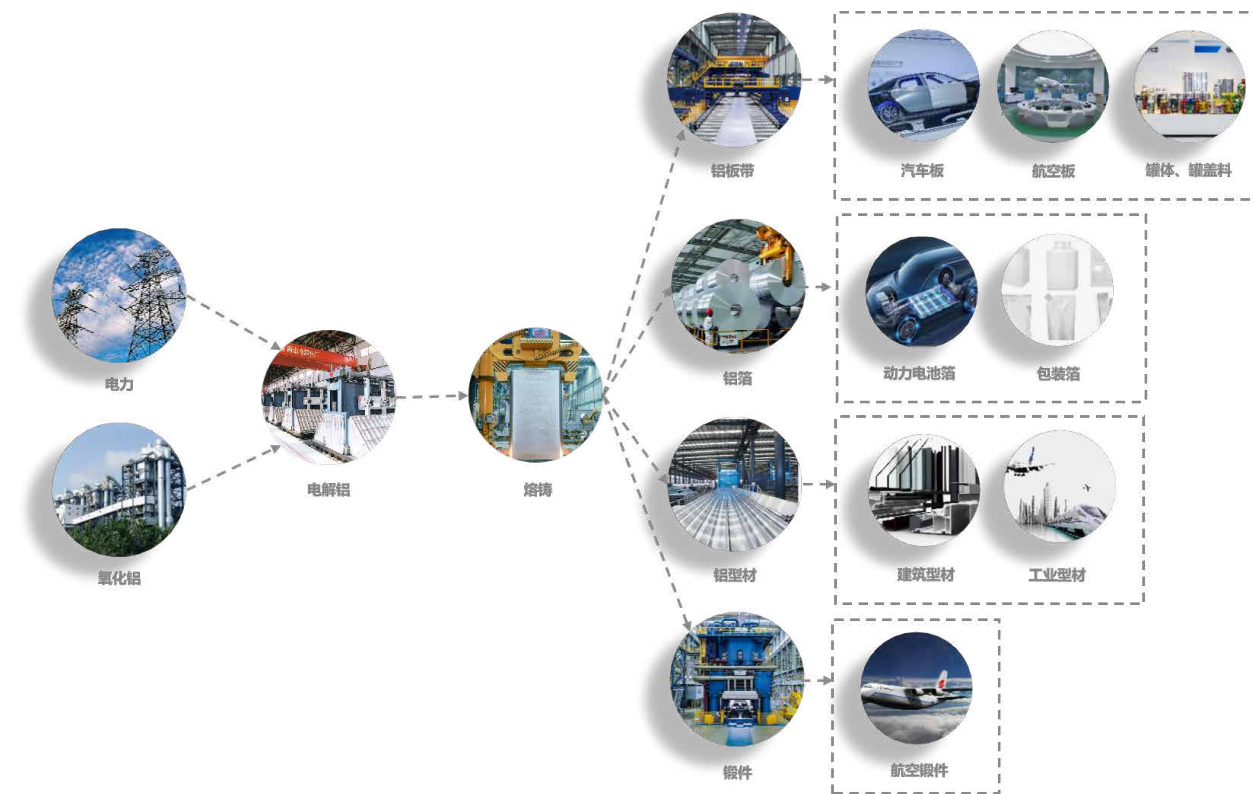
Founded in 1993 and successfully went public at the Shanghai Stock Exchange on December 23, 1999 (trading code: 600219), Shandong Nanshan Aluminium Co., Ltd. is the only large joint-stock company in the world with a complete aluminium industrial chain production line including thermoelectricity - alumina - electrolytic aluminium - casting - (aluminium profile/hot rolling - cold rolling - foil rolling/forging) in the same local region. At present, the Company is in the leading place of aluminium processing industry in China regarding the scale and the benefit, with annual processing capacity of about 1.275 million tons.



Industrial Distribution

With 30 years of hard work by all employees, Nanshan Aluminium has become the world's only aluminium processing enterprise with complete industrial chain within short reaching. By extending the upstream and downstream industrial chains, including improving and refining the upstream production process as well as R&D, and making breakthrough for the downstream product technology, the Company has established the business model based on the main industrial chain of electric power, aluminium oxide, electrolytic aluminium, aluminium extrusion, aluminium rolling, forging and aluminium intensive processing. Our customers include aircraft manufacturers, automobile OEMs and well-known domestic and foreign new energy vehicle manufacturers, rail traffic equipment manufacturers, communication enterprises, food and beverage enterprises, etc.

At present, the main production bases of Nanshan Aluminium include Nanshan Thermal Power Plant, Donghai Thermal Power Plant, Longkou Donghai Alumina Co., Ltd., Electrolytic Aluminium Branch of Shandong Nanshan Aluminium Co., Ltd., Nanshan Aluminium Rolling New Material Co., Ltd., Nanshan Aluminium Profile Company, Medium-thick Plate Branch, Forging Branch, Technical Research Center, Alumina Project in Indonesia, etc. The Company has set up branches and overseas offices in Indonesia, Singapore, the U.S., Australia and other countries, which extents regional business coverage and spreads the reputation of Nanshan Aluminium all over the world.



Schematic Diagram of Nanshan Aluminium Industrial Chain



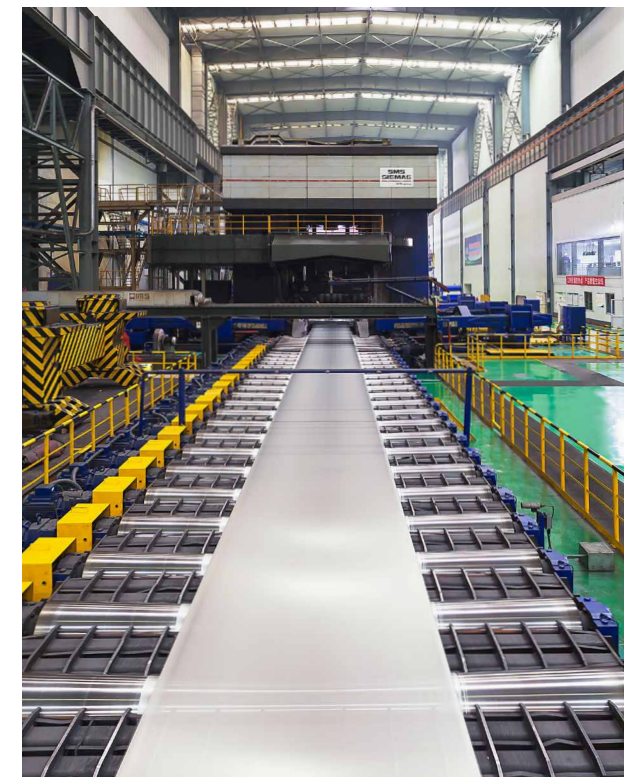
Longkou Donghai Alumina Co., Ltd.



Electrolytic Aluminium Company



Aluminium Flat Rolling New Material Co., Ltd.



Aeronautical Material Industrial Park

Main Products

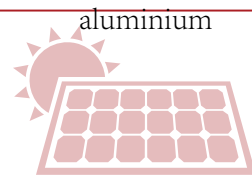
In recent years, we have improved the product mix continuously and focused on high-tech and value-added products. At present, the Company's main products include the upstream products such as electricity, alumina, and aluminium alloy slabs; downstream products such as extrusions, rolled products and forgings, which are mainly used for processing aviation plates, automobile sheets, aluminium materials for new energy vehicles, high-speed trains, railway freight trains, plates for ships, tank trucks, house cars, urban subways, passenger cars, electric power tubes & rods, aluminium foil stock, high-grade aluminium-plastic composite boards, power battery foil, food flexible packaging, cigarette packaging, pharmaceutical packaging, air-conditioning foil, can stock, high-grade PS substrate, curtain wall, aluminium alloy doors and windows, containers and large mechanical structural parts, etc.

Auto-material



- Manufacturing car body sheets and structural parts, including hang-on parts (doors and hoods) and wheel fenders, etc., Nanshan Aluminium is currently the automobile sheet manufacturer with the fastest certification progress, the most certified manufacturers, and the most complete certified alloys in China. We are also the first qualified supplier of automobile sheet materials in China to realize the batch supply of automobile sheets. As a corporate champion of domestic automobile sheet industry, the Company actively promotes business cooperation or certification with customers, including a famous international new energy OEM, NIO, GAC New Energy, BAIC BJEV, Audi, Daimler, GM, BMW, Nissan, Hyundai, Volvo, Ford, Jaguar Land Rover, and RIVIAN, etc.

Power battery foil for new energy market

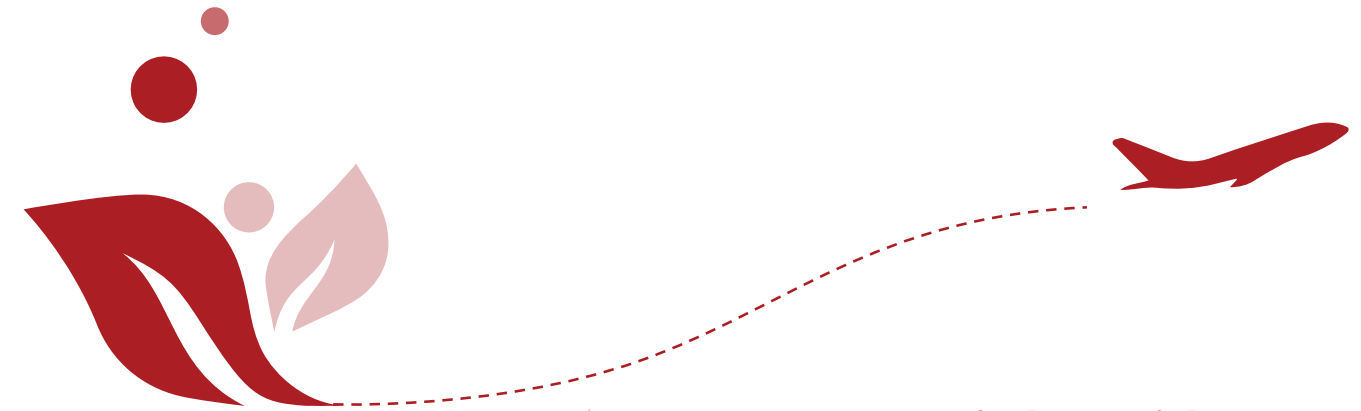


- The Company has established cooperative relations with domestic leading enterprises, including CATL, BYD, CALB, Gotion High-tech, EVE, etc. and became an important supplier of high-end aluminium foil for these customers; the Company has extended business with domestic well-known enterprises with better future prospects, and the sales volume increase significantly compared with that of last year; the proportion of orders of high value-added products is further increased, which effectively optimizes the order structure.

High-quality materials for civilian use



- Nanshan SIPOT has independently designed, researched and developed the 100 Series Ultra-low Energy Passive Windows. According to the technical standards of passive ultra-low energy green buildings, the heat transfer coefficient U of the whole window is below 0.80W/(m²·K). The window passed the Energy Saving Evaluation of Germany Passive House Research Institute in one attempt with energy conservation level of pH₈, which maximizes the thermal insulation and air tightness performance of buildings, effectively reducing the dependence on active mechanical heating or cooling systems, and contributing to the strategic goal of carbon emission peak and carbon neutrality.



Aeronautical material



- The Company produces forgings for fuselages (landing gears and their support beams, cabin door frames, etc.), engines (mounts, casing parts of aeroengine, etc.), and aircraft seats, luggage racks, etc.; the aluminium sheet is mainly used for fuselage skins, wing ribbed plates, etc.; it is the only extruded material supplier for civil aviation aircraft structural parts in China.

Canning materials and food packaging



- The Company produces bodies and lids for ordinary ring-pull cans, food cans and bottles, and plates and sheets for lids and bottom caps of ring-pull cans. The products are mainly used in the field of ring-pull can packaging, and for the production of ring-pull cans, bottles, etc. containing soft drinks, tea drinks, energy drinks, protein drinks and beer. Now the Company is not only in a leading position regarding the export of canning materials, but also the largest canning materials exporter in China, with the annual export volume of more than 0.3 million tons, accounting for 5% of the global total volume. The Company has brought the product advantages into play by promoting the thinning process of canning materials as well as the development and testing of new canning materials and cap-type materials, and stabilizing the supply of BPA-free materials. As the supplier of OEM customers, such as Pepsi, Cola, Budweiser, etc. and international canning giants, such as Boer, Crown, Ardagh, etc., the Company exports products to regions, including North America, South America, Europe, etc.
- Relying on high quality aluminium foil, the Company has established long-term strategic cooperative relationship with many international well-known flexible packaging companies and became the main supplier of aluminium foil for aseptic packaging in China.

Rail transit



- As a long-term strategic partner of CRRC, the Company has successfully researched, developed and delivered train body profile for CRHs with speed per hour of 200km/h, 250km/h, 300km/h, 350km/h, 380km/h and 500km/h

Strategic Development

Adhering to the strategic development ideas of "innovation-driven development, high-end manufacturing and fine and intensive processing", Nanshan Aluminium will focus on high value-added products and accelerate the layout of aeronautical material and auto sheets. Always being market- and problem- orientated, the Company actively promotes supply-side structural reform, cultivates new development momentum, breaks down foreign technology monopoly, fills the gap in the domestic market, and meets the needs of rapid development of domestic aviation industry and automotive lightweight market.



Auto sheets

- According to the quality of existing products, the Company implements benchmarking with the products of competitors in the same industry to improve the competitive edge;
- The Company strengthens the implementation of project management system, completes the organization structure and division of responsibilities of project teams, and drafts and implements project schedule;
- Pay attention to the development status of new force of car manufacturers to develop potential customers;
- Expand the scope of automobile OEM certification for external body sheets, improve customer viscosity and increase customer confidence;
- Accelerate the market layout, focus on the expansion of domestic market share, and promote the layout in the Europe market.

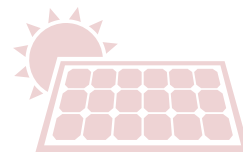


Aeronautical materials

- Relying on the supply of aeronautical aluminium alloy raw materials, the Company promotes the certification by major OEMs continuously, extends the industrial chain, realizes the upgrading of technology and equipment, improves the added value of industrial chain, improves the international competitiveness of industry constantly, and establishes a near-side machining and aluminium recycling center to improve the added value;
- As an aeronautical raw material supplier, Nanshan Aluminium boasts its complete aluminium industrial chain in the region, and enjoys great advantages at the moment when the aviation market shifts to the Asian region;
- Maintaining cooperative relationship with domestic large aircraft manufacturers continuously, Nanshan Aluminium will improve the technology constantly and lay a good foundation for the development of national aluminium industry.

Other flat-rolled products

- Stabilize and strengthen the cooperation relationship with old customers, learn about the product structure of competitors in time, and promote the development of new markets and customers.
- Promote the delivery of other flat-rolled products such as battery foil, pharmaceutical foil; plates for house car, tank truck; plates for tooling and 3C plates for electronics, ensure the scale of production and sales, and maintain stable order volume by means of improving service, ensuring product quality, reasonable price positioning, R&D innovation, etc.



Corporate Culture

As an enterprise with historical accumulation, Nanshan Aluminium has planted the concept of value into the heart of every employee. Having always adhered to the sustainable development idea of green manufacturing, building a bright future for enterprises, and persisting in the Nanshan spirit of "Do Nothing but the Best", Nanshan Aluminium guides leaders and employees to establish a scientific outlook on life and value with Nanshan culture, enhances team cohesiveness, and strives to develop with the enterprise and make progress with the industry with higher quality, better service and more cutting-edge products.





Sustainable Development

Green manufacturing for bright future

The sustainable development is the goal and direction of national development in the new era, the requirement of healthy development of manufacturing industry, and the only way for the development of Nanshan Aluminium. As a high-end processing and manufacturing enterprise, Nanshan Aluminium takes the initiative to shoulder the responsibility of sustainable development after fully recognizing the significance of good performance of environment, society and governance (ESG) to the Company's development. The Company actively responds to industry requirements, and implements sustainable development through research and determination of ESG key issues, and conduction of relevant training.

Concept of Sustainable Development

Actively advocates the business philosophy of "green, energy conservation, emission reduction and efficiency enhancement", Nanshan Aluminium adheres to the sustainable development strategy, fulfills the sustainability requirements of environmental, social and governance and the highest standards in the industry, and actively undertakes its social responsibilities. The Company will continue to increase investment in environmental protection and adopt advanced energy conservation and environmental protection facilities and technologies to realize resource recycling. As always, the Company will achieve environmental goals for production waste water recycling, exhaust emissions, noise, comprehensive energy consumption of products, etc., and fulfill the business philosophy of "energy conservation, emission reduction, green development" through the improvement of infrastructure, technological transformation and process optimization.

ESG Management

Nanshan Aluminium integrates the sustainable development concept into daily management. The Company has set a special work team responsible for tracking the performance of sustainable development of all departments; each department establishes sustainable development indicators, targets and plans every year according to its rights and responsibilities, and is responsible for the implementation of plans and the assessment of targets.

