CNBM

2016

CHINA NATIONAL BUILDING MATERIAL GROUP CO., LTD

Sustainability Report

CBMI DEVNYA Cement Project in Bulgaria

CHINA NATIONAL BUILDING MATERIAL GROUP CO., LTD

Sustainability Report 2016

CNBM

China National Building Material Group Co., Ltd.
Address: Building 2, Guohai Plaza, 17 Fuxing Road, Haidian District, Beijing
Post code: 100036
Contact: Liang Xiao
Email: csr@cnbm.com.cn
Telephone: 010-68138139
Fax: 010-68138088
Website: www.cnbm.com.cn

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This Report truly re□ects China National Building Material Group Co., Ltd.'s (CNBM) sustainability and social responsibility performance.

On August 26th, with the approval of SASAC, China National Building Materials Group Corporation (CNBM) and China National Materials Group Corporation (Sinoma) carried out reorganization. Sinoma was transferred into CNBM with no compensation for exchange. After the reorganization, CNBM has a new name and will act as the parent company.

January 1st to December 31st, 2016; given the ongoing continuity of certain businesses and projects, some contents involve the □rst and second quarters of 2017, the details of which are indicated in the Report.

Annual report.

All wholly-owned or controlled (including absolutely and relatively controlled) members of CNBM. For brevity, the terms 'CNBM', the 'Group' and 'We' are used in the Report to refer to China Nationono Napor

All the information and data used herein comes from the Headquarters and member companies of CNBM. Notes have been made in the Report to indicate information from external references. Unless otherwise stated, all monetary amounts are expressed in RMB.

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De□ning the annual work plan, convening meetings and issuing documents

Analyzing stakeholders' concerns, identifying annual major topics, studying CSR standards and guidelines and new trends

De□ning the indicators for information system, making list of annual case examples

Collecting and analyzing materials from member companies, functional departments and o□ces and media reports

Drawing up report framework, de□ning topics, and compiling □rst draft

Consulting CSR leading group, functional departments and o□ces of Headquarters, member companies, stakeholders and CSR experts

Revising text, verifying data and self-checking standards

Readability, innovation and consistency

Evaluating according to the *Rating Standards of Corporate Social Responsibility Reporting in China (2014)*

Delivering to stakeholders via multiple carriers and channels

Analyzing de□ciencies and making improvement plans

The □nancial data in the Report is derived from the CNBM 2016 Annual Financial Statement which has been audited by Baker Tilly China.

The external data in the Report is derived from the data released by third parties through media, the sources of which are indicated in the Report.

The non-□nancial data in the Report is derived from CNBM's CSR information management system. The data in the system was faithfully reported by the functional departments and o□ces of the CNBM Headquarters and its member companies in accordance with the *CNBM Social Responsibility Management Information Collection Measures*.The data of member companies was submitted to the Headquarters after being approved at all levels; each department or o□ce of the Headquarters reviewed the data from member companies and then veri□ed the data through sampling at a proportion of at least 5% in order to ensure its standardization, reliability and authenticity.

The preparation of the Report is based on the *Sustainable Development Report (G4)* published by the Global Reporting Initiatives (GRI), the *Social Responsibility Guide (ISO26000)* issued by the International Organization for Standardization (ISO), the *Guidelines for the Preparation of Corporate Social Responsibility Reports GB/T36001-2015* and the *Guidelines for the Preparation of Corporate Social Responsibility Reports in China (CASS-CSR 3.0)* issued by the Chinese Academy of Social Sciences, etc. Please refer to pages 88-91 of the Report for the benchmarking between the Report and CASS-CSR 3.0 and the evaluation results.

You can complete the feedback page at the end of the Report and send it to us through fax or mail, visit the o□cial website of our company or scan the QR code below and □ll in your opinions on the website or WeChat; you can also contact us directly through the contact information on the back cover.

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Chairman's Address

CNBM's Path of Sustainable Development

China National Building Material Group Co., Ltd. (CNBM) is in a new stage of development. On August 26th, 2016, On august 26th 2016, the original CNBM incorporated with SINOMA. CNBM became the "aircraft carrier" in the world building materials area. The objective of the new group is not just to be large in scale but to move from being 'large' towards being 'great' a world-class comprehensive building materials industry group.

China's economy is currently in a crucial stage of the continuous transformation of the old and new momentum, as well as economic restructuring and upgrading. If scale expansion is the first 'Long March' of Chinese enterprises since reform and opening up, the second Long March is is transition from Large to Great. A great enterprise has three important features: the first is having large industry scale and strong market influence; the second is achieving top-ranking business performance and creating long-term value for the shareholders; the third is having strong sustainable development capacity to remain invincible through self-regulation regardless of what happens in the market.

The innovative transformation from 'large' to 'great' is an inevitable course, a breakthrough path and a road of opportunity for the second Long March. The new CNBM is determined to become a great company and lay a solid foundation for sustainable development. Our strategic vision is to build a world-class comprehensive building materials industry group in the building materials industry, and our positioning is to become a leader of industrial consolidation, an innovator of transformation and upgrading, and a pioneer of production capacity cooperation among international communities. By creating the 'three curves' through innovation, green development, and international cooperation, we aim at a high-end, intelligent, green and international transformation.

Being high-end means enhancing structural adjustment and technological innovation, further extending the industrial chain through the comprehensive application of such models as manufacturing industry servicization, the combination of production and research, and integrated innovation, constantly upgrading towards higher end of the value chain and increasing the overall value of the enterprise. A large number of high-end CNBM products have sprung up, including special cement, electronic glass, photovoltaic (PV) glass, ultralight and super strong plasterboard, top-grade glass fiber electronic yarn, CIGS cells, T-800 carbon fiber, lithium battery packs and industrial ceramics.

Intelligence is the core of 'Industry 4.0' and 'Made in China 2025', and it's also the major transformation and upgrading direction of the manufacturing industry. China United Cement Taishan Co., Ltd. has built the world's first 'Industry 4.0' intelligent 'dream cement factory'. The factory has realized 'unmanned' production through of GPS positioning, mobile internet, big data processing, and artificial intelligence systems. The management of the production line is therefore smooth, and the indicators of energy efficiency, environmental protection and performance have reached the world advanced level. Through deeply integrating intelligence with high-end products, we can match individualized consumer demands with mass production, and achieve cross-boundary operation, thus promoting digitization of key equipments, enhancing intelligence of technological flow, reducing costs, saving energy and increasing efficiency.

'Green' means actively responding to climate change and overcapacity, safeguarding global ecological security and adhering to green, low-carbon and cyclical development. Upholding strong moral values, CNBM places the environment, security, quality, technology and costs in order of importance and implemented the 'Blue Sky Responsibility' action plan. We have been vigorously promoting energy conservation, emission reduction, transformation and upgrading in keys fields such as energy conservation and cost reduction, pollution and emission reduction, ecological protection, and circular economy. In terms of raw material, we stick to the idea of circular economy to use industrial waste and urban construction waste as mush as we can. Our annual consumption of industrial waste has exceeded 100 million tons. During production, we strive for zero emission of waste water, gas and material, and try to improve our recycling capacity, leading the industry in energy conservation, output-restriction and self-regulated emission reduction. For product application, we place importance on energy conservation, environmental protection, comfort and health, and strive to provide quality and environmentally friendly products.

'International' means actively promoting the 'Going Out' of equipment and international production capacity cooperation, fully exploring the big market of One Belt, One Road, innovating 'Going Out' strategies and trying to build the technical equipment of building materials as the new brand name of Chinese industry. We are committed to build more hidden champions, advance our technology, and explore the international market, with the goal of changing from "being the world's factory" to "the world is our factory". We will focus on the mid-to-high-end international market, improve the cost effectiveness of our products and place emphasis on international production capacity cooperation. While attaching importance to countries along the 'Belt and Road' Initiative, we also view Europe and the United States as our important markets.

CNBM's path of sustainable development is based on the 'three curves' of industrial innovation, transformation and upgrading.

The first curve is the upgrading of existing structural reform improved the quality and efficiency. We will refine our cement business operations, carry out in-depth integration, consolidate the core profit business, promote industrial competition and cooperation, and create a better market condition. We will pursue 'high-performance, specialized, and commercialized' development, strengthen the transformation of equipment and technology, and promote energy conservation and emission reduction and cost effectiveness. We will also strengthen our glass business, extend the industrial chain, upgrade the business in the 'electronic, photovoltaic, intelligent and energy-saving' direction, and increase the added value of our products.

The second curve is the upgrading of new technological industries. We will develop the three-new industries of new building materials, new housing and new energy materials to create new growth points. In terms of the new building materials, we will improve the industrial structure of the plasterboard business and high-end products increase the added value of the products. For the new housing business, we will develop lightweight steel frame structure and prefabricated reinforced concrete structure, as well as a supporting system of housing components. We will promote the Energy Plus 5.0 housing system, build 'green towns' and provide solutions for smart ecological residences and old-age care residences. For the new energy materials business, we will optimize our competitive industries such as wind turbine blades, high-performance fiber glass, electronic glass and high-grade refractories, improve and expand the manufacturing and market capacity of products such as high-performance carbon fiber, photovoltaic (PV) glass, CIGS thin-film solar cells and graphite, and make breakthroughs in the fields of building integrated photovoltaics and photovoltaic agriculture. We will also enter the field of new energy power station and improve our new energy industrial chain.

The third curve is the upgrading of manufacturing services by enhancing innovation and technical services. First, we will develop large-scale research and service platforms. We will give full play to the role of China Building Materials Academy (CBMA) as a magnetic field of innovation, and open platforms for R&D and services. With large scale R&D, we can have a bright future. The second is Internet plus services. We will use "Internet plus" to optimize our service and promote new foreign trade mode such as "cross-border e-commerce+overseas warehousing" and BNBM HOME, so as to build a world-leading comprehensive service system. The third is carbon trading testing and certification services. China Building Material Test & Certification Group Co., Ltd. (CTC) is the largest third-party testing & certification service provider in China's building materials industry and an industrial technology service platform; it is also China's first CDM-designated operational entity in the industry to provide third-party carbon emission verification service. The fourth is EPC engineering services. We will actively explore the overseas engineering services market and innovate the EPC construction mode. We will also deepen our cooperation with industry partners, make full use of the Internet, information and smart technology, consolidate investment, management and follow-up services, and create a new era of 'equipment going out.' The fifth is production and manufacturing services. Through the construction of smart industry plus smart port', we will adopt the GE mode, focus on customer demands and carry out remote operation and maintenance, as a total service package of operation and maintenance.

Despite the challenges and difficulties, we will forge ahead. A great company is essentially shaped and driven by value creation, which has to be realized through innovation and transformation. We have the confidence, determination and perseverance to build a long lasting enterprise with foresight and commitment to excellence through the second Long March. CNBM's ultimate goal is to join hands with the stakeholders to create the greatest welfare for the greatest number of people.

Song Zhiping

World's largest gypsum board
rld's largest com prer

World's largest commercial concrete producer

Largest carbon □ber producer in China

业务活动

Business Activities

Cement

CNBM has an annual production capacity of 520 million tons of cement and 470 million m^3 of ready-mix concrete, both of which rank □rst in the world.

China United Cement Corporation, South Cement Company Limited, North Cement Company Limited, Southwest Cement Company Limited, CNBM Investment Co., Ltd., Sinoma Cement Co., Ltd., Xinjiang Tianshan Cement Joint-stock Cement Company Limited, Ningxia Building Materials Group Co., Ltd., and Gansu Qilianshan Cement Group Co., Ltd.

Float Glass

CNBM has an annual production capacity of 19.2 million weight cases of high-quality □oat glass. We can produce ultra-thin glass products from 0.15 mm to 1.3 mm.

Triumph Science & Technology Group

Engineering and Production Services

We continuously maintain a leading position in the markets of cement and glass engineering, mine engineering, cogeneration engineering, energy conservation and environmental protection, etc.; we are expanding our market shares in □elds of new glass, new energy, new materials, new buildings and so on.

Sinoma International Engineering Co., Ltd., China Triumph International Engineering Co., Ltd., Sinoma Energy Conservation Limited, China New Building Materials Design & Research Institute, Hefei Cement Research & Design Institute and Qinhuangdao Glass Industry Research & Design Institute

Equipment Manufacturing

With over 20 equipment manufacturing enterprises forming a production base, CNBM has established an industrial service platform with complete categories, advanced technology, high-quality equipment, exquisite workmanship and full support.

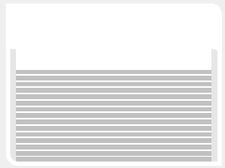
Triumph Science & Technology Group, China Triumph International Engineering Co., Ltd., Hefei Cement Research & Design Institute, China National United Equipment Group Co., Ltd. and Sinoma Technology & Equipment Group Co., Ltd.

Logistics & Trading

We use new Internet technologies to e□ciently integrate the service links of bulk building material suppliers, logistics and transportation, insurance and credit, and inspection and quarantine; we provide full-package, comprehensive solutions for international trade, and are listed as an import enterprise enjoying major support and a key business circulation enterprise by the Ministry of Commerce.

China National Building Materials and Equipment Import & Export Corporation, Beijing New Building Materials (Group) Co., Ltd., CNBM Investment Co., Ltd. and China National Materials Industry Import & Export Corporation

New Materials

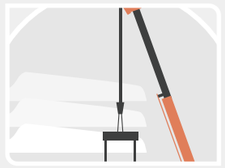


CNBM's annual production capacity of plasterboard is about 2 billion m^2, ranking □rst in the world. We have high-end brands in the international market and proprietary intellectual property rights, as well as 54 major industrial bases. We possess three business sectors; namely, the wall and suspended ceiling system, housing parts and architectural energy conservation system, and exterior building envelope system. We provide an application solutions package for public buildings and family housing with our complete product system.

BNBM Public Limited Company and Taishan Gypsum Co., Ltd.

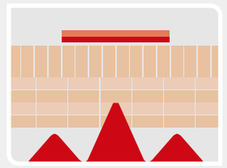
CNBM's annual production capacity of □berglass is 1.85 million tons, ranking □rst in the world. We have the world's largest alkali-free tank furnace production line with an annual capacity of 120,000 tons, and a national enterprise technology center. We possess the proprietary intellectual property rights of such packaged technologies as alkali-free tank furnaces, medium alkali tank furnaces, □berglass waste silk recycling process, and so on. We also have several production bases in Tongxiang of Zhejiang, Jiujiang of Jiangxi, Chengdu of Sichuan, Tai'an of Shandong, Zoucheng of Shandong and Egypt.

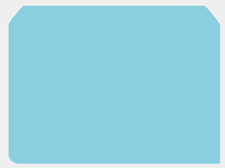
China Jushi Co., Ltd., Taishan Fiberglass Inc. and Sinoma Jinjing Fiberglass Co., Ltd.



CNBM's annual production capacity of wind turbine blades reaches 16 GW, ranking □rst in the world. We have 9 series and 58 types of products with categories ranging from 1.25 MW to 6.7 MW, and blade length varying from 31 m to 80 m. We possess blade production bases in Yanqing of Beijing, Funing, Pingxiang, Handan, Xilinhot, Baicheng, Lianyungang, Shenyang, Jiuquan, Baotou, Hami and Guizhou, an R&D center in Germany and a national blade testing center.

Sinoma Wind Power Blade Co., Ltd. and Zhongfu Lianzhong Composites Group Co., Ltd.





We have established a whole industrial chain of BIPV (Building Integrated PV) with a focus on thin-□lm solar products and technologies. We are committed to the integrated application of new energy materials and distributed energy, and carrying out the R&D, application and dissemination of new-energy housing. We have several solar cell production bases at home and abroad. We also possess a 100 MW CIGS thin-□lm solar cell production base in Germany, and have developed several PV power stations in China, Great Britain, the United States, Thailand and Japan respectively.

Triumph Science & Technology Group and China Triumph International Engineering Co., Ltd.

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‘Individual Champion of the Manufacturing Industry’ refers to an enterprise persistently engaged in certain speci□c market segments, equipped with internationally advanced production technologies or processes, and leading globally in terms of individual product market share. This de□nition involves two aspects: ‘Individual’ means that the enterprise concentrates on its target market and is persistently committed to the ‘intensive cultivation’ of related □elds; while ‘Champion’ means that the enterprise should hold a champion-level market position and possess technical strength regarding the sectors in which it operates.

Dedicated to manufacturing glass □ber and glass □ber products, Jushi Group Co., Ltd. (‘Jushi Group’) constantly occupies a leading position in terms of scale, technology, market share and e□ciency. Alkali-free glass □ber roving and alkali-free chopped □ber glass are the major segments of its business. Both reinforced composites, these two products are widely used in such □elds as wind power, automobiles, electronics & electric appliances and building materials. The Jushi Group is the highest ranking player (market share: 22%) in the global market of these two products, with a share as high as 35% in the domestic market.

