



2018

China National Building Material Company Limited

Environmental, Social and Governance (ESG) Report

(Stock code: 03323)

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01 About this Report

This Report provides the latest information relating to the work for sustainable development in 2018 conducted by China National Building Material Company Limited and its subsidiaries. The Report mainly includes environmental and social topics related to the Group's sustainable development that the Group's stakeholders are concerned about, in order to facilitate all stakeholders to better understand the concepts, measures and related performance of the Group's sustainable development. This Report should be read in conjunction with CNBM's *2018 Annual Report* (in particular the "Corporate Governance Report" contained therein) for a comprehensive understanding of the Group's relevant performance. The Report is published in both Chinese and English versions. Should there be any discrepancy between the Chinese and the English versions, the Chinese version shall prevail.

Reporting Period

This Report covers the period from 1 January 2018 to 31 December 2018, unless otherwise specified. The information presented in this Report includes the Group's specific policies and performance in environmental, social and sustainable aspects. Due to the continuity and comparability of the information disclosed, the timeframe of selected contents is adjusted where necessary.

Reporting Scope

The reporting scope of this Report is determined on the principle of materiality. Unless otherwise specified, the material content of this Report is derived from China National Building Material Company Limited and its subsidiaries.

Reporting Guideline

This Report is prepared in accordance with the provisions of "comply or explain" in the "Environmental, Social and Governance Reporting Guide" set out in Appendix 27 of the *Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited* of The Stock Exchange of Hong Kong Limited, and is based on the reporting principles of materiality, quantitative, balance, and consistency.

Confirmation and Approval

This Report was confirmed by the staff members responsible for ESG of the Group in June 2019. The board of directors of CNBM has reviewed and approved this Report, so as to ensure that this Report covers the major environmental, social and governance contents of the Group.

Feedback on the Report

If you have any comments on the Group's work relating to the environmental, social and governance report, please contact the Group by the following e-mail: cnbmtd@cnbm.com.cn.

Definition

In this Report, unless the context otherwise requires, the following terms shall have the meanings set out below:

"BNBM PNG"	BNBM PNG Limited
"BNBM"	Beijing New Building Material Public Limited Company
"CBMI Construction"	CBMI Construction Co., Ltd.
"China United Cement"	China United Cement Corporation
"CNBM", "Company"	China National Building Material Company Limited
"ESG"	Environmental, Social and Governance
"Group"	the Company and, except where the context otherwise requires, all its subsidiaries
"Guizhou Southwest Cement"	Guizhou Southwest Cement Company Limited
"Hejing Tianshan"	Xinjiang Hejing Tianshan Cement Co., Ltd
"Jushi Group"	Jushi Group Company Limited
"Listing Rules"	the Rules Governing the Listing of Securities on the Stock Exchange as amended from time to time
"North Cement"	North Cement Company Limited
"Parent", "CNBMG"	China National Building Material Group Co., Ltd. (previously known as China National Building Materials Group Corporation)
"PRC", "China"	The People's Republic of China
"Qilianshan"	Gansu Qilianshan Cement Group Company Limited
"Report"	the Company's <i>2018 Environmental, Social and Governance Report</i>
"Reporting Period"	the period from 1 January 2018 to 31 December 2018
"RMB"	Renminbi yuan, the lawful currency of the PRC
"Sichuan Nwua Building Materials"	Sichuan Nwua Building Materials Co., Ltd.
"Sinoma International"	Sinoma International Engineering Co., Ltd.
"Sinoma Mpande"	Mpande Limestone Limited
"Sinoma"	China National Materials Company Limited, a joint stock company incorporated in the PRC with limited liability
"South Cement"	South Cement Company Limited
"Southwest Cement"	Southwest Cement Company Limited
"Stock Exchange"	The Stock Exchange of Hong Kong Limited
"Taishan Gypsum"	Taishan Gypsum Co., Ltd
"Tianshan Cement"	Xinjiang Tianshan Cement Co., Ltd.
"Zhongfu Lianzhong"	Lianyungang Zhongfu Lianzhong Composites Group Co., Ltd

02 About CNBM

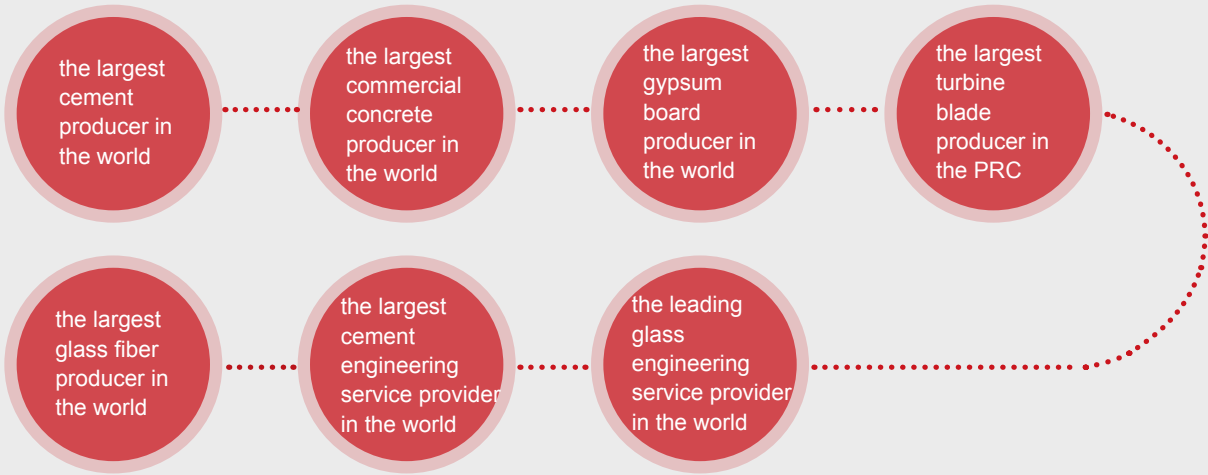
Company Profile

With Parent, BNBMG, CNBM Trading, Cinda and Building Materials Academy as Promoters, China National Building Material Company Limited was converted into a joint stock limited company on 28 March 2005. The Company's H shares under the initial public offering were listed on the Stock Exchange on 23 March 2006 (Stock Code: 03323) and approximately 150 million H shares, 300 million H shares and 240 million H shares were placed on 9 August 2007, 5 February 2009 and 14 September 2010, respectively. The Company issued bonus shares on 13 June 2011 on the basis of ten bonus shares to be issued for every ten shares held by the Shareholders. On 2 May 2018, the Company and Sinoma completed the share exchange. As of 31 December 2018, the Company has a total issued share capital of 8,434,770,662 Shares.

As of the end of the Reporting Period, the Company's total assets exceeded RMB430 billion, and it has owned seven A-share listed companies¹, with over 150,000 employees. From 2005 to the end of 2018, the Company's total assets, revenue and profits (consolidated data) have increased from RMB13.5 billion, RMB6.2 billion and RMB690 million, respectively, to RMB 436.6 billion, RMB218.9 billion and RMB14 billion, creating good economic and social benefits.



The Group is mainly engaged in cement, new materials and engineering services businesses. As regards the current market positions (in terms of the production capacity or contract amount in 2018), the Group is:



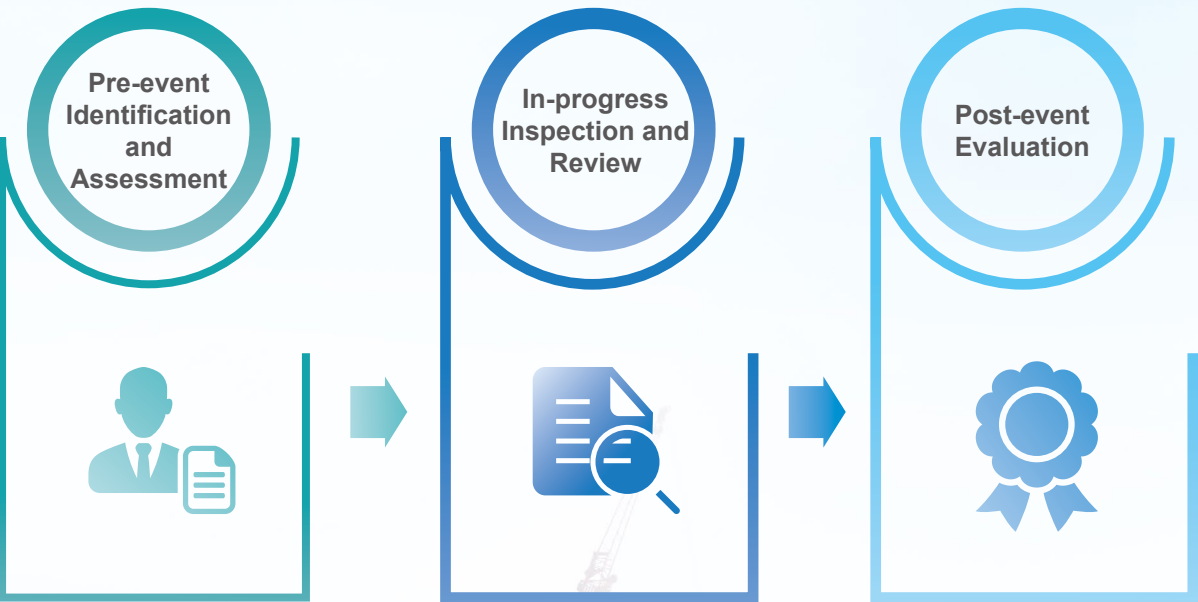
In the future, the Company will be committed to creating a three-way development pattern composed of cement, new materials and engineering services, forging itself into a world-class comprehensive building materials group, and committed to create maximized value for the Company's shareholders.

1: Please visit <http://www.cnbm ltd.com.cn/col/col731/index.html> for the company names.

 Environmental Protection Concepts

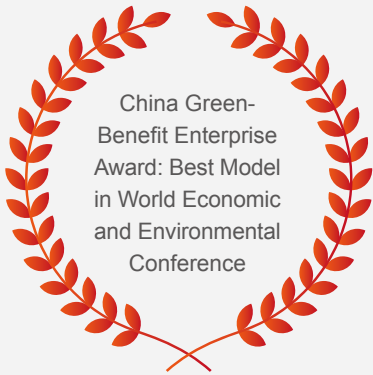
In 2018, the Group continued to focus its efforts via three major environmental protection aspects, including energy saving and consumption reduction, pollution reduction, and ecological conservation. Upholding the core values of “Green Development and to Realize Green Transformation”, the Group has continued to make greater contributions to environmental governance. Through technological innovation and aligning our efforts with the various environmental protection policies in China, including the *13th Five-Year Plan for the Protection of Ecological Environment*, the *13th Five-Year Plan for Renewable Energy*, the *Reform Program of the Ecological Environmental Damage Compensation System*, the *Opinions on Further Strengthening the Treatment of MSW Incineration*, the *Notice of the State Council on Further Strengthening the Cleaner Production of Key Enterprises*, the *Plan for Cutting Overcapacity in Cement Industry (2018 - 2020)*, and the *Standard Condition of Cement Industry (2015)*, the Group has kept abreast of the latest policy trends while seizing opportunities for development, and has actively advocated sustainable development.

In 2018, the Group has further enhanced the Environmental, Safety and Health Management System. Guided by the relevant information disclosure, the Group established an integrated system comprising of pre-event identification and assessment, in-progress inspection and review, and post-event evaluation. This system enhanced the daily management and allowed risks to be controlled at source, and thus strengthening the Group’s sustainable development capabilities and continuously propelling the Group to become a world-class comprehensive building materials company.



 Company Honors

The Group unwaveringly takes the path of sustainable development and is recognized by the governments and institutions of China and overseas in the fields of science and technology, environmental protection, and economy. CNBM has been awarded several honorary titles including the “First Prize at the State Scientific and Technological Progress Award of the 2017 National Science and Technology Award Conference” approved by the State Council of China, the “2018 Outstanding Issuer of Corporate Bonds” issued by the Shanghai Stock Exchange, the “Pioneering Company in Climate Attention and Ecological Civilization” issued by the Global Compact Network China, the “100 Energy Saving and Emission Reduction Demonstration Enterprises in Construction Material Industry” issued by the China Building Materials Federation, the “Advanced Group in China Cement Industry for Energy Conservation and Emission Reduction” jointly issued by the China Machinery, Metallurgy and Building Materials Union, the China Building Materials Federation, and the China Cement Association, and the “China Green-Benefit Enterprise Award: Best Model in World Economic and Environmental Conference” jointly issued by the International Ecological Economy Promotion Association, the United Nations Industrial Development Organization and the United Nations Educational, Scientific and Cultural Organization.