In order to improve the overall ESG governance capacity, Nanshan Aluminium has conducted various internal and external training for the Board of Directors and management, including discussion on regulatory policies and development trends of mergers and acquisitions of listed companies, insight and analysis of ESG development trends, interpretation of dual carbon policy and suggestions on course of action, etc. These training courses have effectively promoted the development of ESG concept in Nanshan Aluminium, and provided strong support for the management regarding the ESG mechanism and policy decisions.











Management training on ESG

Communication with Stakeholders

It is crucial to the sustainable development of the Company by maintaining good communication with stakeholders and timely understanding the demands of stakeholders. Nanshan Aluminium has established a regular communication mode with stakeholders and continued to strengthen the management of communication with stakeholders. The Company organizes regular meetings of the Boards of Directors and Supervisors, and the general meeting of shareholders, completes regular reports and issues true and accurate semi-annual reports and annual reports. We communicate with investors in a timely, in-depth and extensive manner through website and official account

of the Company, one-to-one communication, telephone consultation, on-site visits, online and offline meetings with analysts, road shows, etc. During the report period, the Company participated in or led more than 100 rounds of activities for investor relations, including holding the large-scale investor meeting "Joint Efforts for Success".

The Company has identified key stakeholder groups with close relationship. The ESG issues concerned by different stakeholder groups during the report period, as well as the main communication channels between the Company and stakeholders are listed in the following table.

Stakeholder Groups	Issues of Concerns for Stakeholders	Main Communication Channels
 Government/Regulators	Compliance management Combat corruption and uphold integrity	Tax payment pursuant to the law Periodic information reporting Safety production Pollutant emission compliance
 Investors/Shareholders	Enterprise profitability Information disclosure Corporate governance	Convening of general meetings Regular reporting Regular release of annual reports
 Suppliers	Fair competition Formulation of industry standard Supply chain management	Enhance R&D capabilities Strengthen supply chain management and cooperation Participate in industry events
 Customers	Business ethics Product quality	Collect the customer's opinions Handle customer complaints Conduct customer satisfaction survey
 Research Institute	Scientific and technological innovation	Industry-university-research cooperation
 Society/ Public	Social benefits Community development	Maintain communication with government departments and social organizations
 Employees	Employee health and safety Employee compensation and benefits Employee development and training Employee working environment	Summon conference of employee representatives Implement employee training Collect and respond to opinions and suggestions of employees
 Environment	Renewable energy Energy conservation and emission reduction Improve HSE management Discharge and management of waste gas, wastewater and solid waste	Communicate with and learn from environmental protection departments and social organizations Exchange advanced experience at home and abroad Improve production process

ESG Materiality Issues

Combining with macro policy guidance as well as attention and demands of stakeholders, the Company has confirmed ESG key issues as follows, analyzed the current situation of sustainable management in different aspects, formulated corresponding development strategy and concrete measures, made breakthroughs one by one and promoted the development of ESG governance in multiple aspects by benchmarking with excellent enterprises in the industry and conducting interviews with various stakeholders. These issues will be disclosed in subsequent sections of the Report in response to stakeholder demands.



Awards and Recognition

Nanshan Aluminium is committed to high-quality sustainable development management. Creating economic value for enterprises and the society continuously is the basis of our sustainable development; Advocating environmental protection goal and business philosophy of green and energy conservation is the direction of our sustainable development; formulating perfect promotion

mechanism based on “People-oriented” and encouraging diversified development of employees is the fundamental power of our sustainable development. So far, sustainable development has become one of the core competitiveness of Nanshan Aluminium Our commitments and achievements based on sustainable development have been recognized by many external institutions.



2021 Sina Finance Best Corporate Governance (G) Responsibility Award



The fifth excellent IR: Best Capital Market Communication Award & Best Information Disclosure Award





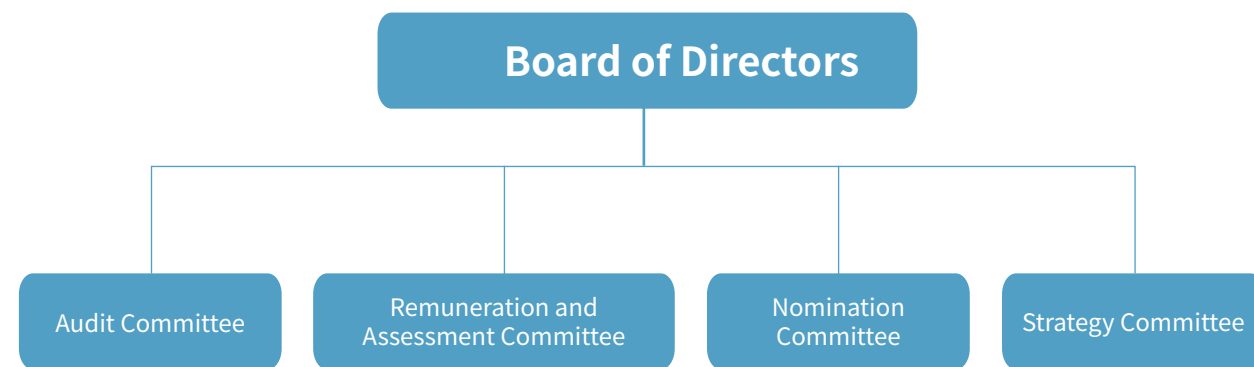
Corporate Governance
Strive for continuous governance and
corporate enhancement.

As one of the leading listed companies in China's aluminium industry, Nanshan Aluminium firmly believes that building a high-quality corporate governance system is an important measure to protect the stockholder's equity and the Company's sustainable and healthy development. While constantly improving the governance architecture and mechanism, Nanshan Aluminium actively identifies, monitors and responds to internal risks, pursues business ethics and integrity, and accelerates the Company's network informatization process, so as to promote the leap of governance level.

Governance Structure

Nanshan Aluminium establishes a robust corporate governance structure. We strictly abide by the *Company Law of the People's Republic of China*, the *Securities Law of the People's Republic of China*, the *Governance Standards of Listed Companies*, the *Stock Listing Rules of Shanghai Stock Exchange* and other normative document requirements, and formulate the Articles of Association. The shareholders meeting, Board of Directors, Board of Supervisors and the top management perform respective rights and obligations independently, make decisions and operate in accordance with the law according to the

Articles of Association. Under the background of actively expanding the global market, Nanshan Aluminium improves the governance mode synchronously, enhances the diversification and specialization level of governance to carry out business orderly and deeply empowers the Company's future development. Besides, the Company also strengthens the participation of the Board of Directors and Professional Committees in many issues according to the laws, regulations and actual operation status, so as to maintain the interests of shareholders and the Company.



Board of Directors and Committee of Nanshan Aluminium

While fulfilling the sustainable development, Nanshan Aluminium focuses on the diversity of talent background, adheres to the employment philosophies of "Emphasizing education background and capability, arranging posts according to talents and making employees seek their proper jobs", and introduces technical backbones and management elites both at home and abroad in many ways. When building the corporate governance architecture,

we are committed to establishing a pluralistic, inclusive, professional and compliant Board of Directors and senior management talents team, and accept different individuals regardless of gender, age, major and educational background. By the end of this report period, the Board of Directors of Nanshan Aluminium is composed of 9 directors, wherein female directors account for 22%, and independent directors account for 33%.

In 2021, the Company held 11 board meetings,

11

with the attendance rate of directors of

100%

and 52 proposals approved after deliberation.

52

Business Ethics and Anti-corruption

Nanshan Aluminium focuses on business ethics management and anti-corruption construction, committed to building a fair and impartial business environment and upholds a zero tolerance attitude to irregularities for favoritism. So far, the Company has formed an internal ecology with ethics and integrity, actively promotes positive development of industry and society.

Code of business ethics

By adhering to the business philosophy with law abiding, honest and high-quality service as the core, Nanshan Aluminium strictly abides by national and regional laws and regulations such as the *Company Law of the People's Republic of China*, *Anti-unfair Competition Law of the People's Republic of China* and *Anti-monopoly Law of the People's Republic of China*. The Company has released system procedure documents such as *Management Procedures for Labor and Business Ethics Hazards*, *Management Procedures for Enterprise Merger and Acquisition*, *Management Procedures for Clean Governance* and *Employee Handbook*, and defines the code of business ethics of leaders and employees in daily work such as honest procurement and operation, privacy and identity confidentiality, labor rights and interests, improper income and diversification. We continuously strengthen system supervision, so as to vigorously maintain the principle of fair competition and the interests of company and shareholders.

The business ethics training in report period covers **100%** employees, which successfully prevent the violations to business ethics

In order to control and manage the business ethics hazard related to operation, Nanshan Aluminium formulates the *Management Procedures for Labor and Business Ethics Hazards*. All employees shall accept the Company's educational training periodically according to the procedures. In addition, the Company carries out identification, evaluation and control of business ethics hazard every year, so as to evaluate the performance in business ethics. The business ethics training in report period covers 100% employees, which successfully prevent the violations to business ethics.

Anti-corruption management

Nanshan Aluminium fights against corruption resolutely, takes a sound internal control system as the cornerstone and establishes a perfect management mechanism of anti-corruption such as *Management Procedures for Clean Governance* and *Market Management System*. The Company establishes a standard and normalized operation process. All departments shall control the responsibilities through self-inspection and correction, periodically accept and assist the Group and the Company's review on ledger and compliance, and ensure the normalization of work process. For any behaviors violating to the national laws and regulations, the Company's rules and systems or damaging the Company's image and interests, the Discipline Inspection Department will focus on investigation, prosecute or transfer to judicial authorities in the light of circumstances, and timely report to the Chairman or the Board of Directors.

In order to create an honest, clean and anti-corruption business culture environment, Nanshan Aluminium organizes anti-corruption training for employees periodically, publicizes and implements the policy and system and conduct assessment, so as to enhance the employees' understanding on anti-commercial bribery, and further improves their compliance awareness.

In order to implement the Aluminium Stewardship Initiative (ASI), Performance Standard (PS) and Chain of Custody (CoC) review, we employed the third-party certification agency to review and confirm the Company's clean governance in this report period. Corporate management conforms to the document requirements and standard, and internal clean governance has achieved landmark effect.

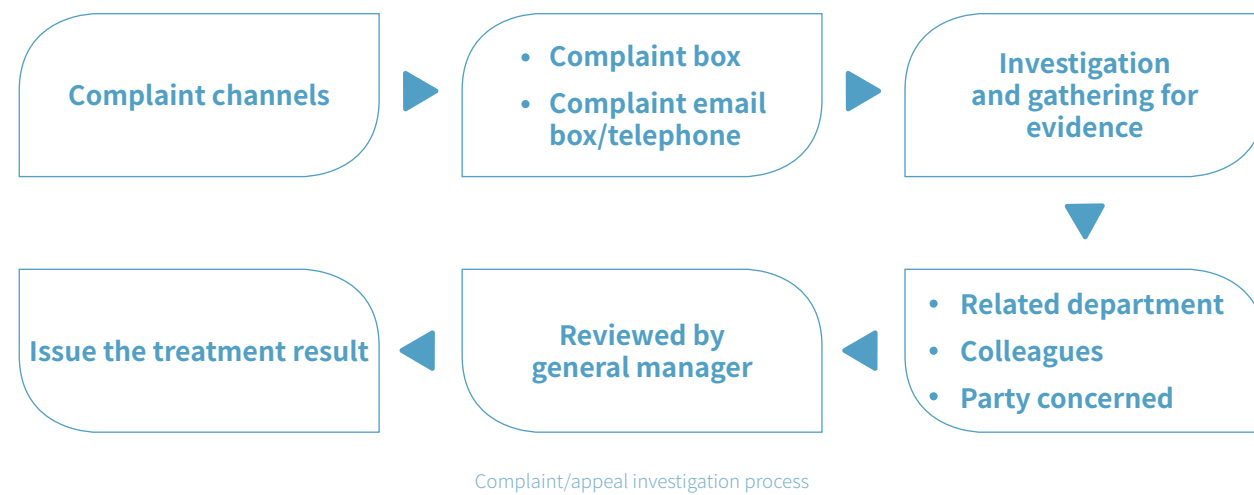


Anti-corruption training of Nanshan Aluminium

Reporting and complaint mechanism

The Company encourages employees to report all behaviors violating to business ethics or damaging the Company's interests, so as to find and treat the potential hazards. The Company establishes an internal report and complaint system, formulates *Management Procedures for Employee Complaints (Appeal)*, publicizes the report channel, periodically checks the complaint box and email box, investigates and treats relevant issues such as internal

control, laws and regulations, work style and benefit transfer. We focus on protecting the confidentiality management of informants, arrange special personnel to handle and record the reports, strictly prevent the leakage and dissemination of informant's identity and reporting materials, prohibit and punish the act of retaliating against informants and request the judicial organ to investigate the legal responsibility according to law when necessary.



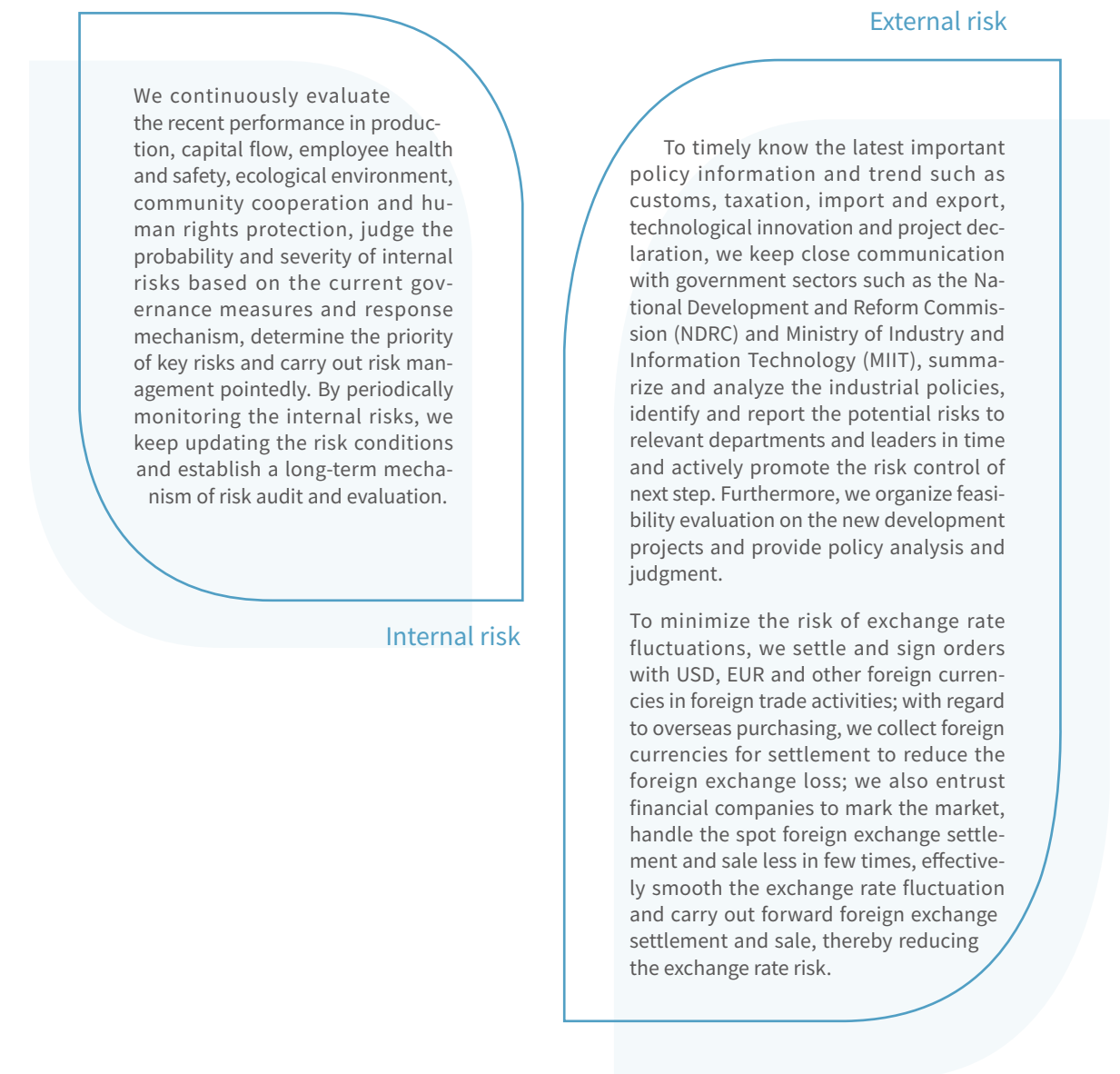
Risk Management

A good risk control system is the key to guarantee the normal and orderly operation of an enterprise. The top management and supervision departments of Nanshan Aluminium pay high attention to risk control, incorporates risk management into corporate culture, core business activities and decisions, strictly abides by the listing rules of Shanghai Stock Exchange, implements risk management policy, and establishes an integrated overall risk management system with the *Control Procedures for Risks and Opportunities* as the basic system and the *Project Risk Management System, Management Method for Supplier Risk Evaluation, Management Method for Sales Service Risk Evaluation and Management Method for Product Inspection Effectiveness Risk Evaluation* as the supplementary. The Company actively identifies, monitors and responds to the risks in all operation processes and links, so as to minimize or avoid the risk impact.