According to the *Special Action Plan for Cultivating and Promoting Individual Champions of Manufacturing Industry* issued by the Ministry of Industry and Information Technology, by 2025, 200 individual champions of the manufacturing industry will be promoted to demonstrators, and 600 enterprises with the potential of becoming individual champions will be identi□ed and cultivated. The Jushi Group has been included in the list of □rst-batch demonstrators. This initiative is of practical signi□cance for improving manufacturing technologies and processes in China. It can not only guide China’s manufacturing enterprises to be committed to innovation and product quality improvement, spur the industry to march towards the middle and high ends and drive ‘Made in China’ to rise onto the world stage, but also guide enterprises to embody the philosophy ‘it takes ten years to grind a sword’ and increase the core competitiveness of China’s manufacturing industry.

Transformation & Upgrading

We promote the orderly structural adjustment of industries on 'Curve 1' (cement, etc.). Continued e□orts are made to re□ne the cement business, accelerate development in the direction of 'high performance, specialization, commercial concrete and productization,' and promote the improvement of industrial standards. The share of high-grade cement in the Group's product portfolio is 10% higher than the national average. Depending on its technical advantages, the Group has built 7 special cement virtual operation platforms. In the meantime, we vigorously promote Jiahua's HLMC (high-performance low-carbon micro-clinker) cement and optimize the layout of the commercial concrete business according to the market and resource orientation principle. In particular, the work of laying out the aggregate business has been launched, involving the construction of 24 aggregate lines with a combined capacity of 43.31 million tons. Furthermore, continued e□orts are being made to substantialize and optimize the glass business, and accelerate its development in the direction of 'electronics, PV, intelligence and energy conservation.'

We make e□orts to rapidly improve the pro□tability of industries on 'Curve 2' (the three-new industries). Thanks to the optimization and perfection of the layout, the scale of the gypsum board business has maintained □rst place in the world. A professional platform for the management of new-type housing has been built to develop and promote Energy Plus 5.0 House, and contracts have been signed for 24 domestic and overseas projects. In the glass □ber business, the formula of E8 high-modulus glass □ber has been released. In the carbon □ber business, a 1,000-ton T800 line has been built up and put into operation to launch the export of carbon □ber. In the new glass business, a range of high-end industrial projects have been put into operation or are currently under construction, which is represented by the volume production of ultra-thin 0.15 mm touchscreen glass and 0.2 mm TFT liquid crystal glass substrate. In particular, we have commenced the construction of a CIGS thin □lm module line which sets a world record for photoelectric conversion rate (17.9%), and launched a 200 million m^2/y lithium battery diaphragm material project.

We actively develop the new types of operation on 'Curve 3' (R&D and services). Manufacturing services are being actively developed by accelerating business transformation and upgrading. China Building Material Test & Certi□cation Group Co., Ltd. ('CTC') has been awarded multiple international and national quali□cations for building technical service platforms; CBMIE is building Internet of Things (IoT) platforms; Sinoma International Engineering Co., Ltd. is building overseas spare parts maintenance bases; the China National Geological Exploration Center of Building Materials Industry is developing in the direction of mineral development and overseas markets; and Sinoma Group Finance Co., Ltd. has built up a □nancial service system that allows more than 2,000 member units to be simultaneously active.

Deepening Reform

After being identi□ed by SASAC as a 'dual-pilot enterprise' for the '4 reforms' experiment in 2014, CNBM was identi□ed as a 'pilot enterprise for 10 reforms' by the same authority in 2016. At present, the Group is undertaking 4 tasks of pilot reform. Speci□cally, a stage summary has been completed for the mixed ownership economy experiment; the *Study on Practices of Mixed Ownership Development in SOEs - Illustrated by the Case of CNBM*, a project of the Publicity Department of the CPC Central Committee for studying Marxist theories and summarizing important experience in implementing construction projects, has been completed in cooperation with a think tank; continued e□orts have been made to deepen the experiment of putting the board of directors' functions and powers into practice, and actively explore how to perfect the professional management system; the CNBM-Sinoma merger has been advanced stably and has had signi□cant e□ects; and Sinoma Jiangxi Electrical Ceramics Co., Ltd. ('Sinoma Jiangxi'), a member of CNBM, has been included in the □rst batch of pilot enterprises for implementing the employee stock ownership system in mixed ownership enterprises. CTC was successfully listed, making it China's □rst state-owned listed company to integrate the functions of testing and certi□cation. In addition, several stock equity diversi□cation projects have been accomplished, including restructuring 35% of the stock equity of Taishan Gypsum Co., Ltd. under the stock-for-stock method by BNBM, injecting 100% of the stock equity of Taishan Fiberglass Inc. into Sinoma Science & Technology Co., Ltd., and the purchase of K & D Technology by Triumph.

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On November 9th, 2016, CTC was successfully listed at the Shanghai Stock Exchange, becoming CNBM's 15th listed company. As an important achievement in the market-oriented reform of a testing and certi□cation body, the o□cial appearance of CTC in the A-Share market was of benchmarking signi□cance.

As a third-party high-tech modern service enterprise, CTC responds on its own initiative to requirements for reform and development in the process of enterprise-oriented transfer and market-oriented transformation, improves its professional development capability through

Responsibility Operation

Lawful Operation

We insist on the working rule of lawful, compliant and honest operation. The Group has been awarded an AAA credit rating for many years. The CNBM-Sinoma merger has been continuously supported by financial institutions. A line of credit of RMB 375 billion has been established by signing contracts with 8 banks; the CNBM Industrial Development Fund (total amount: RMB 80 billion) has been jointly established with China Insurance Investment Co., Ltd.; and the member enterprises have issued bonds of over RMB 100 billion.

We insist on fair competition without infringing on the rights of our competitors and partners through improper means or misconduct (fraud, bribery, malicious price-cutting, etc.), and we advocate building good partnerships based on free will and equality. In international operations, we firmly maintain national interests and our own dignity, and actively respond to malicious anti-dumping events. With great attention paid to promoting the concept of fair competition, our staff are organized to participate in fair competition training.

We continue to improve our legal affairs mechanism. Major decisions and management contracts must be subject to a strict legal review procedure. Rules and regulations can be issued and put into practice only if approved by the Legal Affairs Department; we adhere to the integration of law popularization and legal affairs management through such means as organizing law popularization activities of different forms; and we publicize the concept of 'legal systems' and prevent risks in a systemic way.

With much attention paid to anti-corruption, we deeply integrate anti-corruption into the reform, development and stabilization of the enterprise; we emphasize integrity in work and make efforts to create a culture of integrity; we make efforts in efficiency supervision and inspection so as to give full play to its effects; and we establish and perfect discipline inspection and supervision bodies, and further develop discipline inspection and supervision organizations and teams, so as to continuously improve the working efficiency and quality of the Group.

In 2016, Beijing New Building Material (Group) Co., Ltd. ('BNBM') won the 'China Industry Award', which is honored as the 'Oscar of China's Industrial Community'. As the supreme award of China's industrial community, established with the approval of the State Council in accordance with the Party Central Committee's instructions and decisions, this award aims to elect and commend industrial enterprises and projects that represent the highest level of industrial development, and make signi□cant contributions to enhancing comprehensive national strength, promoting ecological progress and national economic and social development, and playing a demonstrative and driving role in industrial, regional and corporate development.

Adhering to the concept of 'create the future with greenness', BNBM has built a full life-cycle green industry chain through technological innovation, and is supplying various new building materials and new-type total solutions for composite wall renovation, interior

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We comprehensively utilize industrial and urban waste resources and manufacture low carbon products with minimal consumption and emissions; we are committed to providing society with green and environmentally friendly building materials with reliable quality, and providing product and service support for the new energy industry; we are delighted to share e□ective energy conservation technologies and management experience, explore development modes for the industry and ecological environment to co-exist in harmony, and advocate the sustainable development of the whole industry and society.

- Green Operation
- Green Manufacturing
- Green Products
- Green Synergy

In 2016, CNBM's investment in energy conservation and environmental protection reached RMB

4.3 billion

In 2016, CNBM's installed cogeneration capacity reached about

2,025.3 MW

In 2016, the treatment and reuse amount of solid waste reached about

149.1 million tons

O□shore wind turbine blade self-developed by Zhongfu Lianzhong Composites Group Co., Ltd.

Green Operation

Compliance with Laws and Regulations

We strictly abide by the industrial access system and resolutely close down outdated production facilities. We strictly implement the national quota on energy consumption, continuously improve the efficiency of energy utilization and keep the energy consumption of our main products at an advanced level. We strictly abide by standards for pollutant emissions, improve our monitoring and emission reduction systems, and ensure clean production and the meeting of emission standards.

Mining is carried out according to the *Green Mine Convention*. We carry out ecological restoration in good time while developing limestone mines. We respect the *Biological Diversity Convention*; carry out strict evaluation discussions on the site selection and layout of factories; protect natural habitats, wetlands, forests, wildlife corridors and agricultural land during the construction of projects; and reduce adverse effects on the surrounding environment and communities to the minimum.

We strictly perform the environmental assessment approval procedures for our projects, implement the '3 simultaneities' requirements of energy conservation and environmental protection for fixed asset investment projects, and earnestly organize and carry out the feasibility evaluation and environmental impact evaluation of new reconstruction or expansion projects. We maintain our environmental risk warning mechanism, prepare contingency plans and prevent and reduce potential environmental hazards.

In the mines that it provides with limestone mining services, CNBM Xi'an Engineering Co., Ltd. actively and effectively implements side slope revegetation work. With multiple factors (rock texture, rock property, slope ratio, soil thickness, scour resistance, drought resistance, cold resistance, re-greening effects, etc.) taken into consideration, the 'grass planting through hydro-seeding (CBS) + evergreen planting on side slope' scheme is adopted. Specifically, CBS substrate is sprayed and different types of shrub and grass seeds are sown to constitute a vegetation-based landscape which is well-matched and coordinated in the vertical direction. So far, the company has completed revegetation work with a high survival rate on a total area greater than 40,000 m^2, thus effectively controlling soil erosion at the mines and creating a green landscape belt equivalent to original natural vegetation. This work has been unanimously praised by local governments, owners and residents.

Mine before revegetation vs. mine after revegetation

Systematic Management

We have established a social responsibility and energy conservation and emissions reduction office at the CNBM Headquarters. Member companies have established related functional organizations of different categories and levels, achieving the overall coverage of the Group's energy conservation and emissions reduction management system.

We attach great importance to the construction of our energy conservation and emissions reduction team. Management personnel on key positions have obtained professional certificates. We continuously enrich the knowledge of employees responsible for energy conservation and emissions reduction, and improve their professional qualities and management competence.

We manage our member companies based on their categories; formulate strategies, general policies, plans and systems for energy conservation and emissions reduction; and improve our work through the three systems of measurement and statistics, monitoring and analysis, and evaluation and assessment.

We implement a standardization management system and realize energy conservation, consumption reduction and clean production through refined management. The manufacturing companies of the Group have established standardization management systems regarding quality, the environment and energy, most of which have been certified.

We integrate the fund for energy conservation and emissions reduction into the overall budget management system, and formulate a related expenditure plan to guarantee the implementation of technological upgrading and management improvement.

We have established an information disclosure mechanism. We disclose our annual energy conservation and environmental protection performance via annual CSR reports, and accept the supervision of stakeholders. During the feasibility study, construction, reconstruction and acceptance of a project, we take advice from nearby residents and stakeholders in the region, and reduce the adverse impact of the operation activities of enterprises on the environment and society to the minimum.

Initiatives and Guidance

We have formulated detailed green office plans in such aspects as power saving, water saving, reduction of office consumables and so on. Our green office performance is included in the routine monitoring and evaluation system. We actively promote the construction of a video conference system, and we arrange business travel in a scientific way, favoring low-carbon vehicles.

We are active in environmental protection welfare and publicity activities, doing our best to promote environmental protection concepts. We donate money and supplies to support the construction of environmental protection facilities; we develop ecological forests with local community entities to jointly cope with climate change; and we actively promote energy conservation, low-carbon lifestyle and green consumption awareness.

Keeping the responsibilities of enterprises in mind, we endeavor to become a practitioner, demonstrator and advocator of coping with climate change. We actively undertake national energy conservation and emissions reduction missions, have initiated and signed conventions and written proposals, and advocate a robust response to climate change, environmental protection, dust-haze treatment and low-carbon development. We also advocate and implement peak-shifting production, relieving the problems of overcapacity and exploring sustainable development.

In 2016, we organized or participated in [illegible] environmental protection publicity events

In 2016, [illegible] person-times of employees attended training regarding energy conservation and environmental protection

In 2016, [illegible] on-site conferences were replaced by video conferences

▲ CBMI Garadagh EPC project in Azerbaijan

Green Manufacturing

Source Reduction

Our mines are blasted by means of multi-row core short delay blasting to reduce shock and resource waste; the components of mineral resource batches are measured accurately to establish reasonable proportions, e□ectively use low-grade ore, improve homogenization and give full play to the value of mineral resources; and closed belt corridors are built to avoid the raised dust and energy consumption of automobile transportation.

The layout of the production line is optimized. Such measures as physical isolation, greening shields and occupational protection are taken to reduce noise, reach national standards on noise treatment and relieve the impact of noise on the sta□ and surrounding communities.

Outdated production equipment is put out of service in good time. Kilns and furnaces

Green Products

In order to supply systematic low-carbon environmentally friendly products, we have integrated the concepts of low carbon and environmental friendliness into the whole process of R&D, design, production, packaging, sales and recycling.

Adjusting the basic building material product mix: We actively encourage the cement industry to develop in the direction of 'high-performance, specialized, ready-mixed and commercialized' so as to supply our customers with high-quality, green and low carbon cement products. By making innovations in and extending the industry chain, we guide the glass industry to transform and upgrade in the direction of 'electronics, PV, intelligence and energy conservation' so as to improve the added value of the products.

We research and develop new building materials in accordance with the four core concepts of energy conservation, safety, comfort and ecology. We improve the quality and extend the service life of our products, and reduce repetitive production. We develop and use industrial waste resources as raw materials to produce building materials, thereby reducing the consumption of natural mineral resources and achieving maximized recycling and e□ective disposal after service life.

Our new housing products not only integrate high-performance green building materials, but also joint seamlessly with new energy technologies and intelligent control technologies, creating 'zero emission', 'energy plus' and 'future core' dream homes.

We provide high-end and serialized rotor blades, thin-□lm solar cell packs and specialized cement products, guaranteeing the sound development of such new energy industries as wind power, solar power, hydropower.

Ingeniously developed by Lianyungang Zhongfu Lianzhong Composites Group Co., Ltd. ('Zhongfu Lianzhong'), the LZ75-5.0 blade for o□shore wind turbines was successfully released at the company's blade factory in Lianyungang. The blade is 75 m in length and typhoon-resistant (design generating area: IEC IB), and has been successfully applied in the Pinghai Bay 50 MW O□shore Wind Power Project in Fujian. In July 2016, the super typhoon Nepartak landed in the coastal area of Fujian. Although the maximum wind force near the center was as high as 17, the blades rode out the super typhoon and withstood the test.

After nearly 40 years of unremitting exploration and e□orts devoted to creating new-type housing, the green towns put on the market by CNBM have blossomed everywhere at home and abroad, responding to Deng Xiaoping's entrustment to 'make housing built with new-type light building materials better and better, and suit them to the a□ordability of the people'.

In the planning and construction, all 43 households of the village were taken as a whole. One of Beijing's most beautiful rural areas, thi75.07(dabcuS.w)10 (er(t)291po_4 -2.5 TD(c)6 (onstruc)-12.9 (tm3 (e.pr)10 (oc)-12 d (vpe)T]0 -1.286 TD(hog and c)di2.9 s -30 (f)1 loc 9 (ning_(o.cr)10 (ea(ed c)6d53 ( )T]0.02)T]0 -1.286 i4 (map (twho mes)11 (scp/T11.3 Tc 0 Tw 8 0 0 7 215.65 r460.678 (e'G)-3 (r)8 (een t)5 (o)s a S)4 meshichehous7as)1M)-ologyun11 (scp/T10 QBT7 09455 3

Green Synergy

assigned operation utility of CDM

technical service agencies of energy conservation and environmental protection

building materials industry training base of national carbon market competency construction

Following Industrial Chain Trends

We implement green procurement. In our procurement of raw materials, we give priority to products that are produced in low carbon and environmentally friendly ways and cause a lower degree of damage to the environment; when selecting energy, we choose clean energy and vigorously promote the use of such non-fossil energies as low-grade energy, municipal refuse, biomass energy, etc.; and when choosing daily o□ce supplies and other consumer goods, we prefer products that have simple packaging and are convenient for recycling.

CNBM advocates the policy of simple packaging. We insist on promoting bulk packaging for cement products and bare packaging for glass products. We seek to maximize the use of recyclable packing materials to reduce waste while ensuring the quality and transportation safety of the products.

We adopt the green sales model. We reduce resource occupation and improve marketing e□ciency through establishing modern logistic parks and rational plans for supply, marketing and logistics. We provide online transaction services for worldwide building material products and reduce the carbon released by the business travel of clients and sales personnel through establishing an online marketing platform.

Supporting Industrial Chain Extension

We provide low-carbon technologies and full life-cycle services. In the three □elds of technical transformation, smart control and re□ned management, CNBM provides industrial enterprises with the □ve low-carbon services of detection and diagnosis, transformation and upgrading, intelligent control systems, expert consultation and □nancing management. As such, we contribute our share to continuously enhancing industrial energy e□ciency and environmental performance, as well as achieving sustainable development.