 First Prize at the State Scientific and Technological Progress Award of the 2017 National Science and Technology Award Conference The State Council of China	 2018 Outstanding Issuer of Corporate Bonds Shanghai Stock Exchange	 Pioneering Company in Climate Attention and Ecological Civilization Global Compact Network China
 100 Energy Saving and Emission Reduction Demonstration Enterprises in Construction Material Industry China Building Materials Federation	 Advanced Group in China Cement Industry for Energy Conservation and Emission Reduction China Machinery, Metallurgy and Building Materials Union; China Building Materials Federation; and China Cement Association	 China Green-Benefit Enterprise Award: Best Model in World Economic and Environmental Conference International Ecological Economy Promotion Association; United Nations Industrial Development Organization; and United Nations Educational, Scientific and Cultural Organization

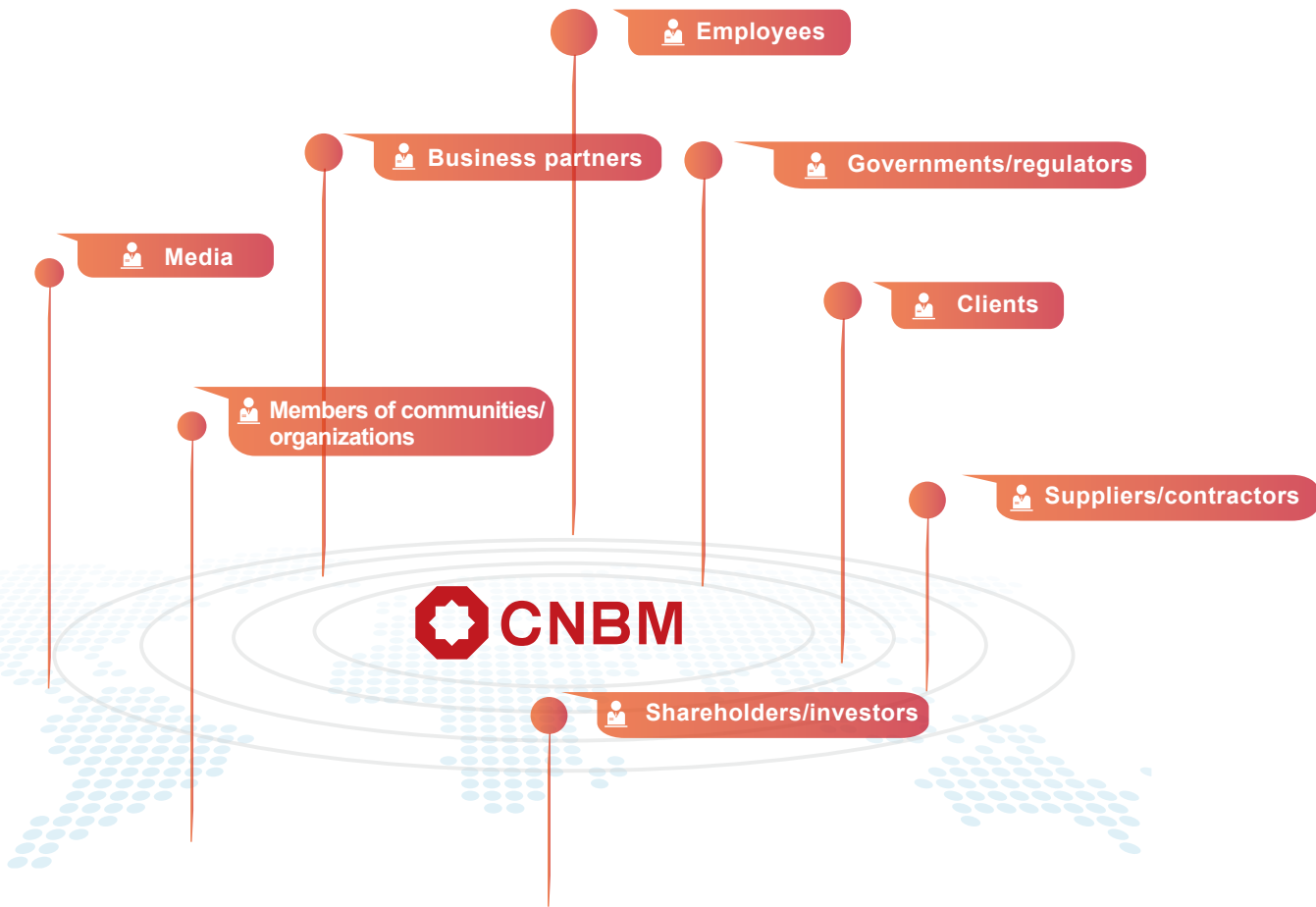
Stakeholder Communication

Maintaining effective communication with stakeholders is an important part of CNBM's management of long-term development. The Company accurately identifies the key stakeholders relating to the Group's operation, and communicates with them through meetings, regular visits, and satisfaction surveys, etc., to understand their expectations and interests on the Group's current and even the future's developing process. The Company will take measures to respond and meet the demands of key stakeholders according to its production and operation situation.

CNBM mainly identifies relevant individuals or groups as its key stakeholders through the following three criteria:

- whether they have invested or will invest in CNBM
- whether they have an influence on the business operation of the Group
- whether they have interests in or are affected by the business, products, services and relationships of the Group

The Company has identified eight key stakeholders:



CNBM attaches great importance to the valuable opinions from different key stakeholders in various manufacturing projects during developing, designing, constructing and operating process in China and overseas. During the preliminary design stage of various projects, the Company will conduct public consultation to deeply understand the concerns of the residents of surrounding areas by extensively collecting their opinions on the development of the project. The Company will appoint professional environmental assessment agencies to conduct a comprehensive environmental impact assessment for the project and formulate impact mitigation plans, so as to minimize the potential impact of the project development on the surrounding environment and communities to the largest extent.

CNBM's communication channels and frequency with key stakeholders are as follows:

Key stakeholder	Main communication channel	Frequency
Employees	- Employee meeting/forum - Employee performance appraisal interview - Employee satisfaction survey - On-site investigation and research - Recreational activities and voluntary activities for employees	Regularly/From time to time
Governments/regulators	- Telephone/email - Meeting and interview	Regularly/From time to time
Clients	- Telephone/email - Interview	Regularly/From time to time
Suppliers/contractors	- Issue invitation for bids on procurement of products/services - Inspection and supervision of work - Supplier conference - Telephone/email - Interview	Regularly/From time to time
Shareholders/investors	- General meeting - Investor conference - Press release announcement - Annual/interim result presentation - Analyst seminar - Roadshow - Visit - Corporate Day	Annually/Regularly/From time to time
Members of communities/organizations	- Telephone/email - Interview	Regularly/From time to time
Media	- Press release/announcement - Media interview	Regularly/From time to time
Business Partners (e.g., tertiary education institution, research institutions, professional groups or individuals)	- Inspection and supervision of work - Telephone/email - Interview	Regularly/From time to time

03 Corporate Governance

As a leading enterprise in the comprehensive building materials industry, the Group hopes to consolidate and develop sustainable domestic and foreign building materials market through its corporate governance. Relying on the sound corporate governance of the Group's management and the joint efforts of all employees, the Group has achieved good results in economic results, clean government construction, and risk control during the Reporting Period.



Economic Outcomes

Building Integrity

Risk Management and Control

Highlights of 2018



 Economic Outcomes

In 2018, China's economy has maintained a stable performance on the whole, with year-on-year gross domestic product growth of 6.6%, and the overall economic development has gradually moved towards a high-quality state. Fixed asset investment increased by 5.9% year-on-year, real estate development investment increased 9.5% year-on-year, the building materials market was under continuous stability. The industry continued to deepen the supply-side reform, leading to rational price stability of major products in the industry, and achieved the best economic efficiency in history.

Facing the complicated and tough market environment at home and abroad in 2018, CNBM actively responded to the challenges of economic transformation by relying on sound corporate governance, seized potential development opportunities, and accelerated the implementation of the work policy of "Maintaining Steady Growth, Adjusting Economic Structure, Promoting Reforms and Enhancing Party Building". CNBM strictly complied with the internal operation and guiding principles, focusing on the market, price stability and quantity expansion, detailed management, cost reduction and efficiency increase; strengthened financial management integration, optimized debt structure and expanded financing channels; promoted the adjustment and optimization of main business, increased the research and development of new materials, and promoted the innovation and transformation of engineering service business. In overseas investment and regional production capacity cooperation, CNBM continued to make steady progress, new business and new business model continued to develop orderly, the Company's international business standards and quality continued to improve during the Reporting Period.

In 2018, the former CNBM and the former Sinoma have successfully completed the merger. On 3 May 2018, the H shares of the Company after the merger were listed on the Stock Exchange.

 Building Integrity

In order to pursue sustainable corporate development, CNBM regards integrity building as the key cornerstone of corporate governance and resolutely fights against corruption in all forms. The Group strictly complies with the Criminal Law of the People's Republic of China, the Anti-Money Laundering Law of the People's Republic of China and other laws and regulations; the Group has also developed the *CNBM Responsibility System for Clean Party*, the *Measures for Implementing the Conversation Reminder System of CNBM Party* and other internal policies and revised the *Measures for Implementing the Responsibility System of CNBM Party*. The Group's focus is on establishing a sound system of punishing and preventing corruption, and with the improvement of the system's implementation, to gradually establishing a complete system of anti-corruption to further strengthen the Group's clean Party and anti-corruption work. Since the Party committee of CNBM signed the *Responsibility Commitment of Clean Party* with the Party organization of each of the Group's business segments, the Group, through methods such as clearly identifying the inspection, assessment, responsibility and supervision mechanisms for the clean Party integrity building and requiring its subsidiaries at all levels to sign the responsibility commitment, has further strengthened the Group internal integrity building, and has achieved good results.

During the Reporting Period, the Group did not receive any reported cases relating to bribery, extortion, fraud and money laundering.

 Risk Management and Control

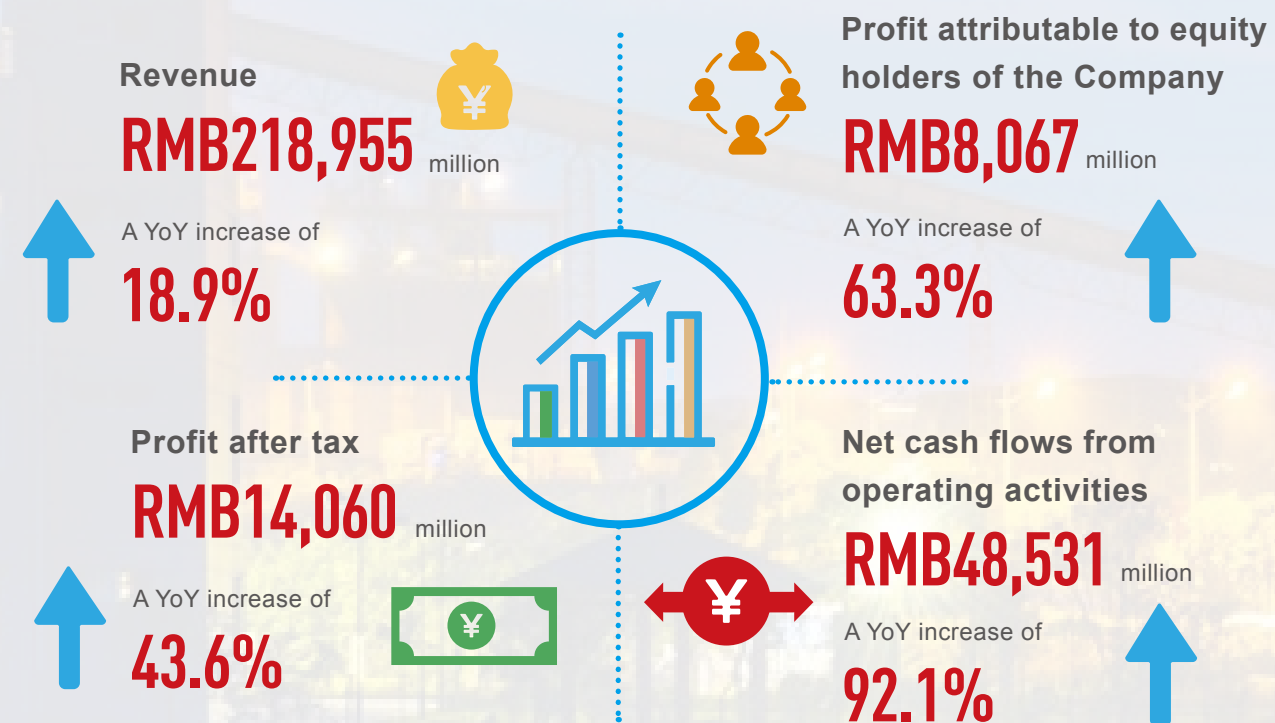
In order to comply with relevant domestic laws and regulations as well as the provisions under the *Listing Rules*, strengthen the corporate risk management and internal control management, and monitor and safeguard the achievement of the Company's business management objectives, the Group has formulated a series of internal control management systems in line with the Company's actual situation, covering financial supervision, operational regulation, compliance supervision, risk management, and other aspects, and has conveyed the systems to its employees.



