

2014 CHINA NATIONAL BUILDING MATERIALS GROUP CORPORATION Social Responsibility Report



Preparation Notes

This Report gives a true picture of China National Building Materials Group Corporation's (CNBM) performance of social responsibilities.

Which report is this one? How to get these reports?

This is the fourth English version of social responsibility report released by CNBM. Please ask for the printed version of each year's Report via the contact information on the cover. You can also scan the two-dimension code below or log onto http://www.cnbm.com.cn/ EN/ to download the electronic versions and get more related information.



Period Covered by the Report

1 January to 31 December 2014; given the progressing continuity of certain businesses or projects, some contents relate to the first and second quarters of 2015, the details of which are indicated in the Report.

Reporting Frequency

Annual report.

Entities Covered by the Report

All the wholly-owned or controlled (including absolute and relative controlled) members of CNBM. For the purpose of concise description, terms of "CNBM", the "Group" and "We" are used in the Report to refer to China National Building Materials Group Corporation.

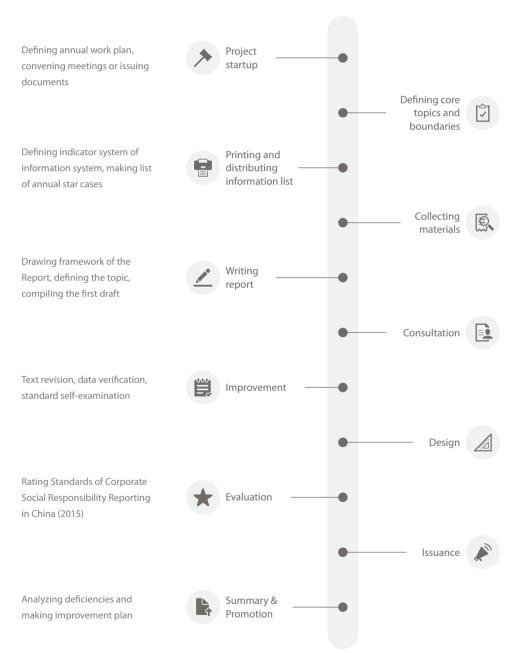
Data Sources

All information and data used herein are from the headquarters of CNBM and its member companies. Notes have been made in the Report for the information from external reference. Unless otherwise stated, all monetary amounts are expressed in RMB.



How is this Report prepared?

This Report is prepared according to China CSR Reporting Guidelines (CASS-CSR3.0) issued by the Chinese Academy of Social Sciences, CNBM Methods of Social Responsibility Management, and CNBM Social Responsibilities Management Information Collection Measures. The detailed preparation process is as follows:



Analyzing of stakeholders' concerns, defining annual major core topics, analyzing domestic and overseas CSR standards and guidelines, studying new standards and trends

Feedback on member companies' materials, feedback on functional departments and offices' materials, analysis of stock materials, collection of media reports

CSR leading group, functional departments and offices in the headquarters, member companies, stakeholders, CSR experts

Readability, innovation, continuity

Transmission to stakeholders via multiple carriers and channels

Contents

Executive's Address	4
Company Profile	6
Business Activities	8
Governance Structure	10



Responsibility Management	12
Responsibility Concepts	13
Responsibility Management Mechanism	14
Communicate with "Hearts" —— Responsibility	16
Communication	
Growth•Sharing•Accountability —— Capacity Building	18



Market Performance	20
Responsibility Performance Mechanism of Market	22
Performance	
Reform and Innovation for Expansion —— Transformation	24
and Upgrading	
Expenditure, Consumption and Costs Reduction ——	26
Lower Costs and Higher Efficiency	
Tap Potential Through the Integration of Informationization	28
and Industrialization —— Refined Management	



Em	ployee Care
Res	ponsibility Performance Mechanism of Empl
Safe	ety for All

Responsibility Performance Mechanism of Employee Care	42
Safety for All	44
Happy CNBM Family	46
Exemplary CNBMers	48



40

Corporate Citizen	50
Responsibility Performance Mechanism of	52
Corporate Citizen	
"One Belt and One Road" and Promising Outlook	54
Regional Common Growth	
Growing Together Bit by Bit —— Social Welfare	56
Building Future Bit by Bit —— Voluntary Activities	58

Responsibility Performance	70
Market Performance	70
Energy Saving & Environmental Protection	72
Employee Care	73
Corporate Citizen	74
Technological Innovation	75

Indicator Index	76
Rating Report	80
Feedback	81



Energy Saving & Environmental Protection 30

Responsibility Performance Mechanism of Energy	32
Saving & Environmental Protection	
A Low-carbon and Environment-friendly Travel ——	34
Green Manufacturing	
A Refuse-to-Resource Revolution —— Ecological Service	36
A Competition between Building and Energy	38
Consumption —— Green Products	

Technological Innovation

60

Responsibility Performance Mechanism of Technological	62
Innovation	
From Professionalism to Sharing —— Serve Nationwide	64
Innovation	
From "Manufacturing" to "Creating" —— Furthering the	66
Integration of Production and Research	
From Innovation to Service —— Boosting Green Industry	68

How to guarantee the data released in the Report?

The financial data in the Report are derived from CNBM 2014 Annual Financial Statement which has been audited by Baker Tilly China. External data in the Report are derived from those released by third parties through media, sources of which are indicated in the Report.

The non-financial data in the Report are derived from CNBM's statistical data system. Data in the system are faithfully reported by functional departments and offices of CNBM headquarters and its member companies in accordance with CNBM Social Responsibilities Management Information Collection Measures; data of member companies are submitted to the headquarters after approved at all levels; each department or office of the headquarters reviews special data according to its function; to ensure the standardization, reliability and authenticity of the data, the headquarters verify data of member companies through sampling at a proportion of at least 5%.

On what standards is the Report based? How about the benchmarking and the evaluation?

The Report is prepared in accordance with the Global Reporting Initiative (GRI) G4 Sustainability Reporting Guidelines using the Core option; Social Responsibility Guide (ISO26000) issued by the International Organization for Standardization (ISO); China CSR Reporting Guidelines (CASS-CSR3.0) issued by the Chinese Academy of Social Sciences, etc. Please refer to Page 76-80 of the Report for the benchmarking between the Report and CASS-CSR3.0, and the evaluation result.

How to feed back opinions and contact us?