Harmless co-processing in cement kilns: We carry out the co-processing of urban garbage, hazardous solid waste and sludge by giving full play to our technological advantages. We also continuously improve our co-processing capability and quality in order to boost the eco-development of cities.

Rapid development of intelligent industry: We provide operation management, expert diagnosis and production line debugging services for 14 production lines in 7 countries. Our scope of production services has expanded from cement plants to other categories of entities (such as mixing plants and sugar re□neries). Our service mode combines □eld services with remote centralized diagnosis. Our industrial operation data expert diagnosis center in Beijing can provide expert diagnosis and data services to production lines all over the world.

Exploration of intelligent agriculture: We have signed a strategic cooperation agreement with DALSEM, a well-known greenhouse company based in the Netherlands. Based on the Group's industrial advantages, talent advantages and expertise in the □eld of high-transmittance ultra-clear glass, we are dedicated to creating a new agricultural domain and propelling China's agriculture to develop in the direction of high end and intelligence. The intelligent greenhouse sheathed with new-type ultra-clear rolled glass has such advantages as high output, long service life, stable climate, low energy consumption and high land utilization rate, and can fully recycle rainwater and carbon dioxide. Compared with traditional □eld planting on the same area, it yields 5-6 times more crops and consumes 95% less irrigation water, thereby making agricultural production more e□cient and environmentally friendly.

▼ CNBM marches towards intelligent agriculture

In 2016, CNBM was rated by the NDRC as a training base of the building materials industry for national carbon market capacity development. As a key link in national carbon emission trading capacity development, the training and demonstration bases for national carbon market capacity development are supposed to lay a foundation for officially launching the carbon emission trading market throughout the country in 2017. CNBM constantly and industriously cultivates and establishes energy conservation and environmentally friendly technical service platforms. Its member enterprises, among which CTC takes the lead, actively practice the implementation of the energy management system, carbon emission management system, CDM project, CCER project, low carbon product certification and carbon inspection, as well as the development of carbon emission accounting methods and standards in the building materials industry, through which it has accumulated rich experience. In order to practically perform the duties of a training base of the building materials industry, by giving full play to the Group's technological superiority in the industry and using the large platform provided by the National Carbon Trading Capacity Development Training Center, we lead trainees to go deep into the workplaces of member enterprises, give them a detailed understanding of carbon accounting, carbon inspection, examination and verification of voluntary emissions production projects and carbon asset management on the spot, and share cases of low carbon, energy conserving and emission reducing actions taken by advanced enterprises. This makes the carbon emission trading capacity development of the building materials industry both visible and reproducible, and has brought about standards to which to conform.

The 450 t/d Domestic Refuse Co-processing Project initiated by Sinoma Liyang Environmental Protection Co., Ltd. is one of six demonstration projects identi□ed by MIIT. Backed by the 5,000 t/d cement line of the Liyang Tianshan Cement Plant, this project realizes the harmless treatment and day-to-day clearing of domestic refuse in Liyang by using the internationally advanced technologies of co-processing in cement kilns. In 2016, it treated 155,000 tons of urban domestic refuse with a treatment rate in excess of 90%. As the project with the largest co-processing capacity in China, it additionally carried out the emergency treatment of more than 5,000 tons of non-local illegally dumped refuse within the same year.

▲ A full view of the 450 t/d Domestic Refuse Co-processing Project initiated by Sinoma Liyang Environmental Protection Co., Ltd.

The mode of pretreatment with automatic machinery is adopted to ensure that complicated domestic refuse is e□ectively and reliably sorted and utilized, and enable continuous automatic production and reliable operation.

The most advanced sewage treatment system has been introduced to treat leachate up to the Class 1A discharge standard.

The most advanced deodorization system has been introduced. Deodorization proceeds at negative pressure in a closed workshop and produces little odor, thereby preventing any in□uence on the surrounding environment.

The workshop design is safe and sanitary. Around the workshop, an isolating greenbelt is provided to reduce noise emitted to the surroundings.

Di□erent treatment modes are adopted for di□erent components of domestic refuse under the principle of neither disrupting cement production control nor deteriorating clinker quality. This prevents secondary pollution throughout the process.

The products of domestic refuse sorting are used as substitutive materials or fuels for cement production. In this way, domestic refuse is reclaimed and cement is produced in an energy saving way.

03

We make every e□ort to safeguard the rights of our employees, respect their di□erences and make the company a reliable partner and a happy and comfortable home for our employees. We try to jointly build a brighter and more sustainable future with all our employees, and deliver happiness to society.

- Safety
- Health
- Dignity
- Happiness

At the end of 2016, the total number of employees reached

234,511

In 2016, the number of member companies carrying out employee satisfaction surveys stood at

602

In 2016, the employee turnover rate was

12.3 %

The overseas project sta□ of Sinoma International Engineering Company Limited

Safety

We have established a domestically top-ranking management system for safe production with the safe production accountability system as the core, the standardization of safe production and workplace safety technical regulations as the emphases, the troubleshooting and treatment of potential accidents as the methods, the informatization of safety management as the tool and the development of safety culture as the guarantee, thereby ensuring safe production and the occupational health of the sta□.

Management & Control System

We have established an organizational system for safe production. The Party and administration heads of the enterprises are the primary persons responsible for safety in the workplace, and they take charge of safe production matters. All key production safety enterprises within the Group employ full-time production safety management personnel. We establish smooth channels for feedback and encourage all sta□ to participate in safety management.

We have established a safety production management system covering penalties for safety violations. We have also introduced special regulations and work guidelines for overseas projects, non-coal mines and so on.

We place emphasis of investment in safety, continuously improve and maintain our safety equipment and facilities, implement technical innovations for the purpose of essential safety, organize training in safety procedures, and popularize safety culture.

Potential risks identi□cation

. production safety accidents occurred in 2016

We intensify inspections for hidden dangers. We take the development of the 'capacity to identify and prevent hidden hazards' as an important part of our efforts to improve the basic management level of enterprise safety and promote closed-loop control, composed of 'basic capacity building - assessment and control of hidden dangers - work and performance reward assessment - the ability to enhance safe operation,' thereby achieving the continuous improvement of the PDCA. We explore and establish a six-in-one screening and governing system of accident potential, the six items being 'focusing on the fulfillment of post responsibilities, using listed investigation standards as the tool, taking closed-loop self-examination and self-reporting of hidden hazards as the means, taking team construction and all-staff participation as the basis, taking the reward and penalty incentive system as the guarantee, and taking information management means as the support.

We continue to improve our emergency management system. In this system which covers all levels of the CNBM, the Group's emergency management team takes general charge while the emergency management teams of the member companies are responsible for specific measures. A comprehensive emergency response plan is established and supplemented by special emergency response plans and on-site response schemes. We organize the member companies to regularly check the reserves of emergency supplies, conduct emergency response drills and give on-site instruction in emergency response work.

Informatization technology is applied for the purpose of daily safe production management. A safety production prediction and alert system independently developed by CNBM is also utilized. We generate monthly warning information according to the data on the reporting and rectification of hidden dangers, and promptly publish work safety warning information to remind enterprise leaders and all staff to take targeted precautions for the purpose of identifying, handling and removing hidden dangers as soon as possible, thereby minimizing the probability of accidents and their consequences.

Standard Safety

As a national pilot enterprise of standard safe production, we actively promote the work of meeting the safety standards of cement enterprises, improving the safety management system, increasing the safety management level and boosting safety management performance. By the end of 2016, all the manufacturing enterprises a□liated to the Group passed their work safety standardization reviews. In particular, 131 of the 280 cement clinker manufacturers (45%) passed the national Class 1 review, representing a 60% share of the total number of Class 1 standardized enterprises in the building materials industry.

We attach great importance to building up our safety management team. We have continuously fostered the sense of responsibility and awareness of safety procedures in the workplace, and improved the professional quality of safety management personnel. We strictly follow the CNBM Safety Training Rules and guarantee the popularization of safety knowledge, execution of safety procedures, implementation of contingency plans, knowledge of occupational hazards and the self-protection abilities of the sta□ through training and assessment.

We actively organize such safety promotion activities as 'Safe Production Month' and 'Safe Production Year', prepare and issue safety culture manuals and incorporate the idea of 'people □rst and life foremost' into our corporate culture. The Guilin South Cement Company Limited was rated as a 'National Model Enterprise of Safety Culture Development 2016'. China United Cement Qufu Co., Ltd., China United Cement Zaozhuang Co., Ltd. and Hangzhou Shanya South Cement Co., Ltd. all passed the review for identi□cation as 'National Model Enterprise of Safety Culture Development'.

In order to build a safety culture ecosystem, we share safety knowledge and experience with interested parties (such as suppliers, customers and communities) and popularize safety concepts.

On December 23rd, 2016, the building of China United Cement Nanjing Co., Ltd. into a work safety standardization model enterprise sailed through the acceptance check by the State Administration of Work Safety, making the company one of the □rst batch of work safety standardization model enterprises in China. During the 960-day total involvement in the mission, the company abstracted and summarized 6 improvement priorities and a new concept of safety management ('223355'), thereby developing corporate safety culture with its own style. The 6 improvement priorities are as follows: to bring all posts to the standard by ful□lling the responsibilities of safe operation post by post and level by level; realize the complete coverage of safety education and training by □exibly using various media; realize visual safety management by normatively improving workplace standardization; expand the concept of safety management through international benchmarking; make innovations in the safety management of outsourcing units by controlling the 5 'strategic passes'; perfect the management system and operation mechanism of hidden danger identi□cation by skillfully operating the prediction and warning system platform; and move the 'strategic passes' forward and the emphasis down by transforming safety management concepts.

危 险
有限空间
未经许可
禁止进入

Dignity

In 2016, the number of female employees reached

In 2016, the ratio of the average salary of male employees to that of female employees was

In 2016, the total amount of remuneration for overtime work was about RMB million

Equality

We respect and support the international covenants on human rights and labor standards, strictly forbid forced labor and discrimination, guarantee a decent working environment for our employees and strictly prohibit and reject employing child laborers in any form.

We adhere to equal employment and treat employees of di□erent nationalities, ethnicities, genders, ages, religions and cultural backgrounds with respect and equality. Employees are recruited and employed in an open, fair and impartial manner.

In line with the principle of equal pay for equal work, we treat our part-time employees, temporary sta□s and the workers of our subcontractors with equality. Their legitimate rights and interests are well protected.

We respect the privacy of our employees and have established a privacy management system covering such management links as recruitment, assessment and health records.

Legal Compliance

In strict compliance with the *Labor Contract Law of the People's Republic of China* and relevant laws and regulations, we sign labor contracts with our employees and standardize our labor contract management.

We pay our employees basic pension insurance, basic medical insurance, unemployment insurance, work injury insurance, maternity insurance and other social insurance in accordance with the law, and establish supplementary medical insurance and corporate pension schemes, and a periodic physical examination system. We also encourage our member companies to purchase comprehensive accident insurance and other supplementary insurance for their employees in line with their actual conditions.

We adopt a paid leave system according to such related regulations as *Regulations on Paid Leave of Employees*, and pay remuneration for overtime work.

▲ Foreign sta□ working for the RAPID Project in Malaysia

In Nigeria, a country thousands of miles away, CBMI's Sokoto project group is implementing the 'Belt and Road' initiative. Bumi, a youngster indigenous to Yoruba, has worked for 7-8 years in the project group to manage the supplies and material requisition and related archives of the project. When he joined the EWK Project initiated by CBMI in Nigeria in 2009, his family was poverty-stricken and had a child to foster, which was a very di□cult situation to sustain. Through hard work, Bumi has gradually increased his family's income. During his 8 years of work, the members of the project group helped him in his life, work and diet, and he was promoted from a temporary 'materialman' to a storekeeper o□cially appointed by the project department. In 2016, Bumi followed the project group to Sokoto in northern Nigeria. In order to help this employee who had never left home to adapt to his new living environment, the project group provided Bumi with a residence, paid him a non-local work premium and gave him the bene□t of annual paid, which greatly improved his living conditions. The Nigerian youngster is now deeply rooted in CNBM's 'Belt and Road' shipping line. As Bumi said, he feels very lucky to work in CBMI, enjoys working with his colleagues and views them as his closest brothers.

▲ Employees of BNBM HOME (a supermarket chain built by CNBM in Papua New Guinea)

In 2016, our coverage rate of collective bargaining and contracts was approximately , , - %

In 2016, . . - % of the proposals of the Workers' Congress were handled and settled

Democracy

We keep widening our trade union network and establishing and improving trade union organizations and work organizations at all levels; we develop the members of these organizations and make the trade unions more attractive and cohesive.

We support our employees in expressing their rational appeals and safeguarding their own rights in such aspects as laboring, labor remuneration, work time, rest and vacation, work safety and health, social insurance and welfare, special protection for female employees, etc., through collective bargaining, signing collective contracts and other forms.

We implement the Workers' Congress system, implement regulations on the disclosure of factory a□airs, and ensure employees' rights regarding participation, information and supervision. We share corporate operation information with our employees through such channels as the disclosure board of factory a□airs, employee discussion meetings, managers' mailboxes and company websites.

Sense of Achievement

We establish a scienti□c remuneration system and incentive mechanism, and set a competitive salary standard. We also maintain two career paths for the promotion of employees, leading to management positions and technical positions respectively, through which we try to meet the development needs of di□erent kinds of talents by allowing talents from di□erent □elds and with di□erent specialties to give full play to their respective expertise.

We implement the mechanism of intragroup communication and in-position learning for employees, thereby e□ectively allocating the human resources within the Group and providing a broad platform for our employees to develop their careers.

We encourage enterprises to carry out corporate pension plans and equity diversity according to their actual situation. We spare no e□orts to motivate employees and retain talents, while improving their sense of achievement by allowing them to feel the development and growth of our enterprise.

Sense of Identity

We spare no e□orts in the construction of learning groups. We aim to build a multi-channel, multi-form, multi-level and di□erentiated employee cultivation and training platform. Following the training approach of 'based on internal training and supplemented by external training', we share education resources to build a comprehensive training system for the Group. We support the autonomous training of employees and encourage them in active learning. We also support and guarantee the re-education, re-training and re-learning of employees in the aspects of working hours, training investment and reward mechanism.

We attach great importance to the quality training of our employees. Aside from encouraging vocational education and training, we create a unique model for the quality promotion of enterprise talents and establish a unique corporate culture system to improve the executive ability, professional quality and cultural identity of our employees.

Sense of Belonging

We care for the health and lives of our female employees, and treat them equally with their male counterparts in salary, management positions, professional training and vocational development opportunities. We purchase maternity insurance for them and provide antenatal examination leave, maternity leave, breastfeeding leave and birth allowance. We are concerned about the lives and mental needs of our young employees. We bring young people together through the Communist Youth League, providing them with a platform on which to demonstrate their talents and exchange ideas. We care for the work and lives of expatriates, especially those who are long stationed abroad or in communities of minority ethnic groups, hold special after-work activities and provide mental health counseling to relieve their pressure. We also improve the home leave system to remove their worries and promote happiness.
We respect disabled employees and provide them with a convenient working environment and the necessary amenities.

We improve the system of employee support and relief, and help employees to overcome their di□culties through the 'Mutual Fund for Combating Serious Illness', 'Golden-autumn Grant-in Aid', 'Sunshine Employment Program' and so on. We carry out practical measures, solve di□cult problems and do good deeds for employees in di□culty, and make such actions regular, institutionalized and standardized. We stick to the custom of visiting needy groups in winter and during two major festivals, mainly including childless and widowed elderly people, families of martyrs and poor retired employees.

We encourage our member companies to strengthen the construction of gymnasiums, recreation rooms, libraries and psychological counseling rooms. We also organize colorful cultural and art activorii aceati colortisl and art amp-

In 2016, RMB . -, million was spent to help and reward special groups of employees

Fan Qi is a mechanical engineer of Beijing Triumph International Engineering Co., Ltd. At CCTV's Chinese Poetry Competition, with exceptional poetry knowledge and literary accomplishments, she entered the □nal four by beating multiple competitors. She once correctly answered 9 consecutive questions, bringing the house down and re□ecting the style of talented woman. Fan's outstanding performance was praised by all the experts, professors and presenters, who commended her by saying, "This female mechanical engineer engaged in the general contracting of international cement projects under the 'Belt and Road' initiative has admirable literary attainments and a mien comparable to her male peers." Guided by the 'Belt and Road' initiative and following in CNBM's footsteps in developing the international engineering business, Fan became involved in the promotion, design and development of multiple overseas cement lines and new-type prefabricated buildings, and realized her working dream. More than a peer in our midst, she is a common member among the numerous citizens of CNBM. Undertaking their responsibility for their families, the Group and the country, while also keeping their own dreams in mind, CNBM's citizens are writing the most beautiful and magni□cent chapter in the great picture roll of the 'Chinese Dream'.