Highlights of 2018

The figures below illustrate the performance of the Group on economic development and integrity building during the Reporting Period.

Economic performance:



Integrity building:



Number of cases involving bribery, extortion, fraud and money laundering

0

Unchanged from 2017

04 Energy-saving and Environmental Protection

To proactively address the issues of climate change and excess production capacity, and to uphold green, low-carbon and sustainable development, the Group has vigorously implemented the “Responsibility for Blue Sky” action program that focuses on energy saving, emissions reduction, ecological protection, circular economy and other key areas to promote energy saving and the transformation and upgrading works.



Green Operation
Green Manufacturing
Green Products
Green Ecology
Highlights of 2018

 Green Operation

The Group is committed to maintaining a green operating environment and has resolutely implemented the laws, regulations and policies on environmental protection formulated by China, local government authorities and the Group respectively. In doing so, the Group's management system and management methods in environmental protection have been continuously improved. The Group has actively advocated for a green office to achieve energy saving and emission reduction, and to improve resource utilization efficiency.

Law and regulation compliance

To prevent and control pollution and to reduce the emission of pollutants, the Group strictly abides by and implements the Environmental Protection Law of the People's Republic of China, the Atmospheric Pollution Prevention and Control Law of the People's Republic of China, the Water Pollution Prevention and Control Law of the People's Republic of China, the Soil Pollution Prevention and Control Law of the People's Republic of China, the Water and Soil Conservation Law of the People's Republic of China, the Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes, the Law of the People's Republic of China on Prevention and Control of Pollution from Environmental Noise, the Cleaner Production Promotion Law of the People's Republic of China, the *Emission Standard of Air Pollutants for Cement Industry*, the *Measures for the Administration of Permit for Operation of Dangerous Wastes* and other laws and regulations related to exhaust gas emissions, greenhouse gas emissions, water and land discharges and waste disposals which have a significant impact on the Group; through making reference to the laws and regulations mentioned above, and the initial policy of the Parent, the Group has also revised and formulated the *Environmental Protection Management System of CNBM*, the *Measures for the Administration of Emergency Environmental Accidents of CNBM*, the *Measures for the Administration of Reporting Emergency Environmental Accidents of CNBM*, and the *Measures for the Administration of Energy Saving and Emission Reduction of CNBM*. In addition, the Group's subsidiaries have formulated their own energy saving and emission reduction related system based on their business characteristics and relevant national and local laws and regulations and the Group's internal management measures. Through the formulation and implementation of relevant internal emission management policies, the Group has achieved good results in preventing and controlling atmospheric emissions, water body and land discharges, and solid waste production.

During the Reporting Period, the Group did not receive any reported complaints relating to significant environmental pollution problems.



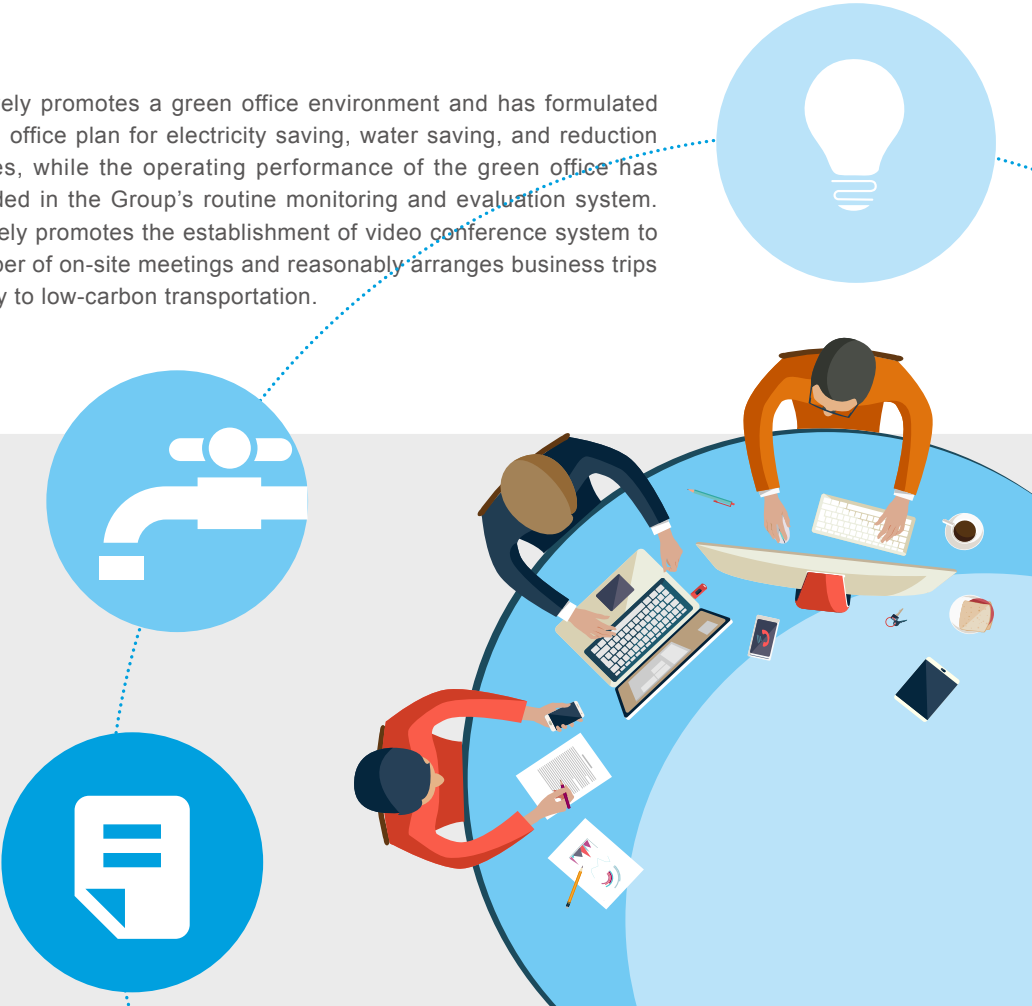
Detailed management

In order to further strengthen the environmental protection management of production enterprises, CNBM has revised and improved its energy saving, emission reduction and environmental protection management system in accordance with the relevant national laws and regulations and with reference to actual conditions. The Group's *Measures for the Administration of Emergency Environmental Accidents* and *Measures for the Administration of Reporting Emergency Environmental Accidents* were prepared by the Group in accordance with the Emergency Response Law of the People's Republic of China, the *National Environmental Emergency Response Plan*, and the *Measures for Information Report of Environmental Emergencies*, which has improved the Group's environmental emergency preparatory system, standardized the information report for environmental incidents and improved environmental emergency management. In addition, based on daily work situations, the Group has revised the regular meeting system for energy saving and emission reduction to a monthly reporting system. This has enabled the prompt reporting of the subsidiaries' production status, the identification of potential problems through analysis, and the rectifications based on timely feedback. The subsidiaries of CNBM have also developed strategies, policies and plans for energy saving and emission reduction in accordance with their own situation.

The Group has implemented a standardized management system and has achieved energy saving, consumption reduction and cleaner production through lean management. The Group's manufacturing subsidiaries have established a basic standardized system for quality, environment and energy management. With regard to building an energy-saving and emission-reduction talent team, the Group has continuously enriched the knowledge of energy-saving and emission-reduction personnel and improved their professional ability.

Green office

The Group actively promotes a green office environment and has formulated a detailed green office plan for electricity saving, water saving, and reduction of office supplies, while the operating performance of the green office has also been included in the Group's routine monitoring and evaluation system. The Group actively promotes the establishment of video conference system to reduce the number of on-site meetings and reasonably arranges business trips and gives priority to low-carbon transportation.





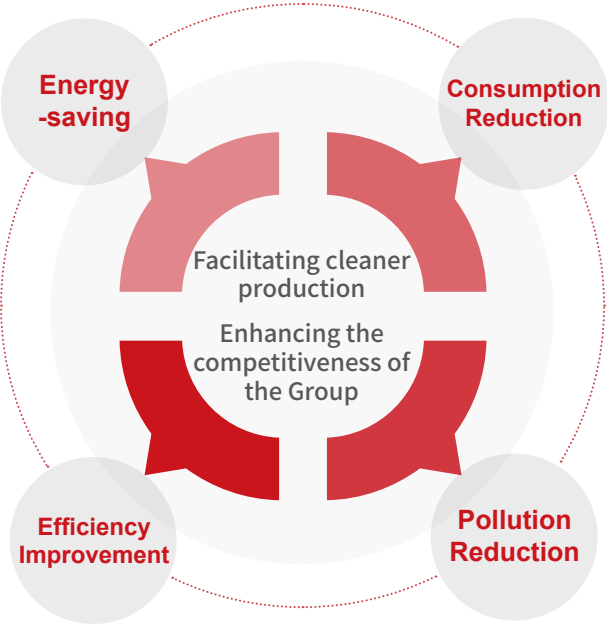
 Green Manufacturing

The Group has continuously improved energy efficiency and the Group’s main production units have been maintained to an advanced level in energy efficiency. At the same time, the Group strictly follows pollutant emission standards, improves monitoring and emission reduction systems, and ensures compliance with emission standards and cleaner production.

Cleaner production

The Group adheres to the concept of “Optimizing the Use of Resources to Serve and Construct” and strives to promote green and sustainable development.

The Group is committed to reducing the discharge of wastewater and the emission of exhaust gas. By carrying out peer benchmarking and initial comprehensive benchmarking among enterprises within the Group, the Group optimizes the key indicators of each production process, and actively leads the industry in energy conservation, production optimization and self-discipline emission reduction. Taking the path of sustainable development is the development direction the Group always adheres to. In 2018, the Group improved the established environmental, safety and health management system, such as the *Guidelines for the Co-disposal of Solid Waste in Cement Kilns* and the *Measures for Occupational Health Supervision and Management in Workplaces of CNBM*, etc. Starting from information disclosure, the Group further optimizes the work processes of pre-event identification and assessment, in-process inspection and review, and post-event evaluation in the management system. By strengthening the efficiency of daily management and preventing risks at the source, the sustainable development of the Group is guaranteed.



Case Sharing

In order to fulfill the corporate environmental responsibility, Tianshan Cement actively responds to environmental requirements and continuously improves its environmental performance. In 2018, Tianshan Cement implemented "Peak-Averting Production" and reduced or even stopped the production of enterprises to reduce pollutant emissions. At the same time, Tianshan Cement increased its own investment in environmental protection and improved the production process, to fundamentally solve the problem of environmental protection. In 2018, a total of RMB246 million was invested in 87 environmental protection projects, of which 39 have been completed and the remaining 48 are in process.

Tianshan Cement
In 2018, a total of **RMB246** million
was invested in **87** environmental
protection projects, of which **39**
have been completed and the remaining
48 are in process.

Case Sharing

Qilianshan persistently pays high attention to environmental pollution prevention and control. In view of the different production processes and their corresponding major environmental pollution sources, Qilianshan safeguards and strengthens its treatment and control of pollutant emission discharge from various aspects.

Dust control

Bag filters or electrostatic precipitators are applied for dust collection;

Sulfur-dioxide treatment

As the calcining process of cement kiln was conducted in an alkaline condition, sulfur dioxide is absorbed and reacts in the furnace during the calcining process, where basically a zero or a very low-level of emission of sulfur dioxide within emission standard has been achieved;

Nitrogen oxides treatment

Nitrogen oxides emission treatment at the end of cement kiln was conducted with mixed denitrification system as "low nitrogen oxides burners + staged combustion +SNCR (i.e. selective non-catalytic reduction)";

Wastewater treatment

The domestic sewage in the production area is treated with MBR (i.e. membrane bioreactor) hollow membrane microorganism disposal measure, and after reaching the Level A of First Grade Standard in the *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant (GB18918-2002)*, treated water will be returned to the reclaimed water recycling system for reuse.