You can complete the feedback page in the end of the Report, and send it to us through fax or mail; you can also visit the official website of our company or scan the two-dimension code below, and fill in your opinions on the web page or WeChat; you can also contact us directly through the contact information on the back cover.











your opinions through WeChat.

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Executive's Address

Innovation, the way for social responsibility fulfillment under the "new normal"

The China's economy has entered the "new normal". How to better fulfill social responsibilities thus meet new requirements in the new situation has been a new topic of CNBM. In 2014, stressed by economic downturn, investment slowdown and overcapacity, we implemented the strategy of innovative development. In detail, the issues of vigor and driving force for sustainable development, competitiveness, development scale and benefit and cost were addressed by means of mechanism innovation, technical innovation, business mode innovation and management innovation, respectively, and a way for social responsibility fulfillment under the "new normal" was explored based on practical actions.

Drive mechanism innovation through reform, motivate the vigor for social responsibility fulfillment: During merger and restructuring, CNBM, which is engaged in the highly competitive field, proactively practices the mode of "Market-oriented Operation of Central State-owned Enterprises" and takes the new road of market-oriented reform and industrial structure adjustment based on "simultaneous advance of SOE and POE" by adhering to the compound principles of "normative operation, mutual benefit, mutual respect, long-term cooperation" and the formula of "SOE's strength + POE's energy = corporate competitiveness". This effectively relieves the problems of overcapacity, low concentration ratio and disorder competition in the industry, and drives the concentration ratio of the China's cement industry to rise from 16% of 2008

to 60% at present, with quality and efficiency of development continuously improved. Besides, both the sales revenue and the total profit of CNBM have increased by 100 times over the past ten-odd years. On the basis, CNBM has been quickly promoted from a "grass-roots" central SOE to a member of the Global Top 500, honored as "a good model of quick growth in highly competitive field".

Push technical innovation through indigenous innovation and integrated innovation, improve competitiveness for social responsibility fulfillment: By giving play to technical advantages, we vigorously implement the strategy of indigenous innovation, and have generated a wide range of proprietary intellectual property rights in the fields of building materials, composite material and new energy, which lay foundation for industrial upgrade and strategic transformation of CNBM. By the end of 2014, CNBM has been awarded 4,000+ patents, including 600+ inventive patents. Pushing integrated innovation in line with the concept "integration", we successfully introduced the advanced technologies of MW-scale wind turbine blade and PV glass by acquiring European enterprises, and introduced the housing technology "energy +" upon cooperation with AGN, to make clear new directions of upgrade and build new economic growth points. Efforts are made to build an open platform for joint innovation in the industry of building materials, and support nationwide innovation in the forms of talent exchange, scientific research alliance and strategic cooperation.



Song Zhiping Chairman of CNBM

Guide innovation of business mode through information technology and service-oriented transformation, tap the potential of social responsibility fulfillment: We proactively explore innovation of business mode with Internet technologies and push service-oriented transformations (housing industrialization, logistics & trade service, testing & certification service, engineering technology service, eco-industry, etc.).The integration of informationization and industrialization is vigorously promoted in the cement segment to practice the new mode of "Internet+ cement manufacturing". The service of cloud computing is applied at www.okorder.com to form the foreign trade mode of "cross-border e-commerce + overseas warehouse", which makes the website the best platform for cross-border spot transaction of building materials in China. In the prefab housing segment, information-based technologies are adopted to offer more than 1,000 personalized house types for customer's selection. In the future, we will spread the concept "green town" all over the world to become the world's largest comprehensive service provider of industrialized prefab housing.

Innovate management by centering on integration, optimization, transformation and upgrade, improve the strength of social responsibility fulfillment: Under the macroenvironment that the economy enters mediumspeed development, CNBM shall undertake the important task of "defend growth". As an enterprise engaged in the highly competitive field, CNBM proactively creates specific atmospheres favorable to "stable growth" in the overall atmosphere featuring economic downturn. On the basis, the goal of "enterprise with 4 focuses" (focus on innovation-driven development, focus on qualitybased benefit, focus on manufacturing service, focus on social responsibility) has been set, and a range of advanced management concepts and processes, such as "gridding management", "8 processes", "6-star enterprise" and "increase-saving-reduction process", have been proposed upon summary and refining. The simple and practical "combination blow", which emphasizes marketing and cost control, further improves CNBM's strength of social responsibility fulfillment, and maintains good benefits based on steady actions taken under the "new normal".

Look into the future: We will accelerate the innovation-driven in-depth reform, carry out allround innovation of technology, management, system and culture, and push the integrated innovation featuring openness, inclusiveness and orientation to future. In the wave "mass business start-up, mass innovation", CNBM will join hands with partners, customers, staffs and other stakeholders to continuously make new breakthroughs on the path of sustainable and healthy development.

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Company Profile

As the leader in China's building materials industry, CNBM is the largest comprehensive building materials industry group in China. It has been ranked first among the top 500 enterprises in the building materials industry for many years, 41st among the Top 500 Enterprises in China and 270th among the Fortune Global 500. Up to the end of 2014, the total assets of the Group amounted to RMB 406.9 billion and the total number of employees reached 176,854. In 2014, CNBM achieved revenue of RMB 250.4 billion with total profit of RMB 13.0 billion, whilst taxes paid amounted to RMB 14.6 billion. With the objective to maximize corporate value and improve core competence, CNBM has developed into a comprehensive building materials industry group with integration of manufacturing, scientific research and development, set of equipment, logistics and trading, through asset restructuring, business integration and management improvement.

Headquartered in Beijing, CNBM has over 1,100 member companies, dominates 6 listed companies, including 2 overseas listed companies. Member companies of CNBM are located in 30 Chinese provinces, municipalities and autonomous regions, whose businesses cover over 120 countries and regions in the world.