Fu Zhuanxia, an ordinary 'CNBM citizen', holds the post of production management division director of the Gansu Qilianshan Cement Group's Pingshan Commercial Concrete Company. In May 2016, the company was required to supply concrete products higher than international railway standards in order to guarantee the quality of a railway bridge and culvert section built by China Railway No. 5 Engineering Group Co., Ltd. Faced with incredibly demanding requirements, Fu led the members of the production management division to select indigenous materials, carry out pre-mixing in the daytime and study institutions and speci□cations at night. Hard work pays o□. At last, the construction party's requirements were met with high quality within the speci□ed period, enabling the project to proceed smoothly. By virtue of the unremitting e□orts made by normal 'CNBM citizens', the company has output and sold more than 240,000 m^3 of concrete without any quality accidents or production upsets.

04

During production and operation, we seek to achieve mutual development with the region in which we operate. Our accomplishments could not be achieved without the support of the stakeholders and people from all walks of life, and we give back to society through our unique social welfare projects. Our employees are delighted to make contributions and dedicate themselves to voluntary activities, exercising their responsibilities as corporate citizens with their actions.

- All-win Harmony
- International Cooperation
- Sunshine Welfare
- Poverty Alleviation

In 2016, the number of new employees hit

22,000

In 2016, the amount of taxes paid to local governments reached RMB

9.4 billion

In 2016, CNBM Headquarters took up posts in

57 organizations

In 2016, the donation amount reached RMB

24.0 million

Night view of CMBI's project in Bulgaria

All-win Harmony

We have established an overseas operation system with the characteristics of CNBM and integrated the concepts of responsibility and sharing into our business activities. Particularly in the practice of overseas business, CNBM abides by local laws, respects local culture, makes good use of local resources and serves regional construction, safeguards the rights and interests of shareholders and the safety of employees through its e□ective risk management and control system, popularizes the concept of responsibility through 'sunshine procurement' and sharing cooperation, and takes environmental protection and the quality of life into consideration in a comprehensive manner based on regional civil interests. We have held many exchanges with Saint-Gobain, Rachau, CRH, Owens Corning, Vale and the Mitsubishi Corporation. Our responsible and sustainable business philosophy makes us highly recognized and fully accredited in local areas as we engage in 'Going Out'.

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亲 诚 惠 容

We insist on good neighborly and friendly relations and mutual aid: we strictly carry out social and environmental impact assessments for investment projects, and thoroughly seek the opinions of interested parties with regard to economic and environmental bene□ts so as to minimize the negative e□ects of our operation on the local environment and society. We also actively take part in local public bene□t programs and community activities in order to increase our attractiveness, emotional appeal and in□uence.

We treat cooperative countries sincerely and strive for more friends and partners: we strictly observe international conventions as well as local laws and regulations, pay taxes in accordance with the law, pay attention to environmental protection and respect local religious beliefs, customs and habits. We also stick to public bidding and 'sunshine procurement'; that is, excellent subcontractors are selected through the comprehensive assessment of their business strength, credit standing and management level. In contracts, we have clear provisions on rights, interests, safety and occupational health protection applicable to the employees of subcontractors. In the process of cooperation, our subcontractors are supervised and reminded to implement such provisions. We have won respect, trust and support from surrounding countries by virtue of our sincere devotion.

We cooperate according to the principle of reciprocity and mutual bene□ts: we strive to build competitive value chains by using local superior resources in combination with the Group's advantages in technology and management, thereby providing a value-added space for local raw material suppliers and product sellers, helping the local economy to prosper and generating taxes. We also build advanced cement and glass lines for developing countries and regions to meet local construction demands, and advocate the concepts of green consumption and architectural energy conservation by promoting new-type building materials and housing. In addition, we optimize local resource circulation and allocation by building large logistics parks and sales networks, for the purpose of growing together with the regions in which the member enterprises are located.

We advocate the concept of inclusiveness-based cooperation: we respect local religious beliefs, customs and habits, and execute a sta□ localization policy. Speci□cally, job opportunities are provided locally, and local employees are trained to spread advanced technologies and management experience, and improve the quality of local talents. Through proper operation, we enhance the management of overseas enterprises and projects. Furthermore, we have established a comprehensive risk management system covering the risks involved in overseas operation (i.e. political risk, country risk, □nancial risk, legal risk, bidding and tendering risk, tax risk, labor service risk and industry risk) and developed a risk analysis & warning system and an emergency response mechanism for the purpose of protecting the safety of the sta□ and assets. In the future, we will promote regional cooperation with a broader mind and higher enthusiasm so as to share opportunities and enjoy mutual prosperity.

In 2016, the hiring rate of local employees reached - %

In 2016, the hiring rate of local senior management reached , - %

On March 23rd, 2016, as the only representative of the building materials industry, CNBM took part in the Lancang-Mekong Cooperation Exhibition which was jointly sponsored by the Ministry of Foreign A□airs, National Development and Reform Commission and China Council for the Promotion of International Trade. The Group exhibited such internationally advanced products and technologies as ultra-thin electronic glass, carbon □ber, glass □ber and refractory materials.

State Council Premier Li Keqiang visited the exhibition. With much attention paid to the 0.2 mm ultra-thin electronic glass ingeniously developed by CNBM, Li answered questions about the performance, application, technology and R&D of ultra-thin electronic glass. As Song Zhiping said, attaching importance to the protection of IPRs, CNBM strives to catch up with and surpass the world's advanced levels by adopting integrated and innovative development modes, setting a new milestone in the development history of China's glass industry and launching the industrialized production of ultra-thin electronic glass in Bengbu. Li highly praised the Group's internationally advanced carbon □ber technologies, and experienced the performance and usage of the carbon □ber bicycle in person at the venue. He also highly praised the e□orts CNBM made during the transformation of the industry, and expressed his hopes that the Group will enhance its technological innovation and industrial upgrading by making full use of its industrial advantages, deepening its cooperation with Lancang-Mekong countries and playing a guiding role in promoting the implementation of the 'Belt and Road' initiative and international capacity cooperation.

Shen Jianying has been honored as a 'May 1st Female Pacesetter of Tongxiang 2013-2016'. She is softly spoken and persistently works with a mask by bending her head. She likes welding pieces of platinum-rhodium alloys together with a welding gun. She is the only female welder assigned to Egypt's platinum processing workshop by the Jushi Group. Through undertaking the task of passing on experience, she has trained 2 apprentices in the technology of argon arc-welding.

Sunshine Welfare

We □rmly believe that a responsible social welfare system is the basis for promoting social justice and for central enterprises to ful□ll their social responsibility, and more importantly an important measure for protecting the interests of investors and the safety of state-owned assets. According to the principle of being accountable for bene□ciaries and shareholders, we carefully assess invitations for social welfare support prior to implementing any donation, and cautiously select projects to support in order to guarantee public rights and interests by evaluating the importance, reliability and public bene□ts of projects, as well as our annual business performance.

In 2016, the total environmental protection and public welfare donation amount reached RMB [illegible]

In 2016, the number of foreign donation projects reached [illegible]

In 2016, total foreign donations reached RMB [illegible] million

Donation Standardization

We establish emergency response mechanisms in order to provide rapid disaster relief, civil defense and other public safety services.

We provide support for disaster affected areas, poverty-stricken areas, science, education, culture, and hygiene causes, welfare projects and environmental protection causes in kind and capital, thereby supporting the development of society.

We standardize our donation management regulations. We establish and improve the donation organization and management system, and strictly implement the annual budget and procedure for process examination and approval; we have established a mechanism for periodically analyzing and reporting on donation project progress, evaluating the effects and conducting return visits when the project ends, and rejecting apportioned, duplicated, ineffective or poorly run public welfare projects, as well as those that are beyond the enterprise's capacity, so as to focus on the donation effect and guarantee the interests of investors.

[illegible]

Education and medical care are the basic □elds most closely associated with improving people's livelihoods. Sinoma Cement's Zambia Building Material Industrial Park built a school-hospital complex for Chiyeya of Lusaka, and the villagers gladly named the complex 'Naqitete.' After 5 months of planning and construction, the complex was delivered. Its facilities were designed and built in strict accordance with Zambia's national standards. Constructed with a total investment of USD 1.5 million, the complex consists of 5 classrooms, a 711m² hospital and other facilities (o□ces, teachers' dormitory, doctors' dormitory, solar power generation and lighting system, water supply and drainage system, etc.). The school is capable of admitting school age children from the surrounding villages and communities, and supplying educational services from the 1st grade to the 6th grade. The hospital will supply high-quality medical services to local residents and bene□t a population as large as 15,000. The complex gives an impetus to the long-term development of the surrounding communities.

The Zambia Building Material Industrial Park is an important action taken by Sinoma Cement in response to the government's calls for 'Going Out' under the 'Belt and Road' initiative. It has not only made signi□cant contributions to the economic development of Zambia, but also written a new chapter in the Sino-Zambian relationship.

Voluntary Activities

We advocate a harmonious social atmosphere and encourage our employees to provide voluntary services and participate in social welfare activities. We provide guarantee and support for voluntary activities in such aspects as organizational structure, work mechanism, scheduling, □nancial support, communication and liaison. Under the voluntary service system with the Communist Youth League at its core, companies at di□erent levels have established several volunteer activity groups which carry out a variety of voluntary activities, demonstrating the enthusiasm of the participants and spreading happiness.

[illegible]

Beijing Xingzhi Experimental Primary School (Gongcun Department) is a primary school for the children of migrant workers. Located near Jinyuan Overpass on the West 5th Ring, Haidian District, Beijing, it has more than 550 enrolled students. The infrastructure of the school was run-down. Speci□cally, most of the exterior walls of the classrooms and playground had not yet been painted, and some walls were peeling badly. To this end, BNBM Assistant General Manager Chen Haoya, who was pregnant at the time, led volunteers from BNBM's 'Youth BNBM' volunteer service corps and Tsinghua University's Whitewasher Studio to make the campus colorful and full of warmth by painting the walls with BNBM's star product, 'Dragon Paint.'

'Youth BNBM - Colorize Our Homeland with Paint' is a public bene□t activity persistently developed by BNBM's 'Youth BNBM' volunteer service corps in collaboration with Whitewasher Studio. The activity has been developed several times for Hongqinglan Primary School (Shunyi), Sun village (Beijing), Taiyuan Town (Chongqing), Huairou Yucai School, Zhongqingjing Primary School (Hebei's Lingshou County) and Mingyuan School (Beijing's Daxing District). It is popular with all teachers and students, and praised by all social sectors.

▼ Volunteer, Chen Haoya

In 2016, the total voluntary activity donation amount reached about RMB [illegible] million

In 2016, [illegible] hours of voluntary services were provided by our employees

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We shoulder the responsibility of making innovations in the industry by leveraging our strong research capability. We also promote the transformation and upgrading of the industry with our foresight, vision and advanced technology. We promote and share our technical information, and we are committed to building more environmentally friendly, comfortable and intelligent living environments, and creating a sustainable future.

Research Strength

In addition to the transformation and improvement of traditional industries, we vigorously develop the three-new industries, enhance services for technological innovation and the development of the technological talent team, deeply perform the task of 'encouraging people to start their own businesses and make innovations', and strengthen IPR protection by implementing the patent portfolio strategy. We strive to build the largest comprehensive scienti□c research platform with the strongest power in the building materials and inorganic non-metallic materials □elds of China, and provide services and security for nationwide innovation.

Establishing Platforms

We have established an integrated scienti□c research innovation center that comprises national research and design institutes, state and industry key laboratories, national research centers, technology development and promotion centers, scienti□c and technological cooperation demonstration bases, and public service demonstration platforms. We intend to build China's largest integrated scienti□c research platform with the greatest strength in the □eld of building materials and inorganic non-metallic materials.

Attracting Talents

We build a strong contingent of scientific researchers by attracting and cultivating scientists and engineers. We set up the academician workstation and post-doctoral research stations and workstations, and implement the 'Thousand Talents Program' in order to maintain smooth channels for the introduction and exchange of high-caliber talents from overseas and domestic universities and institutes. We also make innovations in the incentive mechanisms and improve intellectual property rights protection so as to retain talents.

Ensuring Input

We place emphasis on science and technology investment. We increase financial support for hardware construction and scientific research rewards. Aside from ensuring the requirements for research into the basic theories and cutting-edge technologies of material science, we also specifically boost our investment in the R&D of low-carbon environmental protection technologies and products.

	China Building Materials Academy	Tianjin Cement Industry Design & Research Institute Co., Ltd.
	Hefei Cement Research & Design Institute	Sinoma International (Nanjing) Engineering Co., Ltd. (Nanjing Cement Institute)
	Bengbu Design & Research Institute for Glass Industry	Chengdu Design & Research Institute of Building Materials Industry Co., Ltd.
	China New Building Materials Design & Research Institute	Nanjing Fiberglass Research & Design Institute Co., Ltd.
	Harbin FRP Institute	Beijing Composite Materials Co., Ltd.
	Qinhuangdao Glass Industry Research and Design Institution	Suzhou Sinoma Design and Research Institute of Non-metallic Minerals Industry Co., Ltd.
	Xi'an Research & Design Institute of Wall & Roof Materials	Shandong Industrial Ceramics Research & Design Institute Co., Ltd.
	Xianyang Research & Design Institute of Ceramics	Beijing Sinoma Synthetic Crystals Co., Ltd.
	Hangzhou Mechanical and Electrical Design and Research Institute of Light Industry	Suzhou Concrete & Cement Products Institute Co., Ltd.
	Horological Research Institute of Light Industry	Xianyang Non-metallic Minerals Research & Design Institute Co., Ltd.
	Light Industrial Xi'an Mechanic Design and Research Institute	Wuhan Building Material Industry Design & Research Institute Co., Ltd.
	Research Institute for Automation of Light Industry	Sinoma Science & Technology Development Center Co., Ltd.
	Suzhou Waterproof Research Institute	Sinoma Geological Engineering Exploration Academy Limited
	State Key Laboratory of Green Building Materials	National Key Laboratory of Special Fiber Composites
	National Key Laboratory of New Float Glass Technologies	
	State Key Laboratory of Pulp and Paper Engineering	
	National Glass Deep Processing Engineering Technology Research Center	National Non-metallic Minerals Deep Processing Engineering Technology Research Center
	National Resin Matrix Composites Engineering Technology Research Center	National Industrial Ceramics Engineering Technology Research Center
	National and Local United Engineering Research Center for Glass Industry Energy-saving Technology	National Fiber Reinforced Moulding Compound Engineering Technology Research Center
	National Fiberglass and Products Engineering Research Center	National Research Center of Cement Energy Conservation & Environmental Protection Engineering
	Technology Center of China National Building Materials Group Co., Ltd.	Technology Center of Sichuan Jiahua Enterprise (Group) Co., Ltd.
	Technology Center of Beijing New Building Material (Group) Co., Ltd. (Sub-center)	Technology Center of Sinoma Technology & Equipment Group Co., Ltd.
	Technology Center of China Luoyang Float Glass Group Co., Ltd. (Sub-center)	Technology Center of Taishan Glass Fiber Co., Ltd.
	Technology Center of Lianyungang Zhongfu Lianzhong Composites Group Co., Ltd. (Sub-center)	Technology Center of Taishan Glass Fiber Zoucheng Co., Ltd. (Sub-center)
	Technology Center of Hefei Smarter Technology Group Corporation (Sub-center)	Technology Center of Xinjiang Guotong Pipeline Co., Ltd.
	Technology Center of Jushi Group Co., Ltd. (Sub-center)	Technology Center of Sinoma Science & Technology Co., Ltd.
	Technology Center of Hefei Cement Research & Design Institute (Sub-center)	Technology Center of Sinoma Energy Conservation Limited
	Technology Center of Hefei Zhongchen Light Industrial Machinery Co., Ltd. (Sub-center)	Technology Center of Xinjiang Tianshan Cement Joint-Stock Cement Company Limited
	Academician Workstation of China Building Materials Academy	Academician Workstation of Zhengzhou Cement Industry Functional Refractory Material
	Academician Workstation of Bengbu Design & Research Institute for Glass Industry	Academician Workstation of Enterprises in Jiangsu Province
	Post-doctoral Scienti□c Workstation of China Building Materials Academy	Post-doctoral Scienti□c Workstation of Bengbu Design & Research Institutnstituttn 0.6tion of Enter.wang Float Glass Grei Zhongchen Light lenh24 (tion of e)-4 (eng Post-doctoral ScienTec chn

Security Mechanism

IP Protection

Focusing on such aspects as the protection of intellectual property and the management of scientific research funds, we have combined the development of internal control systems with risk management requirements to form a scientific research management system which conforms to national scientific research management requirements and has the features of the building materials industry, providing the efficient progress of scientific research with a security mechanism.

Incentives

We have gradually established a talent development mechanism to promote the development of talents, and an assessment and reward mechanism according to their performance and contribution. Inside the Group, we provide the 'Scientific and Technological Progress Award', 'Technical Improvement Award' and 'Group Technical Center Project' to boost the enthusiasm of researchers for innovation. We have established the Youth Science Foundation and organized youth scientific research competitions to promote the fast growth of young backbones of scientific research and inject vigor into the scientific research teams of the Group.