Case Sharing

Jushi Group invested more than RMB10 million to completely transform the production plant by rainwater and wastewater diversion. All the wastewater was collected by open pipes and then centralized for treatment; after being treated and meeting drainage requirements, the treated water will be discharged to sewage treatment plants. Jushi Group transforms and maintains the rainwater pipelines. The rainwater was collected and transported to the sewage treatment station by the water pump before the transformation and maintenance. Now the rainwater is collected and discharged by a unified rainwater discharge outlet through rainwater pipelines. In addition, Jushi Group added an ozone denitrification system for exhaust gas in 2018, which not only reduced the emission concentration of nitrogen oxides in exhaust gas, but also served as a backup system to deal with the special circumstances that the original ozone system needs to be repaired, so as to ensure that the concentration of nitrogen oxides shall always meet the emission standards.

Comprehensive utilization of waste materials

The Group abides by the Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes, the *Measures for the Administration of Permit for Operation of Dangerous Wastes* and other relevant regional laws and regulations. The Group standardizes the management of various types of waste generated in the production and living processes to achieve "Recycling, Reduction, and Harmlessness". The Group is also committed to reducing waste disposals and mitigating environmental impacts. With regards to hazardous waste disposal, the Group has signed the *Hazardous Waste Disposal Contract* with companies that have relevant hazardous waste disposal qualifications to conduct centralized disposals of hazardous waste generated from the Group's production processes. In order to effectively enhance the comprehensive utilization of waste, CNBM actively responds to the call of the national and local governments: the cement business segment vigorously promotes the comprehensive utilization of resources by using a large amount of industrial waste for cement production; the light building materials business segment comprehensively utilizes industrial waste by extensively recycling and utilizing desulphurized gypsum and phosphogypsum.

In addition, the Group actively promotes the co-disposal of municipal waste, sludge and hazardous waste, etc., and makes full use of the advantages of cement kiln to develop cement kiln co-disposal projects. These projects neutralize hazardous wastes into harmless states, and helps the Group to move towards the green development of building materials.

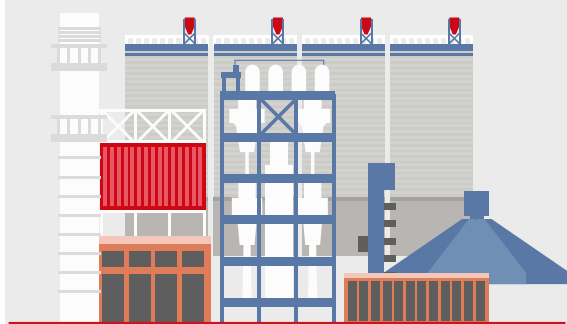
At the same time, each cement business segment vigorously promotes the comprehensive utilization of resources, using a large amount of industrial waste residue for cement production, such as coal fly ash, slag, desulfurized gypsum, and calcium carbide slag, etc., to achieve the comprehensive utilization of industrial waste.

The cement enterprises affiliated to CNBM have built **12** co-disposal projects, and there are **4** projects under construction, which include **7** co-disposal projects of hazardous waste,

5 domestic garbage disposal projects, and **4** sludge disposal projects. Besides, there are **15** proposed projects.

In 2018, a total of **695,900** tonnes of hazardous waste, **553,100** tonnes of domestic waste and **212,300** tonnes of sludge were disposed by the Group.

During the Reporting Period, the Group utilized more than **98.60** million tonnes of industrial waste.



Case Sharing

The enterprises affiliated to BNBK produce gypsum board with desulfurized gypsum. In 2018, gypsum board output reached 2 billion square meters, and 15.34 million tonnes of industrial by-product gypsum were consumed, which effectively solved the disposal problem of by-product gypsum for thermal power plants.

Water conservation

By taking water resources conservation and protection as the focus, through strengthening leadership, improving system, implementing responsibility and strengthening supervision, the Group has achieved remarkable results in water measurement management, water-saving system construction, sewage treatment, water reuse and other areas.

The cement business segment companies have taken active water-saving measures; they have recycled water by reusing industrial cooling water in the production system, and no wastewater from production is discharged out of the system. At the same time, in order to reduce water consumption in production, each cement business segment company regularly inspects the circulating water pipe network and regularly cleans the sedimentation tanks, so as to better conserve water resources.

In addition, the Group implements water resources management measures such as diversion of clean water and wastewater, diversion of rainwater and wastewater, segregated collection and pre-treatment of production wastewater and domestic sewage. All wastewater is reused after advanced treatment by sewage treatment stations at site areas, and the treated wastewater is mainly used for vehicle washing, water spraying for dust reducing in the storage yard, as well as ground washing, road sprinkling, and gardening, etc. to achieve zero discharge of wastewater.

During the Reporting Period, the Group did not have any problem in sourcing water.

Case Sharing

Tianshan Cement invested RMB1.43 million in Hejing Tianshan to build sewage treatment equipment for purifying wastewater from living areas, eliminating sewage discharge and saving water resources. The sewage treatment equipment adopts the MBR method with high-efficiency membrane separation technology. Through detection, the water quality after treatment meets the Level A of First Grade Standard in the *Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant (GB18918-2002)*.

Case Sharing

BNBM takes active water-saving measures to reuse industrial cooling water into its production system, and no wastewater is discharged from the production process. BNBM implements rainwater and sewage diversion, production wastewater recycling, and domestic sewage centralized collection to the municipal pipe network for centralized treatment.



Case Sharing

Jushi Group invested RMB37 million to build an advanced sewage treatment and reuse system in the fourth phase of Tongxiang Economic Development Zone. The system was put into operation in October 2018, which realizes sewage recycling. The average daily volume of recycled water is about 560 tonnes, and the annual water consumption can be reduced by 150,000 tonnes while reducing the outflow of sewage. At the same time, through technical transformation, the energy-intensive water pumps have been replaced by energy-saving ones, so as to reduce the use of purchased electricity in the process of operation.

Jushi Group invested

RMB37 million

to build an advanced sewage treatment and reuse system in the fourth phase of Tongxiang Economic Development Zone.

Upgrading eco technics

The Group encourages each enterprise to strengthen energy conservation and emission reduction and improve resource utilization efficiency through independent innovation.

Case Sharing

Southwest Cement

- Introducing trial kiln, PIT automatic optimization system for cement grinding, column pin roller of roller press, ceramic roller layer of vertical grinding, ceramic hanging piece of preheater, magnetic coupler, energy-saving air compressor with permanent magnet inverter, on-line cleaning system of the condenser for power generator of waste heat recovery, and transformation of high-efficiency vacuum system;
- Sichuan Nvwa Building Materials adopts automatic transformation such as precise ammonia injection and precise control to reduce nitrogen oxides emission;
- Guizhou Southwest Cement implements grading of pulverized coal, tertiary air procedures, and raw materials into the calciner by optimizing the fractional combustion technology, so as to increase the reduction reaction area of the calciner cone and enhance the reduction reaction efficiency.

Case Sharing

BNBM vigorously promoted the establishment of the systems for wet electric dust removal and desulfurization and denitration system of flue gas, which realized the reduction of the emission concentration of flue gas particulate matter to lower than 10 mg/m³, the reduction of sulfur dioxide emission concentration to lower than 50 mg/m³, and the reduction of nitrogen oxides emission concentration to less than 100 mg/m³, and successfully completed the transformation of the ultra-low emission system.

Case Sharing

South Cement promotes cleaner production in an all-around way and promotes the construction of tidy factories and green mines. An investment of RMB53 million was made in the technical upgrading of dust emission, with an annual dust emission reduction of about 1,750 tonnes. The technical renovation of wet desulphurization at the end of the kiln was carried out, with an annual sulfur dioxide emission reduction of about 57,550 tonnes.

Circular economy

The Group attaches great importance to the rational and efficient use of resources, actively develops a circular economy and promotes resource conservation. The Group continues to vigorously promote pure low-temperature waste heat recovery for power generation of cement rotary kilns. As of December 2018, the system of waste heat recovery for power generation of the subsidiaries in the cement business segment of the Group has generated 8.519 billion kWh of electricity, which led to a consumption reduction of 1.047 million tonnes of standard coal, an emission reduction of 2.7431 million tonnes of carbon dioxide, and generated nearly RMB3.546 billion of economic benefits. At the same time, the Group actively utilizes industrial waste and municipal construction waste as raw materials in its production. In 2018, the Group consumed over 98.60 million tonnes of industrial waste.

Case Sharing

Through the technical renovation and enhanced management of environmental protection project facilities, the dust emission of Tianshan Cement was 1,518.10 tonnes in 2018 with a year-on-year reduction of 551.76 tonnes. The system of waste heat recovery for power generation produced 308,452,100 kWh of electricity, saving 37,900 tonnes of standard coal and reducing 99,200 tonnes of carbon dioxide emissions. Emissions of nitrogen oxides were 9,160.49 tonnes, which experienced a slash from the same period last year.

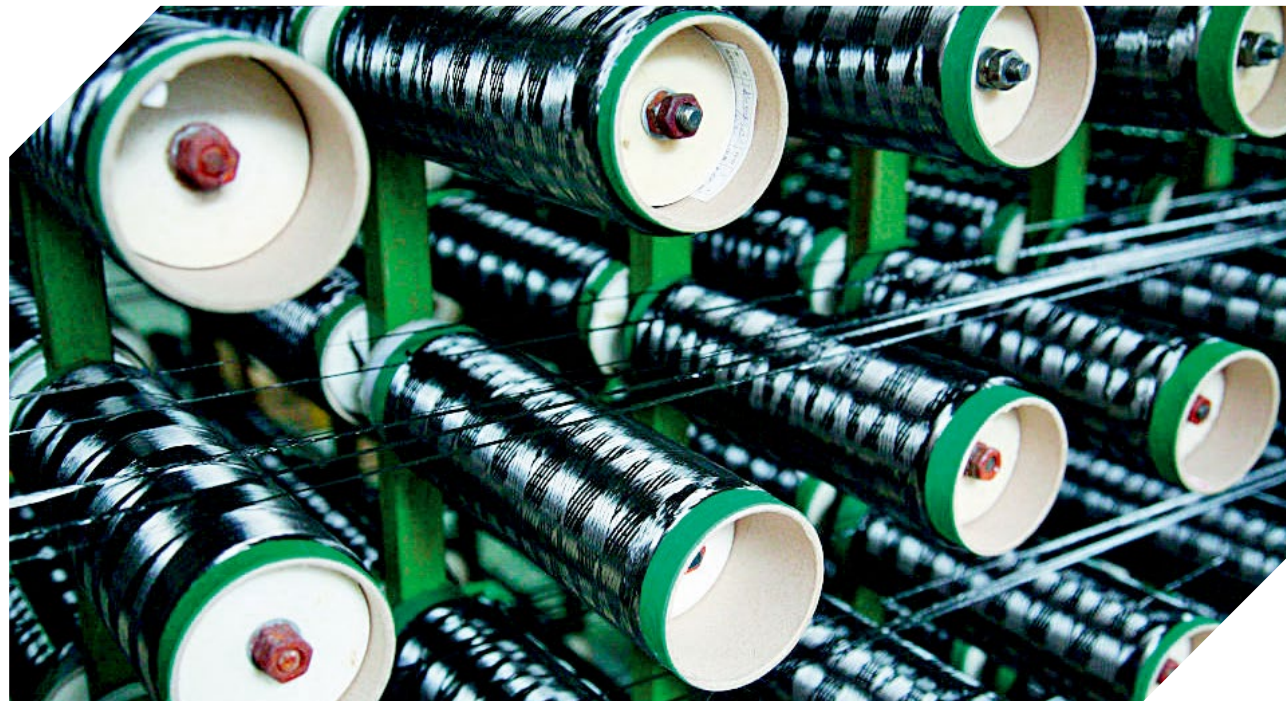
Through the technical renovation and enhanced management of environmental protection project facilities, the dust emission of Tianshan Cement was

1,518.10 tonnes

in 2018 with a year-on-year reduction of

551.76 tonnes





Green Products

In terms of products, the Group always pays attention to the performance of the whole life cycle of products, and is committed to providing high-quality, safe and healthy, green and environment-friendly building materials.

The Group has adjusted the structure of basic building material products and actively advanced the cement business in the direction of "High Performance, Specialized, Cross-industrial, Product-oriented", providing clients with high-quality, green and low-carbon cement products; the Group has developed and used industrial waste resources as raw materials to produce building materials, thus reducing the consumption of natural minerals; products that have reached the end of their life cycle are recycled as much as possible or effectively disposed.