Largest cement producer in the world

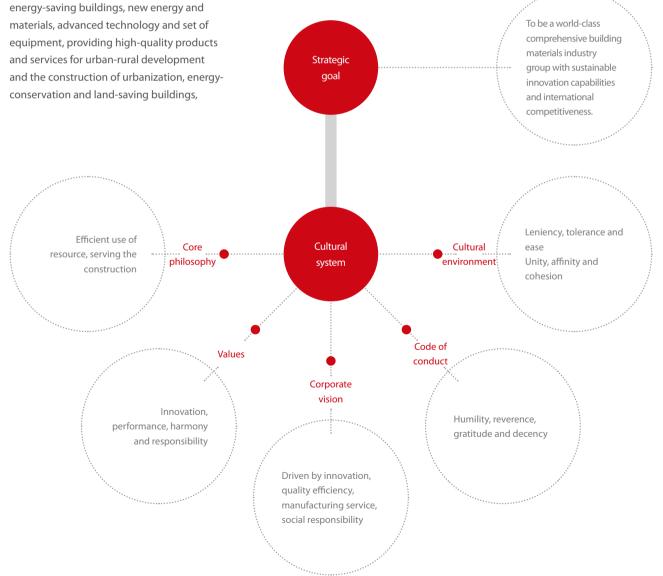
Largest ready-mixed concrete producer in the world

Largest gypsum board producer in the world

Leading glass fiber producer in the world Largest rotor blade producer in Asia

Leading service supplier of glass and cement production line design and engineering in the world Taking "efficient use of resource, serving the construction" as the core philosophy and technical innovation as the guide, CNBM optimizes and integrates industrial and social resources, adheres to circular economy, promotes combination and restructuring, structural adjustment, and energy conserving and emission reduction of such industries as cement and glass. CNBM vigorously develops new building materials, new energy-saving buildings, new energy and materials, advanced technology and set of equipment, providing high-quality products and services for urban-rural development and the construction of urbanization, energy-conservation and land-saving buildings

and national key projects. CNBM endeavors to develop enterprises with innovative performances, resource conservation capacity, environment conservation awareness, and social responsibilities, advancing towards the leading position of the industry with international competitiveness, contributing to the sustainable development of the industry and society.



Business Activities

Manufacturing

CNBM has built strong cement, glass, lightweight building material, prefab housing, glass fiber, composites, new energy products and refractory platforms, through undertaking strategic resources integration and restructuring, reconstructing traditional industry by new technologies, and developing advanced productivity by incremental input.

Scientific research and development

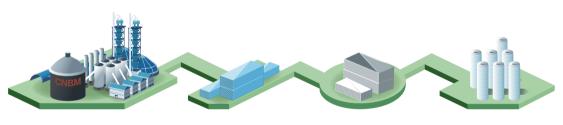
Our scientific research and development business possesses 13 top scientific research and design institutes in building materials and light industrial machinery sectors of China, and a cluster of hitech companies. We also have a national scientific innovation platform, which comprises of state key laboratories, engineering (technology) research centers, company technology centers, industrial products QC and technical assessment laboratories, work stations of academician, mobile work stations of post-doctors, scientific research work stations, innovation alliances, etc. We have also established a new technical innovation system of building materials corporate group with international competitiveness.

China Building Materials Academy, Hefei Cement Research & Design Institute, Harbin FRP Institute, CNBM Design & Research Institute, Qinhuangdao Glass Industry Research and Design Institution, Xi'an Research & Design Institute of Wall & Roof Materials, Xianyang Research & Design Institute of Ceramics, Horological Research Institute of Light Industry

Core platforms

Representative companies

China National Building Materials Company Limited, China Triumph International Engineering Co., Ltd., China New Building Group Corporation



Cement Glass Light-weight building Fiberglass material

The annual capacity of cement is about 400 million tons, ready-mixed concrete is 410 million m3, both of which rank the first in the world. At present, CNBM has formed four strategic zones, namely Huaihai Economic Zone, Southeast Economic Zone, North Zone and Southwest Zone, and become the leader of industrial integration and development in these zones. The glass industrial platform can produce high-quality float glass with a processing capacity of 10 million m2, covering products of vehicle glass, architectural fabricated glass, and decorative glass. We can produce 15 ultra-thin glass products from 0.2mm to 1.3mm. We also have an industrial base capable of producing 40 million pieces of ITO electropane and TFT crystal glass substrates. The light-weight building material industrial platform includes three business sectors, namely the wall and suspended ceiling system, the housing parts and architectural energy conservation system, and the exterior building envelope system. It provides application solutions pack for public buildings and family housing with its complete product system. It also possesses internationally recognized high-end brands and proprietary intellectual property rights, as well as 54 major industrial bases. Its annual productivity of gypsum plasterboard exceeds 1.78 billion m2, ranking the first in the world.

The total productivity of fiberglass has surpassed 1 million tons. We have several production bases both at home and abroad, and the world's largest alkali-free tank furnace production line with an annual productivity of 120.000 tons. We also possess proprietary intellectual property rights of such packaged technologies as alkali-free tank furnace, medium-alkali tank furnace, recycling of wasted silk of fiber glass, etc.

China United Cement Corporation, South Cement Company Limited, North Cement Company Limited, Southwest Cement Company Limited, CNBM Investment Co.,

China Luoyang Float Glass Group Co., Ltd., Anhui Huaguang Photoelectricity Materials Technology Group Co., Ltd., Chengdu China Optoelectronic Technology Co., Ltd.

BNBM Public Limited Company

China Jushi Co., Ltd.

Set of equipment

Our set of equipment business is based on over 20 equipment manufacturers. We've established an equipment industrial service platform for the building materials industry, the light machinery industry, the mining equipment sector, and the environmental protection equipment sector of China. The platform covers all categories, providing leading edge technologies, fine equipment, advanced techniques, and complete supporting services, and undertakes such businesses as engineering design, contracting, consultation, supervision, etc. both at home and abroad on the basis of set of equipment.

China National United Equipment Group Co., Ltd., Triumph Heavy Industry Co., Ltd., China Triumph International Engineering Co., Ltd., Hefei Cement Research & Design Institute, CNBM Design & Research Institute, Qinhuangdao Glass Industry Research and Design Institution, Xi'an Research & Design Institute of Wall & Roof Materials

Logistics and trading

With our experience of new Internet technology and e-commerce operation, we have rationally and effectively integrated such services as suppliers of bulk building materials, logistics and transportation, insurance and credits, inspection and quarantine, etc. We provide comprehensive solutions covering all links of international trade, and have realized the online one-stop management of export services. We've become a comprehensive building materials service provider for the international market, and been listed as a key export support enterprise and key commercial distribution enterprise by MOFCOM.