In 2016, we held a total of patents

In 2016, we gained scienti□c and technological awards at provincial or ministerial level or above

Collaborative Innovation

We attach great importance to cooperation with famous universities and professional institutions in jointly tackling key problems and engaging in technical cooperation, academic exchange, talent cultivation, the incubation and transformation of achievements, thereby establishing an innovation alliance with various levels. We explore the establishment of an open scientific research system. Aiming at research hotspots and challenges which attract the attention of the country and the industry, we mobilize social technological resources to tackle difficult problems. We promote the close combination of production, learning and research, establish new production-study-research relationships on the basis of the mutual benefits and cooperation of enterprises, and build up a technical innovation cooperation system external to the Group.

On the morning of January 9th, 2017, the Party Central Committee and State Council grandly held the National Science and Technology Award Conference. Party and state leaders Xi Jinping, Li Keqiang, Liu Yunshan and Zhang Gaoli attended the event and presented prizes to the prize-winning representatives. The project ingeniously developed by the Jushi Group, 'development of technologies and complete equipment for low-cost large-scale production of high-performance glass □ber', and the project jointly developed by the Bengbu Design & Research Institute for the Glass Industry ('Bengbu Institute'), CTIEC and another 5 units, 'development of key technologies and complete equipment for industrial production of ultra-thin information display glass' each won the second prize for technological progress.

The project 'development of technologies and complete equipment for low-cost large-scale production of high-performance glass □ber' made signi□cant breakthroughs in high-performance glass formulae, surface modi□cation, technologies and equipment for large-scale production, as well as technologies and equipment for green manufacturing. Speci□cally, a new formula of high-strength high-modulus □uoride-free boron-free glass □ber was created to signi□cantly lower the liquidus temperature and crystallization degree of glass, and achieve the kiln with the greatest capacity in the world; high-COD reducible sulfur clari□cation technology was developed to signi□cantly increase the heat absorptivity of glass; a few melting technologies and types of equipment (e.g. vertical combustion with pure oxygen in the kiln, longitudinal dual-H channel structure, matrix-type electric boosting, etc.) were developed to increase the melting capacity, bring the melting rate up to 3.0 t/m^2/d and lower the energy consumption to the internationally advanced level (32.7% lower than the value speci□ed in the entry criteria of the glass □ber industry); IoT technologies were adopted to enable the automatic preparation of mineral materials, automatic delivery of products and intelligent tridimensional storage, and bring labor productivity up to 270 tons/person/year; and green production was improved by using the technologies of melting glass □ber □lament scraps, recycling blast furnace slag and controlling waste gas and water. The achievements of this project have been applied on 15 production lines for more than 3 years. In addition, a demonstration line has been built in Egypt to successfully apply the complete technologies abroad. The spread of the achievements of this project is of great signi□cance for promoting the structural adjustment, energy conservation and emissions reduction of China's glass □ber industry, and guiding its progress.

In the project 'development of key technologies and complete equipment for industrial production of ultra-thin information display glass', the technologies for the over□ow forming of ultra-thin TFT-LCD glass, material size grading of ultra-thin electronic □oat glass and variable melting and forming upon constant-gradient temperature drop, as well as the major supporting equipment, were successfully developed, thereby creating the key technologies and complete equipment for the industrial production of ultra-thin information display glass with complete proprietary IPRs; China's thinnest (0.2 mm) electronic □oat glass line was put into operation and successfully realized the industrial, continuous and stable production of 0.5 mm, 0.4 mm and 0.3 mm TFT-LCD glass substrates, and a complete range of 1.1-0.2 mm ultra-thin electronic □oat glass. The products of this project have been applied in more than 20 domestic well-known manufacturers in place of imports. By virtue of the successful implementation of this project, the application area of Chinese □oat glass products and technologies has transformed from traditional building materials to electronic information display technology.

Conversion of Achievements

Enterprises as major players

enhanced the top-level design of our technological innovation strategy and promoted the all-round implementation of the Group's technological development plan for the '13th Five-Year Plan' period. Our competitive enterprises including the China Building Materials Academy, Bengbu Institute, BNBM, Jushi Group and Taishan Fiberglass were organized to □le project applications. As a result, 6 projects under the National Key R&D Program and 2 IM projects, involving the 5 □elds of new energy, new materials, green building materials, new IM modes and service platforms, have been approved.

Market-oriented

We have scienti□cally set our research direction on the basis of the principles of technology productization, product marketization and market e□ciency. We give full play to the advantages of an integrated production-study-research platform, closely link the industry and market so as to respond to market demands without any delay, and scienti□cally plan our R&D direction and technical research focuses. Our R&D achievements have solved the technical problems in the production process, met the higher standards of market demands and provided a guarantee for the Group's R&D achievement transformation.

Production and Research Integration

We accelerate our scienti□c R&D application and bene□t transformation. Relying on the special cement technology of the Key Laboratory of Green Building Materials, we have achieved the promotion of the industrialization of special cement with the four cements of the Group, become the largest manufacturer and supplier of special cement, and widely applied it in power plants, oil and gas □elds, harbors, high-speed railways and other major construction projects, thereby generating direct economic bene□ts reaching a billion dollars. We have implemented a range of new production and research projects centered on carbon emission trading, functional glass and intelligent equipment, and taken the lead in establishing a carbon □ber industry alliance in a very real sense: the China Glass Fiber and Composite Material Industry Development Alliance. The project 'application of Zhongfu Shenying's carbon □ber in lightweight electric vehicles' was identi□ed as a major special NEV project under the National Key R&D Program, and a wind energy □eld workgroup was set up to strengthen industry chain-based collaboration inside the Group. The China Building Materials Academy and the Lanhai Group jointly built the 'China Building Materials Academy Ocean Engineering Material and Technology Promotion Base', which has now become a 'production-study-research-application' platform for the industrialization of the technological achievements of China's ocean engineering □eld.

On November 3rd, 2016, Long March 5 (China's □rst powerful launch vehicle) was successfully launched at the China Wenchang Spacecraft Launch Site in Hainan. It is the launch vehicle with the largest carrying capacity in China so far. Its launch symbolized that 4 technological achievements developed by the Harbin FRP Institute ('Harbin Institute'), Nanjing Fiberglass Research & Design Institute ('Nanjing Institute') and China Building Materials Academy ('CBMA') had been successfully applied.

As components of the rocket propulsion subsystem, the tank support and gas cylinder support produced by the Harbin Institute with composite materials have high requirements for dimensional accuracy and bear high loads. Compared with traditional metal supports, these supports are 50% lighter, 4 times greater in bearing capacity and much higher in structural e□ciency, representing another successful application case of the Harbin Institute in the aerospace □eld. Used as substrate in the interior trim parts and structural members of Long March 5, the high-strength □ber with proprietary IPRs produced by the Nanjing Institute improved the performance and reduced the weight of the products. Used in the sighting telescope testing & calibration instrument of the navigation system, the optical □ber image mirror developed by CBMA met the requirements for high-accuracy integrated testing, and enabled the accurate calibration of the sighting telescope, thereby assuring the complete success of the launch.

Generations of R&D personnel from CNBM (Hefei) Powder Technology Equipment Co., Ltd. have been dedicated to the pulverizing technology □eld. The HFCG roll squeezer, a product of the company with proprietary IPRs, ranks 1st in the world for multiple parameters, and the number of units in service (1,500) also ranks 1st in the world. In addition, the company has set a world record for the capacity of a cement grinding system (350 t/h/set). By constructing the world's □rst large-scale ultra-□ne steel slag powder line, the company has e□ectively solved the worldwide problem of e□ciently treating steel slag on a large scale, and earned inclusion in China's □rst batch of Individual Champion Demonstration Enterprises of the Manufacturing Industry.

The company undertakes the grinding of 40% of all the cement produced in China, and saves electric energy in excess of 7 GWh every year. Furthermore, its products have been exported to more than 20 countries and regions, including some countries in the EU. They have been purchased and successfully applied by such large domestic and overseas enterprises as Harsco, Baowu, Conch and TCCIH.

▼ A powder raw material roller press of CNBM (Hefei)

Open and Sharing

Leading & Popularization

We undertake the secretariat work of standardization organizations, industrial organizations, professional societies and scientific agencies, and lead the technology innovation and industry revolution of the professional sector. We develop extensive science services. Industry websites and professional publications are run to promptly publish the

Opening Services

We have actively built a service platform system in the open industry style, a comprehensive technical service platform system for the building materials industry integrating industry-wide inspection and certification resources, industrial product quality control and technical evaluation laboratories, and a national public service demonstration platform for enterprises. The system provides SMEs with services including inspection and detection, management system certification, standardization, technical product development, intellectual property and brand building, promotes advanced practical technologies and provides entrepreneur services. CTC has been approved as a 'National Construction Engineering Corrosion and Protection Quality Supervision & Inspection Center', and included in the first batch of enterprises identified as industrial technological, basic and public service platforms. The building of international platforms (such as the Jushi Group's Sino-Egyptian Fiberglass United Library) is proceeding smoothly. Platform-building for the glass and equipment sectors is also being accelerated to serve the transformation and upgrading of the Group.

Involvement in 'encouraging people to start their own businesses and make innovations'

We have set up a leading group and established organizations to comprehensively promote the work of 'encouraging people to start their own businesses and make innovations'. The Group's cases in such work have been included in *Typical Cases of 'Encouraging People To Start Their Own Businesses and Make Innovations' in Centrally-administered SOE*;

On September 8th, 2016, the annual meeting of the Asia Cement and Concrete Research Academy (ACCRA) was held in Beijing. It was attended by nearly 100 experts from di□erent international organizations including the United Nations Industrial Development Organization (UNIDO) and Cement Sustainability Initiative (CSI), and countries including Japan, Thailand and Iran. O□cially founded in October 2015 in Beijing and backed by CBMA, ACCRA aims to provide a platform for

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We pay close attention to the expectations of our stakeholders, such as investors, government, employees, clients, partners, related groups, communities, the media and the environment. We insist on the core philosophy of 'making e□cient use of resources to serve construction' and regard 'innovation, performance, harmony and responsibility' as our core values. We insist on establishing a harmonious relationship with our competitors, the ecology, our employees and society. We stress both technology and management innovation in our development, pursuing a coordinated and win-win situation with the market, environment and society, and constantly improving our capacity for ful□lling responsibilities.

- Value Discovery
- System Building
- Communication
- Sharing

352 quantitative indicators of social responsibility management

12 th in Top 300 Enterprises in the *2016 CSR Development Index of China*

5 stars in the *2016 Evaluation of Corporate Performance of Social Responsibilities in the Industries of China*

The master control room for □berglass tank kiln of Jushi Group

Value Discovery

Responsibility Concepts

We pay close attention to the expectations of our stakeholders, such as investors, government, employees, clients, partners, related groups, communities, the media and the environment. We insist on the core philosophy of 'making e□cient use of resources to serve construction' and regard 'innovation, performance, harmony and responsibility' as our core values. We insist on establishing a harmonious relationship with our competitors, the ecology, our employees and society. We stress both technology and management innovation in our development, pursuing a coordinated and win-win situation with the market, environment and society, and constantly improving our capacity for ful□lling responsibilities. We perform our social responsibility in the □ve aspects of Market Performance, Technological Innovation, Energy Conservation and Environmental Protection, Employee Care and Corporate Citizenship. We are committed to becoming a world-class comprehensive building materials industry group with sustainable innovation capability and outstanding international competitiveness.

We reward our shareholders and investors with excellent operating results, serve our clients with quality products and services, grow together with our suppliers and industrial partners, and provide a platform for all our stakeholders to create value. Meanwhile, upholding the philosophy of 'industrial interests outweigh corporate interests,' we seek to achieve mutual development and win-win results with the industry and our peers in the same industrial chain.

We comprehensively utilize industrial and urban waste, producing low-carbon products with minimized consumption and emissions. We are committed to providing reliable and green building materials, sharing e□ective green technology and management experience, exploring development modes for the harmonious coexistence of industries and nature, and advocating the sustainable development of industries and society.

We pledge to guarantee the safety and health of our employees, safeguard their rights, respect their di□erences and make the Company a reliable partner and a happy and comfortable home for our employees. We will build a brighter and more sustainable future with all our employees and deliver happiness to society.

In the process of production and operation, we pursue mutual development and growth with the regions in which we operate; our achievements could not be realized without the support of relevant stakeholders and society, and we reward society through characteristic public welfare undertakings. Our employees are pleased to contribute to society and actively participate in voluntary services, practically performing the responsibilities of corporate citizens.

We take up the task of industrial innovation with our strong scienti□c prowess, advance industrial transformation and upgrading with our forward-looking vision and advanced technology, disseminate and share technical information, devote ourselves to creating a greener, more comfortable and more intelligent living environment, and build a sustainable future.

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System Building

We have included social responsibility management in the strategy and overall plan of the Group, and clari□ed the objectives, measures and priorities of improvement, so as to continuously improve our performance level and raise it to the internationally advanced level by the end of 2018.

employees participated in training related to social responsibility in 2016

Organizations

We take the leading organization of social responsibility as the core through the 'CNBM Leading Group for Promoting Social Responsibility' headed by the Chairman. The highest leading organization to promote social responsibility endeavors, the Leading Group is in charge of guiding and promoting social responsibility initiatives.

We take the functional social responsibility management organization of the Headquarters as the connection through which to direct and advance member companies in strengthening their social responsibility management and actively performing their responsibilities. According to the division of businesses, the functional departments of the Headquarters work in coordination to advance special tasks.

With member companies at all levels as the nodes, and according to the uni□ed requirements of the Headquarters, we de□ne the functional departments and assign management personnel to formulate the social responsibility plans and schemes of the Group, satisfy work requirements and actively perform responsibilities.

Competency Improvement

We have issued and are implementing the *CNBM Guiding Opinions on Social Responsibility Ful lment, CNBM Administrative Social Responsibility Ful lment Measures* and *CNBM Social Responsibility Management Information Collection Measures* in order to systemize, institutionalize and standardize our social responsibility management.

The 'CNBM Social Responsibility Management Information System' is run for the online management of information concerning social responsibility ful□llment and social responsibility administrators. The system covers more than 1,000 member enterprises.

We have established a CNBM-style social responsibility indicator system which is divided into 4 classes and consists of 352 indicators. The system contains the core indicators of non-metal mineral products, thereby assuring the completeness of our social responsibility report.

The social responsibility teams of member enterprises are improved in terms of quality and professional pro□ciency by means of publicity and training. The practice of social responsibility ful□llment is promoted by cultivating and selecting highlighted cases.

Performance Evaluation

We prepare and issue an annual social responsibility report in order to continuously improve our social responsibility fulfillment capability and improve our management through the procedures of preparation, benchmarking and assessment. The report is published regularly and information concerning our social responsibility fulfillment development is released irregularly in a special column of our website, constituting an information disclosure system and establishing an effective communication platform.

We selectively take part in external performance evaluations; rely on advanced, applicable, objective and fair evaluation systems and agencies; implement comprehensive evaluation and benchmarking in such special aspects as report quality, responsibility performance, responsibility management, etc.; pay attention to the progress and effect of the social responsibilities of international and domestic enterprises, industries in which we operate, enterprises in the supply chain and other related enterprises; learn from the strong points of others to offset our own weaknesses; and carry out continuous improvement.

Continuous Improvement

We give full play to the talent resources of the management experts within the Group and take their suggestions and advice in terms of adjustments to our social responsibility concepts and strategies, the preparation and revision of management systems, and the establishment and quanti□cation of the social responsibility indicator system, thereby ensuring the feasibility and operability of social our responsibility management mechanism.

We strive for social resources, actively seek help from professional consulting agencies, learn new trends in social responsibility theories, grasp the latest international development tendencies of social responsibility, deeply study new standards and requirements of social responsibility management, and guarantee the professionalism and compliance of the Group's social responsibility management system.

We are gradually extending from endogenous responsibility management to outward-facing responsibility management (e.g. responsibility-themed branding activities, responsibility-themed in-depth communication and responsibility-themed publicity) so as to enable the responsibility system to generate inside-out e□ects and drive more interested parties to ful□ll their social responsibilities.

By exploring evaluation mechanisms, we continuously improve the frequency and quality of our member enterprises' annual social responsibility reports in order to make the ful□llment of responsibilities a systemic and regular activity in these enterprises.