In addition, the Group has also provided advanced and serialized wind turbine blades, solar thin film battery modules and special cement products to provide guarantees for the healthy development of new energy industries such as wind power, photovoltaic power and hydroelectricity, etc.



Green Ecology

The Group adheres to sustainable development and strives to explore the pattern of harmonious coexistence of nature, society and industry. The Group's mining activity is carried out according to the *Green Mine Convention*. The mining process is required to be scientific and orderly, in order to strictly control the impacts on mining areas and the surrounding environment and to protect the ecological environment. The Group carries out ecological restoration swiftly after mining is completed. During the Reporting Period, the Group strengthened mine construction management and actively promoted green mine construction. The Group owns a total of 10 national-level green mines.

In addition, the Group respects the *Convention on Biological Diversity*. The Group carries out strict verification on the site selection and layout design of factories; during the construction of projects, steps are taken to protect natural habitats, wetland, forests, corridors for wildlife and agricultural land, and to mitigate adverse impacts on the surrounding environment and communities as much as possible. The subsidiaries of the Group engaging in manufacturing industry pay attention to the greening and beautification of the site area and its surrounding environment; the Group has combined industrial production with gardening and landscaping and flora and fauna, and is committed to creating a green factory to achieve the natural integration of the industry and its surrounding ecological environment.

Case Sharing

South Cement participated in the standard formulation of the *DZ/T 0318-2018 Green Mine Construction Specification of Cement Limestone Industry* by the China Cement Association and the *Compilation Guide for Green Mine Construction of Limestone Mines* by CNBMG.



Case Sharing

North Cement actively responds to national requirements of green mine building. In August 2018, North Cement signed a strategic cooperation agreement with the geological exploration center of the Group and commissioned its provincial geological corps to conduct a detailed survey of its current owned mines, and a detailed survey report was completed. After discussion and analysis between North Cement and the provincial geological corps, the preliminary plan for the construction of green mines was formed.

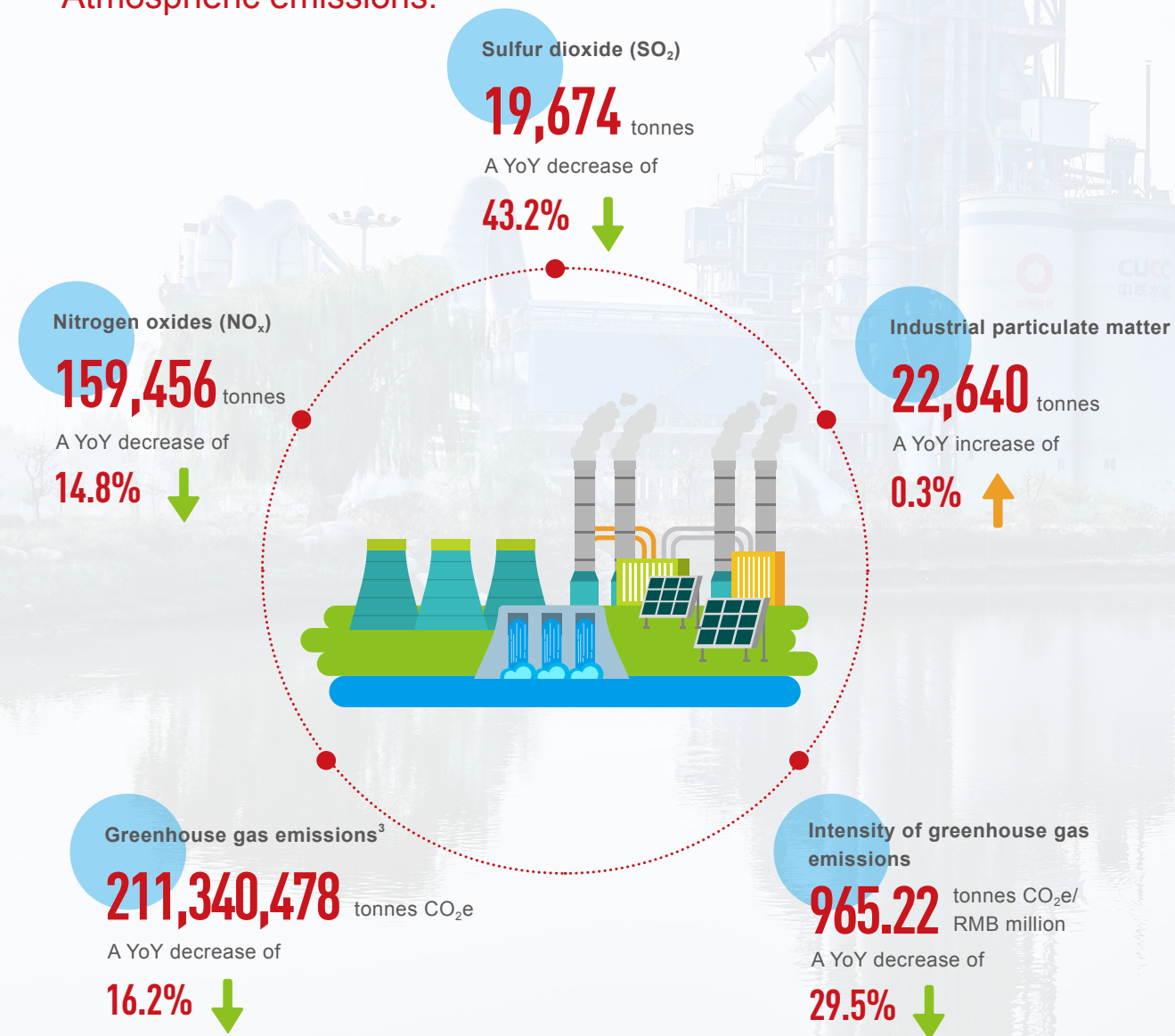
Case Sharing

The mining of Tianshan Cement complies with the *Green Mine Convention*, which requires the mining process to be scientific and orderly, the impact on the mining area and the surrounding environment of mining activities shall be strictly controlled, and ecological environment shall be protected; After the completion of mining, ecological restoration shall be carried out in time. During the Reporting Period, Tianshan Cement has applied for 4 green mines, which are under examination and approval. In addition, Tianshan Cement attaches great importance to the afforestation work of the mining sites, implements the afforestation area promised by the project and realizes the natural integration of industry and its surrounding ecology.

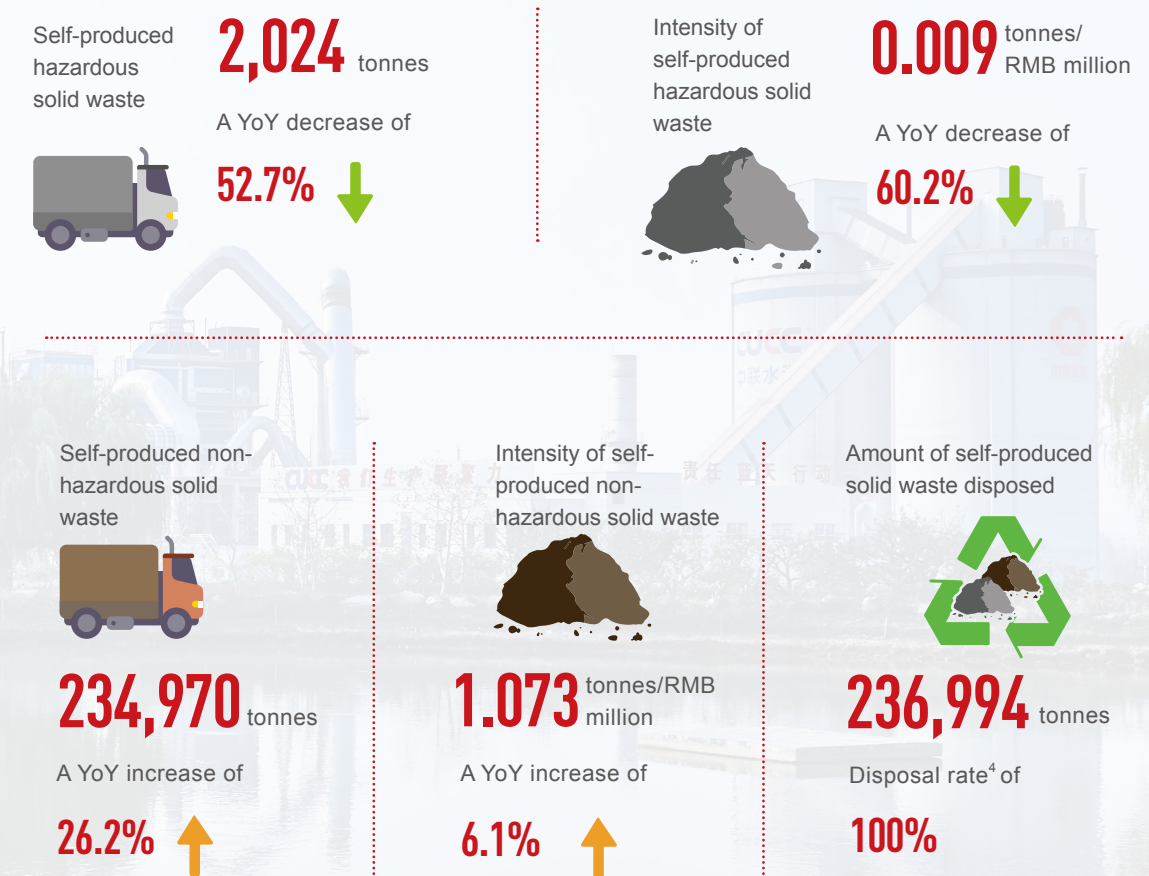
Highlights of 2018

The figures below illustrate the environmental performance² of the Group on emissions and use of resources during the Reporting Period.

Atmospheric emissions:



Self-produced solid wastes:



2: Some data are disclosed for the first time; therefore, they are not applicable for comparison over the same period. In order to make the relevant disclosure of intensity data item can comprehensively reflect the Group's business, starting by this Report, the denominator used for related intensity data calculation will be changed from "production area (i.e., squared meter)" to "the revenue (i.e., RMB in millions) of the Group".

3: Greenhouse gas emissions mainly came from fuel combustion and carbonate decomposition in raw materials during the operation of the Group.

4: Including self-produced hazardous and non-hazardous solid wastes.

Highlights of 2018

Comprehensive utilization of solid wastes:



Amount of solid waste utilization, elimination and disposed

98,602,313 tonnes

A YoY increase of 26.3% ↑



Discharge to water: Amount of chemical oxygen demand (COD)

13,374 tonnes



Noise: Proportion of companies meeting noise level standards

100%

Water and packaging material use:



Water consumption 153,868,717 tonnes A YoY decrease of 6.3% ↓

Intensity of water consumption 702.74 tonnes/RMB million

A YoY decrease of 21.2% ↓

Use ratio of recycled water 85%



Cement packing bags 2,083,801,489 pieces

A YoY decrease of 14.6% ↓

Energy use:

Electricity



30,445,938,948 kWh

A YoY increase of 0.2% ↑

Coal



41,709,935 tonnes

A YoY increase of 1.7% ↑

Natural gas



434,676,538 m³

A YoY increase of 0.04% ↑

Total energy consumption⁵

374,541,437 MWh

A YoY increase of 1.6% ↑

Intensity of total energy consumption

1,710.58 MWh/RMB million

A YoY decrease of 14.6% ↓

5: Calculations based on the electricity and fuel consumption and the conversion factors provided by the International Energy Agency.

05 Caring for Employees

The Group regards human resources as its most valuable asset. The Group respects the differences of employees and creates a safe and harmonious working environment for each employee. Moreover, through human resources policies, employee welfare, vocational training and related activities, the Group unites employees' cohesiveness and their sense of belonging to pursue and achieve the core values of the Group.



Standardized Employment

People-oriented

Equality and Diversity

Safety and Health

Progress Together

Highlights of 2018

Standardized Employment

CNBM strictly complies with the laws and regulations related to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunities, diversity, anti-discrimination, other benefits and welfare, which have a significant impact on the Group, including but not limited to the Labor Law of the People's Republic of China and the Labor Contract Law of the People's Republic of China. The Group upholds the principles of equal competition and merit-based recruitment and selection in the process of recruitment and employment and formulated and implemented system to standardized personnel management. Furthermore, the Group has standardized its dismissal procedures according to relevant measures in an orderly manner. The Group also requires new employees to provide accurate and actual personal information when onboarding. Applicants that have provided material or information which is later verified to be false will not be hired; the Group will terminate the probation period or labor contracts for employees that have provided falsified material or information. Additionally, the Group strictly reviews the identity information of candidates in the recruitment process to prevent recruiting child labor. Meanwhile, the Group firmly complies with the laws and regulations related to preventing forced and child labor.