Verification service

Backed by the Group's strong research and technical capabilities, the verification services business covers testing and verification services, including certification test, energy efficiency assessment, contract energy management, comprehensive utilization and evaluation of resources, production approval and evaluation of green building materials, energy-conservation building materials, and supporting building materials products for constructions. We provide technical guarantee for the QC of building materials products, and the sound and sustained development of building materials market.

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

China Building Materials Test & Certification Group Co., Ltd.



Carbon fiber

We have the 1,000-ton carbon fiber production line, which owns the largest scale and most advanced technology in China. We've reached the annual productivity of 10,000 tons of PAN silk and 4.000 tons of carbon fiber. We have China's first production line successfully producing high-quality T700 PAN silk and carbon fiber and T800S carbon fiber with good performance, with the productivity of T700 silk reaching 5,000 tons and that of T700 carbon fiber reaching 2,000 tons. We can produce ACCC conductor with a sectional area of 150 – 1.250 mm2, which can be applied in transmission lines of 35 -1 000 KV

Rotor blades

We are Asia's largest and one of world's top three manufacturers of megawatt rotor blades with a total capacity of 15,000 blades. Our products have 9 series and 58 types with categories varying from 1.25 MW to 6 MW, and length of blade varying from 31.5 meters to 75 meters. Our products cover all categories of products for land and marine use, and have been exported to dozens of countries and regions. We have 6 blade production bases in China, a R&D center in Germany, and a national blade testing center.

PV parts

We have the productivity of solar PV parts and industrial bases covering several provinces of China. We have also directed constructions of many PV power stations both at home and abroad.

Refractories

Our products include refractories of fusioncast zirconia alumina and fusion-cast aluminum oxide series, and unshaped, basic, alumina-silica and silica refractories. We have a world's largest professional production base of fusioncast refractory, whose annual productivity is nearly 40,000 tons, and an automatic production line of unshaped refractory with an annual productivity of 100,000 tons. Our comprehensive strength, product quality and service are all at a leading level in the industry.

Pre-fab housing

As the animateur and promoter of the environmentfriendly and energyconservation pre-fab housing industry of China, we integrate R&D, design, production and installation with system integration, and have several product systems, including steel, wood, PC, etc. As one of the first national demonstration bases of housing industrialization, we have many demonstration bases of pre-fab housing in Beijing, Sichuan, Jiangsu, Hainan, etc.

Zhongfu Shenying Carbon Fiber Co., Ltd., Zhongfu Carbon Fiber Core Cable Technology Co., Ltd. Lianyungang Zhongfu Lianzhong Composites Group Co., Ltd. Bengbu Design & Research Institute for Glass Industry, CNBM Jetion Solar Technology Co., Ltd.

Ruitai Materials Technology Co., Ltd. Beijing New Building Materials (Group) Co., Ltd., China New Building Group Corporation

Governance Structure

The Board of Directors of CNBM has 11 members, 6 of whom are external directors; there are 4 special committees under the Board of Directors, of which the Remuneration and Appraisal Committee and the Audit and Risk Management Committee are charged by external directors. As the strategic, resource and cultural center, the headquarters of the Group exercises the rights and functions of capital contributor.



Song Zhiping Chairman



Yao Yan Vice Chairman



Cao Jianglin Director



Hao Zhenhua Director



Zhao Xiaogang External Director



Chen Jin'en External Director



Zhu Yanfu External Director



Peng Xuefeng External Director

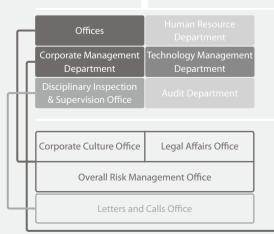


Wang Yumeng Staff Director, Chairman of the Trade Union



Strategy and Investment Committee

Operating Segments of CNBM





Cao Jianglin General Manager



Huang Anzhong Deputy General Manager



Guo Chaomin



Wu Jiwei Chief Accountant



Ma Jianguo Deputy General Manager Deputy General Manager

10



Supervisory Committee



Zhao Jibin External Director



Lu Xiaoqiang External Director

Management Office of the Board

Remuneration and Appraisal Committee Audit and Risk Management Committee



China National Building Materials Company Limited

China United Cement Corporation South Cement Company Limited North Cement Company Limited Southwest Cement Company Limited BNBM Public Limited Company China Composites Group Co., Ltd. Lianyungang Zhongfu Lianzhong Composites Group Co., Ltd. China Triumph International Engineering Co., Ltd. Nanjing Kisen International Engineering Co., Ltd. Beijing Triumph International Engineering Co., Ltd. China Jushi Co., Ltd CNBM Investment Co., Ltd.

China Building Materials Academy

China Building Materials Academy (Beijing Headquarters) Ruitai Materials Technology Co., Ltd. China Building Materials Test & Certification Group Co., Ltd. Hefei Cement Research & Design Institute Harbin FRP Institute CNBM Design & Research Institute Qinhuangdao Glass Industry Research and Design InstitutionXi'an Research & Design Institute of Wall & Roof Materials Xianyang Research & Design Institute of Ceramics Horological Research Institute of Light Industry

China National Building Materials & Equipment Import & Export Corporation

CNBM International Engineering Co., Ltd. CNBM International Corporation CNBM Technology Co., Ltd.

Beijing New Building Materials (Group) Co., Ltd.

INTECH Building Co., Ltd. BNBM International Woods Co., Ltd.

China National United Equipment Group Co., Ltd.

China New Building Group Corporation

China New Building Huagou Residence Industry Co., Ltd.

China Triumph International Engineering Co., Ltd.

China Luoyang Float Glass Group Co., Ltd. Henan Zhonglian Glass Co., Ltd. Bengbu Design & Research Institute for Glass Industry Anhui Huaguang Photoelectricity Materials Technology Group Co., Ltd.

CNBM United Investment Co., Ltd.

Zhongfu Shenying Carbon Fiber Co., Ltd.

Zhejiang Leomax Group Co., Ltd.

CNBM Assets Management Corp.