	1.1 Company pro□le	1.1.1 Company pro□le	1.1.2 Member enterprises
	1.2 Company governance	1.2.1 Governance structure	1.2.3 Legal system building
		1.2.2 Risk management and internal control	1.2.4 Fighting against corruption
	1.3 Responsibility management	1.3.1 Responsibility-themed communication	1.3.3 Responsibility assessment
		1.3.2 Responsibility system construction	
	2.1 Main performance indicators	2.1.1 Financial indicators	2.1.3 Capacity indicators
		2.1.2 Production indicators	2.1.4 Business indicators
	2.2 Quality, brand and customer service	2.2.1 Quality management	2.2.3 Customer service
		2.2.2 Branding	
	2.3 Management in good faith and supply chain responsibility	2.3.1 Management in good faith	2.3.2 Supply chain responsibility
	3.1 Main consumption and emission indicators	3.1.1 Utilization of energy	3.1.5 Pollutant discharge
		3.1.2 Recycling of energy	3.1.6 Response to climate change
		3.1.3 Utilization of raw materials	3.1.7 Environmental protection
		3.1.4 Utilization of water resources	3.1.8 Green o□ce
	3.2 Management of energy conservation and environmental protection	3.2.1 Investment in energy conservation and environmental protection	3.2.4 Management system and mechanism
		3.2.2 Overcapacity cutting	3.2.5 Environmental emergency management
		3.2.3 Organization and team development	3.2.6 Advocacy and publicity of environmental protection
	3.3 Advocacy of green development	3.3.1 Green manufacturing	3.3.3 Green building materials
		3.3.2 Green packaging	3.3.4 Clean energy
	3.4 Negative information	3.4.1 Penalties for environmental problems	
	4.1 Sta□ pro□le	4.1.1 Sta□ diversi□cation	4.1.2 Equal employment
	4.2 Sta□ management	4.2.1 Basic rights and interests	4.2.4 Sta□ training
		4.2.2 Democratic management	4.2.5 Occupational safety and health
		4.2.3 Compensation and bene□ts	
	4.3 Employee care	4.3.1 Economic support and reward	4.3.2 Work-life balance
	4.4 Performance employee care	4.4.1 Sta□ evaluation	4.4.2 External evaluation
	5.1 Support for community development	5.1.1 Domestic	5.1.2 Overseas
	5.2 Enthusiasm for public bene□t	5.2.1 Public-interest donations	5.2.2 Support for science and education
	5.3 Involvement in social activities	5.3.1 Voluntary activities	
	6.1 Research resources	6.1.1 Research institutions	6.1.2 Research personnel
	6.2 Technological investment and output	6.2.1 Technological investment	
	6.3 Technological achievements	6.3.1 Technological achievements	6.3.2 Awards
	6.4 Research services	6.4.1 Social services	6.4.2 Academic services

Communication

Communication is the best way to enhance mutual understanding and trust. Open to supervision, we acquaint stakeholders with how responsibilities are ful□lled in CNBM through active and e□ective communication, thereby improving operational transparency. We also continuously improve our social responsibility management by promptly engaging with opinions and suggestions from internal and external interested parties.

Communication with Stakeholders

We take the demands of our stakeholders as the core focus. We analyze and streamline our objects of responsibility according to the principle of 'Triple Bottom Lines', and categorize them according to in□uence, dependency, representativeness and so on. Through this process, we □nally identi□ed 8 core stakeholders. With the concerns of the stakeholders as the basis, we resolve and identify the core topics of responsibility performance, and respond to the demands of our stakeholders through responsibility performance. We regard communication with the stakeholders as a core part of social responsibility management, and have established a timely, transparent and systematic communication system.

Multi-dimensional communication system. Multiple □elds: We integrate the concept of social responsibility into our daily work and communication, while combining and unifying our business communication and responsibility communication. Multiple forms: We keep in touch with stakeholders through such operable unblocked means as questionnaires, special visits and online communication. Multiple objects: In addition to communication with external stakeholders, we identify international management experts and grass-roots sta□ as important stakeholders of internal interest, and facilitate timely feedback by o□ering democratic and convenient information channels. Multiple angles: The positive and negative evaluations of the stakeholders are regularly collected and arranged by means of public opinion collection and media information mining, so as to analyze our shortcomings more comprehensively and objectively for the purpose of continuous improvement.

The senior management of CNBM continuously participate and we constantly communicate with our stakeholders. As the main force of responsibility communication, the top management personnel pay close attention to responsibility communication and personally take part in responsibility communication activities of di□erent levels and dimensions. Signi□cant communication results are achieved through regular/irregular symposia, the leaders' mailbox and employee assemblies.

CNBM Social Responsibility Report (2015)

	Regular reports Corporate reports Marketing activities Dialogue with and feedback from shareholders Interaction on new media and Internet platforms	Protecting interests of shareholders and creditors Ensuring truthfulness, accuracy, timeliness and integrity of information disclosure	Improving information disclosure mechanism Enhancing corporate values Regulating corporate governance Improving relations with investors
	Releasing laws and regulations Special reports and visits Information submission Evaluation of work targets	Requirements for safety, environmental protection and compliance Security of supply O□ering employment opportunities Boosting regional economic development	Lawful operation and implementation of government policies Sustainable quality operation Paying tax O□ering employment opportunities
	Meetings and consultation with clients Daily contacts Client feedback mechanism Telephone service Interaction on new media and Internet platforms	Speed of response Quality of services Special requirements Complaint handling	O□ering quality products and services Advocating green consumption Improving quality management Protecting client privacy
	Contract negotiation Bidding sessions Management meetings Correspondence exchange Daily business communication Interaction on new media and Internet platforms	Price and timely payment Long-term partnership Pro□t distribution Information and resource sharing Integrity and mutual bene□ts Risk reduction	Honest operation Promoting supplier responsibility Building e□ective partnerships Building an e□ective communication mechanism
	Employee representative meetings Publicity of factory a□airs Employment contracts Rational proposals Regular communication Petitions Interaction on new media and Internet platforms	Employee representative meetings Publicity of factory a□airs Employment contracts Rational proposals Regular communication Petitions Interaction on new media and Internet platforms	Protecting employee rights Offering competitive remuneration Improving employee benefits Enhancing employee training Offering a safe working environment and health protection Building an effective communication mechanism Improving democratic management
	Signing public welfare agreements Taking part in voluntary services Daily contact Interaction on new media and Internet platforms	Environmental protection Jointly building a harmonious community	Timely information disclosure Increasing participation in public welfare Participating in community activities
	Taking part in regular meetings and activities Daily contact Interaction on new media and Internet platforms	Environmental protection Jointly advocating sustainable development	Playing role of a member O□ering economic and technical support Building cooperation relationships

Sharing

Leadership

As a permanent member of the UN Global Compact, World Business Council for Sustainable Development and Cement Sustainability Initiative (CSI), CNBM promotes the popularization and implementation of global responsibility concepts through an expanding range of diversi□ed and international platforms. On December 12th, 2016, CNBM President Song Zhiping attended CSI's CEO meeting in Madrid, Spain, and shared viewpoints on the sustainable development of the cement industry. At this meeting centered on the health and safety of the cement industry, a consensus was reached on the in□uences of environmental, social and biological diversity, and CSI's action plan for 2017.

We take part in social responsibility sharing and advocacy activities in di□erent □elds, participate in the initiation of the 'China Social Responsibilities 100-person Forum' and disseminate concepts, share experience and sponsor initiatives through 'Golden Bee', the China Federation of Industrial Economics, China Building Materials Federation, China Building Materials News, etc. Through continuous sharing, study and discussion, we make e□orts to be a disseminator and advocator of social responsibility, and seek better ways of sustaw

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Merger of CNBM and SINOMA

The China National Building Materials Group Corporation (CNBM) and China National Materials Group Corporation (SINOMA) have the same source and root, as they are both enterprises governed by the former National Building Materials Bureau. They have gone through direct planning by the state (1987), the first group of national pilot enterprises (1991), direct supervision by the Central Work Committee for Enterprises (1999) and direct management by the State-owned Assets Supervision and Administration Commission (SASAC) (2003). They successfully went public in Hong Kong in succession, became pilot enterprises of the board of directors, changed their names to 'limited company' in the same year (2009), and finally merged into CNBM in August 2016.

In their respective development courses, both Groups achieved brilliant results. For more than a decade, as China's largest comprehensive group in the building materials industry, as well as a leading enterprise in the global building materials manufacturing industry, integrating scientific research, manufacturing and circulation, CNBM has adhered to the development road of combining capital operation, mergers and restructuring, management integration and integrated innovation, realized rapid development with an annual compound growth rate of more than 40% and been listed in the Fortune Global 500 for six consecutive years.

SINOMA is the only innovative, value-oriented and international enterprise group in China in the field of non-metallic materials that possesses a series of core technologies and a complete innovation system. Since 2000, by virtue of its complete cement engineering designs with completely independent IPRs, as well as its technical equipment manufacturing capacity, it has achieved a surge from a zero to 45% share of the international cement engineering market and ranked first worldwide for nine consecutive years, while simultaneously occupying more than 80% of the domestic market share of non-metal ore exploration.

Historical Development of CNBM and SINOMA

Historical Development of the China National Building Materials Group Corporation

- authorized by the State Council, the 'China New Building Materials (Group) Company' was officially established.
- direct planning by the state was implemented.
- it was listed in the first group of national pilot enterprises.
- it separated from the former National Building Materials Bureau to become directly supervised by the Central Work Committee for Enterprises.
- it was listed as one of the central enterprises under the direct supervision and management of the State-owned Assets Supervision and Administration Commission (SASAC), and it was renamed 'China National Building Materials Group Company' in April of the same year.
- the China Building Materials Academy merged with the China Light Industry Machinery Parent Company and both became part of CNBM; in November of the same year, the board of directors was set up.
- the newly established China National Building Materials Incorporated Company was listed on the Hong Kong Stock Exchange.
- it changed its name to 'China National Building Materials Group Corporation'.
- it was listed as a 'double pilot' enterprise by SASAC for the development of mixed ownership economy and the implementation of the function and power of the board of directors.
- it was again listed as a pilot enterprise by SASAC for the mergers and acquisitions of central enterprises and the implementation of the function and power of the board of directors.

Historical Development of China National Materials Group Corporation

- authorized by the State Economic Commission, the 'China Non-Metallic Mining Industry Company' was restructured and founded on the basis of the Non-Metallic Mining Management Bureau of the National Building Materials Bureau.
- it was renamed 'China Non-Metallic Mining Industry Parent Company' under the implementation of direct planning by the state.
- it was listed in the first group of national pilot enterprises.
- it separated from the former National Building Materials Bureau to be directly supervised by the Central Work Committee for Enterprises.
- it was listed as one of the central enterprises under the direct supervision and management of the State-owned Assets Supervision and Administration Commission (SASAC), and it was renamed 'China National Materials Science and Industry Group Company' in November of the same year.
- it changed its name to 'China National Materials Group Company'.
- it was renamed 'China National Materials Group Corporation' and identified by SASAC as a pilot enterprise for the board of directors.
- it was identified by SASAC as one of the ten enterprises of key contacts for 'promoting stronger and better central enterprises, and creating world-class enterprises with international competitiveness'.

Merger of CNBM and SINOMA

- authorized by SASAC of the State Council, the China National Building Materials Group Corporation merged with the China National Materials Group Corporation to establish CNBM.

On August 26th, 2016, the China National Building Materials Group Corporation and China National Materials Group Corporation held a merger conference in Beijing, and the China National Building Material Group Co., Ltd. (CNBM) was o□cially established, marking that the building materials industry of China had entered a new stage of starting the merger mode of large enterprises and promoting supply-side structural reform. Following this conference, the newly-born CNBM has rapidly realized merging and integration with its comprehensive enterprise spirit and cultural force, thus achieving a good start for the merger.

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Seamless Merger

- the new strategic goals and strategic positioning were determined
- the selection of the leading group, establishment of functiona departments and o□ces, and arrangement and adjustment of the sta□ were complete
- the construction of the second-level platforms was complete

Pushing Reform Forward

- a regulated company governance structure should be established. By actively promoting pilot reform, phased objectives have been made in mixed ownership pilots
- China Building Material Test & Certi□cation Group Co., Ltd. (CTC) successfully went public, and a number of diversi□ed equity projects were completed smoothly

A Good Start for the Merger in 2016

Annual total pro□ts of **7.6**

Operation revenue of **261.2** have been achieved

RMB 100 million-level pro□t platforms among all secondary enterprises

RMB 100 million-level proft platforms among all tertiary enterprises

Among the main products, cement indicators have in stability

Other product indicators have shown

Lines of credit of **375** have been signed

An industry development fund of **80** has been set up through cooperation

Powerful Enterprise Culture

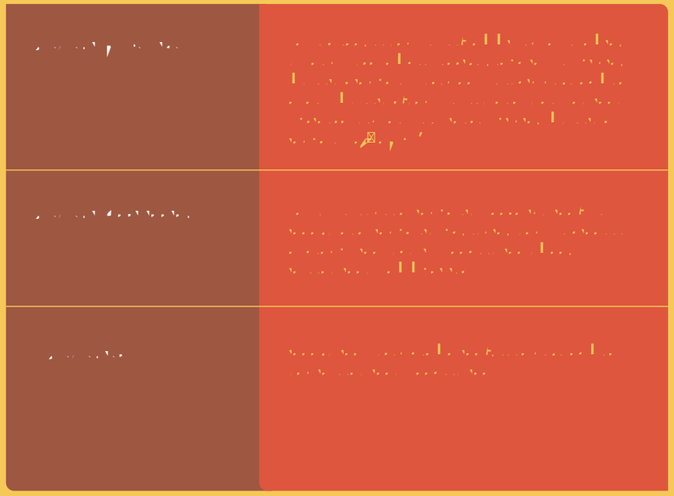
During their long-term practice, CNBM and SINOMA have formed an excellent people-oriented, united, comprehensive and harmonious culture, and trained a group of outstanding cadres and sta□ with strong cohesion, high-e□ciency execution and super strong combat e□ectiveness, who have proven to be the source of power for CNBM and SINOMA to realize a rapid alliance and merger, as well as the inexhaustible impetus of the Group to accelerate its ascension to the rank of world-class enterprises.

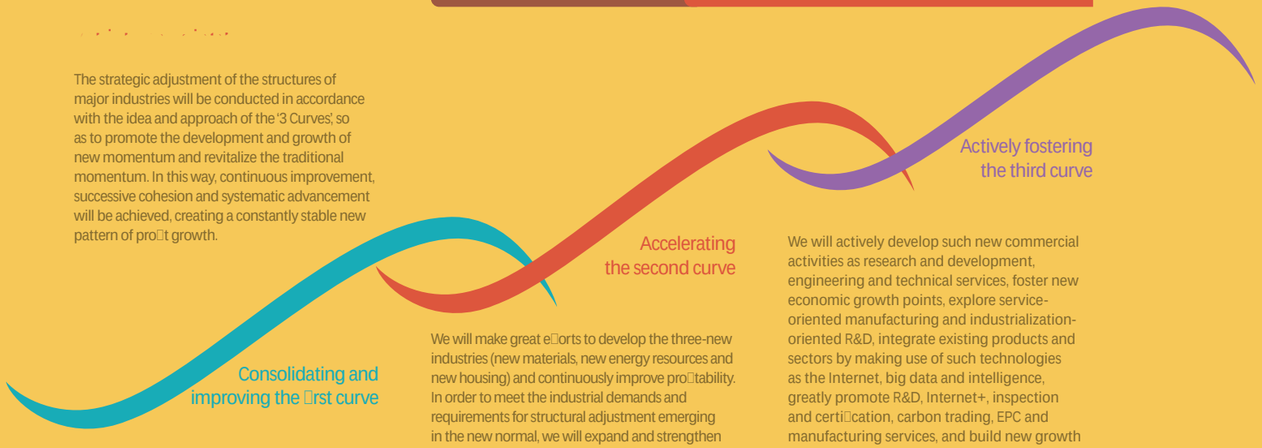
CNBM has conscientiously ful□lled the social and economic responsibilities that an enterprise should take on, upheld such core values as ‘innovation, performance, harmony and responsibility’, advocated the ‘humility, reverence, gratitude and decency’ code of conduct, based itself on the principle of ‘enterprises being people, by the people and for the people’, actively created a cultural environment of ‘San Kuan San Li’ that refers to lenience, tolerance and ease, as well as unity, a□nity and cohesion, regarded the realization of human happiness and value as a signi□cant goal and the fundamental pursuit of the Group, and made e□orts to ensure the ‘mutual growth of the sta□ and the Group’.

With a gross asset value of more than RMB 560 billion, the new CNBM is worthy of the its reputation as China's largest comprehensive building materials industry group, as well as an 'aircraft carrier' and leading enterprise in the □eld of building materials worldwide. The recent alliance between giants has further consolidated its world-leading position.

Strategic Guidance

A winning strategy is invincible and a losing strategy is fatal. After the merger, CNBM has started from a global vision and the commanding height of an industry leader, taken aim at the market demands, mapped out its future, clari□ed its new strategies and positioning, and put forward its aims and tasks, as well as its implementation approach for the future.