People-oriented

The Group adheres to a “People-oriented” concept and pays attention to the employees’ physical and mental health. The Group has formulated an internal employees’ *Leave and Attendance Regulation*, which stipulates that employees are entitled to sick leave, personal leave, marriage leave, maternity leave, paid annual leave and statutory holidays. At the same time, the Group regulates employees’ working hours, and offers overtime compensation for employees who exceed the statutory working hours. In addition, the Group pays basic pension insurance, basic medical insurance, unemployment insurance, maternity insurance, work-injury insurance and housing funds for all formal employees and encourages employees to achieve a win-win model of work-life balance through a series of welfare measures. Furthermore, the Group organizes various cultural and sports events from time to time to enrich employees’ cultural life, enhance employees’ bonding and improve team cohesion.

During the Reporting Period, the Group did not receive any complaints about violation of employees’ legitimate rights and interests.

Equality and Diversity

As of 31 December 2018, the Group had a total of 158,500 formal employees, and the ratio of male to female employees is about 3.28. The Group attaches great importance to maintaining workplace diversity, and is committed to providing a safe, healthy and harmonious working environment for every employee. The Group will never tolerate any form of discrimination within the Group and will never treat candidates and employees differently based on their gender, age, race, ethnicity, religion, culture and sexual orientation.

During the Reporting Period, the Group did not receive any complaint of discrimination against candidates and employees.

At the same time, in order to lay a solid foundation in human resources for the sustainable development of the Group, the Group enhances the internal cohesion and employees’ sense of collective belonging through continuous improvement of human resources policy, employee welfare, vocational training, and leisure activities. Adhering to the principle of paying employees according to their performance and working efforts, the Group sets up and implements a reasonable salary management system based on the employee's work capability, job responsibilities, market salary level, and others.

The Group respects and upholds international covenant on human rights, the Labor Law of the People's Republic of China and other laws and regulations, firmly prohibits the employment of child and forced labor, and opposes any forms of discrimination during recruitment processes and subsequent employment.

During the Reporting Period, the Group was not involved in any cases related to the employment and use of forced or child labor.

As of 31 December 2018, the Group had a total of

158,500

formal employees, and the ratio of male to female employees is about

3.28



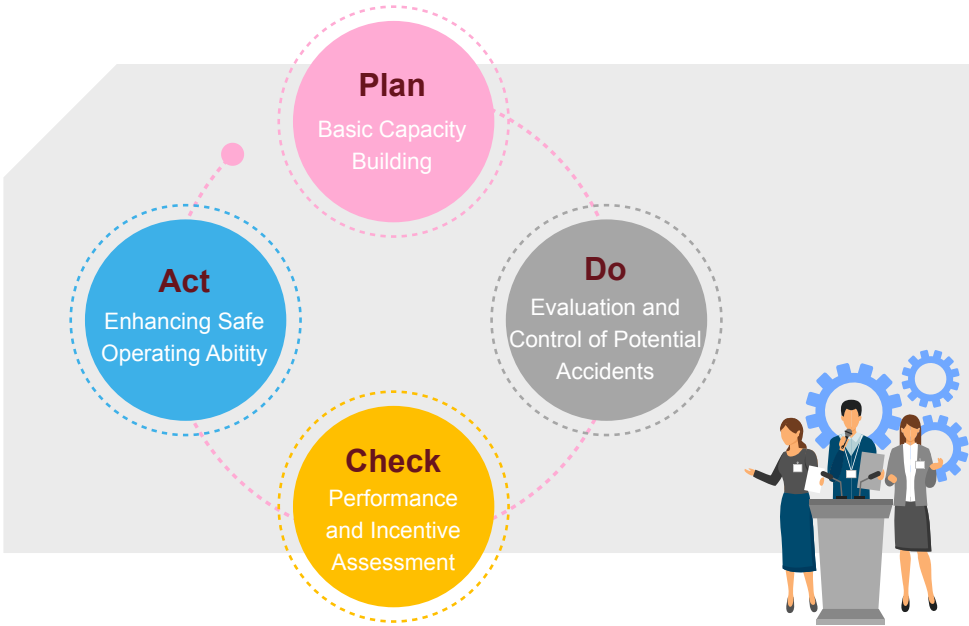
 Safety and Health

The Group is committed to providing a safe, healthy and harmonious working environment for every employee. Ensuring the safety and health of employees is the primary task in the development of the Group. Through in-depth research and analysis of the production characteristics of the building materials industry, the Group continuously improves the *Measures for Occupational Health Supervision and Management in Workplaces of CNBM*, and continuously strengthens the occupational health protection and management of employees, so as to effectively prevent, control and eliminate occupational hazards.

The Group strictly abides by laws and regulations related to occupational health and safety that have a significant influence on the Group, including but not limited to 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 *Measures for the Supervision and Administration of "Three Simultaneities" of Facilities for the Prevention and Control of Occupational Diseases of Construction Projects* and other national laws and regulations and standardized guidelines for work safety, and has established a relatively comprehensive safe production organizational system. In accordance with related laws and regulations as well as its own characteristics, the Group has formulated the *Measures for Occupational Health Supervision and Management in Workplaces of CNBM* to strengthen the supervision and management of occupational health, and to effectively prevent, control and eliminate occupational hazards. In addition, based on in-depth studies and analysis of building material production characteristics, the Group has continuously optimized supporting facilities for dust prevention, toxin prevention, noise reduction and emergency alerts; first-aid equipment has also been provided in production areas. In strict accordance with the requirements of labor protection, employees are equipped with quality and reliable personal protective equipment including work clothes, safety helmets, protective shoes, gloves, anti-noise earmuffs, dust masks, etc. The Group also regularly arranges for employees to take health examinations and organized additional health checks for employees working in positions that may be susceptible to exposures of dust and radiation etc.

The Group intensifies inspections for potential risks and actively promotes closed-loop control which is composed of "Basic Capacity Building - Assessment and Control of Potential Accidents - Work Performance and Incentive Assessment - Enhance the Ability for Safe Operation" (PDCA⁶), to achieve the PDCA improvement cycles. The Group has explored and established an inspection and management system for hidden risks, with the practice of job responsibility as the core, the list-checking standard as the tool, the closed-loop self-investigation and reporting as the method, and the means of information management as the support. Moreover, the Group promotes the use of information technology in the daily management of safe production and has self-developed a safety management information system which has enabled the online management of safety qualifications, safety basic archives, potential risk investigations, hazardous sources management, safety inspections, safety training and other important procedures and processes of safe production management.

During the Reporting Period, the Group did not receive any violations related to occupational health and safety that have a significant impact on the Group.



6: PDCA refers to Plan, Do, Check, Act.

As a national pilot enterprise of standardized safe production, the Group actively promotes the establishment of standardized safe production for cement and other enterprises, improves the safety management system, increases the safety management level and boosts safety management performance. The heads of the enterprises are the primary persons who are responsible for safety in workplaces and are directly responsible for safe production. All key production enterprises are equipped with full-time safety management personnel. The Group has also established an unimpeded channel for feedback and encourages all the staff to participate in safety management. The Group also attaches great importance to building up its safety management team and strictly follows the *Safety Training Management Measures of CNBM*. It guarantees the popularization of safety knowledge and implementation of safety procedures, deepens employees' awareness of safety responsibilities, and improves employees' awareness of occupational hazards and self-protection capabilities through various types of trainings and assessments.

Furthermore, the Group also attaches great importance to the safety and occupational health management of suppliers and partners. The safety and occupational health provisions are incorporated into service contracts; daily safety inspections, training and emergency drills are carried out jointly with suppliers and partners.

During the Reporting Period, no large or above accidents occurred in the Group.

Case Sharing

Zhongfu Lianzhong made an in-depth analysis of each production process and identified that leaf rolling coating is the process which produces inflammable and explosive volatile organic compounds, and the main component of waste gas is xylene. In order to reduce the production of volatile organic compounds from the source, Zhongfu Lianzhong has actively carried out the work of "Oily Paint to Water-based Paint", which is expected to be completed in February 2019. This renovation is not only conducive to environmental protection, but also can effectively reduce the risk of fire and explosion accidents.



 Progress Together

Through reflecting on advanced personnel training experiences and combining this with the Group's own development characteristics, the Group has established an employee development and training platform with multiple channels, multiple forms, different levels and various focuses. The Group adopts the training methods of "Internal Training as the Principal, External Training as the Supplement", sharing educational resources and building the Group's three-dimensional training system. The Group also supports employees' enrollment in independent training and encourages employees to study proactively by providing support and back-up (in terms of working hours, training investment input and incentive mechanisms, etc.) to encourage further-education, further-training and further-learning.

Part of the Group's internal training activities are listed below:



Employee Orientation Training

Lectures for corporate management and business knowledge, onsite inspections at enterprises and team quality expansion, etc.

Emergency Drill Training

To carry out various forms of emergency drills, thereby improving the feasibility, coherence and reliability of emergency rescue systems and contingency plans. To accumulate practical experience of dealing with emergency and enhance safety awareness and skills of employees.

Safety Knowledge Training

Through safety training to improve the level of safety production, technical knowledge of workers and safety management of managers, and to encourage managers to update their technical knowledge in a timely manner.



Training Activity 1: "To Start in Union" Experiential Development Training of CNBM in 2018



Training Activity 2: Lean Management Study Sessions of South Cement in 2018



Training Activity 3: Employee Orientation Training of CBMI Construction in 2018



Training Activity 4: Taishan Gypsum's Exchange Learning of Double Production Safety Prevention System

Highlights of 2018

The figures below illustrate the social performance⁷ of the Group on employment, occupational health and safety, and employee training during the Reporting Period.

Employee composition:



Total number of employees

158,500

A YoY increase of
2.1%

By age group

<30 Below 30 **35,178**

30-50 30 to 50 **97,908**

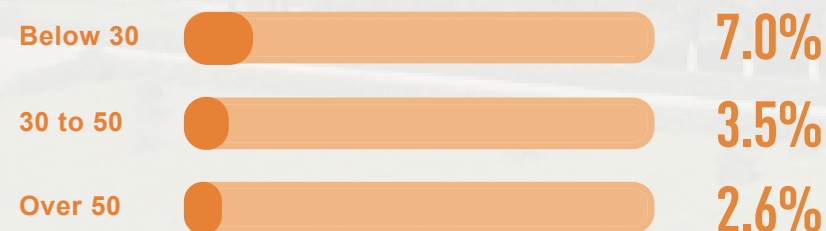
>50 Over 50 **25,414**

Rate of employee turnover:

By gender



By age group



By gender

Male
121,502

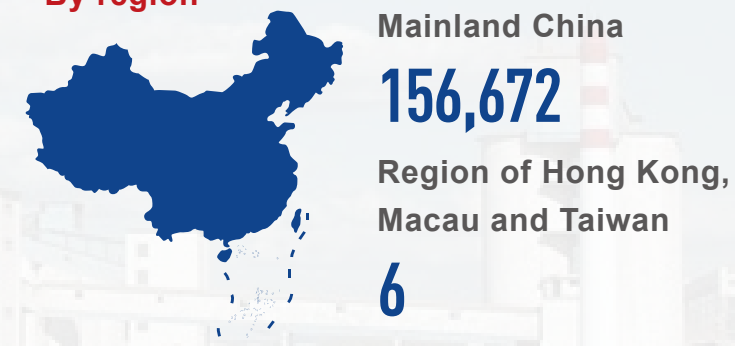
Female
36,998

By employment contract

Permanent
154,945

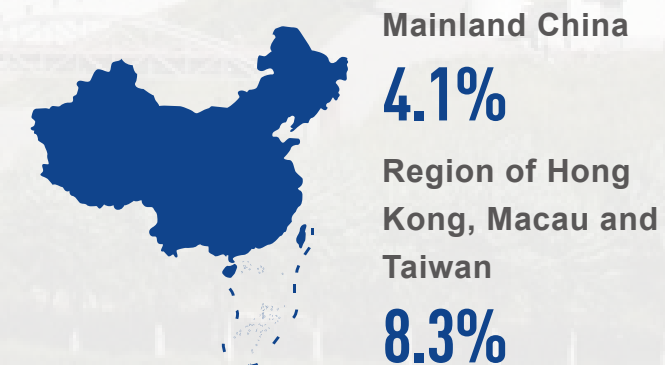
**Temporary/
fixed term**
3,555

By region



Overseas
1,822

By region



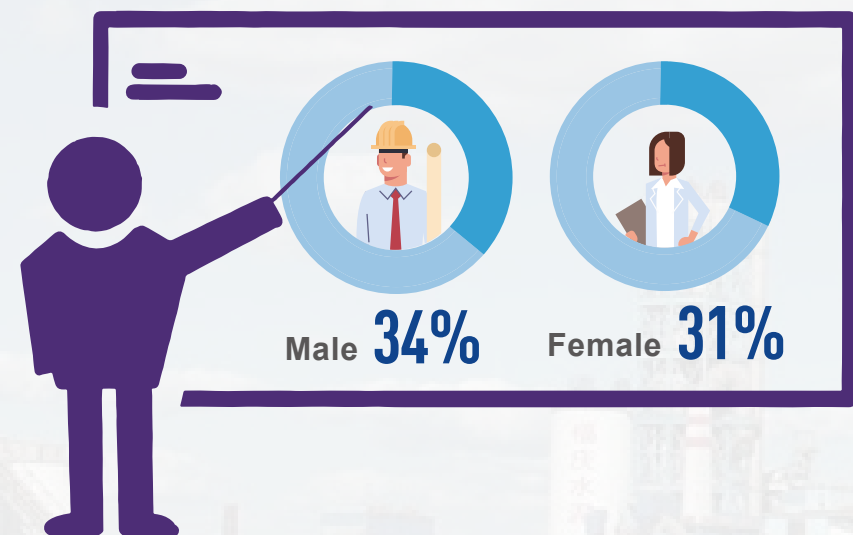
Overseas
6.4%

⁷: Some data are disclosed for the first time; therefore, they are not applicable for comparison over the same period.