Social responsibility mode

Responsibility Management





Clients

Environment

Concepts

Responsibility We pay close attention to the expectations of stakeholders such as investors, government, employees, clients, partners, related groups, communities, media and the environment. We insist on the core philosophy of "efficient use of resource, serving the construction" and regard "innovation, performance, harmony and responsibility" as our core values. We stress both technology and management innovation in our development, pursuing a coordinated and win-win situation with the market, the environment and the society. We insist on establishing a harmonious relationship with competitors, the nature, employees and the society, performing social responsibility in five aspects namely market performance, energy saving & environmental protection, employee care, corporate citizenship and science & tech innovation. We are committed to becoming a world-class comprehensive building materials industry group with sustainable innovation capabilities and outstanding international competitiveness.

Core Topics

~~~^^	Market Performance	We reward our shareholders and investors with excellent operating results, serve our clients with quality products and services, growing together with our suppliers and industrial partners, and providing a platform for all the stakeholders to create values. Meanwhile, upholding the philosophy of "industry interest overweighs corporate interest", we are dedicated to promoting industry restructuring, transformation and upgrading, and seek to achieve mutual development and create win-win situation with the industry and peers of the same industrial chain.
, second se	Energy Saving & Environmental Protection	We comprehensively utilize industrial and urban wastes, producing low-carbon products with minimized consumption and emission. We are committed to providing reliable and green building materials, rendering products and service support to the industry of new energy, sharing effective green technology and management experience, exploring development modes for the harmonious coexistence of industries and nature, and advocating sustainable development of industry and society.
	Employee Care	We pledge to guarantee the safety and health of our employees, safeguard their rights, respect their differences and make the Company a reliable partner and a happy and comfortable home to our employees. We'll build a sustainable and better future together with all our employees and deliver happiness to the society.
2005 2005	Corporate Citizen	In the process of production and operation, we pursue mutual development and growth with the region where we operate; our achievement cannot be realized without the support of relevant stakeholders and the society, we reward the society through characteristic public undertakings. Our employees are pleased to contribute to the society and actively participate in voluntary service, practically performing the responsibilities of corporate citizens.
	Science & Tech Innovation	We take up the task of industrial innovation with our strong scientific prowess, advance industry 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.

## Responsibility Management Mechanism

**BAAB** quantitative indicators of social responsibility management.

in Top 300 Enterprises of CSR Development Index of China in 2014.

#### Organizational System

- We take the leading organization of social responsibility as the core with "CNBM Leading Group for Promoting Social Responsibility" headed by the Chairman. The Leading Group, the highest leading organization to promote social responsibility endeavors, is in charge of guiding and promoting social responsibility initiatives.
- We take the social responsibility management functional organization of the headquarters as the links, direct and advance member companies in strengthening the social

responsibility management and actively performing their responsibilities. According to the division of businesses, functional departments in the headquarters work in coordination to advance special tasks.

 With member companies at all levels as nodes, and according to the unified requirement of the headquarters, we define functional departments and assign management personnel to perform social responsibility plan and scheme of the group, satisfy work requirements, and actively perform responsibilities.



15

#### Management methods

- We have included social responsibility management in the strategy and the overall plan of the group with its objective, measures and priority of improvement made clear, to continuously improve its performance and level and bring it to the international advanced level by the end of 2018.
- We have issued and are implementing the Guiding Opinions on Social Responsibility Fulfillment of CNBM, the Administrative Measures for Social Responsibility Fulfillment of CNBM and the Measures for Collecting Information

about Social Responsibility Fulfillment of CNBM, to systemize, institutionalize and standardize social responsibility management.

- The "CNBM Social Responsibility Management Information System" is run for online management of information about social responsibility fulfillment and social responsibility administrators. The system covers more than 1,000 member enterprises and 343 indexes of internal management.
- We prepare and issue annual social responsibility reports to continuously improve

the capability of social responsibility fulfillment and improve management through the procedures of preparation, benchmarking and assessment. Reports are regularly published and information about developments of social responsibility fulfillment is irregularly released at the special column of the website to constitute an information disclosure system and establish an effective communication platform.

• Social responsibility teams of member enterprises are

#### **Continuous Improvement**

- We give full play to the talent resources of management experts within the Group, and take their suggestions and advice in terms of adjustment of concept and strategy of social responsibility, preparation and revision of management systems, and the establishment and quantification of social responsibility indicator system, ensuring the feasibility and operability of social responsibility management mechanism.
- We strive for social resources, actively seek help from professional consulting agencies, learn new trends of social responsibility theories, grasp latest international development tendency of the social

## 1

in the 2014 Evaluation of Corporate Performance of Social Responsibilities in the Industry of China.

improved in terms of quality and professional proficiency by means of publicity and training. The practice of social responsibility fulfillment is pushed by cultivating and selecting highlighted cases. An assessment mechanism is explored to systemize and normalize social responsibility fulfillment.

employees participated in training related to social responsibility in 2014.

- responsibility, further study the new standards and requirements of social responsibility management, and guarantee the professionalism and compliance of the Group's social responsibility management system.
- 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 social responsibilities of international and domestic enterprises, the industries in which we operate, enterprises in the supply chain, and other related enterprises; learn from others' strong points to offset our own weakness and make continuous improvement.