In the beginning of 2021, the Company organized relevant departments to fully analyze the internal/external factors that may affect the strategic direction and objectives, requirements and expectations of interest parties, environmental factors and compliance obligations, identified the internal advantages and disadvantages, external potential risks and opportunities with SWOT matrix analysis method, and formulated the *Risk and Opportunity Identification Form*. Besides, the Company evaluated the risks according to risk evaluation criterion, determined the risk level, formulated and implemented corresponding measures and evaluated the effectiveness in the end of the year. The evaluation result showed that all risk control measures were effective and the Company's risk control system worked well.

Risk identification

So far, Nanshan Aluminium has established a complete risk identification process to identify the internal/external potential risks and make quick response. We carry out a series of effective risk response by defining the key risk points of internal operation, external macropolicy risks and the foreign exchange risk of international settlement through special audit and daily risk identification.



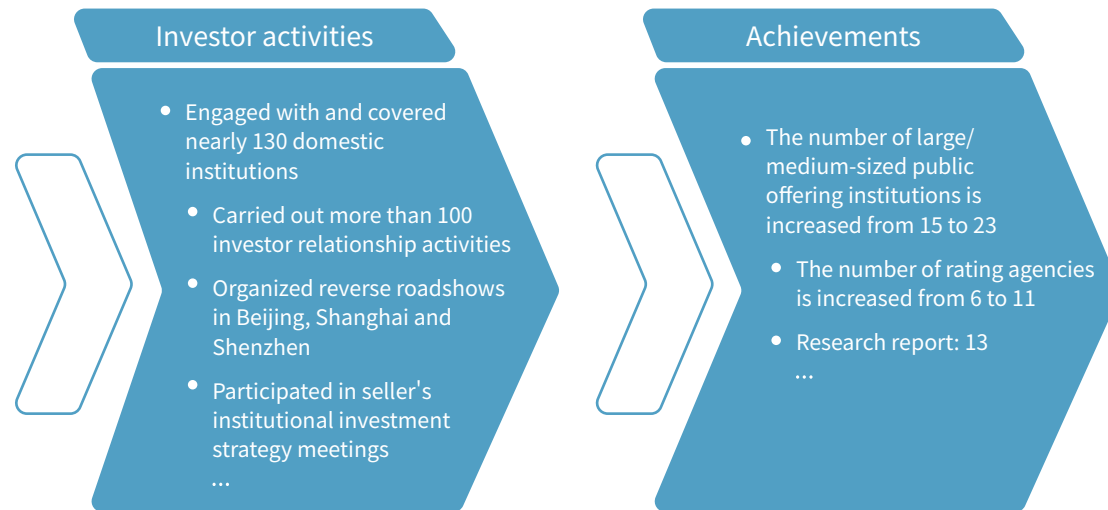
Risk monitoring

To further strengthen the risk management, the Company carries out risk evaluation and audit periodically. It formulates annual audit plans (including overall audit, special audit and joint audit) which will guide the monthly work after being approved by the Board of Directors. The financial revenue/expenditure and economic activities of all departments, holding/joint-stock companies, subsidiaries and overseas offices are supervised by the system, and the

audit covers the whole company, so that all subsidiaries can complete circular audit within a year. Besides, the Company establishes a closed-loop tracking mechanism for internal risk monitoring, collects all audit items, results and rectifications every year, tracks the rectification effect of different departments and prevents financial and operational risks.

Investor Relations

The Company keeps a close connection with capital market and strengthens the relationship with investors through deep communication. The Company has a special Securities Department in charge of information disclosure of regular and interim reports, and keeps a timely, deep and wide communication with the investors through regular/interim announcement, performance illustration meeting, shareholders meeting, analyst online/offline meeting and roadshow. We are committed to creating an efficient and smooth communication mechanism and establishing good relationship with investors.



Investor activities and achievements

Information Security

Nanshan Aluminium incorporates information safety into the major control field. In order to guarantee the network information security, the Company has established a safety perception platform to monitor the enterprise internet access and data center server, treat potential hazards timely and form a platform safety operation process through people involvement, risk host treatment, terminal site treatment, unblock and risk query. Computers and servers at intranet terminal have been equipped with antivirus program, so as to identify and eliminate the risks of threats, bogusware and spyware. We also cooperate with government sectors to carry out network safety inspection and attack-defense

drills, eliminate potential hazards and actively fill the risk loopholes.

Owing to the joint forces of all departments, Nanshan Aluminium has obtained GB/T 23001 informatization and industrialization management system certification. Besides, the Company's BPM business process approval system and website system have passed the Level II Multi-level Protection Scheme (MLPS) evaluation. So far, we have improved the digital operation service capacity in phases. In the future, we will empower the Company's value benefit through information technology.



无色、无味、无毒，由单体丁烯经加聚反应生成。耐老化、耐紫外线、耐酸和碱等独特化... 碱性粘接剂、口腔粘接剂、软化剂、... 系列橡胶以及橡胶等高分子改性等基础。

特种树脂 SPECIAL RESINS

EVA $(C_2H_4)_x(C_2H_3O_2)_y$

乙烯-醋酸乙烯共聚物，白色或淡黄色粒状或粉状物，具有良好的柔软性、透明性、无毒性、无腐蚀性，在-50℃下仍具有较好的弹性，耐摩擦、无毒。EVA可注塑、挤出、吹塑、热成型、发泡、涂覆、粘接、热熔胶、密封、注塑成型等加工。性能优异，用途广泛，用EVA树脂制成的薄膜，耐老化、透光性、弹性、耐冲击性及耐老化性等优于其它聚乙烯类树脂。

EAA $(CH_2CH_2)_x(CH_2CH(COOH))_y$

乙烯-丙烯酸共聚物，熔点、韧性、抗拉伸强度比聚乙稀高，气体透过性、耐环境应力开裂性能均随酸含量增加而提高。透明性、耐油性、粘附性、着色性好，用于香烟过滤嘴粘胶、薄膜包装和涂层、粘接橡胶、塑料、金属和玻璃，也可作为复合纤维、牙膏管、电线电缆护套、防护服、大型天线、耐摩擦漆、地毡材料等生产原料。

EEA $(CH_2CH_2)_x(CH_2CH(CO_2C_2H_5))_y$

乙烯-丙烯酸乙酯共聚物，具有很好的柔软性、热稳定性和加工性，用于包装薄膜、挤出吹膜制品、软管、片材型材、电线电缆、耐磨改性塑料、玩具、鞋类等行业。

ABS

ABS是由丙烯腈、丁二烯、苯乙烯共聚而成。具有优良的机械性能、耐热性和耐化学性。广泛应用于汽车、家电、玩具、体育用品、机械和农业工业中。

Product Quality

Craftsmanship for excellent quality



Nanshan Aluminium always adheres to the development concept of "quality first" and high-standard quality management system since its founding, and strengthens the product quality control. The Company insists on the principle of "customer-oriented", focuses on customer requirements, respects the customers' opinions and suggestions, constantly improves the customer service capacity, improves the after-sales service guarantee system, strengthens scientific and technological development and innovation and has been recognized by all sectors of society in brand competitiveness, development quality and product innovation.

Product Quality

The Company constantly optimizes the quality management mechanism, consolidates the quality management foundation, enhances the quality management awareness of all employees and promotes capacity construction. The Company has formulated *Quality Management System of Shandong Nanshan Aluminium Co., Ltd.* to strengthen the quality monitoring on all production links that may affect product quality and guarantee the outgoing product quality.

Management system

The Company has established a three-level quality management architecture to monitor the production quality, defines the rights responsibilities through hierarchical management and ensures the product quality.



The Company focuses on production process management and strictly controls the product quality of all links. The Company manages and controls three stages such as raw material entry, production process and the packaging and warehousing of finished products. The Company defines the production process responsibilities. All departments shall cooperate with the production and Quality Management Department and bear corresponding responsibilities. Besides, the Company links the quality assessment results with employee performance by formulating quality management assessment system, and guarantees the effectiveness of quality management system.

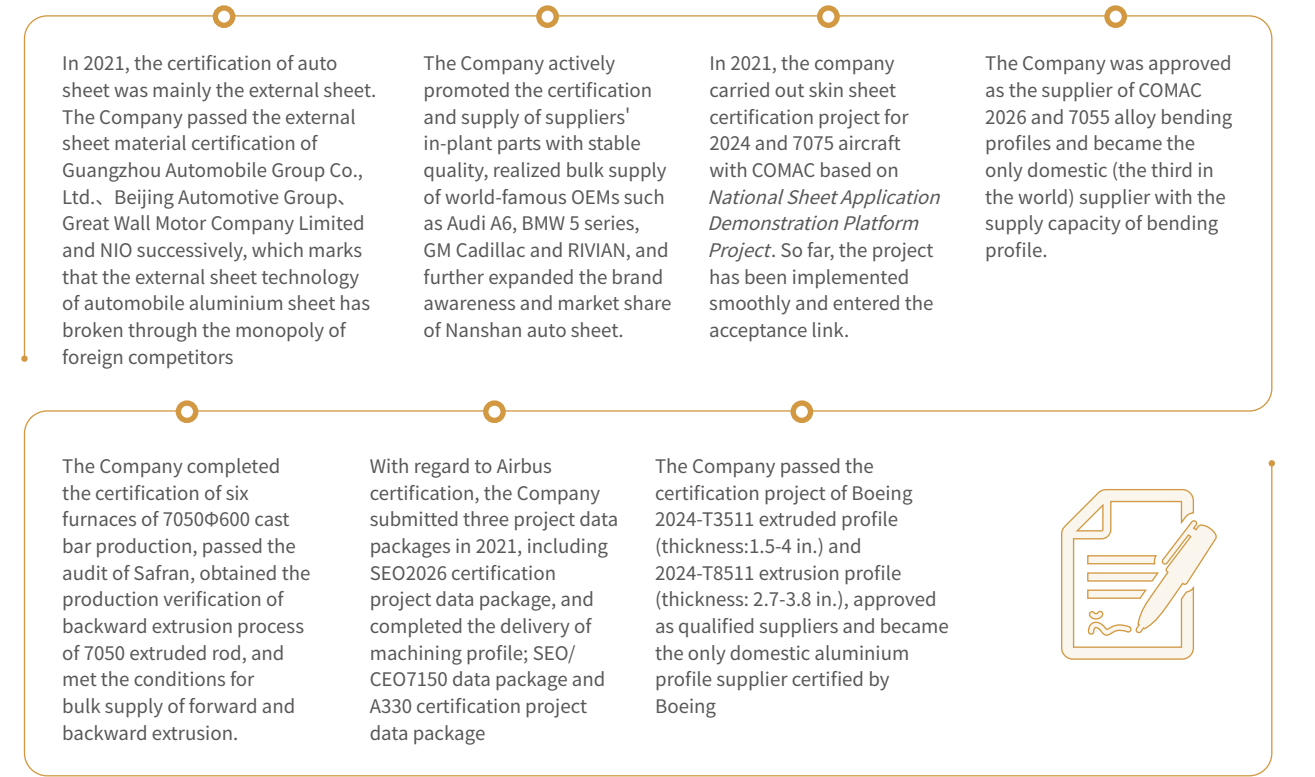


The Company strictly controls the release of products and adheres to the three principle in quality control, that is, the Company does not accept unqualified products, does not manufacture unqualified products, and does not flow out unqualified products. The Company has established two-level organizations, including the unqualified product review committee and the unqualified product review team, which adopt "8D" and RCCA methods to analyze the causes and formulate corrective measures according to different quality problems, so as to ensure that all quality problems are managed in a closed loop.

System certification

The Company strictly controls the product quality, and has been certified by ISO 9001 quality management system, ISO/TS 22163 railway system quality management system, IATF 16949 automobile quality management system, ISO 22000 quality safety management system, ISO/IEC 17025 laboratory management system, GB/T 29490 enterprise intellectual property system, seven classification societies (China, Norway, U.S., Japan, British, France and Korea), National Aerospace and Defense Contractors Accreditation Program (NADCAP) special process certification of Performance Review Institution (PRI) such as thermal treatment, nondestructive testing, chemical treatment and testing laboratory and PED&AD2000 Pressure Equipment Directive Certification.

In the report period, a series of product certifications have been obtained, involving many fields such as automobiles and aerospace.



Responsible production

Aluminium Stewardship Initiative (ASI) is the only comprehensive voluntary sustainability criteria for the global aluminium value chain, and the ESG framework is totally in line with the widely concerned ESG investment philosophy. Shandong Nanshan Aluminium Co., Ltd is the first enterprise in the whole industry chain that has passed ASI certification for the first time and successfully obtains the ASI PS performance standard certificate and ASI CoC standard certificate, thereby improving the Company's green value.

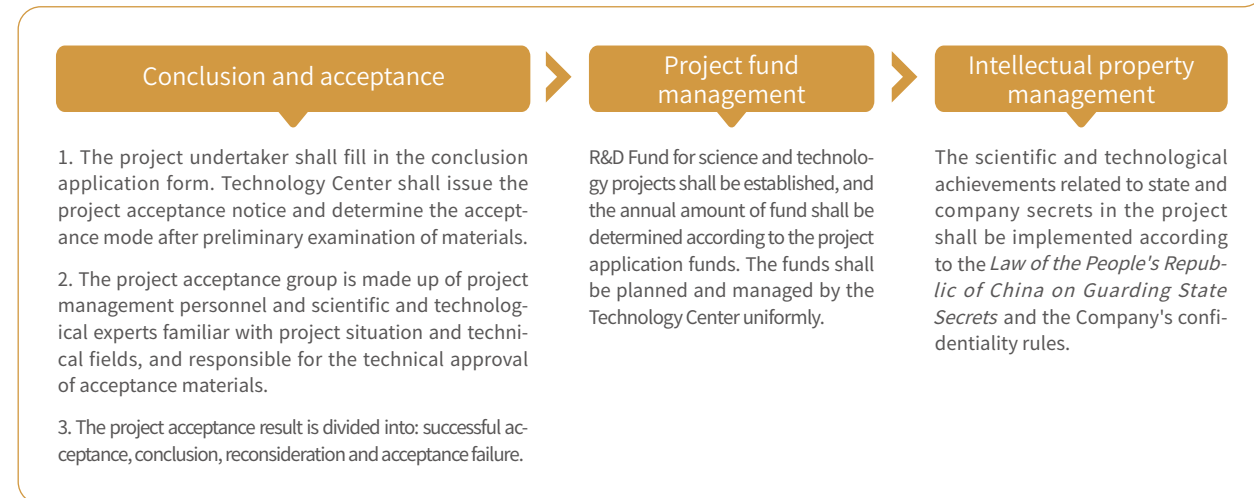


ASI CoC standard certificate | Certificate of GB/T 36132-2018 General Principles for Assessment of Green Factory | ASI PS performance standard certificate

R&D and Innovation

Technical research and development

The Company adheres to facing the technology frontier and industrialization, production bottlenecks and major economic activities and indexes during innovative development, and actively carries out scientific research by relying on various talents, experimental platforms and college-enterprise cooperation. The Company's R&D project management is implemented according to the *Management Measures of Nanshan Holding Technology Project*, with the process as follows:



The Company has established the National Aluminium Alloy Pressure Processing Engineering Technology Research Center, which is the only national engineering technology research center. More than a dozen national standards drafted by The Company have won the "Technical Standard Excellence Award" of the National Non-ferrous Metal Standardization Technical Committee. Besides, the Company actively carries out industry-study-research cooperation, and realizes the organic combination of mechanism theory and mass production through new technical development and experiments with Northeastern University, Central South University, Northwestern Polytechnical University and General Research Institute for Nonferrous Metals. By the end of report period, the Company has established 5 national and 7 provincial R&D platforms. The Company won the honors of "National High-tech Enterprise", "National Innovative Enterprise" by the Ministry of Science and Technology, as well as the "Shandong Provincial Governor Quality Award".

Achievements

Participation in formulating national and industry standards

In 2021, the national standard *Wrought Aluminium Alloy Sheets, Strips and Foils for Deep Cans* drafted by the Company was published;

The industrial standard *Methods for Chemical Analysis of Aluminium Electrolyte. Part 4: Determination of Alumina Content. Gravimetric Method* drafted by the company was published;

The national standard *Renewable Material for Wrought Aluminium Alloys and Renewable Materials for Pure Aluminium* were published; The seven industrial standards such as *Methods for Chemical Analysis of Bauxite. Part 19: Determination of Loss on Ignition. Gravimetric Method, Aluminium and Aluminium Alloy Foils for Household and Determination of Chemical Content and Physical Properties of Aluminium Fluoride. Part 15: Free Alumina Content* were published.