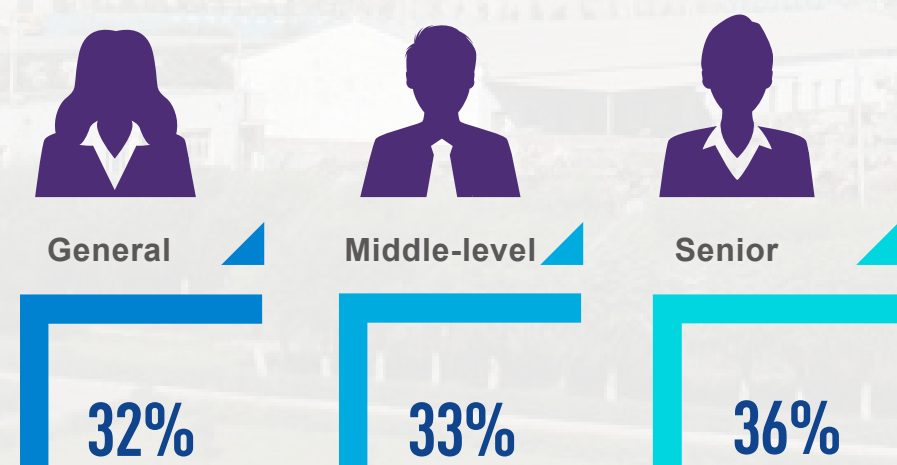
Highlights of 2018

Percentage of employees who received vocational training:

By gender

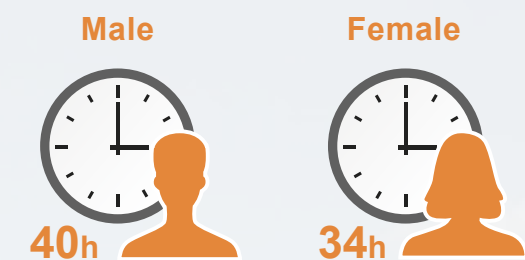


By employee category



Average hours of training per employee who received vocational training:

By gender



By employee category



Number of employment related litigation, complaints and safety accident cases:

Cases involving employing child and forced labor	0	Unchanged from 2017
Received complaints on violations of employees' legitimate rights and interests	0	Unchanged from 2017
Received complaints on discrimination against applicants and employees	0	Unchanged from 2017
Large or above production safety accidents ⁸ occurred	0	Unchanged from 2017

8: Refer to the Regulations on the Reporting, Investigation and Disposition of Work Safety Accidents of the People's Republic of China.

06 Quality Assurance

Providing high-quality products and services to clients is the cornerstone of the Group's sustainable development. The Group is committed to growing together with suppliers and business partners and hopes to create good value through mutually beneficial and win-win cooperation mode.



Supply Chain Management

Product Quality

Protection of Property Right

Protection of Privacy

Highlights of 2018

Supply Chain Management

In terms of supply chain management, the Group forms strategic partnership with suppliers of bulk materials, communicates with each other on environmental and safety issues, etc., and timely supervises suppliers' obligations related to social responsibility in accordance with relevant national policies. When selecting new suppliers and business partners, the Group will give priority to the partners with reliable quality, good business operational condition and good reputation, environmentally friendly and with scientific management.

The Group has established standardized operating procedures to ensure the objectivity, impartiality and scientificity of the selection and evaluation of suppliers, to strengthen the daily management and quality assessment of the Group's suppliers and to establish a stable and win-win cooperative relationship. The Group also regularly reviews and evaluates such procedures to regulate supplier management. Each subsidiary has also developed a supplier management system that meets their actual situations in accordance with the relevant management policies of the Group, such as the *Procurement Management System of South Cement*, the *Measures for the Supplier Management of South Cement*, the *Measures for the Supplier Management of BNB*, the *Procurement Management System of BNB*, the *Measures for the Supplier Management of Jushi Group Company Limited*, the *Procedures of Jushi Group Procurement Control*, the *Measures for the Logistics and Supply Management of Qilianshan*, and the *Measures for Risk Prevention and Internal Control of Material Procurement of Qilianshan*, etc.

The Group mainly considers the credit rating, qualification, sources of the products and the quality assurance in selecting the suppliers. The Group will give priority to suppliers with reliable quality, good reputation, environmentally friendly and with scientific management. After identifying the suppliers to cooperate with, the Group will sign formal contracts with such suppliers, setting out the laws and regulations which the suppliers should comply with, together with relevant additional requirements related to sustainable development and anti-commercial bribery. In addition, the Group regularly communicates with suppliers on major issues relating to safety and environment and urges suppliers to promptly rectify the identified problems.

At the same time, the Group also attaches importance to the performance of suppliers and business partners in ensuring the occupational health and safety of their employees; therefore, the provisions of occupational health and safety are included in the business cooperation agreement between the Group and the suppliers/business partners. The Group actively carries out daily safety inspections, safety trainings, emergency drills, and other work together with its suppliers and business partners.

Case Sharing

Qilianshan implements centralized and unified management of suppliers in its system, optimizes and improves the construction of supplier database and the dynamic management mechanism of supplier maintenance by improving the electronic procurement platform and corresponding supporting systems, aiming at cultivating and building a long-term, stable and mutual-beneficial supplier team, and establishing an online coordination channel between the supply side and demand side on the coordination of bidding, ordering and settlement. Qilianshan optimizes its supplier list by means of regular evaluation and punishment for misbehavior, etc. and implements the supplier relationship management strategy with the main characteristics of "Resource Convergence and Platform Sharing" and the main contents of "Unified Management, Dynamic Assessment, Selecting the Good and Eliminating Those Who Fall Short, and Managing the Whole Life Cycle".

In the purchasing process of raw materials, the Group strongly implements green procurement and gives priorities to the products that are environmentally friendly and with low carbon emission during their production processes. For the selection of energy sources, clean energy is given primary consideration. The Group vigorously promotes the use of non-fossil energy such as low-grade energy, municipal waste, biomass energy and others. As for daily office supplies, products with minimal packaging and are conducive to recycling are selected where possible.

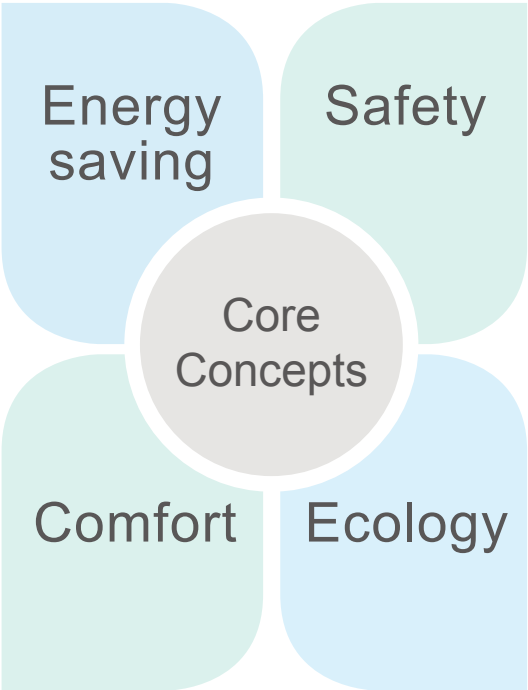


Regarding logistics and trade, the Group applies modern internet-of-things technology and its experience on e-commerce operation into the effective integration of services, such as supply of bulk building materials, logistics, insurance and credit, and inspection and quarantine. The Group is committed to providing comprehensive solutions to the whole process of international trade in order to completely achieve one-stop online management, and thereby enabling the Group to become a global-oriented service supplier in the building materials supply chain.

Product Quality

The Group has been constantly optimizing the traditional industrial structure, extending the industrial chain and promoting industry trends towards greenness, intelligence and being high-end oriented. Regarding product quality, the Group actively carries out quality control (QC) taskforce activities and implements product quality management throughout the entire process from raw materials entering the factory to finished products leaving the factory.

The Group is committed to providing green building material products. The Group researches and develops new building materials based upon the four core concepts, namely: energy saving, safety, comfort and ecology. In the production process of the Group's green building materials products, the production mode of waste utilization is adopted to turn the produced waste into energy again for recycling. In the selection of materials, the Group thoroughly considers the issues of material scrapping, recycling and reusing. The Group also avoids using methods that may produce harmful substances in the process design, implements clean production and clean processing, and accelerates the development of green building materials.



The Group strictly abides by the Advertising Law of the People's Republic of China, the Trademark Law of the People's Republic of China and other relevant laws and regulations regarding health and safety, advertising, labelling and remedial measures of the products and services provided by the Group. In accordance with its actual situation, the Group has formulated the *Measure for Quality Management of China National Building Material Company Limited* to ensure that the products meet the requirements of production. For example, based on relevant regulations, China United Cement controls the raw materials, fuel and clinker products required for production, and sets quality-related requirements and inspection rules for raw materials and fuel for production, and strictly implements inspection procedures of products entering and leaving the factory. China United Cement resolutely identifies the causes of major quality accidents and investigates the responsibility of responsible departments and responsible persons. It provides a good after-sales service, establishes and maintains a reviewing system to consult clients' comments on products' quality, performance, packaging, etc., establishes client profiles, and continuously improves and tracks the quality of products and services.

During the Reporting Period, the Group had no litigation matters concerning the health and safety of products and services that have a significant impact on production and operation.



About product services and complaints, the Group has established pre-sales consulting, sales and aftersales service systems. In order to regulate the after-sales service, the Group has developed the *After-sales Service Management System*. For after-sales problems on product quality, technicians will provide door-to-door service and retrieve samples for subsequent inspections and will take steps to resolve the problems promptly. In addition, the Group has also developed the *Procedures of Processing and Control on Client Complaints* to regulate the processing procedures of client complaints and to further improve the processing efficiency for handling client complaints. Adhering to the client first principle, the Group's responsible personnel are required to handle client complaints in the very first instance and promptly provide feedback to clients.

Protection of Property Right

The Group strictly abides by the Patent Law of the People's Republic of China and the Anti-Unfair Competition Law of the People's Republic of China. An intellectual property rights ("IPR") management system with the characteristics of the building materials industry has been established to provide a guarantee for the scientific research to be conducted in an orderly manner. The system has been established to control the protection of IPR, the management of scientific research funds, and the confidentiality of information and to fulfil the requirements of the internal control system establishment and risk management. In 2018, the Group listed intellectual property risks as one of the overall risks of the corporate through sorting and identification and formulated and implemented corresponding risk management strategies and countermeasures to ensure that the intellectual property risks are always controllable, being-controlled and affordable. Moreover, with the development of the *Management System of CNBM Science and Technology Work* and the *CNBM Patent Management Measures*, the Group has strengthened the protection of the IPR of the Group by laws and improved the Group's ability to manage IPR in research activities, production and business operations.

During the Reporting Period, the Group received no cases regarding to the violations of regulations and the voluntary codes relating to the provision and use of the Group's products and services (including but not limited to product and service information and labelling, marketing and property rights) which have a significant impact on the Group.