## Communicate with "heart"——Responsibility Communication

Communication is the best way to enhance understanding and build mutual trust. Effective communication not only enables stakeholders to be fully aware of whether enterprises live up to their responsibilities in time, but also helps us make continuous improvements according to opinions and advice. From the identification of stakeholders to the design of communication mechanisms, from the identification of communication subjects to the selection of communication approaches, we have established a unique and effective responsibility communication system while combining our routine operation and management processes.

Core: The central part of an object	"Core" Communication	We analyze and streamline the objects of responsibility by the principle of "Triple Bottom Lines" and categorize them according to influence, dependency, and representativeness, etc. Finally, we have identified 8 core stakeholders. With the concerns of stakeholders as the basis, we resolve and identify core topics of responsibility performance, and respond to demands of stakeholders through responsibility performance. We regard the communication with stakeholders as a core part of social responsibility management, and have established a timely, transparent and systematic communication system.
Нарру:		Multiple fields: We integrate the concept of social responsibility into daily work and communication, meanwhile combine and unify business communication and responsibility communication. Multiple forms: We keep in touch with stakeholders by operable unblocked means, such as questionnaire,
happiness, favor; flourish of grass and	"Happy" communication	special visit and online communication. Multiple objects: In addition to communication with external stakeholders, we identify international management experts and grass-roots staffs as important stakeholders of internal interest, and facilitate timely feedback by offering democratic convenient information channels.
trees		Multiple angles: Positive evaluations and negative evaluations from stakeholders are regularly collected and arranged by means of public sentiment collection and media information mining to analyze shortcomings more comprehensively and objectively, for the purpose of continuous improvement.
Commitment —	"Commitment" communication	We continuously communicate with stakeholders. As the main force of responsibility communication, the top managements pay high attention to responsibility communication, and take part in activities of responsibility communication at different levels and dimensions in person. Significant effects are made in communication based on regular/irregular symposium, leader mailbox and employees' assembly.
New: a state and nature different from old pattern	"New" communication	We continuously publish annual social responsibility reports, and timely release information about social responsibility fulfillment at the special column "social responsibility" of the website. Such information is also released via new media (Microblog, WeChart, etc.), together with opinion soliciting. We have established an emergency information release mechanism to timely disclose the latest information in case of accident.
Fragrant: long —— fragrance	"Fragrant" communication	With attention paid to responsibility sharing and dissemination, we identify disseminating the concept of responsibility and advocating responsibility actions as an important part of communication. We push – sustainable development by acceding to associations and sponsoring or supporting initiatives, and proactively share achievements of responsibility research and characteristic practice of social responsibility fulfillment via forum and media, for the purpose of growing together with colleagues.





occasions of communication with external stakeholders were presented with corporate senior management in 2014. Joined **2** international organizations related to social responsibilities and sustainable

. development. Participated in **2** 

	external social responsibility researc				
	projects in 2014.				
	Responding Measures				
s	Improving information disclosure				
s	Improving information disclosure mechanism				
s	Improving information disclosure				
	Improving information disclosure mechanism Enhancing corporate values				
	Improving information disclosure mechanism Enhancing corporate values Regulating corporate governance				

17

Stakeholders	Communication Ways	Focus	Responding Measures
Investors	Regular reports Corporate reports Marketing activities Dialogues with and feedbacks from shareholders	Protecting the 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
Government	Releasing laws and regulations Feature reports and visits Information submission Evaluation of work targets	Requirements on safety, environmental protection and compliance Securing supply Offering employment opportunities Boosting regional economic development	Lawful operation and implementation of government policies Sustainable quality operation Paying tax Offering employment opportunities
Clients	Meetings and consultation with clients Daily contacts Client feedback mechanism Telephone service	Speed of response Quality of service Special requirements Complaint handling	Offering quality product and service Advocating green consumption Improving quality management Protecting clients' privacy
Partners	Contract negotiation Bidding sessions Management meetings Correspondence exchanges Daily business communication	Price and timely payment Long-term partnership Profit distribution Information sharing Integrity and mutual benefit Risk reduction	Honest operation Promoting supplier responsibility Building effective partnership Building effective communication mechanism
Employees	Employee representative meeting Publicity of factory affairs Employment contracts Rational proposals Regular communication Petition	Employee rights Career development planning Complaint handling Occupational health Democratic management Publicity of factory affairs	Protecting employee rights Offering competitive remuneration Improving employee benefits Enhancing employee training Offering safe working environment and health protection Building effective communication mechanism Improving democratic management
Communities and media	Signing public welfare agreements Taking part in voluntary service Daily contacts	Environmental protection Jointly building a harmonious community	Timely information disclosure Increasing participation in public welfare Participating in community activities
Social organizations	Taking part in meetings or activities regularly Daily contacts	Environmental protection Jointly advocating sustainable development	Playing the role as a member Offering economic and technical support Building cooperative relationship

## Growth•Sharing•Accountability ——Capacity Building

#### Past: growth

In 2010, CNBM published the first annual social responsibility report to explore social responsibility fulfillment in zero-based way. Based on learning, research and counseling by professional institutions, with the help of stakeholders, we gradually establish and perfect social responsibility organization systems, prepare and perfect social responsibility management systems, deepen the concept of social responsibility, build social responsibility models, carry out stakeholder management, and implement the mechanism of regularly publishing social responsibility reports. Based on benchmarking and assessing the performance of social responsibility fulfillment, we continuously improve the capability and level of social responsibility fulfillment. The concept of social responsibility penetrates into all aspects of corporate strategy, culture, decision and operation, bit by bit, and guides more than 1,000 member enterprises to proactively practice social responsibility fulfillment. Over the 5 years, CNBM has grown out of nothing to a practitioner of social responsibility fulfillment based on multiple "first" and "supreme" events.