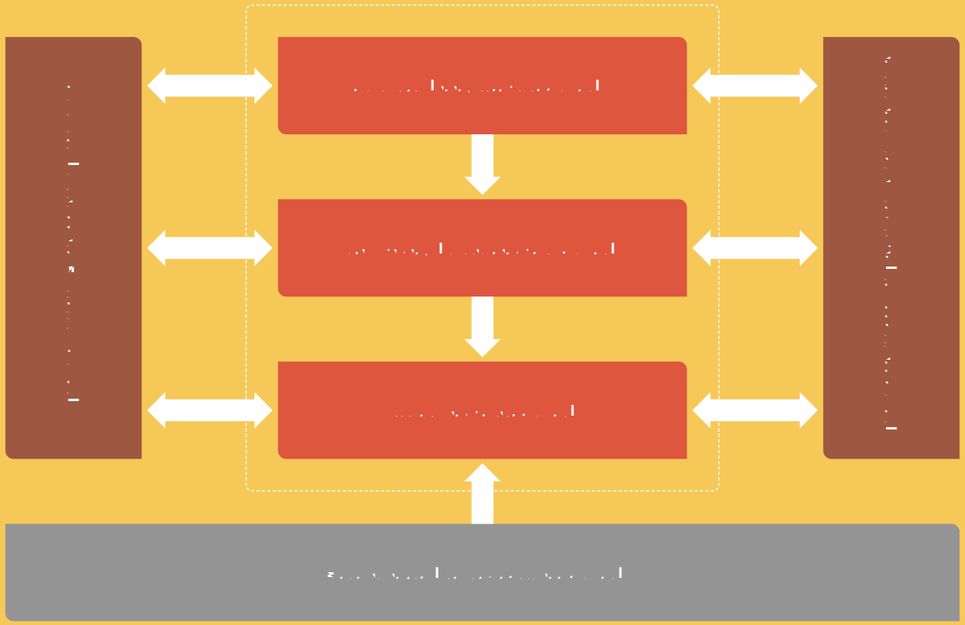
The strategic adjustment of the structures of major industries will be conducted in accordance with the idea and approach of the '3 Curves', so as to promote the development and growth of new momentum and revitalize the traditional momentum. In this way, continuous improvement, successive cohesion and systematic advancement will be achieved, creating a constantly stable new pattern of pro□t growth.

We will reconstruct and improve the traditional sectors (cement, glass, etc.), and thoroughly press forward with supply-side structural reform. In addition, to actively play the leading role of a large enterprise, we will make e□orts to promote the structural adjustment of the cement and glass sectors through market competition and cooperation, outdated production facility close-down, production limiting, emission reduction, production optimization and product upgrading, and work on improving market health and achieving the goals of the improvement of quality and the increase of e□ciency.

We will make great e□orts to develop the three-new industries (new materials, new energy resources and new housing) and continuously improve pro□tability. In order to meet the industrial demands and requirements for structural adjustment emerging in the new normal, we will expand and strengthen the emerging sectors (new materials, new energy resources and new housing) through technical innovation and layout optimization, and extend the business layout to the key links and high end of the industry chain in order to turn them into new pro□t-making points in integrated and innovative modes.

We will actively develop such new commercial activities as research and development, engineering and technical services, foster new economic growth points, explore service-oriented manufacturing and industrialization-oriented R&D, integrate existing products and sectors by making use of such technologies as the Internet, big data and intelligence, greatly promote R&D, Internet+, inspection and certi□cation, carbon trading, EPC and manufacturing services, and build new growth points with new economic forms, new modes and new types of operation.

Meanwhile, we will actively explore new business areas, carry out cross-border operation, develop new growth points outside the building materials industry, follow the principle of conservatism, give equal consideration to the balance between the growth and stability of the enterprise, as well as pro□ts and cash □ow, aim to enter industrial □elds with great market potential or with a conversion period or less obvious periodicity in which enterprises have unique resources and operation capacity, and establish a risk hedging mechanism to form business portfolio advantages.



We will enhance technological innovation, innovate and optimize product structures, extend the industry chain and value chain, realize the development of the industry chain from low end to high end, and push the technological level to advance from mid-to-high end to high end.

We will accelerate the integration of industrialization and informatization, actively carry out exploration and practice in the aspects of 'Internet+' and 'Made in China 2025', strengthen the construction of intelligent mills and intelligent industrial platforms, promote intelligent manufacturing, e-commerce oriented trade and platform-based scienti□c research, and endeavor to seize opportunities and make breakthroughs in key □elds.

We will center on the 'green, circular and low carbon' principle, apply energy conservation and emissions reduction measures throughout the whole process, including raw material selection, production process and product application, vigorously develop renewable energy sources, improve the recycling capacity of resources and guide energy conservation, production limitation and self-disciplined emissions reduction in the whole industry.

We will closely incorporate the 'Belt and Road' strategy, promote international capacity and equipment cooperation, optimize the global market layout, strive to occupy a favorable position in the international division of labor, and create a new business card of the national 'Going Out' policy.

Responsibility Performance

Market Performance

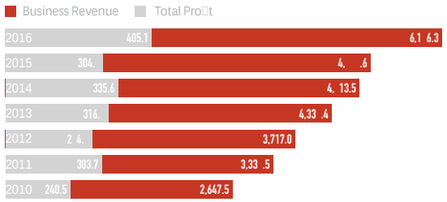
2016 Fortune Global Top 500 Building Materials Enterprises

2016 Ranking	Company	Operating revenue in 2015 (US$ million)	Country
196	Saint-Gobain	46,169.2	France
327	CNBM	31,705.5	China
411	CRH	26,217.8	Ireland
438	Lafargeholcim	24,513.7	Switzerland

Source: Fortunechina.com

2010-2016 Business Revenue and Total Profit of Scale Companies in Chinese Building Materials Industry

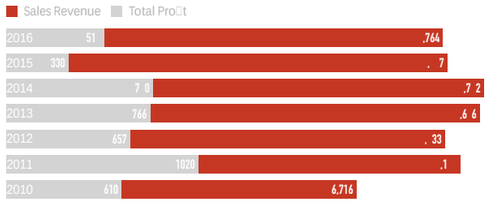
Unit: RMB billion



Source: China Building Materials Quantitative Economics Supervision Society

2010-2016 Sales Revenue and Total Profit of Chinese Cement Industry

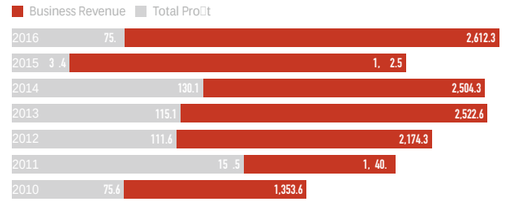
Unit: RMB 00' million



Source: Digital Cement

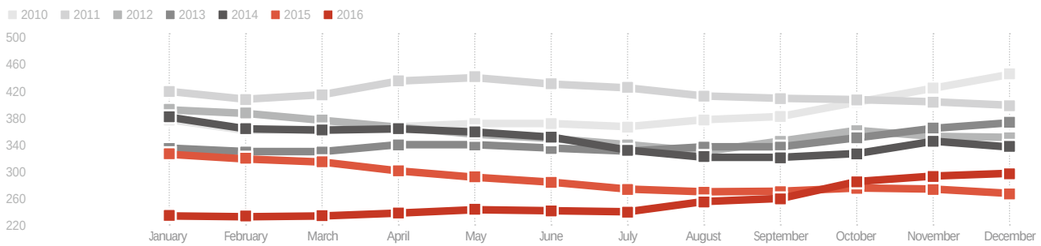
2010-2016 Business Revenue and Total Profit

Unit: RMB 00' million



2010-2016 P.O.42.5 Price of Bulk Cement in China

Unit: RMB / ton



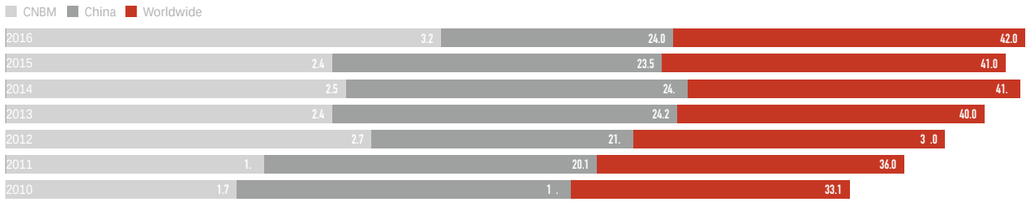
Source: Digital Cement

2016 Performance of Holding Listed Companies

Stock Name	Stock Exchange	Stock Code	Dividend per Share (RMB)	Earnings per Share (RMB)
CNBM	Hong Kong Exchanges and Clearing	3323.HK	0.0430	0.2000
BNBM	Shenzhen Stock Exchange	000786.SZ	0.1800	0.7930
Jushi Group	Shanghai Stock Exchange	600176.SH	0.2500	0.6254
Sinoma	Hong Kong Exchanges and Clearing	01893.HK	0.0300	0.1600
Sinoma International	Shanghai Stock Exchange	600970.SH	0.0880	0.2900
Tianshan Joint-stock	Shenzhen Stock Exchange	000877.SZ	—	0.1134
Ningxia Building Materials	Shanghai Stock Exchange	600449.SH	0.0400	0.1200
Qilianshan	Shanghai Stock Exchange	600720.SH	0.0650	0.2146
Sinoma Science & Technology	Shenzhen Stock Exchange	002080.SZ	0.1000	0.2699
Triumph Science & Technology	Shanghai Stock Exchange	600552.SH	—	0.1970
Sinoma Energy Saving	Shanghai Stock Exchange	603126.SH	0.0700	0.2134
Luoyang Glass	Shanghai Stock Exchange	600876.SH	—	0.0219
Luoyang Glass Company Limited	Hong Kong Exchanges and Clearing	1108.HK	—	0.0219
Ruitai Technology	Shenzhen Stock Exchange	002066.SZ	—	0.1093
CTC	Shanghai Stock Exchange	603060.SH	0.1600	0.6827
Xinjiang Guotong	Shenzhen Stock Exchange	002205.SZ	—	0.1148

2010-2016 Cement Yield

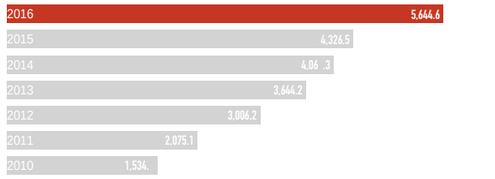
Unit: 00' million tons



Source: United States Geological Survey

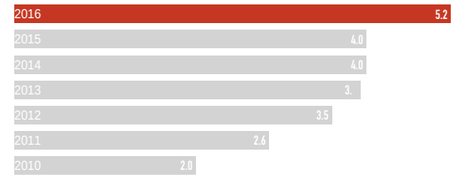
2010-2016 Total Assets

Unit: RMB 00' million



2010-2016 Cement Production Capacity

Unit: 00' million tons



Energy Conservation and Environmental Protection

2010-2016 Comprehensive Energy Consumption per RMB 10,000 of Output Value

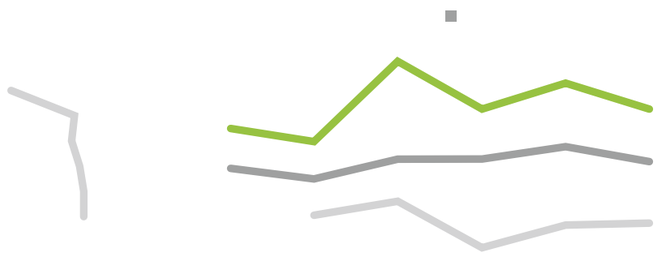
Unit: tons of standard coal equivalent per RMB 10,000 of output value

2010-2016 Emission of SO_2 and COD per RMB 10,000 of Output Value

Unit: kg / RMB 10,000

2010-2016 Treatment and Cyclic Utilization of Solid Waste

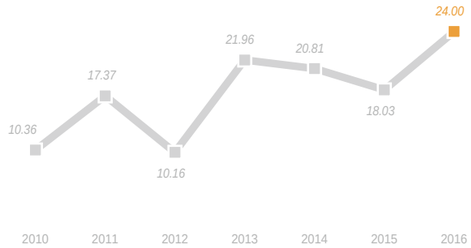
2014



Corporate Citizenship

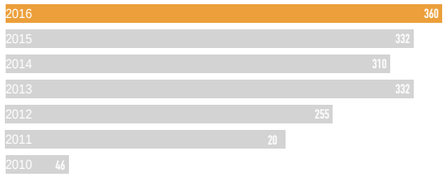
2010-2016 Expenditure on Social Welfare Activities

Unit: RMB Million



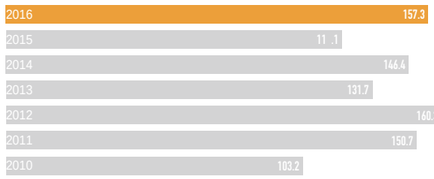
2010-2016 Number of Supported Social Welfare Projects

Unit: Item



2010-2016 Tax Paid

Unit: RMB 00' million



2011-2016 Performance in Creating Employment Opportunities

Unit: Person

	2011	2012	2013	2014	2015	2016
New jobs created	21,182	15,901	16,081	23,617	16,929	22,342
Of which: Graduating students recruited	4,276	3,743	4,383	3,848	2,473	3,129
Of which: Demobilized soldiers recruited	241	521	158	46	10	23

2011-2016 Incentives for Students

	2011	2012	2013	2014	2015	2016
Special scholarships (Number)	27	20	18	31	8	8
Total scholarships (RMB 0'thousand)	-	136	112	53	36	37
Students awarded or subsidized (Number)	727	466	506	227	159	266
Probation bases established (Number)	-	98	119	97	47	134
Intern posts provided to school students (Number)	-	17,815	36,530	28,619	26,586	34,030

2011-2016 Volunteering Activities

	2011	2012	2013	2014	2015	2016
Volunteer teams (Number)	-	67	109	65	56	112
Investment in supporting volunteering activities (RMB 0' thousand)	-	91	145	145	191	344
Number of employee volunteers	-	3,337	4,864	3,400	2,187	5,646
Voluntary service time (Hours)	10,618	39,778	10,681	9,418	14,840	28,157

Technological Innovation

2010-2016 Technology Awards at Provincial and Ministerial Levels

Unit: Number of Awards

	2010	2011	2012	2013	2014	2015	2016
Scienti□c and technological awards at Provincial or Ministerial level or above	63	132	152	145	117	123	173
Of which: National-level scienti□c and technological awards	0	2	0	1	1	0	2
Of which: Technical innovation awards	17	46	89	54	48	48	82

Technical Innovation Awards

Unit: Number of Standards

	2010	2011	2012	2013	2014	2015	2016
Number of Standards	79	28	22	59	104	62	91
Of which: International	0	1	1	1	3	2	2
National	30	15	5	8	35	36	57
Industrial	49	12	16	50	66	24	32

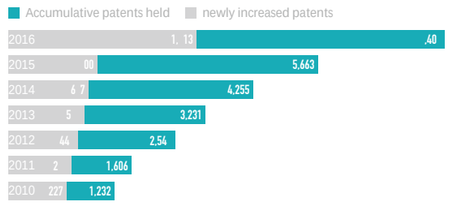
2010-2016 Application and Granting of Patents

Unit: Number of applications and patents

	2010	2011	2012	2013	2014	2015	2016
New patent applications	514	630	766	1262	1571	1568	2156
Of which: invention patents	173	170	228	373	531	566	880
Newly granted patents	420	487	729	848	1318	1492	1793
Of which: granted invention patents	54	80	143	128	106	193	455