Patents

The Company obtained 46 authorized patents in 2021, including 11 invention patents;

The Company accepted 36 patents in 2021, including 19 invention patents;

Aluminium Alloy for Aviation and Production Process Thereof won the Second Prize of Patent of Yantai City.

Cooperation Projects

In 2021, the Company successfully applied for one National Key Research and Development Project and two Key Research and Development Projects of Shandong Province jointly with scientific research universities and enterprises.

 <p>Recycled aluminium recycling and development project</p>	 <p>Intelligent process control technology project</p>	 <p>Traffic lightweight aluminium upgrading project</p>
<p>In 2021, the Company applied the key projects of "solid waste utilization" in National Key Research and Development Project jointly with University of Science and Technology Beijing, Institute of Process Engineering, Chinese Academy of Sciences and DELTA ALUMINIUM. The project obtained the fund from the central government. The project period is started from October 2021 to September 2024, realizes integrated production of aviation aluminium sheet hot rolling - cold rolling - continuous annealing, heavy plate thermal treatment and accurate control of aviation aluminium sheet/heavy plate composition - organization - structure - performance, establishes the industrialization production system of aviation aluminium sheet/heavy plate and supports the high-quality development of secondary aluminium industry.</p>	<p>2017 National Key Research and Development Project "intelligent process control technology of aluminium/copper strip based on industrial big data" undertaken by the Company, as the project leading unit, successfully passed the acceptance of the Ministry of Science and Technology in 2021. In the project, a demonstration line of industrial big data platform for the whole production process of CPS and a demonstration base of intelligent process control technology based on industrial big data were built, and the comprehensive production efficiency of the enterprise's production demonstration line reached 76.57%, with an increase of 20.58%; The comprehensive manufacturing cost of aluminium alloy coil decreased 29.10%, and the Company's intelligent production level was further improved.</p>	<p>In 2021, the Company continuously adhered to the cooperation mode of "industry-university-research", and successfully applied 2021 Key Research and Development Project of Shandong Province (major scientific and technological innovation project) "research and development of key technologies for preparation and intelligent processing of light alloy and composite materials for key industries" jointly with Shandong University, CRRC QINGDAO SIFANG CO., LTD. and SHANDONG YANKUANG LIGHT ALLOY CO., LTD. The Company successfully applied 2021 Key Research and Development Project of Shandong Province (Science and technology demonstration project) "aluminium-based traffic lightweight science and technology demonstration project" jointly with Shandong Hongqiao Advanced Materials Co., Ltd., Advanced Materials Institute, Shandong Academy of Sciences and Suzhou University. The project period is started from October 2021 to December 2024.</p>

Industrial informatization

The improvement of network informatization construction is beneficial for assisting the Company to manage the finance, human resources, quality management and information security from multiple perspectives. The Company has made continuous investments in network informatization to actively promote digital transformation. We establish an informatization-industrialization management framework system based on the successful informatization-industrialization integration cases of excellent enterprises inside and outside the industry, so as to guarantee the planning promotion and coordinate linkage of strategy, business, technology and management, reduce the cost and

increase the benefits.

Currently, we have completed the submission and docking of to-do-list of all departments through business process management (BPM), so as to realize transformation and upgrading from offline centralized procurement to internet purchasing and efficiency improvement. With the intelligent park as an objective, Nanshan Bintan project in Indonesia has established an integrated information platform successfully, developed toward group multi-factory collaborative management and continuously improved the project improvement level in the process.



Integrated Information Platform of Bintan Park in Indonesia

By taking large park network as the basis and production as the main line, Bintan integrated information platform in Indonesia has established centralized management system, production management platform and dispatching center based on information technology, and realized heterogeneous system integration and IoT connection requirements through distributed application and data cluster deployment.

So far, the platform has established a park centralized management system including human resource management, supply chain management, financial management, assets management, engineering project management, AD domain control, BPM system and all-purpose card system, and built 16 core function modules for Indonesian park production such as production management, two-ticket management, operation monitoring, equipment management and production report and integrates with the park centralized management system, so as to break through the barrier of business segments and realize interconnection and digital management of equipment, data and system.

As the twelfth special economic zone in Indonesia, the park has received a great attention from local government and customs in Indonesia. The Indonesian customs takes the park as a trial project of the whole special economic zone and promotes the informatization of supervision initiatively. The park project establishes a customs supervision system based on the integrated information platform. So far, the platform has passed the customs acceptance and put into operation, which makes Nanshan Aluminium become the only company successfully utilizing the customs online system.



Intellectual property protection

The Company constantly improves the intellectual property management system while focusing on innovation and development. We formulate the *Management System Manual* according to the *Patent Law of the People's Republic of China*, *Anti-unfair Competition Law of the People's Republic of China*, *Norms for the Administration of Intellectual Property of Enterprises*, *Guidelines for the Administration of Intellectual Property of Industrial Enterprises* and actual situation, constantly standardize the intellectual property management system, improve the comprehensive capacity in intellectual property declaration, protection and utilization, encourage innovation, avoid intrusion of other intellectual properties while protecting own intellectual properties, accelerate the intellectual property transformation and improve the enterprise benefit and practical productive force.

departments uniformly according to the *Management System Manual*, handles the patent review responses, payment, inventor and patentee change and does well in patent archives management. To avoid the occurrence of infringement and right protection incidents, a patent retrieval shall be made for the technical disclosure before the patent application to ensure the technical disclosure contains no infringement point. Before a paper is published externally, the duplicate shall be checked and reduced for such paper to avoid the occurrence of infringement incident.

The Company cultivates the employees' awareness of intellectual property comprehensively. It invites an agency to provide more than 2 intellectual property trainings every year. In 2021, Nanshan Aluminium had a strict control of the intellectual property, so no infringement or right protection incident occurred.

The Technology Center manages the patents of different

Trademark management

Trademarks belong to intangible assets of the enterprise. Nanshan Aluminium strictly complied with the *Trademark Law of People's Republic of China* and developed its internal trademark management system based on its own conditions. The Company arranged a special post for trademark management and use review as well as active right protection against the infringement behaviors in the market. To protect the enterprise's legal rights and interests, the Company collaborated with other affiliates to clearly define the ownership, reduce trademark conflicts and narrow the gap between rights.

During the report period, Shandong Nanshan Aluminium Co., Ltd applied the registration of 1 new trademark.

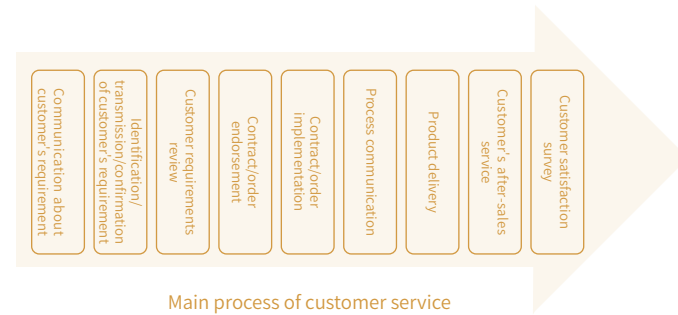
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By the end of 2021, it owned 31 effectively registered trademarks in total.

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Customer Service

Nanshan Aluminium has always attached importance to the guarantee of customers' rights and interests. It is devoted to providing high quality services to customers and further optimizing the customer experience. To establish a complete customer management system, the Company took a series of measures in accordance with *Process Control Procedure Related to Customers*, *Post-sales Service Control Process*, *Customer Satisfaction Measurement Procedure*, *Product and Service Management Regulations* and other system documents, to normalize the customer service process and improve the customer service satisfaction.



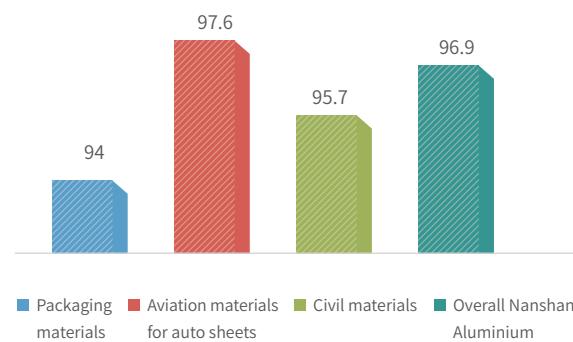
Main process of customer service

Customer satisfaction

According to the *Customer Satisfaction Measurement Procedure*, Nanshan Aluminium regularly conducts the customer opinion and satisfaction investigation. The investigation dimensions cover the product quality, delivery period, service attitude and response to problem. The Company summarizes the result scores of investigations, analyzes the shortcomings and organizes relevant departments to take corrective measures against the investigations.

Nanshan Aluminium is further strengthening the communication with customers, optimizing the service process, reasonably detailing the production schedule, improving the production process, lifting quality and increasing efficiency and creating the scale benefits; in storage and transportation, the Company strengthens the coordination with logistics company, dispatches more vehicles for delivery and follows up the transportation of goods, ensuring delivery within the customer's delivery period.

Results of customer satisfaction investigation



Nanshan Aluminium participated in "ALUMINIUM CHINA 2021"

Customer communication

Smooth communication with customers is the bridge to establish the deep trust of customers. In addition, it is able to systematically display the advantages of the Company's products and enhance the brand influence. Nanshan Aluminium participated in the "ALUMINIUM CHINA 2021" and held a new product release conference titled "Build a dream with ingenuity and create a bright future". During the conference, it displayed its achievements and development concept in multiple fields, including aviation, automobile, packaging material, etc. to customers and peers. The Company won the high recognition of attendees with the advanced market layout, leading development concept and strong social responsibilities, which further improved our industry reputation and brand image.

Nanshan Aluminium devotes itself to continuous improvement and structural optimization. It strives to provide the most considerate services, highest cost performance and most stable and reliable product quality. Furthermore, it is intended to provide the most suitable and perfect product solutions to customers. The Company knows about the customer's demand for quality improvement through email, telephone communication, face-to-face visit, talkfest, etc. It also adheres to good communication with customers and responds to and properly handles their demands timely in accordance with *Process Control Procedure Related to Customers*, *Post-sales Service Control Process*, etc.

To protect the customers' rights and interests, the Company has formed a complete set of customer complaint and feedback treatment process. Such process ensures the smooth complaint channel, timely acceptance and fair treatment. Once receiving the customer's feedback or complaint about quality problems, we will collect more information, such as the performance of related materials in use and law of problem from the customer as possible. And then we will deliver such information to the Production and Technology Departments for investigation and analysis. Finally, we will negotiate with the customer based on the investigation conclusion and determine the treatment scheme.

Customers

The Company sticks to the concept of deep integration with the industrial chain. It adopts the cooperation mode of actively constructing an interest community with customers and seeks to establish a long-term, stable, mutually beneficial and win-win partnership with customers. It realizes the strategic cooperation and strives together for long-term development through joint participation in R&D with customers.

Cooperation with customer France SAFRAN

SAFRAN is a high-tech cross-border group company. It is also a world-class aero-engine and equipment manufacturer and one of the Global Fortune 500 companies. Nanshan Forge Company focuses on the R&D of forging products for A320/321 top-side and downside stay bars. The forgings have successfully passed the trial-manufacture and been put into mass production upon approved by the material lab of SAFRAN.

During the two years from the contract signature of both parties to successful trial-manufacture of the first forging, multiple sectors, including review, research and testing have been completed. The Company's team has been constantly looking for, solving and improving problems in R&D, production and testing to meet the customer's requirements for products. The successful trial-manufacture of the forging for the side stay bar is an outcome of the elaborate R&D and operation of Nanshan Aluminium. In addition, it fully proves the Company's ceaseless emphasis on technology and improvement of quality monitoring and testing. The successful trial-manufacture of stay bar will significantly improve the product credibility and brand influence of the forging company as well as the share of its products in domestic and foreign markets.

Privacy protection

Nanshan Aluminium attaches great important to protection of customer's privacy in strict accordance with *Cybersecurity Law of the People's Republic of China*, *Personal Information Protection Law of the People's Republic of China* and other related laws. We developed and implemented a series of systems, including *Rules for Implementation of Commercial Secret Management*, *Rules for Implementation of Documentation Management* and *Control Procedure for Production Process*. These systems stipulate the contents and scope of commercial secrets and confidential responsibilities of personnel at all levels. The Company has established a confidentiality organization (confidentiality office) for the unified management of related confidential documents and data. In addition, to protect the customer's privacy and our own rights and interests, we signed the corresponding *Confidentiality Agreement* with some customers during the cooperation, thereby reducing the risk of information disclosure.

Cooperation with customer CRRC Qingdao Sifang Co., Ltd.

The high speed maglev traffic system is a key special topic for advanced rail traffic in the National Key Research and Development Project of the "13th Five-year Plan" by the Ministry of Science and Technology. On July 20, 2021, the first set of high speed maglev traffic system with a design speed per hour of 600 km successfully left the production line in Qingdao, China. The high speed maglev train has stricter requirements on aluminium materials. Nanshan Aluminium started to participate in the R&D of aluminium alloy materials for train body of the project by CRRC Qingdao Sifang Co., Ltd. since 2018. The aluminium alloy 6A01, 6005A, 6106 and 6082 used in the project had special requirements on the microstructure, tensile property, fatigue performance, exfoliation corrosion performance, fatigue corrosion performance, stress corrosion performance and weldability.

Nanshan Aluminium participated in the R&D of the high speed maglev train with a speed of 600 km/h. In this project, we broke through multiple key technologies, solved many technical problems and mastered the core process technology for crushing irregular-shaped and cross-section aluminium alloy materials. We also acquired and mastered the mass production capacity of high performance aluminium alloy materials for train body under industrial conditions.

Responsible marketing

Nanshan Aluminium strictly abides by the related national laws and regulations and strives to build up a fair, just and open business platform. During the cooperation with customers, the Company signed the *Integrity Agreement* with some customers. These customers were asked to strictly abide by the related requirements of the agreement in cooperation. The Company also participated in the "anti-hunting" (integrity awareness and execution) training of some customers and accepted the integrity and site review irregularly initiated by the customer's Supplier Management Department.

Carbon emission reduction target of Nanshan Aluminium

in 2030

The carbon emission of electrolytic aluminium

< 8 t CO₂e /t product

< Energy consumption quota
of the non-ferrous industry

Overall energy consumption
of unit product

Low Carbon Production

Green manufacturing towards the peak
carbon emissions and carbon neutrality

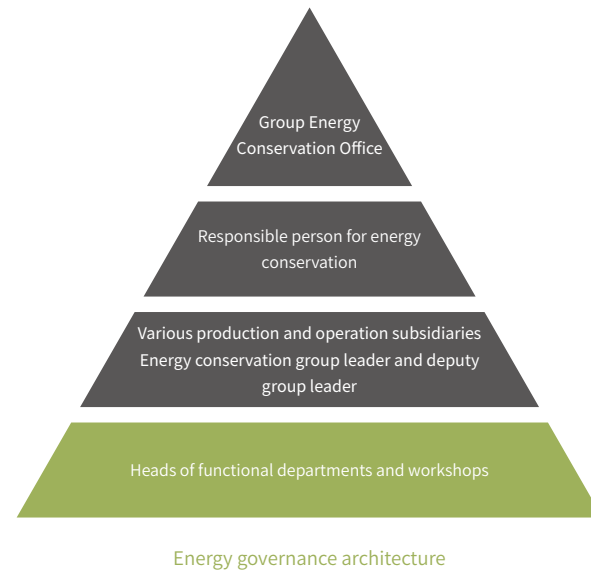
Being committed to building a green and sustainable production system, Nanshan Aluminium strictly abides by the Energy Law of the People's Republic of China, Law of the People's Republic of China on Conserving Energy and other laws and regulations. We utilize the technical means, such as energy use monitoring and energy conservation analysis to intensify the energy consumption control and lift the energy utilization efficiency from two aspects, namely optimization of engineering technology and energy consumption structure improvement. We guide and urge all subsidiaries and production units to actively implement the energy conservation and consumption reduction measures and make an effort to build green enterprises and plants in harmonious coexistence with the environment.

Furthermore, we actively respond to the strategy of "carbon neutrality" and "carbon peak" and the Aluminium Stewardship Initiative (ASI). We develop an active emission reduction target of greenhouse gas and set an example for promoting the high quality and green development of the industry.