#### Present: sharing

In 2014, the 5th year of comprehensively pushing social responsibility management in CNBM, we formed a perfect social responsibility management system, and accumulated unique theories of management and practical experience Simultaneously with continuous deepening and improvement, we seek a new direction of growth in process of sharing and cooperation. In the year, CNBM formally acceded to the United Nations Global Compact to discuss the best way for improving capability and performance of social responsibility fulfillment with more diversified practitioners of social responsibility fulfillment on the internationalized platform.

As a member of the Cement Sustainability Initiative (CSI), CNBM studies and discusses how to effectively combat climate change and realize sustainable development of the cement industry together with colleagues, and join hands with colleagues for development in the severe environment featuring economic downturn and overcapacity, based on taking the lead to perform self-discipline conventions of the industry. The project of preparing the Guidelines for Preparing Corporate Social Responsibility Report 3.0-Industry of Non-metallic Mineral Products with Chinese Academy of Social Sciences has been launched to contribute resources of management

and practice, and serve study. publishing and promotion of social responsibility standards. We take part in social responsibility sharing and advocacy activities in different fields, and disseminate concepts, share experience and sponsor initiatives through "Golden Bee 2020". China Federation of Industrial Economics, China Building Material Federation, China Building Materials News, etc. In continuous sharing, study and discussion, we make efforts to be a disseminator and advocator of social responsibility, and seek better ways of sustainable development based on cooperation.

#### Future: accountability

The industry of building materials is of importance for security of national economy, development of upstream and downstream industries as well as prosperity of regional economy. In the past, we focused on improving practices in line with treaties, standards and advocacies, and improved our management by soliciting opinions from stakeholders. On the new stage of growth and in the new macroenvironment, CNBM is supposed to perform new duties. By integrating the concept of responsibility into supplier evaluation, product design and strategic cooperation in depth,

we guide suppliers, customers and partners to carry out responsibility management against activities on the value chain, and serve as a leader of sustainable development on the value chain. By integrating the concept of responsibility into the process of internationalization in depth, we extend the social responsibility management system to the overseas fields and regions where we invest, operate and offer service. Based on cultural respecting and legal compliance, we disseminate advanced technologies, prosper local economies, establish service areas and build an image of

responsibility to serve as a pioneer of internationalized operation of Chinese enterprise under the strategy "One Belt and One Road". By integrating the concept of sustainable development into technological innovation, transformation and upgrade in depth, we accelerate study on new technologies, products and types of operation as well as transformation of research achievements, to build a new value chain and new economic growth points and serve as a driver of innovation promotion under the "new normal".

of Social Sciences officially released 2013 White Book of Corporate Social Responsibility in China, in which CNBM 2012 Social Responsibility Report ranked the 2nd among five-star reports

In February, CNBM joined United Nations Global Compact as the member of presidium of Network China. Chairman Song Zhiping was named as member of the second presidium of Global Compact Network China

On June 6,  $\ensuremath{\,^{\prime\prime\prime}\!\!\!\!\!}$  Green Town' Facilitates the Construction of New Urbanization" project of BNBM Public Limited Company was listed as an example case of products and services for sustainable development.

On June 26, Chairman Song Zhiping attended 2014 China Summit on Caring for Climate of UN Global Compact awarded with the honor of "2014 Pioneer Enterprise of 'Care for Climate · Ecological Civilization".

On June 30, CNBM released 2013 CNBM Social Responsibility Report, which was rated 5-star by Chinese Academy of Social Sciences according to new preparation and evaluation standards, which was the highest evaluation among CSR reports in the building materials industry of China

On July 26, CNBM was awarded with the title "2014 Fivestar Enterprise in Social Responsibility Performance in the Chinese Industry" by China Federation of Industrial Economics and UNIDO

On August 15, CNBM was awarded with the title of "First Batch of 'CSR Practice Base'' by Social Responsibility Strategic Research Center for Chinese Building Materials Enterprises.

On November 13, CSR Research Center of Chinese Academy of Corporate Social Responsibility, in which the social responsibility development index of CNBM was 82.5 marks, ranking the 10th among top 300 enterprises in China. CNBM was rated as a five-star company of CSR development index in China, and managed to maintain its position in the team of "excellence" among Chinese enterprises in terms of

On December 11, Chairman Song Zhiping was named as "2014 Person of Responsibilities" by China News Service and

On December 20, CNBM was awarded with the "2013

On March 3, CNBM enabled the mechanism of internal

On April 18, CNBM enabled CNBM Information System of

On December 22, Social Responsibility Management

On April 20, CNBM prepared and applied CNBM Social

On May 13, CNBM established "CNBM Leading Group to Advance Social Responsibility Work" with Chairman Song

On July 28, CNBM formulated annual promotion plan for CSR.

On November 8, in 2011 Research Report on CSR of China

On September 20, as the first enterprise releasing an

2013

2014

2012

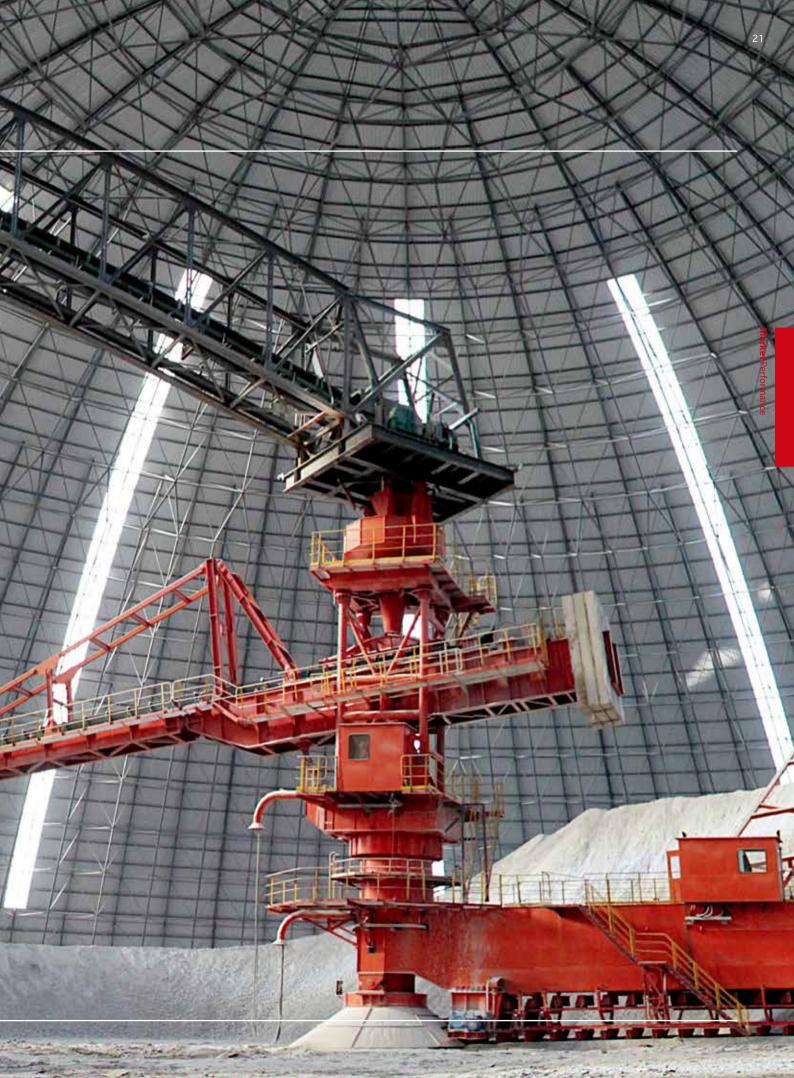
2011

2010

## Market Performance

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 try to become a platform for all stakeholders to create values. Meanwhile, upholding the philosophy of "industry interest overweighs corporate interest", we are dedicated to promoting industry restructuring, transformation and upgrading, and seek to achieve mutual development and create win-win situation with the industry and peers of the same industrial chain.





## Responsibility Performance Mechanism of Market Performance



#### Lawful Operation

- We insist on the working rule of lawful, compliant and honest operation. The Group has been awarded as AAA in credit rating for many years.
- We insist on fair competition without infringing competitor's or partner's rights by improper means or misconducts (fraud. bribery, malicious price cutting. etc.), and advocate building good partnerships based on free will and equality. In international operations, we firmly maintain national interests and our dignity, and actively respond to malicious anti-dumping events. With great attention paid to promote the concept of fair competition, staffs 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

#### Win-win Partnership

- Keeping the responsibilities of leading enterprises in mind, we serve economic and social development, pay taxes, offer opportunities of employment, and support programs for public good, making contributions to national economy and harmonious development of the society.