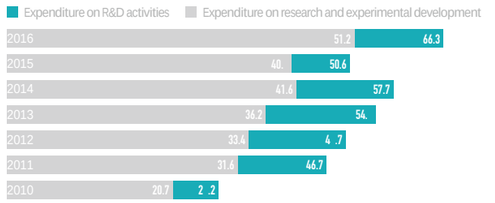
2010-2016 Accumulative Patents Held

Unit: Number of patents



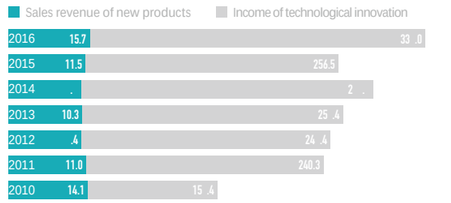
2010-2016 Expenditure on R&D Activities

Unit: RMB 00' million



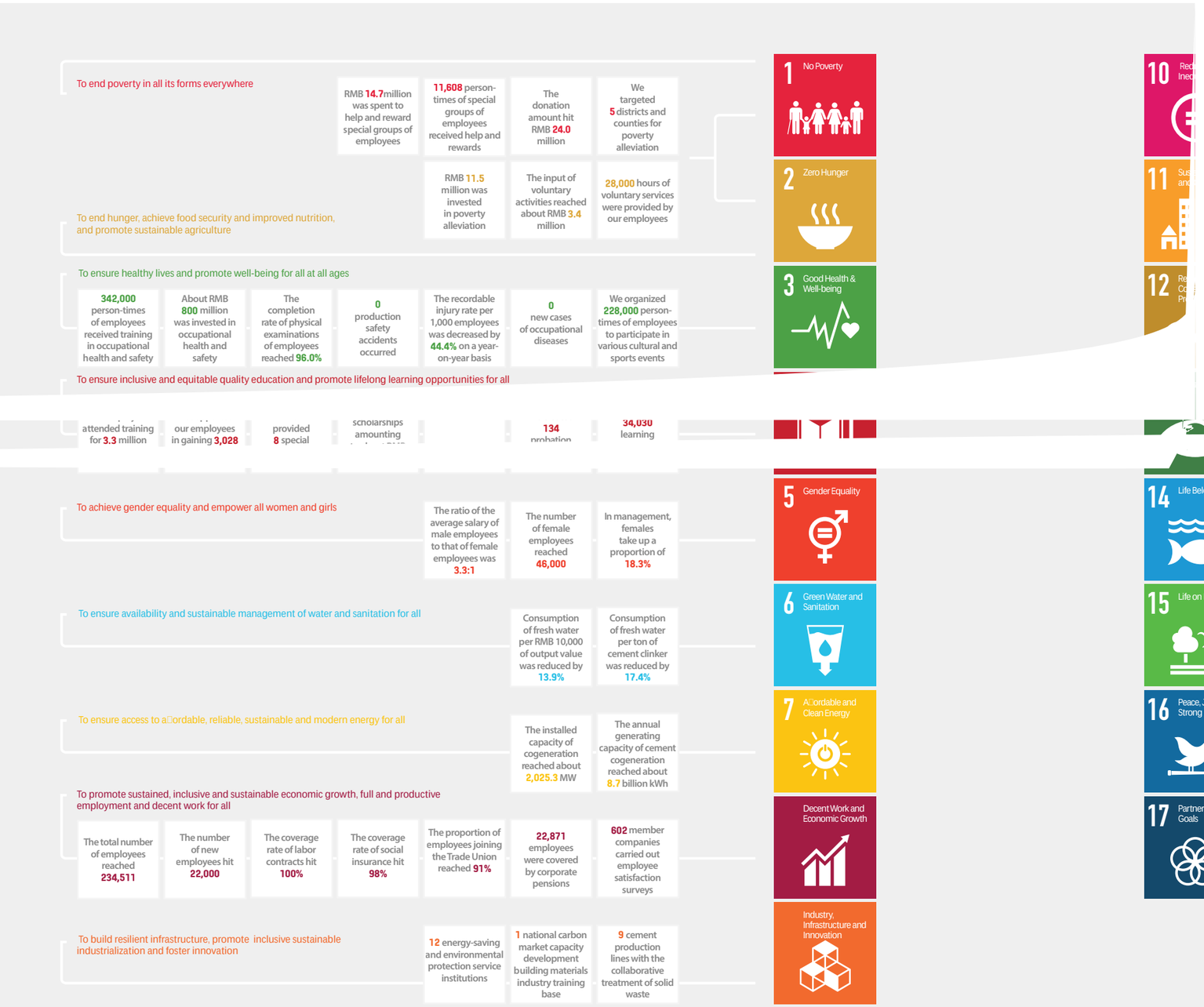
2010-2016 Income of Technological Innovation

Unit: RMB 00' million



Our Actions
– Sustainable Development Goals (SDGs) of the United Nations

On September 25th, 2015, the United Nations o□cially approved 17 sustainable development goals aiming to completely solve social, economic and environmental development problems through a comprehensive approach from 2015 to 2030 by taking the path of sustainable development. As a member of the Chinese network of the UN Global Compact, CNBM operates with the UN SDGs as its guidelines and actively explores the sustainable development path in the building materials industry. In 2016, we responded to all 17 of the goals with excellent performance.



Indicator Index (CASS-CSR3.0)

Part 1 Preface of Report (P series)				
Indicator Classification	No.	Content of Indicator	Page	Nature of Indicator
Scope of report	P1.1	Process of report quality assurance	Cover 2	Extended
	P1.2	Interpretation of data in report	Cover 2	Core
	P1.3	Boundaries of report	Cover 2	Core
	P1.4	Report system	Cover 2	Core
	P1.5	Contact Information	Cover	Core
Report process	P2.1	Preparation process of report	P1	Extended
	P2.2	Selection process of essential topics in report	P68	Core
	P2.3	Process and means of stakeholders participating in preparation of report	P68-69	Extended
Executives' Address	P3.1	Opportunities and challenges of enterprises in performing social responsibilities	P4-5	Core
	P3.2	Summary of achievements and deficiencies of annual corporate social responsibility	P4-5	Core
Corporate profile	P4.1	Company name, nature of ownership and location of headquarters	P6	Core
	P4.2	Major brands, products and services of enterprise	P9-11	Core
	P4.3	Region of enterprise's operation, including operational enterprises, subsidiaries and jointly-owned organizations	P6, P9-11	Core
	P4.4	Service markets divided by industries, customer types and regions	P9-11	Core
	P4.5	Number of employees reported according to contracts (official and unofficial employees) and genders	P38,83	Core
	P4.6	List of memberships or other qualifications in associations, national organizations and international organizations	P70-71	Extended
	P4.7	Major changes in organizational scale, structure, ownership or supply chains within term of report	Cover 2	Extended
Annual progress	P5.1	Annual major social responsibility work	P71	Core
	P5.2	Annual responsibility performance	P80-85	Core
	P5.3	Annual responsibility honors	P71	Core
Part 2 Responsibility Management (G Series)				
Responsibility strategy	G1.1	Philosophy, vision and values of social responsibility	P64-65	Core
	G1.2	External social responsibility proposals signed by the enterprise	P70-71	Extended
	G1.3	Identifying core social responsibility topics of the enterprise	P64,68	Core
	G1.4	CSR planning	P66	Extended
Responsibility governance	G2.1	Leadership organization of social responsibility	P66	Extended
	G2.2	Channel and process of communication between stakeholders and the highest governance organization of the enterprise	P68-69	Extended
	G2.3	Organizational system of social responsibility	P66	Core
	G2.4	Internal responsibility and division of social responsibility work of enterprise	P66	Core
	G2.5	Management system of social responsibility	P66	Extended
Responsibility fusion	G3.1	Promoting social responsibility work of subsidiaries	P66	Extended
	G3.2	Promoting social responsibility performance of supply chain partners	P70	Extended
Responsibility performance	G4.1	Constructing CSR indicator system	P66-67	Extended
	G4.2	Conducting performance assessment based on CSR indicators	P66	Extended
	G4.3	Excellence selection of CSR	P66	Extended
	G4.4	Major accidents of enterprise in economy, society and environment, impact and penalty incurred, and corresponding countermeasures of enterprise	N/A	Core
Responsibility communication	G5.1	List of enterprise stakeholders	P69	Core
	G5.2	Process of identifying and choosing stakeholders	P68	Extended
	G5.3	Concerns of stakeholders and response measures of enterprise	P69	Core
	G5.4	Communication mechanism of corporate internal social responsibility	P68	Core
	G5.5	Communication mechanism of corporate external social responsibility	P68	Core
	G5.6	Participation of corporate senior management in communication and exchange of social responsibility	P68	Core
Responsibility capabilities	G6.1	Conducting CSR subject research	P70	Extended
	G6.2	Participation in social responsibility studies and exchanges	P70-71	Extended
	G6.3	Participation in formulation of domestic and foreign social responsibility standards	P70	Extended
	G6.4	Cultivating corporate responsibility culture through training and other measures	P66	Core
Part 3 Market Performance (M Series)				
Responsibilities with regard to shareholders	M1.1	Policy and mechanism of shareholders' participation in enterprise management	P19	Core
	M1.2	Protecting interests of mid-to-small investors	P19	Core
	M1.3	Normalizing information disclosure	P19	Core
	M1.4	Growth	P80-81	Core
	M1.5	Profitability	P80-81	Core
	M1.6	Safety	P80-81	Core

Part 3 Market Performance (M Series)				
Indicator Classification	No.	Content of Indicator	Page	Nature of Indicator
Responsibilities in respect of customers	M2.1	Customer relations management system	P20	Core
	M2.2	Popularization of product knowledge and customer training	P20	Core
	M2.3	Protection of customer information	P20	Core
	M2.4	Stopping losses and compensation	P20	Core
	M2.5	Product quality management system	P20	Core
	M2.6	Product pass rate	N/A	Core
	M2.7	Product support and service innovation system	P57	Core
	M2.8	Investment in technology or R&D	P54,85	Extended
	M2.9	Number and proportion of technical personnel	P54	Extended
	M2.10	Number of new patents	P85	Extended
	M2.11	Sales revenue of new products	P85	Extended
	M2.12	Significant innovation awards	P85	Extended
	M2.13	Customer satisfaction surveys and customer satisfaction	N/A	Core
	M2.14	Actively dealing with customer complaints and resolution rate of customer complaints	P20	Core
Responsibilities with regard to partners	M3.1	Strategic sharing mechanism and platform	P21	Core
	M3.2	Honest operation philosophy and system guarantee	P18	Core
	M3.3	Fair competition philosophy and system guarantee	P18	Core
	M3.4	Economic contract performance rate	P18	Core
	M3.5	Identifying and describing value chain and responsibility influence of enterprise	P70	Extended
	M3.6	Initiative and policies of enterprise in promoting social responsibility performance of value chain	P70	Extended
	M3.7	Social responsibility education and training received by value chain members from enterprise	P70	Extended
	M3.8	Responsible procurement system and/or policy of enterprise	P70	Extended
	M3.9	Process and frequency of assessment and survey of social responsibility of suppliers	P70	Extended
	M3.10	Ratio of suppliers passing quality, environment and occupational health and safety management system certifications	P70	Core
	M3.11	Number of penalties in such aspects as economy, society and environment against suppliers	Not included in the statistics system	Extended
	M3.12	Ratio of responsible procurement	P70	Extended
Part 4 Social Performance (S Series)				
Responsibilities with regard to government	S1.1	Legal compliance system of enterprise	P18	Core
	S1.2	Training in legal compliance	P18	Core
	S1.3	Prohibition of commercial bribery and corruption	P18	Core
	S1.4	Legal compliance assessment performance of enterprise	P18	Extended
	S1.5	Total taxes paid	P12	Core
	S1.6	Responding to national policies	P21	Core
	S1.7	Policies or measures to guarantee and/or promote employment	P21	Core
	S1.8	New employment during term of report	P42	Core
Responsibilities in respect of employees	S2.1	Signing rate of labor contracts	P83	Core
	S2.2	Coverage rate of collective negotiation and contracts	P39	Extended
	S2.3	Democratic management	P39	Core
	S2.4	Proportion of employees joining the trade union	P83	Extended
	S2.5	Number of applied, treated and solved appeals of employees through appeals mechanism	P39	Extended
	S2.6	Management of employee privacy	P38	Extended
	S2.7	Rights and interests protection for part-timers, temporary workers and employees of subcontractors	P38	Extended
	S2.8	Minimum wage of employees according to operation region and minimum wage in region	P40	Core
	S2.9	Coverage rate of social insurance	P83	Core
	S2.10	Salary for overtime work	P38	Extended
	S2.11	Amount of annual per capita paid vacation time	P38	Extended
	S2.12	Welfare systems according to nature of employment (official, unofficial)	P50-51	Core
	S2.13	Proportion of female managers	P83	Core
	S2.14	Proportion of employees of minorities or other races	P83	Extended
	S2.15	Ratio or number of disabled employees	P83	Extended
	S2.16	Proportion of employees in occupational health and safety committee	P37	Extended
	S2.17	Occupational disease prevention and treatment system	P36	Core

Part 4 Social Performance (S Series)

Indicator Classification	No.	Content of Indicator	Page	Nature of Indicator
	S2.18	Training of occupational safety and health	P36	Core
	S2.19	New occupational diseases during term of report	P83	Core
	S2.20	System and measures of prevention against occupational injuries	P34-35	Extended
	S2.21	Mental health system/measures for employees	P37	Extended
	S2.22	Coverage rate of physical examination and health records	P36	Core
	S2.23	Providing equal health and safety protection to part-timers, temporary workers and employees of subcontractors	P36	Extended
	S2.24	Career development channel for employees	P40	Core
	S2.25	Employee training system	P40	Core
	S2.26	Employee training performance	P83	Core
	S2.27	Investment in aiding and supporting employees in difficulties	P41	Core
	S2.28	Providing special protection for special populations (pregnant women, nursing women, etc.)	P41	Extended
	S2.29	Respect for employees' family responsibilities and spare time lives, and maintaining work/life balance	P41	Extended
	S2.30	Employee satisfaction	P32	Extended
	S2.31	Employee turnover rate	P32	Extended
Safety production	S3.1	Safety production management system	P34-35	Core
	S3.2	Safety emergency management mechanism	P34	Core
	S3.3	Safety education and training	P35	Core
	S3.4	Safety training performance	P36	Core
	S3.5	Investment in safety production	P36	Core
	S3.6	Number of production accidents	P34	Core
	S3.7	Number of employee casualties	P34	Core
Responsibilities with regard to community	S4.1	Assessment of impact of enterprise entering or exiting communities on environment and society of communities	P24-25	Extended
	S4.2	Rate of assessment of implementation environment and social influence of new projects	P24	Extended
	S4.3	Participation of community representatives in project construction and development	P24-25	Extended
	S4.4	Enterprise developed or supported social benefit project in community of operation	P44	Extended
	S4.5	Employee localization policy	P44-45	Core
	S4.6	Proportion of local employment	P45	Extended
	S4.7	Proportion of local employees in senior executives according to main operation regions	P45	Extended
	S4.8	Local procurement policy	P44	Extended
	S4.9	Corporate public welfare policy or main public welfare fields	P48-49	Core
	S4.10	Corporate public welfare fund/foundation	N/A	Extended
	S4.11	Overseas public welfare	P48	Extended
	S4.12	Total amount of donation	P48	Core
	S4.13	Policy and measures supporting voluntary service	P49	Core
	S4.14	Voluntary service performance of employees	P49	Core

Part 5 Environmental Performance (E Series)

Indicator Classification	No.	Content of Indicator	Page	Nature of Indicator
	E1.1	Establishing environmental management organizational system and mechanism system	P25	Core
	E1.2	Environment warning and response system	P24	Extended
	E1.3	Participation in environmental organizations or proposals	P25	Extended
	E1.4	Assessment on impact of enterprise on environment	P24	Core
	E1.5	Total investment in environmental protection	P22	Core
	E1.6	Training and publicity of environmental protection	P25	Core
	E1.7	Environmental protection training performance	P25	Core
	E1.8	Disclosure of environment-related information	P25	Extended
	E1.9	Process and frequency of communication with communities on environment	P25	Extended
	E1.10	Green office measures	P25	Core
	E1.11	Green office performance	P25	Extended
	E1.12	Saving energy by reducing business trips	P25	Extended
	E1.13	Green buildings and sales network	N/A	Extended
Green operation	E2.1	Establishment of energy management system	P24-27	Extended
	E2.2	Energy conservation policy and measures	P24-27	Core
	E2.3	Total annual energy consumption	P27	Core
	E2.4	Comprehensive energy consumption per unit output value of enterprise	P82	Core
	E2.5	Policy and measures for utilization of new, renewable or clean energy	P26	Extended
	E2.6	Utilization amount of new, renewable and clean energy	P82	Extended
	E2.7	Policy, measures or technologies for reducing waste gas emission	P26	Core
	E2.8	Emission and emission reduction of waste gas	P82	Core
	E2.9	Systems, measures or technologies for reducing waste water discharge	P26	Core
	E2.10	Emission and emission reduction of waste water	P82	Core
	E2.11	Systems, measures or technologies for reducing waste emissions	P26	Core
	E2.12	Emission and emission reduction of waste	P82	Core
	E2.13	Policies and measures for development of circular economy	P26	Core
	E2.14	Cyclical utilization rate of renewable resources	P82	Core
	E2.15	Construction of water-saving enterprise	P26	Core
	E2.16	Annual consumption of fresh water/fresh water consumption of unit industrial added value	P82	Core
	E2.17	Volume of neutral water reuse	P27	Core
	E2.18	Plan and action for reduction of greenhouse gas emissions	P26	Core
	E2.19	Emission and emission reduction of greenhouse gases	Not included in the statistics system	Extended
Green products	E3.1	Proportion of suppliers passing ISO 14000	P70	Core
	E3.2	Measures to improve environmental protection awareness and capability of suppliers	P30	Extended
	E3.3	Number of suppliers receiving penalties related to environmental protection, and number of penalties	Not included in the statistics system	Extended
	E3.4	Support for R&D and sales of green low-carbon products	P28-29	Extended
	E3.5	Measures and performance in waste product recycling	P26	Core
	E3.6	Policies and performance in minimization and recycling of packaging	P30	Core
Green ecology	E4.1	Protection of biological diversity	P24	Core
	E4.2	Protection of natural habitats, wetlands, forests, wildlife corridors and agricultural land during construction	P24,26	Extended
	E4.3	Ecological restoration and governance	P24,26	Extended
	E4.4	Rate of ecological restoration and governance	Not included in the statistics system	Extended
	E4.5	Public welfare activities for environmental protection	P25	Core

Part 6 Report Postscript (A Series)

	(A1)	Future plan: Corporate planning on social responsibility work	P5, 66	Core
	(A2)	Report Evaluation: Evaluation of report by social responsibility or industry experts, relevant interested parties or professional organizations	P92	Core
	(A3)	Reference Index: Application of indicators required to be disclosed by the Guidelines	P88-91	Extended
	(A4)	Feedback: questionnaire of readers' opinions and feedback channel for readers' opinions	P93	Core

Rating Report

Feedback

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Suite 2218, Building 2, Guohai Plaza, 17
Fuxing Road, Haidian District, Beijing

Social Responsibility and Energy Saving & Environmental
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Material Group Co., Ltd.

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