Governance structure

Under the overall management of the energy conservation office of Nanshan Group, we have established an energy conservation control architecture featured with a clear hierarchy and explicit responsibilities. The organizations at all levels coordinate in an inter-connected manner and cooperate with each other. The Group's Energy Conservation Department serves as the Overall Planning and Management Department. It is responsible for supervising and managing the energy conservation of its subsidiaries, implementing the Company's all decisions on energy management and checking the implementation of energy conservation by all subsidiaries. The head of the Company works as the responsible person for energy conservation and takes charge of the management, supervision and check of the energy conservation of all subsidiaries. In all domestic and foreign production and operation subsidiaries, we have assigned the group leader and deputy group leader for energy conservation. They perform the daily energy conservation practice based on the actual conditions of production and operation, collect statistics on and manage the energy consumption of their own companies and prepare the energy conservation planning and execution plan; on the other hand, we ask the functional department and head of workshop of each subsidiary to strictly implement various energy conservation requirements in the principle of energy conservation and consumption reduction, strengthen the energy conservation and utilization and summarize the scientific management experience.

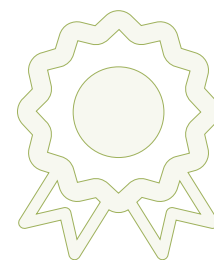


In addition, we set up a carbon check group and assign the general manager as the group leader, general managers of the branches and subsidiaries as the deputy group leaders and carbon check responsible persons as members. They constitute the check group and verification group working in coordination. This arrangement helps us master our own current status of carbon emission, realizes our control of the total carbon emission and provides practical experience and data support for our subsequent management and trade of carbon assets.

Governance system

We support the implementation of the energy conservation and emission reduction target of Nanshan Aluminium based on a unified, orderly and efficient management system. Besides, we integrate the management concept of "strictness, meticulousness, practicality, innovation, constancy and alignment" in the whole process of energy management, actively implement the energy conservation and consumption reduction measures and reduce the resources consumed during production and operation. Through enhancement of energy management, improvement of energy management working system documentation and operating requirements and implementation of the responsibility system for energy conservation target, Nanshan Aluminium decomposes the consumption indicators for resources, energy and raw materials in layers. Finally, it implements the management closed loop with the assessment indicators, including energy conservation plan management, energy conservation foundation management, energy conservation system and assessment system construction, construction of energy conservation organization and management system, energy conservation modification project, etc.

Nanshan Aluminium starts with various production sectors and efficiently and reasonably utilizes the energy resources. It adheres to five basic energy conservation principles, namely the combination of conservation priority and multi-energy complementation, the combination of energy conservation and consumption reduction and reducing costs and improving efficiency, the combination of source control and existing potential tapping, the combination of management in accordance with laws and regulations and policy incentives and the combination of partly highlighting and comprehensive promotion. Through its own positive efforts, it passed the ISO 50001 energy management system certification. Such certification covers the production and energy management activities on the core production and operation places of Donghai Thermal Power Plant, Electrolytic Aluminium Branch of Shandong Nanshan Aluminium Co., Ltd., Longkou Donghai Alumina Co., Ltd., Nanshan Aluminium Flat Rolling New Material Co., Medium-thick Plate Branch and Nanshan Aluminium Profile Company.



Coverage rate of ISO 50001 certification

66.6%

Training mechanism

Nanshan Aluminium has paid continuous attention to the emission standard of the industrial pollutants, utilization of solid waste resources, low-carbon sustainable development and some other key topics related to environmental management. We analyze and interpret the trend of ecological environment protection policies and regulation news as well as the development trend of low carbon production technology in real-time. Through the systematic special training on low carbon and environmental protection, we combine the management theory and practical operation of skills and convey the sustainable development concept and green low carbon working method to all employees.

Nanshan Aluminium provides the systematic management knowledge related to the low carbon environmental protection to the employees. It also organizes the key personnel for environmental protection of the key energy consumption subsidiaries, including Donghai Power Plant to participate in the training for carbon market capacity building of power generation enterprises in Shandong Province, the special training program of Beijing Zhonghuan Environmental Protection Technology Center for industrial green low carbon development and carbon emission management and green manufacture, the workshop for development and application of carbon neutrality implementation route and other external trainings and workshops of various types. We guide employees' behavior for energy conservation and emission reduction and low carbon environmental protection during the production and operation through the combination of theory and reality as well as the combination of method and practice.

Environmental protection theory training with the topic of low carbon development and green manufacture



Training for energy consumption practice



Energy Management

Efficient energy management is an important sector to realize the green development. Nanshan Aluminium improves and strengthens the fitness of energy use management by means of continuous energy consumption monitoring and energy conservation analysis. We also constantly lift the energy utilization efficiency in terms of production technology optimization and energy consumption structure improvement and urge the production and operation subsidiaries to actively implement the energy conservation and consumption reduction measures. During the report period, we start with the all-around energy management and realize the accurate recognition of energy consumption object and energy conservation modification changes. Apart from setting the annual energy conservation target, we add the energy consumption indicators at the Company, system, facility and area levels, continuously detecting and controlling the energy consumption.

Nanshan Aluminium actively explores the new technology, equipment, material and process for energy management. We have successively invested in and started a series of projects for energy conservation and emission reduction technology optimization and equipment modification to constantly consolidate the basic energy management capacity and offer a powerful support to the attainment of the Company's energy management target.



We reuse the exhaust gas from high-pressure flash evaporation and reduce the consumption of new steam and discharge of non-flashed exhaust gas while conserving steam and reducing the discharge of greenhouse gas;



We organize the direct discharge process modification against the bottom flow of the sedimentation tank, which improves the sludge discharge efficiency, reduces the equipment operation time and lowers the electricity consumption;



In addition, we install the fan frequency converter for melting and holding furnace, optimize the production-used sawing machine, prolong the thermal control time for tank materials, replace the linings for melting and holding furnace on the production line and reduce the energy consumption through fine adjustments.

Reuse process modification project for high-flash waste steam in the aluminium oxide sedimentation workshop

We optimize the process for sedimentation tank and heater in the aluminium oxide sedimentation workshop and replace the original new steam with the high-flash waste steam from the VI stripping workshop for heating. At present, the high-flash exhaust gas has been used for the daily heating of all sedimentation tank and heater in the workshop. It is predicted to conserve 8,000t new steam and reduce the discharge of greenhouse gas - about 2,500t CO₂ every year.



Modification for variable frequency control and energy conservation of fan in the melting furnace in the plate belt casting workshop

Nanshan Aluminium implements the frequency converter modification on the motors of two melting furnace combustion fans and two smoke exhaust fans in the third plate belt casting workshop. We change the condition that the fan still operates at a high speed when the fire is off in the melting furnace, which minimizes the energy consumption of motor and achieve the target of energy conservation and consumption reduction. After the modification is completed and then commissioned and tested, the equipment in workshop operates normally and has no adverse impact on the original production control of the workshop. In addition, it optimizes the combustion air, controls the smoke exhaust pressure, reduces the workshop noise, prolongs the service life of motor as well as reduces the power consumption by 319,235 kWh, achieving a year-on-year energy conservation of 25%.



Nanshan Aluminium has always implemented the green office concept to create the green and low-carbon working environment in the Company.



We promote the energy conservation modification of lights and adopt the timing and voice control light management mode to reduce the power consumption in lighting;



We further popularize water-conserving devices in office places and conduct a regular inspection to avoid water venting, overflowing, dripping and leakage;



All of our employees carry out the paperless online office through an internal OA online office system of the Company;



We are gradually replacing the office cars with new energy electric environmental protection vehicles.

During the report period, the energy consumption indicators of Nanshan Aluminium are described as follows:

Energy consumption indicators	Unit	Data
Indirect energy consumption	tce	251,735
Purchased electricity	kWh	2,048,287,783
Direct energy consumption	tce	5,049,267
Diesel	t	4,309
Raw coal	t	6,564,588
Natural gas	10,000 m ³	31,743
Comprehensive energy consumption	tce	5,301,002

Energy consumption in 2021

(The scope includes the company's main operating plants in China, Indonesia and the U.S..)

Management of Carbon Emission

Nanshan Aluminium adheres to the sustainable development concept of "Green manufacture for a bright future". We respond to the national strategy of "carbon neutrality" and "carbon peak" and continuously implement the sustainable development route. As the first enterprise passing the ASI aluminium industrial chain certification, we set an example for constantly promoting high quality and green development of Chinese non-ferrous metal industry. We take the green development as a topic and actively respond to the call upon carbon reduction from the national and local governments. We are ceaseless exploring the best carbon neutrality practice in the non-ferrous metal industry through the green and low carbon optimization of production and operation.

Optimization of energy architecture



Nanshan Aluminium is actively attempting the power generation layout of non-fossil energy. We are gradually increasing photovoltaic power generation, reducing consumption of thermal power and fully consider purchasing low carbon energy and discuss the deep cooperation with energy partners in cross-region power and gas supply, constantly optimizing the energy structure with the clean energy represented by green power.

Low carbon process development



With the maturity and promotion of the carbon capture and storage technology, Nanshan Aluminium is actively exploring the comprehensive solution for carbon capture and storage (CCS) and biological energy and carbon capture and storage (BECCS) equipment while upgrading and modifying the existing coal-fired unit. We strive to both realize the low carbon, green and sustainable development and explore the optimal route to reduce the discharge of greenhouse gas.

Check of carbon footprint of products

We closely trace the frontier technology of the industrial low carbon process, update the greenhouse gas emission plan and control target every year and publish *Greenhouse Gas Emission Target and Implementation Plan of Nanshan Aluminium* on the official website, accepting the supervision of all sectors of society. As the only responsible enterprise disclosing the direct and indirect greenhouse gas emission carbon footprint during the whole product life cycle, we actively respond to the carbon reduction demand on upstream and downstream of the supply chain. Furthermore, we decide to lower the year-by-year carbon emission target and measures based on the third-party's product check report and try to build the important sector on the supply chain of low carbon aluminium.



Product carbon footprint check report



Roof Distributed PV Power Project of Thermal Power Plant

Nanshan Aluminium checks the carbon emission in strict accordance with the standard ISO 14064. We established our own standard document *Management Procedure for Greenhouse Gas Calculation* and an internal greenhouse gas check and verification group. The group checks, calculates and discloses the greenhouse gas discharge every year. During the report period, we reduce our own greenhouse gas discharge through the refined energy conservation management and thereby address the climate change. See the table below for details of the greenhouse gas emission of Nanshan Aluminium:

Discharge indicators	Unit	Data
Total greenhouse gas discharge (Scope 1 + Scope 2)	t CO ₂ e	13,057,121
Greenhouse gas discharge (Scope 1)	t CO ₂ e	2,118,741
Greenhouse gas discharge (Scope 2)	t CO ₂ e	10,938,379
Carbon emission intensity		
Longkou Donghai Alumina Co., Ltd.	t CO ₂ e /t product	0.55
Longkou Nanshan Aluminium Rolling New Material Co., Ltd.	t CO ₂ e /t product	0.52
Medium-thick Plate Branch	t CO ₂ e /t product	0.58
Electrolytic Aluminium Branch of Shandong Nanshan Aluminium Co., Ltd.	t CO ₂ e /t product	13.24
American plant	t CO ₂ e /t product	0.45

Greenhouse gas discharge indicators of 2021²

(Data scope includes the company's main operating plants in China, Indonesia and the U.S..The scope of the data includes the company's main production plants in China as well as the U.S. We will conduct future disclosures of greenhouse gas emissions metrics for the Indonesia plant as it came into operation in 2021.)

²As the Company is involved in a long industrial chain, the Company carried out carbon emission verification for major products, and the carbon emission data disclosed accounts for 85% of major aluminium products.

Environmental management target of Nanshan Aluminium

target rate of waste
water discharge

100%

target rate of waste
gas discharge

100%

disposal rate
of solid waste

100%

harmless disposal rate
of hazardous waste

100%

Environment and Ecology

Work together to protect the ecology
for harmony

Nanshan Aluminium takes high quality and sustainable green development concept as its own promotion topic and attaches great importance to the impact of production and operation on natural environment and ecology. Under double topics of transformations to green and low carbon development, we continually enhance the environmental protection efforts with normalized and efficient emission reduction initiatives. We stably implement the emission reduction and pollutant-cleaning by the company's complete environmental management system and integrate the concept of ecological civilization into the whole process of enterprise production, operation and management. Nanshan Aluminium constantly digs the value of resources while sticking to the commitment of sustainable development. We utilize our active environmental management policies to cultivate green dynamics, supply green products, build green enterprise and lead the green and high quality development.

Management structure

Nanshan Aluminium always adheres to the clear environmental protection target and ensures the proper direction of environmental management; we carry out clear internal labor division and cooperation to ensure the coordinated environmental management; we use a powerful environmental management system to ensure the implementation of environmental management. For all subsidiaries of Nanshan Aluminium, we clearly assign the head of each company as the first responsible person for environmental protection. The responsible person manages the company's environmental protection uniformly and is in full charge of all environmental problems within the area under management; In the meanwhile, we stick to the management principle of "the one who is in charge shall bear the responsibility" and further divide the environmental protection responsibilities into details and allocate them to the environmental management responsible persons and environmental management commissioners for various production sectors. Clear post responsibilities, post instructions, workflow and operating guidelines are also provided for support, which ensures the effective implementation of environmental protection and management during the whole production process of Nanshan Aluminium. In addition, our overseas operation places strictly abide by the requirements of American and Indonesian laws and regulations and rules of local competent environmental authorities. They implement the internal management and assessment guideline of Nanshan Aluminium while ensuring compliance with local environment regulations, promoting the green and stable production and sustainable and healthy development of American and Indonesian plants.

Nanshan Aluminium employs the third-party institution - Shandong Longxin Monitoring Technology Co., Ltd. (hereinafter referred to as "Longxin") to guide and supervise the Company's environmental protection and collaborates with the Security and Environment Department of Nanshan Aluminium and all its subsidiaries. Longxin conducts the daily, quarterly and special assessments and comprehensively supervises the environmental management of various production companies based on decomposed and detailed environmental management targets.

Management system

Nanshan Aluminium strictly bears the environmental protection management responsibilities. While meeting the requirements of national laws and regulations for ecological environment protection, including the *Environmental Protection Law of the People's Republic of China*, *Environmental Impact Assessment Law of the People's Republic of China*, *Regulations on the Administration of Construction Project Environmental Protection*, etc., we also implement the *Management Method for Environmental Protection of Nanshan Holdings*. We determine the environmental protection target, key work contents, functional division and coordination and assessment and accountability mechanism to adhere the bottom line for environmental protection.



the construction and commissioning of desulfurization works have also been completed.

In 2021, with the constant advance of the environmental protection target, Nanshan Aluminium carried out a new round of environmental management system optimization and summarizing for all subsidiaries. At first, we established the refined environmental management system and low carbon and emission reduction work mode covering power plant, coal gas, water works and aluminium oxide product in the subsidiary PT Bintan Alumina Indonesia (hereinafter referred to as "Indonesian Plant"). We have also shared and promoted the successful experience of Indonesian Plant among the subsidiaries.

Nanshan Aluminium takes the environmental protection performance level as one of the measures to test the effectiveness of our environmental protection. During the report period, two subsidiaries - the Electrolytic Aluminium Company and the Aluminium Oxide Company have been awarded Level C environmental protection performance during the enterprise assessment. In this case, we set a clear target to improve the environmental protection level of the two companies to Level A in 2022. When effectively bearing the environmental protection responsibilities, we will try to improve the environmental management of Nanshan Aluminium to a higher level.

Nanshan Aluminium has laid a green foundation for high quality development and become a comprehensive aluminium enterprise that lays out the whole industrial chain. Our company keeps in line with the international standard, optimizes the management and increases the benefits. Our environmental management has won the recognition of professional organizations for several times and passed the certification of ISO 14001 Environmental Management System and GB/T 36132-2018 *General Principles for Assessment of Green Factory*. It means our management in full compliance with the basic requirements, infrastructure, management system, energy and resource investment, product, environment discharge, performance, etc.



Green factory certificate

Coverage rate of ISO 14001 certification

87.5%

Compliance of Emission

Nanshan Aluminium adheres to the concept of "prevention first, combining prevention and control, clean production". We actively carry out pollution prevention and control in strict accordance with the requirements of the *Atmospheric Pollution Prevention and Control Law of the People's Republic of China*, *Water Pollution Prevention and Control Law of the People's Republic of China*, *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes* and laws and regulations of the authorities at the operation places of overseas projects for pollutant discharge management. We start with two aspects, namely emission reduction from the source and resource utilization and introduce advanced pollution control technology and process, improve the pollutant treatment capability, deeply implement the pollution prevention and control measures and promote the achievement of production discharge target and purifying.

Management of waste gas

We actively respond to the requirements of the *Atmospheric Pollution Prevention and Control Law of the People's Republic of China* and operation places of the overseas projects, propel the ultra-low discharge modification and constantly mitigate the impact of production process on atmospheric environment. All subsidiaries and production companies of Nanshan Aluminium have achieved their ultra-low discharge target for 2021. Their discharge is much lower than the national and operational basic standard.

Constantly propel the fugitive ultra-low emissions control

As regards to fugitive emissions, all production posts are responsible for controlling the discharge points in the production system and enhancing the "sealing" and "blocking" control of the "venting", "overflowing" and "leakage" in the production system.