Protection of Privacy

The Group attaches importance to protect the privacy of itself and its clients. The Group has implemented a strict confidentiality policy on the personal data of clients, and it requires employees that possess confidential information to sign confidentiality agreements with the Group. For example, in order to further standardize the protection of confidential information in sales, BNBM has formulated the *Implementation Measures for the Confidentiality of Sales Information*, which regulates the work of relevant personnel involved in sales information and implements the confidential management of client data and sales information. In addition, in order to further standardize the implementation of management measures, Southwest Cement has formulated the *Agreement on Commercial Confidentiality* to regulate the protection of confidential information concerning client information, marketing plans, pricing policies, non-public financial information, sales strategies, pre-tender and tender document contents in the bidding and daily production and operation data for relevant personnel in sales positions.

During the Reporting Period, the Group did not receive complaints about the leak of clients' privacy information.



Highlights of 2018

The figures below illustrate the social performance data⁹ of the Group related to supply chain, product and service during the Reporting Period.

Supply Chain Management:



Number of suppliers with long-term partnerships

15,659

By region



Mainland China
14,579

Region of Hong Kong, Macau and Taiwan
24



Overseas
1,056

Intellectual Property Rights:



Number of valid patents of the Group

6,331

A YoY increase of
3.5%



In which the patents of inventions

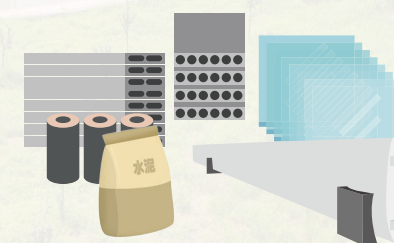
1,243

A YoY increase of
2.6%



Cases involving infringement of IPR of others **0** Unchanged from 2017

Complaints related to products and services:



Proportion of products to be recalled for safety and health reasons

0%

Litigation concerning the health and safety of products and services

0

Unchanged from 2017

Complaints received arising from the leak of clients' privacy information

0

Unchanged from 2017

⁹: Some data are disclosed for the first time; therefore, they are not applicable for comparison over the same period.

07 Contribution to the Society

中国援赞比亚医疗队
Chinese Medical Team
中国建材赞比亚工业园
CNBM Zambia Industrial Park

关爱健康走进Na
Voluntary Medical Ser

The Group adheres to good-neighborliness and mutual assistance during the process of operation at home and abroad, and actively participates in the community public welfare undertakings and activities in the neighborhood of its operation sites. According to the uniform policy for public charity of the Parent, the Group has established a sound emergency response mechanism in order to provide rapid disaster relief, civil air defense security and other public supports. In addition, the Group attaches importance to supporting various poverty alleviation work.



Targeted Poverty Alleviation
Sunshine Charity
Highlights of 2018

In 2018, the Group donated a total of more than RMB37.15 million, of which the poverty alleviation funds were mainly used for infrastructure construction, geological disaster management, industrial development, medical and health care, education sponsorship and e-commerce training.

Targeted Poverty Alleviation

With regard to targeted poverty alleviation, the Group actively refines the mindset of poverty alleviation. With the original intention of "to teach someone how to fish is better than to just give him a fish", the Group launches a new model of Internet + Poverty Alleviation, which assists the poverty alleviation in China through multiple aspects, including accurate personnel assignment, targeted object selection for poverty alleviation, precise project arrangement and use of fund, to effectively provide the basic needs for the people who are in difficulties, and make the poverty alleviation achievements can actually benefit the livelihood of the people.

In 2018, CNBM selected and assigned 10 poverty alleviation cadres to Suijiang County, Yongshan County, and Zhaoyang District in Yunan Province, Shitai County in Anhui Province and Jingyuan County in Ningxia Autonomous Region, respectively. The Company donated more than RMB13 million as targeted poverty alleviation funds¹⁰ and provided monetary and material assistance that worth tens of millions of RMB to these areas.



"Good Construction Public Welfare Fund" fundraising activity organized by China United Cement



A residential village task force from Tianshan Cement helped a poor village in Kashgar dig and equip a motor-pumped water well

10: From the "Good Construction Public Welfare Fund" of CNBMG.

Sunshine Charity

In order to encourage employees to actively participate in various voluntary activities, the Group has provided guarantees and supports in various aspects such as human resource organizational structure, working mechanism, time management, financial support, and communication and liaison, etc. Under the voluntary service system with the Communist Youth League as its core, the Group and its subsidiaries have established several voluntary groups which organized a variety of voluntary activities. Through participating in the activities, not only the employees have demonstrated their enthusiasm but also spread their happiness.



BNBM organized voluntary activity



CNBM Zambia Industrial Park held a large-scale voluntary medical service activity



Sinoma Mpande actively participated in the cholera prevention and control activities in Zambia



BNBM PNG actively fulfilled its social responsibility and made donations to local elementary schools

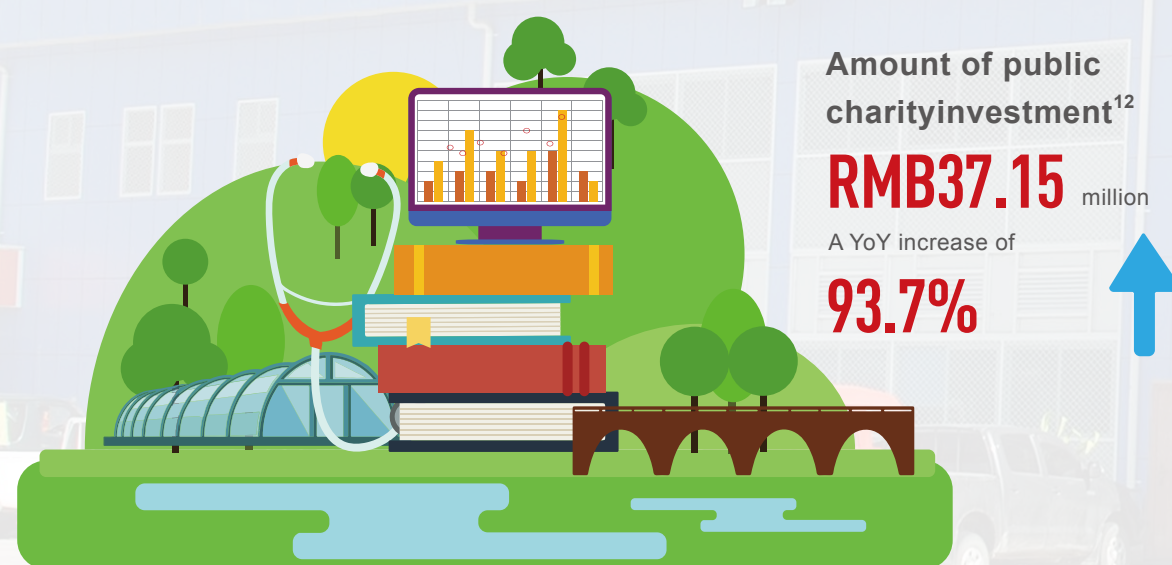


Sinoma International organized activity to visit the elderly in a nursing home

Highlights of 2018

The figures below illustrate the social performance data¹¹ of the Group on poverty relief and public charity during the Reporting Period.

Contribution to the society:



Targeted poverty alleviation:



Number of property alleviation project through industrial development

253

11: Some data are disclosed for the first time; therefore, they are not applicable for comparison over the same period.

12: Including targeted poverty alleviation projects.

13: Including monetary value of input fund and resources.

08 Content Index of the Stock Exchange ESG Reporting Guide

Subject Areas, Aspects, General Disclosures and KPIs		Locations of Disclosure or Remarks
A. Environmental		
Aspect A1: Emissions		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste	Energy-saving and Environmental Protection – Green Operation
KPI A1.1	Types of emissions and respective emissions data	Energy-saving and Environmental Protection – Highlights of 2018
KPI A1.2	Greenhouse gas emissions in total and, where appropriate, intensity	Energy-saving and Environmental Protection – Highlights of 2018
KPI A1.3	Total hazardous waste produced and, where appropriate, intensity	Energy-saving and Environmental Protection – Highlights of 2018
KPI A1.4	Total non-hazardous waste produced and, where appropriate, intensity	Energy-saving and Environmental Protection – Highlights of 2018
KPI A1.5	Description of measures to mitigate emissions and results achieved	Energy-saving and Environmental Protection – Green Manufacturing
KPI A1.6	Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved	Energy-saving and Environmental Protection – Green Manufacturing
Aspect A2: Use of Resources		
General Disclosure	Policies on efficient use of resources including energy, water and other raw materials	Energy-saving and Environmental Protection – Green Manufacturing
KPI A2.1	Direct and/or indirect energy consumption by type in total and intensity	Energy-saving and Environmental Protection – Highlights of 2018
KPI A2.2	Water consumption in total and intensity	Energy-saving and Environmental Protection – Highlights of 2018
KPI A2.3	Description of energy use efficiency initiatives and results achieved	Energy-saving and Environmental Protection – Green Manufacturing
KPI A2.4	Description of whether there is any issue in sourcing water, water efficiency initiatives and results achieved	Energy-saving and Environmental Protection – Green Manufacturing
KPI A2.5	Total packaging material used for finished products, and if applicable, with reference to per unit produced	Energy-saving and Environmental Protection – Highlights of 2018
Aspect A3: The Environment and Natural Resources		
General Disclosure	Policies on minimising the issuer’s significant impact on the environment and natural resources	Energy-saving and Environmental Protection – Green Ecology
KPI A3.1	Description of the significant impacts of activities on the environment and natural resources and actions taken to manage them	Energy-saving and Environmental Protection – Green Products, Green Ecology, Highlights of 2018

Subject Areas, Aspects, General Disclosures and KPIs		Locations of Disclosure or Remarks
B. Social		
Employment and Labour Practices		
Aspect B1: Employment		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare	Caring for Employees – Standardized Employment, People-oriented
KPI B1.1	Total workforce by gender, employment type, age group and geographical region	Caring for Employees – Highlights of 2018
KPI B1.2	Employee turnover rate by gender, age group and geographical region	Caring for Employees – Highlights of 2018
Aspect B2: Health and Safety		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards	Caring for Employees – Safety and Health
KPI B2.1	Number and rate of work-related fatalities	Caring for Employees – Highlights of 2018
KPI B2.2	Lost days due to work injury	The Company may disclose such information in the future.
KPI B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored	Caring for Employees – Safety and Health
Aspect B3: Development and Training		
General Disclosure	Policies on improving employees’ knowledge and skills for discharging duties at work. Description of training activities	Caring for Employees – Progress Together
KPI B3.1	The percentage of employees trained by gender and employee category	Caring for Employees – Highlights of 2018
KPI B3.2	The average training hours completed per employee by gender and employee category	Caring for Employees – Highlights of 2018
Aspect B4: Labour Standards		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour	Caring for Employees – Standardized Employment, Equality and Diversity
KPI B4.1	Description of measures to review employment practices to avoid child and forced labour	Caring for Employees – Standardized Employment
KPI B4.2	Description of steps taken to eliminate child and forced labour practices when discovered	Caring for Employees – Standardized Employment

Subject Areas, Aspects, General Disclosures and KPIs		Locations of Disclosure or Remarks
Operating Practices		
Aspect B5: Supply Chain Management		
General Disclosure	Policies on managing environmental and social risks of the supply chain	Quality Assurance – Supply Chain Management
KPI B5.1	Number of suppliers by geographical region	Quality Assurance – Highlights of 2018
KPI B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored	Quality Assurance – Supply Chain Management, Highlights of 2018
Aspect B6: Product Responsibility		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress	Quality Assurance – Product Quality
KPI B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons	Quality Assurance – Highlights of 2018
KPI B6.2	Number of products and service related complaints received and how they are dealt with	Quality Assurance – Highlights of 2018, Product Quality
KPI B6.3	Description of practices relating to observing and protecting intellectual property rights	Quality Assurance – Protection of Property Right
KPI B6.4	Description of quality assurance process and recall procedures	Quality Assurance – Product Quality
KPI B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored	Quality Assurance – Protection of Privacy
Aspect B7: Anti-corruption		
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering	Corporate Governance – Building Integrity
KPI B7.1	Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases	Corporate Governance – Highlights of 2018
KPI B7.2	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored	The Company may disclose such information in the future.
Community		
Aspect B8: Community Investment		
General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities takes into consideration communities’ interests	Contribution to the Society
KPI B8.1	Focus areas of contribution	Contribution to the Society – Targeted Poverty Alleviation, Sunshine Charity
KPI B8.2	Resources contributed to the focus areas	Contribution to the Society – Highlights of 2018



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