Accelerate the organized ultra-low emissions modification

Invest in the construction of desulfurization and denitration optimized technical equipment and implement the ultra-low discharge operation in strict accordance with the waste gas treatment standard and equipment operation procedure.

We incorporate the waste gas treatment facilities within the responsible areas of all subsidiaries into the branch and workshop equipment management. They accept the patrol inspection, maintenance, care and overhaul equivalent to the main equipment to ensure their efficient and normal operation.

Unintermittent ultra-low emissions monitoring assessment

The Security and Environment Department of all subsidiaries communicating with Longxin and the competent third-party organizations are entrusted as required to carry out the discharge monitoring assessment. The discharge data helps us realize the accurate, scientific and legal pollution control.

The electrolysis and calcination workshops of the Electrolytic Aluminium Company have completed the optimization and upgrade of desulfurization and denitration

In 2021, Nanshan Aluminium carried out the ultra-low discharge modification on the land originally owned by the Electrolytic Aluminium Company. We took the technical upgrade as the main line, performed the optimization and rectification in combination with multiple aspects, including process and management improvement. As a highlight, we deployed the denitration and limestone - gypsum wet desulfurization process combining the selective non-catalytic reduction (SNCR) technology and the selective catalytic reduction (SCR) technology. This landmark project of deep ultra-low discharge modification involves a total investment of up to 220.97 million yuan, a total planned building area of 6,499.75 m² and 15 sets of purchased new large-scale treatment equipment.

The desulfurization and denitration facilities for the 200,000t electrolytic aluminium plant have been completed and formally put into operation; The denitration works for the 480,000t electrolytic aluminium plant have been put into operation and the construction and commissioning of desulfurization works have also been completed. After the project is put into operation, the concentration of sulfur dioxide in the flue gas discharged from the 200,000t and 480,000t electrolytic aluminium production line will be less than 35 mg/m³. The concentration of NOx in the burning and roasting flue gas discharged from the associated carbon production line will be less than 50 mg/m³. An emission reduction of 734t sulfur dioxide/year and 95t nitrogen oxide/year will be achieved.



During the report period, Nanshan Aluminium spares no effort to support the ultra-low discharge modification. We are continuously investing and propelling ultra-low discharge modification projects and optimizing and improving the air quality within and surrounding the plant. Our performance continues to rise in multiple waste gas emission indicators compared with past years while meeting the national emission standards. All subsidiaries can abide by the requirements of national and local laws and regulations and ensure compliance of production discharge.

The following table provides our waste gas discharge indicators during the report period:

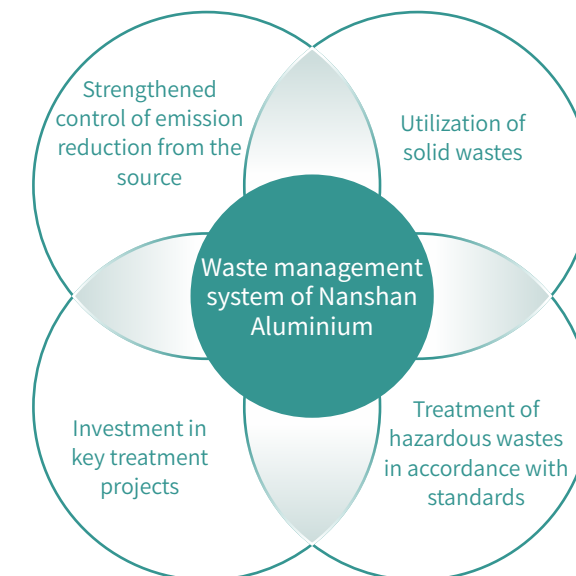
Discharge indicators	Unit	Data
Nitrogen oxide	t	2,935
Sulfur dioxide	t	2,768
Non-methane hydrocarbon	t	169
Particles in flue gas from the burning and roasting furnace	t	59
Particles	t	1,030

Waste gas discharge indicators of 2021

(The scope includes the company's main operating plants in China, Indonesia and the U.S..)

Prevention and control of solid waste

Nanshan Aluminium attaches great importance to the prevention and control of solid contaminants and compliance treatment of hazardous wastes and strictly abides by the national laws and regulations, including *Law of the People's Republic of China on the Prevention and Control of Environmental Pollution by Solid Wastes*, *Technical Specifications for Collection, Storage, Transportation of Hazardous Waste*, *Management Measures of Sheets for Transfer of Hazardous Wastes* and related regulations of the domestic and overseas operation places. To meet the requirements of *Measures for Standardized Management of Solid Wastes of Nanshan Holdings*, we classify the solid wastes for collection based on the prevention and control measures of "safe storage, compliance transfer and reasonable treatment" and the principle of "reduction, reutilization and harmlessness". In addition to reducing the hazardous wastes from the source, we are actively exploring the "zero-emission" green production mode.



Waste management system of Nanshan Aluminium

Closed modification project of the coal yard of Donghai Power Plant

In 2021, Nanshan Aluminium carried out the special action against the flying dust pollution problem in the open coal yard and performed the closed alteration for all coal yards under Donghai Power Plant. The special governance action implemented a fully-closed modification of three coal yards of Donghai Power Plant in form of gas film. The modification covers the construction of new facilities with an area of 64,320 m². The new area of 38,624 m² can prevent the diffusion of flying dust caused by mechanical operation in the coal shed. The coal unloading and storage facilities were modified with the more mature bolt-sphere steel grids in design, manufacture and installation. A total of 21,280 m² was modified and the steel material of the bolt-sphere steel grid can be recycled.

The investment on the closed modification of Donghai Power Plant totaled up to 100 million yuan. The closed coal storage and transportation building resistant to wind, frost, rain and snow creates a closed management space. The environmental benefit of particle emission reduction of 1,000t has been achieved every year. While isolating the flying dust, it also avoids the overflow of particles, prevent the rain flush from causing loss of coal, ensuring the coal blending quality.



Nanshan Aluminium is continuously working on technical research and practice exploration of comprehensive utilization of non-hazardous waste and return of solid wastes to production. In 2021, Nanshan Aluminium cooperated with the University of Science and Technology Beijing and Institute of Process Engineering of Chinese Academy of Sciences and other high quality scientific research institute partners. We jointly applied for and received the approval of the key special projects titled "solid waste utilization" under the National Key Research and Development Program of China. The project will constantly break through the integrated production technology for aviation aluminium sheet hot rolling - cold rolling - continuous annealing, heavy plate thermal treatment and accurate control of aviation aluminium sheet/heavy plate composition - organization - structure - performance, promote the establishment of the industrialization production system of aviation aluminium sheet/heavy plate and supports the high-quality development of secondary aluminium industry.

Comprehensive aluminium ash and slag utilization project

Nanshan Aluminium recycles the aluminium slag crusts produced during the slagging-off of melting furnace in the forging workshops of the electrolytic aluminium, light alloy, aluminium and medium-thick plate companies in principle of "recycle and reuse all wastes as possible". Through the comprehensive utilization of aluminium ash, the workshops realize the secondary production of the aluminium slag crust and return the produced aluminium alloy ingots to all subsidiaries for recycling, effectively lifting the resource utilization efficiency.

In 2021, Nanshan Aluminium made several breakthroughs in comprehensive reduction-based utilization of aluminium slags, including sorting, recycling and use. The aluminium recycling company achieved 61,200t annual treatment of aluminium slag crusts and 18,900t production of aluminium ingots.

The aluminium recycling company's treatment of aluminium slag crusts from downstream processing companies are

61,200 t



Grade-keeping and comprehensive utilization project of recycled aluminium

The recycled aluminium is a key sector for the Chinese aluminium industrial system to realize sustainable development. In 2021, Nanshan Aluminium started the grade-keeping and comprehensive utilization project of recycled aluminium. The project remelts raw materials - waste aluminium and processes them into aluminium products. It mainly utilizes the aluminium scraps or offcuts produced by the subsidiaries and tank waste materials and defective aluminium products as the raw materials, introduces the nationally advanced double-chamber melting furnace, logging furnace and multi-chamber furnace and adopts the self-owned advanced melting process for aluminium recycling and uses the metal aluminium and recycled aluminium for grade-keeping and reproduction.

At present, the project remains at the environmental protection procedure approval and early preparation stage. It is predicted that after the project is completed and put into production in 2022, the target of an annual production of 100,000t recycled aluminium will be achieved with only less than 3% of the energy consumption of electrolytic aluminium. We will continuously build the green and environment-friendly grade-keeping aluminium products with the low energy consumption, pollution and cost, and construct the complete green product closed recycling network of Nanshan Aluminium.



Indicator	Unit	Data
Total generation of solid wastes	t	5,564,270
Generation of hazardous wastes	t	81,490
Recycling and utilization of hazardous wastes	t	20,793
Generation of general wastes	t	5,482,780
Recycling and utilization of general wastes	t	3,048,956

Amount of produced and utilized solid wastes in 2021

(The scope includes the company's main operating plants in China, Indonesia and the U.S..)

During the report period, Nanshan Aluminium achieves a comprehensive solid waste utilization rate of

56%

compliance treatment of

100%

of hazardous wastes, reaching the industrial advanced and historically best level

Wastewater Discharge

Nanshan Aluminium strictly abides by the related regulations in the *Water Pollution Prevention and Control Law of the People's Republic of China* and continues to pursue the zero-discharge target of wastewater. We will continuously reduce the water consumption of process and improve the wastewater treatment through infrastructure improvement, technical modification and process optimization. Apart from constructing the production facilities, all of our subsidiaries are equipped with internal wastewater treatment facilities capable of treating production wastewater to meet the municipal wastewater discharge and receipt standard.

Nanshan Aluminium performs the all-around overall supervision on the wastewater treatment plants of the subsidiaries, including technical support, operation and management and equipment control.

Based on compliance discharge, we constantly carry out the wastewater treatment process modification and technical upgrade, improve the wastewater recycling utilization rate and recycled water quality control standard and actively propel the wastewater reduction in source and check on wastewater zero-discharge demonstration project.

Nanshan Aluminium Donghai Park domestic wastewater treatment plant project

As Nanshan Aluminium constantly invests in the wastewater treatment, the highlight projects have been implemented in succession. In 2021, the Donghai Park domestic wastewater treatment plant project of Nanshan Aluminium was formally started. The project was proposed to cover an area of 50,640 m² and a total building area of 4,413.46 m².

As a highlight project of Nanshan Aluminium's wastewater purifying and discharge, the Donghai Park domestic wastewater treatment plant uses the treatment process combining the off-side buried and integrated lifting pump station and thin grids, aeration grit chamber, biochemical (A/A/O+A/O), secondary sedimentation tank, efficient sedimentation tank, denitrification deep-bed filter tank, activated coke adsorption tank, contact disinfection tank and reused water tank. The treatment solution can ensure the economic, efficient and safe treatment of wastewater.

After completion, the Donghai Park domestic wastewater treatment plant will undertake the treatment of all domestic wastewater produced in the residential and industrial areas in Donghai community. It will achieve a daily domestic wastewater treatment of 40,000t, which greatly improves the surrounding water environment. It will supply the compliance water upon domestic wastewater treatment in the area to the municipal organization for reuse, providing the backup guarantee for the municipal water supply.



During the report period, Nanshan Aluminium complies with all standards in wastewater discharge. The related indicators are as follows:

Emissions	Unit	Data
Wastewater	10,000 m ³	113
Pressure filtration water	10,000 m ³	238
Recycled wastewater	10,000 m ³	130
COD	t	57,376
Ammonia nitrogen	t	598

Wastewater discharge in 2021

(The scope includes the company's main operating plants in China, Indonesia and the U.S.)

Water Resources Management

Nanshan Aluminium paid great attention to the water resources management, kept evaluating our responsibilities, and actively explored the optimal utilization method. We conducted scientific testing and consumption analysis on the water sources, thus to optimize the consumption structure and the closed recycling network

and strictly control the potential risks, by which the safe and reliable water supply for production and operation of Nanshan Aluminium can be guaranteed. During the reporting period, there were no issues or incidents with water sourcing.

Water environment risk management

During the operation, Nanshan Aluminium strictly abided by and implemented the *Water Law of the People's Republic of China*, the *Regulations for the Administration of Water Collection Licenses and Water Resources Fees*, the *Water Pollution Prevention and Control Law of the People's Republic of China* and other laws and regulations, and attached importance to water resources management and conservation in the whole value chain. Except that the water used by the Indonesian alumina plant is drawn from the surface, the water used by the Company's main production sites is from municipal pipelines. A complete and comprehensive water resources control system has been established in the long-term practice of achieving the goal of "zero discharge" of industrial wastewater.

through our active control measures. At the same time, regular public disclosure of water pollution discharge monitoring results and emission reduction plans was made to achieve transparent management of water resources risks.

Based on the results of water resources risk analysis, we formulated the *Water Resources Risk Assessment Report of Shandong Nanshan Aluminium Co., Ltd.* to give tips on water resources risk and guide the implementation of mitigation plan. Meanwhile, according to the management measures of water balance testing in the regions where each operation place is located, water balance tests were carried out regularly. Based on the analysis of available water supply and demand, the *Water Balance Chart of Shandong Nanshan Aluminium Co., Ltd.* was drawn, which provides reliable data calculation guarantee for the optimization and promotion of water resources management. Furthermore, we analyzed the weak links of water consumption, tapped the potential of water saving in enterprises, made clear the main direction of water-saving, and continuously explored the best solutions for enterprises to provide water drawing, consumption, drainage and saving to improve the utilization efficiency of water resources.

We were faced with potential water resource risks in the production, operation, storage and transportation of Nanshan Aluminium. Then, we carried out early warning and announcement of water resources risks with the goal of mitigating risks. In addition, by conducting transparent and compliant potential water resources risk assessment and research, and cooperating with the continuous monitoring of water discharge and water quality in Nanshan Aluminium, we controlled the probability of potential water resources risk

Comprehensive demonstrations of water resources help the Indonesian plants launch projects successfully



In order to speed up the industrial layout along the Belt and Road and deeply participate in international cooperation on production capacity, Nanshan Aluminium started to plan the Indonesian Bintan Nanshan Industrial Park Project in 2015. The planned area of the project is 2,333.6 hectares, which is planned, constructed and put into production in stages according to the industrial model of "port - electric power - aluminium oxide - electrolytic aluminium". In the preparatory stage of Indonesian plant project, based on the requirements of the *Guidelines for Water-draw and Utilization Assessment on Construction Projects* of the Ministry of Water Resources of the People's Republic of China and the supervision of the operation places, Nanshan Aluminium cooperated with a third-party qualified unit to conduct comprehensive demonstrations of water resources, and put Nanshan Aluminium's strict requirements on water resources management into practice in advance.

out comprehensive analysis and demonstration activities on the rationality of water consumption, drawing and returning in Indonesian plants and the impact of construction projects on the water environment and the legitimate rights and interests of other interested parties. With the support of water resources demonstration, Indonesian plants were making smooth progress in water resources management, such as water returning permits, division of water function zones, optimal dispatch, supervision of examination and approval, etc. In May 2021, the first phase of 1 million tons of alumina and supporting projects of the Indonesian Plant were completed and put into operation. The water resources demonstration supported the smooth implementation of the construction project, and also helped promote the Indonesian plants to realize the conservation, protection and efficient utilization of water resources, and promoted the sustainable development and utilization of water resources and the sustainable economic development of the factory area.

Based on the *Water Resources Demonstration Report*, we carried

Water resources consumption

In practice, Nanshan Aluminium has summed up the idea of "one water for multiple purposes, graded utilization and cascade utilization" for the comprehensive management of water resources, and has started to further promote the rational use of water resources from refined management and recycling. During the reporting period, we reduced the unnecessary loss of water consumption by strengthening water statistics, plugging treatment of process equipment and upgrading of water-saving technology. Besides, the industrial water reusability was improved by the recycling of rain, water, and cooling water, which continuously optimized the water supply network to reinforce the internal water circulation system, thereby improving the efficiency of water utilization.

In the report period, Nanshan Aluminium reached the highest level in water recirculation, and there were no issues or incidents in seeking water sources. The water resource utilization indexes are as follows:

Indicator	Unit	Data
Total water consumption	10,000 m ³	700
Tap water	10,000 m ³	228
Surface water	10,000 m ³	402
Other types of water	10,000 m ³	10
Recycled water	10,000 m ³	60

Water resources consumption indicators in 2021

(The scope includes the company's main operating plants in China, Indonesia and the U.S..)



Biodiversity Protection

Nanshan Aluminium abided by the concept of ecological civilization and upheld the reverence for the nature. The Company strictly adhered to the *Environmental Impact Assessment Law of the People's Republic of China*, the *Law of the People's Republic of China on Water and Soil Conservation*, the *Regulations on the Administration of Construction Project Environmental Protection* and other relevant laws and regulations. In the process of production, management and project operation, we have minimized the impact and damage to the surrounding ecological environment, and carefully protected the habitat of local animal and plant communities. In addition, we were committed to continuously improve the ecological environment quality of our operation places and regions, and strived to protect biodiversity.

The Company has formulated the *Management Procedures for Biodiversity Conservation in Nanshan Aluminium*, and in coordination with the *Environmental Impact Assessment Report of Construction Projects* and the *Biodiversity Risk Assessment Report*, has put forward the following require-

ments: all construction projects and operation and production units in Nanshan Aluminium must formulate positive biodiversity action plans and efficient prevention and control measures for biodiversity risks in combination with the mitigation hierarchy. At the same time, efforts should be made to maintain the biodiversity and ecological balance of the communities around where we operate, combining the necessary ecological restoration and compensation measures as needed.

We conducted a special biodiversity risk assessment for two of Nanshan Aluminium's core domestic production sites, the Nanshan Industrial Park and the Donghai Industrial Park. And in the *Nanshan Aluminium Biodiversity Report*, the potential risks were forewarned. On the basis of the above, with our active pollution prevention and control policies and the rational utilization of local plant communities and soil, the negative impact of the production units on the surrounding ecological environment was strictly controlled, thus the ecological environment of the local area was protected.



Ecological restoration of red mud dump and green plant covering project



Nanshan Aluminium has firmly established the development concept of respecting nature, conforming to nature and protecting nature, and continues to carry out ecological management. We designed and built a red mud dry storage yard according to domestic standards. On this basis, we carried out ecological restoration and green plant coverage projects, improved the soil structure of the red mud dump, and continuously increased the green plant coverage. By

the end of 2021, Nanshan Aluminium had accumulated 700,000 square meters of ecological restoration area in the green planting coverage project of the red mud dump, and the effective coverage rate of green planting in the first phase of the red mud dump reached 95%. These achievements have effectively improved the regional ecological environment and demonstrated Nanshan Aluminium's responsibility.





Human Resources

Diverse talents with inclusive employment

Nanshan Aluminium cares for its employees, respects their human rights, and earnestly safeguards and protects every employee's legitimate rights and interests in employment, remuneration and benefits, career development and learning and training. The Company has a sound human resource management system, recruitment system, training system, salary and welfare system, performance system, promotion system, staff change management system, foreign expert management regulations, etc. The regulations are implemented in all units under Nanshan Aluminium and updated regularly every year. At present, the Company has completed the restructuring of the three pillars of human resources to ensure that every employee is provided with a platform for growth and development, a diversified and flexible training system, a sound and comprehensive health protection and a friendly and harmonious working environment.

Rights and Interests Guarantee

Nanshan Aluminium has formulated a thorough recruitment system to respect the legitimate rights and interests of every employee. The Company complies with the relevant requirements of the *Labor Law of the People's Republic of China* and the *International Labour Organization (ILO) Conventions*. It has formulated the system and procedural provisions such as the *Management Procedure for the Prohibition of Mental and Physical Abuse*, the *Management Procedure for the Prohibition of Discrimination*, the

Management Procedure for the Protection of Minors, the *Management Procedure for the Prohibition of Forced Labor*, the *Management Procedure for the Protection of Female Employees* and the *Management Procedure for the Prohibition of the Use of Child Labor and Remedial Measures*. It aims at eradicating employment discrimination, forced labor, child labor and harassment in the workplace and promoting the diversity and inclusiveness of the company's personnel.

Number of on-the-job staff in the parent company	13,182
Number of on-the-job staff in the main subsidiaries	5,564
Total number of on-the-job staff	18,746
Number of retired workers with expenses undertaken by parent company and main subsidiaries	0

Professional Composition

Professional composition categories	Number of professionals
Production personnel	13,957
Sales personnel	378
Technical personnel	2,889
Financial personnel	112
Administrative personnel	1,410
Total	18,746

Educational Background

Education level	Quantity (person)
Master and above	101
Bachelor	2,144
Junior college	5,120
Below junior college	11,381
Total	18,746

Equal employment

Nanshan Aluminium adheres to the recruitment principle of equal employment. The Company puts an end to any discrimination against religion, gender and ethnicity in talent introduction, and create a diversified working environment by combining job demand with two-way selection of employees' intentions. The Company also actively contributes to community development and local employment, thus providing many jobs and better welfare benefits for local residents.

Indicator	Unit	Value
Turnover rate		
Total turnover rate	%	8.44
By gender		
Turnover rate of male employees	%	8.68
Turnover rate of female employees	%	7.72
By age		
Turnover rate of employees no more than 30 years old	%	15.22
Turnover rate of employees between 30-50 years old	%	7.01
Turnover rate of employees no less than 50 years old	%	4.30

*The above-mentioned data are collected from all the Company's on-the-job Chinese employees.



Bintan Alumina Indonesia signed a talent cooperation agreement with three universities in Batam.



Bintan Alumina Indonesia, Universitas Riau Batam, Universitas Internasional Batam and Batam Institute of Technology held a school-enterprise cooperation forum in the Bintan Alumina Indonesia Park, and formally signed a cooperation agreement with them. Based on the principle of "complementary advantages, cooperative education, joint construction and sharing, mutual benefit and win-win situation, and cooperative development", the Company has actively explored a new cooperative model of cooperative development between enterprises and universities. The Company carries out all-round and integrated cooperation in recruitment and employment, targeted training, resource development and joint construction of teaching and research bases. The Company will take measures in forms of Indonesia campus education, sponsored oriented training, and employment practice. In this way, we can fundamentally solve the problem of talent supply in simple short-term employment, focusing on the transformation of production results, school-enterprise cooperation in education and resource sharing. We will also create a good environment for attracting and retaining talents, help stabilize employment facing the pandemic in Indonesia, and strive to set an example and demonstrate its responsibility.



Rights and interests guarantee

The Company has established the *Management Procedure for the Right to Freedom of Organizing Trade Unions and Collective Bargaining* and the *Management Procedure for Staff Representative*, which made it clear that the Company respects all employees' rights of free association and collective bargaining, belief, free formation, participation in trade unions, collective bargaining and peaceful assembly. When the rights to freedom of association and collective bargaining are subject to laws, the Company will assist all employees to obtain the rights of independence, freedom of association and bargaining through similar channels. When an employee's right of freedom of association is infringed, he/she can report to the general manager, who will deal with it personally and publish the result. During the reporting period, the collective agreement signing proportion of the Company is 100%

Salary and welfare

In strict compliance with the laws, regulations and policies of the place of its business, Nanshan Aluminium establishes a compensation management standard system in line with its actual situation and an operating mechanism to continuously improve the income of employees to ensure that every employee gets a competitive salary and their labor can be rewarded. At the same time, it attracts and retains necessary talents for its strategic development, and advocates the synchronous and harmonious development of the Company and employees.

Nanshan Aluminium is committed to establishing a staff team with strong cohesion and belongingness. The Company launched a welfare housing policy; set up many kinds of allowances, such as seniority allowance, night shift allowance, full-attendance bonus, mobility premium, transportation allowance, high-temperature allowance, health care allowance and heating allowance. For female employees, in addition to insurance, maternity leave, breast-feeding leave and other state-stipulated policy guarantees, the Company also provides a medical room and maternity lounge or nursery room to properly meet the physiological, health, lactation and baby nursing needs of female employees.



Staff Development

Nanshan Aluminium attaches great importance to the construction of career promotion paths for employees, and it is committed to creating diversified career development opportunities for all excellent employees. In Nanshan Aluminium, the development paths for all occupational categories and ranks are open and transparent. The Company has established a sound performance system and promotion system, including vertical promotion and horizontal cross-series extension. At present, Nanshan

Aluminium divides the positions into six categories, including operation series, technical series and management series. Each employee of each series has the opportunity to get promoted vertically from manipulation level to executive level, operation level and decision-making level. Positions in each series are adjusted according to the characteristics of the business line, and promotion channels that best meet position and employee development needs are established.



Nanshan Aluminium carries out employee performance assessment every year, encourages outstanding talents to make contributions to the Company and holds an annual commendation conference to commend and reward advanced individuals, management cadres, technical experts, sales champion and "five-good" families.

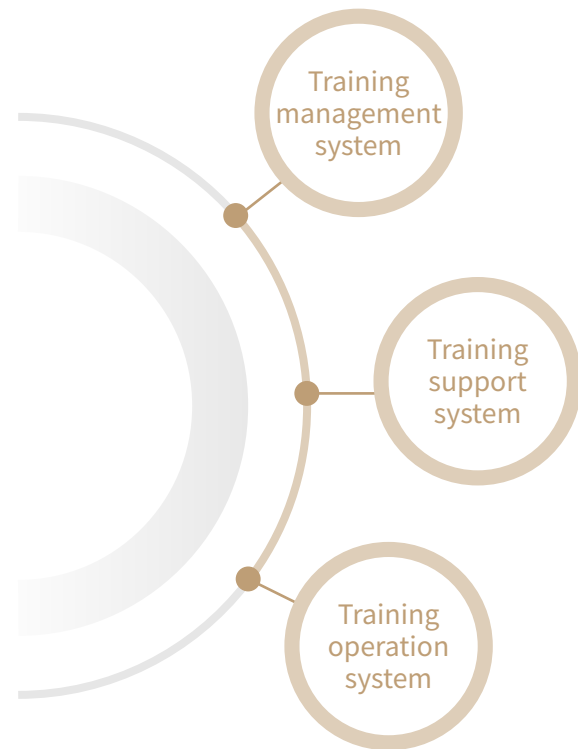


Photo Taken at the 2021 Annual Commendation Conference

Employee Training

Nanshan Aluminium has established a training management mechanism composed of three parallel systems involving training management, training support and training operation. Moreover, the Company also developed an online

learning platform (eLearning platform) to achieve the online management of the whole training process, which covers all employees in combination with offline training activities.



The Company establishes and improves relevant systems involving the training management and the internal promotion management.

Relying on the resource advantages of Yantai Nanshan University and Nanshan Training Institute, the Company establishes an internal training lecturer team, improves the course system, covering new employee training, sales staff training, professional and technical training and safety training courses and learning materials, and cooperates with a number of external training institutions for internal training and open class learning.

The Company develops annual and monthly training plans based on needs surveys, improves training files according to the implementation, and supervises and inspects the training plan, organization and implementation of subordinate units.

Indicator	Unit	Data
Number of trainees	Person	17,477
Total training hours	Hour	821,419
Training hours for male employees	Hour	625,570
Training hours for female employees	Hour	195,849
Training hours for senior management	Hour	2,491
Training hours for middle management	Hour	42,535
Training hours for ordinary employees	Hour	776,393
Training coverage of employees	100%	100%

Staff training statistics of Nanshan Aluminium

*The above-mentioned data are collected from all the Company's on-the-job Chinese employees.



Management Cadre Training

During the reporting period, the Company organizes ideology training of middle and senior management cadres, and the training courses include the *Construction of Ideological Style of Enterprise Leaders*, the *Realistic Value and Nanshan Aluminium Practice of Yan 'an Spirit*. About 800 management cadres above the deputy factory director of Nanshan Group attended these courses, which helped the management of Nanshan Aluminium to strengthen the work style construction, tap their own potential, keep up with the pace of the industry, and improve the management level.



Employee Communication

Nanshan Aluminium actively listens to the demands and feedback from employees and builds smooth communication channels for employees. In accordance with the *Employee Complaint (Appeal) Management Procedure* and the *Management Procedure for Staff Representative*, employees can put forward their demands and suggestions through the workers' congress, complaint box, complaint mailbox, telephone, leadership mailbox or direct communication with leaders. In response to complaints, employees who experience or witness discrimination or harassment in the Company should immediately report to the staff representative, ASI management representative, HR Department, or other management personnel as they deem appropriate. Harassment from other personnel who have business dealings with the Company should also be reported, so that the Company can take corresponding actions. The Company will complete the *Employee Complaint / Feedback / Suggestion Handling Record* in accordance with regulations, and will keep the personal information of employees strictly confidential. Besides, the Company, through various forms such as workers' congress, meetings before and after work, and symposiums, understands the ideological trends of employees, solves their problems in life and work, and adopts the specific constructive suggestions they put forward.

The Company organizes various cultural activities every year, such as artistic performances, basketball games, internal sports meetings, hikes and tourist activities for outstanding cadres and employees to enhance their position knowledge and enrich their life.



Basketball Game of Electric Power Corporation



Team Building Activities of Indonesia Project Department of Nanshan Aluminium

Satisfaction survey shows that employees' overall satisfaction with the company is

87.53%

Each of the subsidiaries and branch offices of Nanshan Aluminium organizes at least one satisfaction survey every year and formulates a satisfaction survey report. Among them, the 2021 satisfaction survey report of Nanshan Aluminium shows that employees' satisfaction with the overall situation of the Company is 87.53%. The Company will make improvements according to the problems raised by employees in line with its actual situation, so as to enhance employee satisfaction.

Health and Safety

Nanshan Aluminium has always put the health and safety of employees as the top priority in the management, and sees it as its responsibility and obligation to create a healthy and safe working environment for employees, so as to ensure the employees' work is carried out safely with quality and quantity guaranteed.

Management Structure

In accordance with GB/T 45001-2020 *Occupational Health and Safety Management Systems - Requirements with Guidance for Use*, the Company has established and continuously operated the occupational health and safety management system. An emergency response office was also set up to supervise the implementation of the primary responsibilities of work safety and the work safety responsibility system in all units, improve the safety management system, enhance safety production conditions, investigate and deal with production safety accidents, assist the HR Department in safety education of employees. Each unit has a work safety committee

responsible for routine safety management, work safety reporting, organization of safe production and preparation for occupational health inspection.

According to the *Work Safety Responsibility System* and the *Work Safety Incentive and Accountability Management System*, Nanshan Aluminium incorporates safety performance into the performance indicators of the senior management to ensure the realization of the Company's development strategy.

Management System

The Company abides by laws and regulations such as the *Work Safety Law of the People's Republic of China*, the *Law of the People's Republic of China on the Prevention and Control of Occupational Diseases*, the *Fire Protection Law of the People's Republic of China*, the *Regulations on the Reporting, Investigation and Disposition of Work Safety Accidents*, the *Provisions on the Safety Training of Production and Operation Entities*, the *Provisions on the Administration of Fire Control Safety of State Organs, Organizations, Enterprises and Institutions*, and the *Provisions on the Supervision and Administration of Occupational Health at Work Sites*, and has developed internal policies to ensure employee health and safety.

The company invested **89.1** million yuan of the special reserve in 2021

For domestic plants, the Company established the *Safety Management Standard System* and implements safety systems and policies such as work safety responsibility system, safety education and training, hidden danger identification, emergency plan, work safety input, reward and punishment system, hazardous operation approval, and equipment and facilities safety management. In 2021, it further established a vehicle safety management system and a building safety management system. Nanshan Aluminium constantly improves the construction of work safety standardization by establishing the work safety responsibility system, formulating the safety management system and operating procedures, identifying and controlling hidden dangers, monitoring major sources of danger, establishing a prevention mechanism and standardizing production behaviors.

For overseas plants, the Company has formulated compliance and legal system documents in line with the Company's safety and health policy according to relevant domestic systems and the laws and regulations in Indonesia, the U.S. and other places of operation. Corresponding management systems for on-site construction units were also formulated and implemented. At the beginning of each year, our overseas plants will formulate training plans on environmental protection, health and safety, and carry out trainings and drills according to the training plans to improve employees' safety operation skills, environmental protection concepts and self-protection awareness.

Goals	Assessment Indicators
There is no casualty accident, no fire or explosion accident and no occupational disease accident. The key performance indicators of occupational health and safety were mainly the work-related accident rate, supplemented by hazardous events. The work-related accident rate is 1‰.	The Company conducts profit and tax assessment on senior executives based on their monthly assessment and year-end assessment results, of which safety assessment accounts for 15%. The Company practices one-vote veto for work-related death incidents.

Health and Safety Goals of Nanshan Aluminium

The Company has obtained occupational health and safety management system certification (ISO 45001) and work safety standardization certification, and it is a Level II enterprise in terms of work safety standardization. All the plants have passed the ISO45001 system certification except Donghai Power Plant, among which the plant certification accounts for 83%, and there are no work-related death accidents in the report period.

Risk Prevention and Control

Adhering to the principle of "prevention first and all-time preparedness", Nanshan Aluminium has never stopped risk prevention and control. It constantly improves safety management and emergency management measures and implements the whole-process management before, during and after the event, aiming to provide a safer working environment for employees.

Nanshan Aluminium has established an emergency management system, identified the Company's hazard sources and evaluated them according to the workplace hazard identification and evaluation method (LECD) to determine the risks to be controlled and the occupational health and safety goal indicators and management plan of the year. All units have identified highly possible incidents and emergencies, formulated various contingency plans, and organized drills according to the plans to control the adverse consequences caused by the accidents and maintain work and life stability. The Company's emergency plan has been approved and filed by the government, and won the title of "demonstration unit of emergency plan management".

In the meantime, the Company set up a special work safety management organization, equipped with full-time safety management personnel and registered safety engineers to enable the safety management professionalized and standardized gradually, established and improved work safety regulations and operating procedures, promoted the work safety and occupational health "dual-prevention system" to eliminate hidden risks and prevent accidents, strengthened safety education and training for all staff and organized safety culture activities on a regular basis to

improve the safety culture construction.

The Company has also organized various safety-related trainings for employees to consolidate their safety knowledge. The emergency management office organized all departments to carry out first-aid knowledge training and further popularized self-rescue and mutual aid knowledge and skills through teaching by doctors, which effectively improves the self-rescue and mutual aid ability of employees, and prevents or reduces the occurrence of accidents. Furthermore, the Company organized all departments to watch the work safety warning education film titled Life First, Alarm Bell Ringing produced by the provincial work safety committee, and also carried out safety law learning and training activities for the foremen and above and full-time safety management personnel of all units. Through safety training, the safety red-line consciousness, consciousness of responsibility and legal consciousness of the leaders and employees of all units have been further enhanced.

During the reporting period, the Company organized 1,848 inspections of potential safety hazards, covering natural gas, dangerous chemicals, inflammable and explosive sites, external construction units, emergency plans, safety education and training, "three violations" of staff, lifting equipment, electrical equipment, pressure vessels, vehicles in the factory. It also organized safety publicity activities in the "national work safety month" in various forms, including safety banner, safety oath, accident video, fire-fighting skill competition and safety knowledge contest.

Fire-fighting skills competition

To train the fire control emergency team and improve their ability of fire rescue and emergency disposal, the fire-fighting skills competition of Nanshan Holdings was organized in November 2021, and a total of 37 teams including more than 180 people participated in this competition. This fire-fighting skills competition was divided into three parts: basic theoretical knowledge, physical fitness test and actual combat operation, including fire-fighting knowledge, target shooting with fire-extinguishing water tanker, relay race, fire-fighting and rescue. Such activities further consolidated the fire control knowledge and common sense of the staff, improved their fire-fighting skills and provided a safety guarantee for our continuous and stable operation.



Safety Knowledge Training of Special Operation Posts

In January 2021, a workshop of the Flat-Rolled Product Division of Nanshan Aluminium organized safety knowledge training for personnel in special operation posts to help them learn special operation skills and safety knowledge of their posts and improve safety awareness.



During the reporting period, the accident rate was 1‰, equivalent to 0.66 of LTIR per million working hours. There was no major casualty. All the accidents mentioned above are minor injuries or health damages, and the employees involved have been compensated and treated properly.

Employee Health

Nanshan Aluminium takes occupational health protection measures for all employees, including occupational health education, occupational health inspection, regular physical examination of employees, regular workplace detection, and provision of labor protection products. The Company formulates and implements the occupational disease prevention management system to strictly control daily production, equipment operation and staff operation process. It also regularly detects occupational hazard factors in workplaces, provides labor protection articles to employees exposed to occupational hazard factors, supervises their daily wear and use of such protection articles, organizes occupational physical examination annually, adjusts their posts in time if there is any abnormality, and files the physical examination results.

In addition, the Company makes technical improvement and reforms production process, such as replacing toxic substances with non-toxic or low-toxic ones, for example, replacing high sulfur coke with low sulfur coke in an aluminium electrolysis process. In the production process, we reduce workers' exposure to harmful factors through mechanization and automation, reduce and eliminate productive harmful factors through ventilation, dust removal, noise reduction, isolation and other technical measures. and strengthen equipment management to prevent blowing, puffing, dripping and leakage. Every year, the Company entrusts a qualified unit to detect the workplace, and the qualification rate of dust and harmful gas operation points reaches 100%.

Safety of External Construction Personnel

Nanshan Aluminium has formulated the *Safety Management System for External Construction Personnel*. According to the principle of "A person in charge should be responsible for management", production and operation units together with the Safety Management Department are responsible for the management of the qualifications and work safety of external construction units. The Company signs a work safety management agreement with the external construction party to clarify the work safety responsibilities of both parties, and provides regular trainings for relevant personnel. The Company will conduct regular statistics of the work-related injury accident rate of external construction personnel. During the reporting period, the work-related injury accident (serious injuries and casualties) rate of external construction personnel was 0.



DEEP KNOWLEDGE OF ALUMINUM
WORLD CLASS RESEARCH AND TESTING CAPABILITY

科技之铝 智慧起航
——国际领先的铝研检测平台——

Cooperation
Win-win partnership for
benefiting cooperation



Nanshan Aluminum actively shoulders social responsibilities and joins hands with all parties to achieve a greater vision. We attach importance to the cooperation with the upstream and downstream of the industry, strengthen supplier management, carry out supplier assistance, and build a responsible supply chain. We also actively promote industry co-construction, deeply participate in government-enterprise cooperation, and carry out strategic cooperation with outstanding companies in the industry. We are committed to promoting resource sharing, complementary advantages, and win-win cooperation to achieve industry prosperity and sustainable development. At the same time, based on the attributes of the industry, we are mindful of the protection of indigenous rights, environmental protection, and cultural heritage in the communities where the projects are located, and always insist on participating in community public welfare and charitable causes to build a beautiful homeland together.

Supply Chain Management

The Company's high quality service and vigorous development depend on the stable supply chain operation. Committed to close business cooperation with suppliers, Nanshan Aluminium attaches great importance to supply chain system construction and management process improvement. It evaluates suppliers' legal compliance and other key factors such as supply level and guarantee ability through various review and assessment measures, so as to create a fair and efficient system for supply chain standardization and professional management.

For each link in the supply chain that involves suppliers, the *Management Procedure for Supplier (Contractor and Service Provider) Implementation ASI* formulated by the Company can fully publicize responsible supply chain policies to all suppliers to ensure the effective implementation of ASI code of conduct and standards, and gradually improve the social responsibility performance of the supply chain. To realize the unified management and dispatching of raw material procurement issues, Nanshan Aluminium sets up a supply department to be responsible for supplier assessment, communication and certification, contract signing, cooperation and support to achieve systematic and standardized supply chain management.

Supplier Access

Nanshan Aluminium implements refined management and control starting with the supplier admission link. All the production departments independently will submit their procurement plans, and the procurement specialist communicates and coordinates with the supply department of the head office about material dispatching and procurement method. Nanshan Aluminium confirms

whether a supplier has the ability and qualification of stable and long-term supply through pre-qualification and on-site investigation, and makes provisions on protection of workers' rights and interests, environmental protection, occupational health and safety. Suppliers that pass the assessment will be included in the qualified supplier list and proceed the cooperation with us.



Supplier access process

Nanshan Aluminium works together with its suppliers to create a clean and responsible procurement supply chain. When the qualified upstream suppliers are determined, we will require them to sign constraint documents such as letter of integrity commitment, letter of commitment

and agreement for sale and purchase. A regular training will be organized for all procurement personnel related to responsible supply chain, so as to publicize its internal procurement system.

Supplier Assessment

To further ensure the healthy and stable supply of high-quality raw materials, we will dynamically update and manage the supplier list through a supplier scoring and evaluation mechanism after establishing a partnership with the suppliers. A monthly evaluation mechanism is set up to uniformly evaluate the product delivery time, quality qualification rate, invoices and other aspects of suppliers. In addition, the incorporated social responsibility performance will also be included into the supplier evaluation management system. According to the *Management Procedure for Supplier (Contractor and Service Provider) Implementation ASI*, the Company organizes on-site audit of "main suppliers/contractors/service providers of next tier" at least once every two years, fills out the *On-site Audit Report of Supplier / Subcontractor / Service Provider*, evaluates the social responsibility of the "main subordinate suppliers/contractors/service providers of next tier", and puts forward follow-up improvement measures, to ensure that the social responsibility performance of suppliers is consistent with business ethics.

For suppliers whose overall evaluation score is less than 60 points, Nanshan Aluminium will give a warning, reduce or even terminate the cooperation with them, as the case may be. Any supplier with its annual score deducted by more than 30 points will be removed.

Annual score deducted by more than **30** points will be removed

Conflict Minerals Regulation

To prevent conflict minerals from the Democratic Republic of Congo and its adjacent areas from being used in the production of Nanshan Aluminium products, the Company has formulated the *Regulation Procedure for the Prohibition of the Use of Minerals in Conflict Areas*. When selecting suppliers, the Company requires them to sign the *Letter of Commitment for Not Using Conflict Minerals* and to provide the *Conflict-Free Mineral Survey Report*. If any supplier is found to use materials from conflict minerals, the Company will immediately stop using such materials provided by the supplier and require for another source of minerals with valid proofs.

Commitment of Nanshan Aluminium

Do not support or use metals derived from armed conflict zones, illegal mining and poor working conditions, known as "conflict minerals". Suppliers should investigate their products for metals such as gold (Au), tantalum (Ta), tin (Sn), tungsten (W), aluminium (Al) and identify their sources in accordance with the *OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas (DDG)*.

Communication with Suppliers

While actively promoting the construction of a supply chain management system, Nanshan Aluminium adheres to the common growth and progress together with suppliers, and steadfastly fulfill social responsibilities and obligations. Every year, the Company will invite high-quality suppliers to attend industry exhibitions and annual meetings to communicate about strategic cooperation and market dynamics, discuss industry development trends and forecast market

conditions. The Company provides effective suggestions and substantive assistance to solve suppliers' problems in the working environment and help them improve product supply performance. We will continue to improve its ability of systematic and standardized supply chain management, guarantee legal and compliance operation, actively assume social responsibilities, and make important contributions to the sustainable development of supply chain.

Win-win Development of Industries

Maximizing its positive role as an enterprise, Nanshan Aluminium is committed to promoting the construction of a bridge of cooperation inside and outside the industry and facilitating the application of substantive cooperation achievements to achieve industry co-construction and win-win development.

Industry Association

At present, Nanshan Aluminium is a director unit and a member unit of China Nonferrous Metals Industry Association Aluminium Branch and other associations. On the premise of abiding by the basic principles such as constitutions and resolutions, Nanshan Aluminium contributes its management wisdom and provides technical assistance to the development of the associations and the industry, and helps enterprises in independent innovation and vigorous development

of advanced productivity. The Company actively participates in various activities and internal construction of the associations, safeguards the legitimate rights and interests of its own and other member units, practices fair cooperation and competition in the industry, and provides possibilities for enhancing the communication between members and the government and society.

Name of Industry Association	Role
China Nonferrous Metals Industry Association Aluminium Branch	Vice President Unit
Industry Technology Innovation Alliance for Lightweight Material Forming Technology and Equipment of China	Council Unit
Marine Materials Association of China	Member Unit
Shandong Aluminium Industry Association	Vice President Unit
Shandong Aluminium Alloy Material R&D and Application Technology Innovation Alliance	Leading Unit
Yantai Manufacturing Big Data Industry Technology Innovation Strategic Alliance	Member Unit

Government-enterprise Cooperation

As an excellent representative of the industry, Nanshan Aluminium actively conveys and feeds back the Company's opinions and suggestions when the government sectors formulates and issues policies, so as to maximize the interests of the whole industry and promote the sustainable and healthy development of all companies in the industry. During the reporting period, the Company actively participated in the 14th Five-Year Plan of the provincial level, the municipal level, the non-ferrous industry and the aluminium industry, and actively sought for major projects and policy supports. Through continuous coordination with government sectors, during this reporting period, Nanshan Aluminium successfully entered the "List of Leading New Material Enterprises" issued by the Department of Industry and Information Technology of Shandong Province, obtained the external recognition. All above continuously expand the consensus building and value identification with industry regulators and other institutions, and provide valuable new ideas for the development direction of peer companies.

Enterprise Cooperation

By adhering to the cooperation concept of "win-win cooperation, resource sharing and complementary advantages", Nanshan Aluminium accelerates its communication with the upstream and downstream peers, and enhances the sustainable development ability while improving our technical level and business capacity through cooperation. During the reporting period, Nanshan Aluminium successfully reached strategic cooperation with Honeywell UOP. In the future, based on green chemical technology, the two sides will carry out in-depth technical cooperation in carbon neutrality to build a global industrial chain of aluminium, electric power and petrochemistry characterized by green and low-carbon development, and establish technology demonstration sites. We also plan to organize a "Carbon Neutrality Industry Forum" based on the progress in the application of carbon neutral technology, regularly issue white papers on industrial development, and provide services such as technology training and personnel training for small and medium-sized enterprises through an open and shared development platform and industrial development direction to achieve green and environment-friendly development.

Care for Local Community

Enterprise growth is closely related to community development. Focusing on the mutual benefit and common development of enterprises and communities, Nanshan Aluminium is committed to creating a harmonious and co-prosperous development environment through the integration of enterprise and community relations. Nanshan Aluminium formulated such procedures as the *Management Procedure for the Protection of Indigenous Residents and Their Independent, Prior and Informed Consent Right*, the *Management Procedure for the Protection of Cultural Heritage Sites and Religious Holy Sites* and the *Local Community Impact Control Procedure* to strengthen the compliance management of the Company's construction projects in terms of governance, environment, human rights and labor rights, and protect the legitimate rights and interests of local community residents.

Protection of the Rights and Interests of Indigenous Residents

When the development and utilization of mineral, water or other resources may affect indigenous communities during the project construction, reconstruction and expansion of the Company, Nanshan Aluminium will actively communicate with indigenous residents and establish cooperation with them through a representative agency, so as to obtain the independent informed consent of indigenous residents before the project is approved. The Company provides resources such as an open evaluation outline, invites indigenous communities to participate in our normal evaluation,

monitors and disposal process, and enables them to choose independent experts to review the impact assessment. In addition, the Company actively protects the basic human rights and other legitimate rights and interests of indigenous residents of labors, women, expropriation and resettlement, and establishes a complaint mechanism for indigenous communities according to local coefficient-related laws and regulations to ensure the openness and effectiveness of complaint channels.



Commitment of Nanshan Aluminium

The Company will respect indigenous residents' rights to live and develop, rights to use and share the interests from natural resources (including mines, land and scenic spots), and right to enjoy a healthy and suitable natural environment. The Company undertakes to safeguard the indigenous residents' right of "independent, prior and informed consent" before its expropriation of natural resources, project construction (reconstruction and expansion), closure, decommissioning and divestment; not to collude with local governments, but communicate with indigenous residents in advance, and provide compensation or resettlement after expropriation of natural resources according to laws and regulations; and not to discriminate against indigenous residents in recruitment, work arrangement, salary and remuneration, and post promotion.



Protection of Cultural Heritage Sites and Religious Holy Sites

Tangible cultural heritage, as a unique and often non-renewable resource with cultural, scientific, spiritual or religious value, is highly valued, managed and protected by the Company.

Before project approval and site selection, Nanshan Aluminium will seek for advice from the Cultural Relic Administration Department at the same level as the competent department of examination and approval, so as to avoid cultural heritage sites and religious holy sites as far as possible. If such avoidance is impossible under special circumstances, the Company must implement in-situ

protection of them. To implement the in-situ protection, the Company should determine protection measures in advance, which should be incorporated into the feasibility study report and design specification and reported for approval. If it is impossible to implement the in-situ protection and it is necessary to remove or dismantle the cultural heritage, Nanshan Aluminium will report to the people's governments at all levels for approval. If the Company's operation activities affect the safety and environment of cultural heritage sites and religious holy sites, the Company will make rectification within a prescribed time limit according to law.

Commitment of Nanshan Aluminium

The Company abides by international conventions and national laws and regulations to protect cultural heritage sites and religious holy sites.

The Company fully respects the freedom of religion.



Community Impact Control

Committed to fostering good interactions with communities, the Company will develop measures and procedures to promote community development and strengthen the ESG management of projects to protect the rights and interests of local residents.

The Company actively promotes the organization construction of community medical care, education, culture, tourism, and other industries, such as building infrastructure including hospitals, schools and libraries, stadiums, using abandoned resources to transform and develop scenic spots, providing and improving assistance for villagers, social insurance and commercial insurance, organizing cultural activities and providing other services. In local project construction and operation, the Company emphasizes the implementation of human rights due diligence and management, biodiversity conservation, and environmental assessment, monitoring, and governance. In the event of closure, decommissioning and divestment, the Company will discuss and negotiate about the ESG impact with local communities.

Commitment of Nanshan Aluminium

The Company will respect the legal and traditional rights and interests of local communities with respect to their land, livelihoods and use of natural resources. Appropriate steps will be taken in accordance with laws to prevent and eliminate any adverse impact of the activities on the livelihood of local communities. The Company also explores opportunities with local communities to respect and support their livelihoods.

Nanshan Aluminium has organized many public welfare activities to provide living subsidies, free health examination, free travel to 5A scenic spots and other welfare care to the elderly from Nanshan. We also took measures to improve community living environment and create a harmonious and co-prosperous atmosphere between the Company

and the communities. In the meantime, in active response to the call of local governments, Nanshan Aluminium assisted in nucleic acid testing, epidemic prevention and control, population census to protect the life and health of employees and community residents.