- Under the concept of "industry interest overweighs and breeds corporate interest", we firmly curb illegal and blind capacity expansion, and practice expansion based on stock combination, technological transformation and upgrading based on incremental input, and benefit creation based on management integration; we maintain balance between supply and demand in the market, execute industrial reconstruction, improve concentration ratio of the industry, and endeavor to create a new intraindustry ecosystem.
- Performing social responsibilities is included in supplier evaluation system. Our suppliers are

office; we adhere to the integration of law popularizing activities with legal affair management and by means of law-popularizing activities in different form, we deeply publicize the concept of "legal system" and prevent risks in a systemic way.

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

dynamically evaluated in terms of law compliance, environmental protection, protection of laborer's rights and interests; any form of commercial bribe is prohibited. We urge our suppliers to continuously improve product quality, and supervise and push suppliers to pay attention to physical and psychological health of their staffs. In each bidding for production line construction, safety, energy saving and environmental protection are essentially included in bidding document. During construction, we pay sustained attention to occupational health, safe production, and protection of staffs' basic rights.

 The concept of social responsibility has been integrated into procurement management. We stick to "sunshine procurement", and spare no effort to eradicate commercial bribes in procurement by pushing regional procurementbidding integration, bidding process normalization, bidding performance opening and



## **66,000**

66,000 person-times of employees participated in legal publicity and education in 2014.

of our rules, regulations, management decisions and management contracts were legally reviewed.

## **99.0**°

of business contracts were performed in 2014.

#### **Refined Management**

- CNBM establishes a standard corporation management system. As the strategic, resource and cultural center, the headquarters of the Group exercises the rights and functions of capital contributor. Business platforms focus on their expertise and principal businesses to build up profit centers. As operating entities, the enterprises at the primary level implement strict cost control while assuring quality. We align the pace of different enterprises with orderly management in the course of rapid development.
- Depending on management improvement and the construction of internal control system, we deepen the management integration and promote managements towards routinization, normalization, institutionalization, and standardization. We strengthen the leading role of strategic planning. deeply advance EVA evaluation, continue to shorten management chain and improve operation efficiency; we strictly control guarantee risk; we implement risk management and internal audit to guarantee safe and stable operation.
- We continuously advance the deep integration of informationization and industrialization. We develop intelligent factories to effectively reduce energy consumption and costs and downsize staffs and improve efficiency. We build up online marketing service platform, public bidding platform, and intelligent delivery platform to obtain direct access to market information, optimize resources allocation and improve service quality and efficiency.
- Public companies build up efficient and streamlined shareholders communication model. Shareholders exercise their

#### **Quality Service**

- We provide material supports and technical services for national key projects and urban infrastructures, and systemic building materials solutions for residents' daily life. Through our various products, sufficient production capacity, reliable quality assurance, globalized marketing system and convenient and friendly service system, we offer customers returns beyond commercial values.
- ٠ Our member companies are instructed in the construction and certification of standard quality management systems, and implement quality management throughout the procedure from procurement of raw materials to delivery of products by QC group activities. We make public quality commitment and a customer evaluation & feedback mechanism is built. Customers are actively invited to get involved in product quality control, and we will compensate customers for their loss caused by the quality defect of our products.

- rights by holding shareholders meetings. They implement daily operation, supervision and management of the company through the board of directors and the board of supervisors. Decisionmaking by major shareholders or controlling shareholders and their control over board of directors and board of supervisors are regulated to give full play to the role of independent directors in protecting interests of medium and small shareholders and an effective mechanism to maintain seats for and allow disinvestment by small shareholders is set up.
- Public companies truthfully, accurately, completely and compliantly disclose periodic financial data, significant matters and the matters required to be disclosed in accordance with Information Disclosure System issued by supervisory authority. In case that a company encounters an emergency possibly influencing its share prices, the secretary of the board of directors would organize study on handling, and timely disclose related information to investors in accordance with related procedure.

- information-based bidding management. Under the principle of green procurement, we implement local purchasing of bulk raw materials and fuels to reduce transportation costs; we advocate green consumption by selecting green and clean energies and lowcarbon products.
- We establish long-term strategic partnerships with our partners through multilevel platforms and flexible and effective mechanisms for strategy sharing. To jointly plan future development of the industry, appropriate technologies and advanced experience are shared via high profile visits, regular communications, and daily exchanges through various cooperation models, such as research alliances, productionresearch synergy, etc.

**55.2**[°]

of suppliers in long-term cooperation with CNBM passed the quality management system certification in 2014.

**37.5**[%] of suppliers in long-term cooperation

with CNBM passed the occupational health and safety management system certification in 2014.

18,000

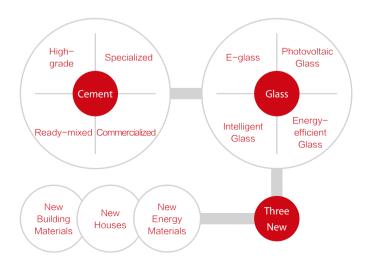
person-times of subcontractors' and suppliers' employees participated in safety, energy and law training in 2014. • Service systems for pre-sales consultation, sales reception and after-sales service are well established. Complaints and inquiries from customers are responded to and handled without any delay. We own professional customer service teams and they regularly provide professional training for our agencies. Customer training meeting and product publicity meetings are held to deliver basic knowledge of green building materials, notes on selection and use of building materials, and knowledge of counterfeit identification to customers. With attention paid to protecting customer privacy, we execute a strict confidentiality system for customers' personal information.

Market Performance

### Reform and Innovation for Expansion – Transformation and Upgrading

Since Chinese economy is facing a critical stage when transformation and upgrading are accelerated to fit in with new normal, in order to further emancipate and develop productive forces and fit in with new normal and new requirements, we pursue vitality and sustainable driving force of growth through mechanism innovation, competitiveness through technological innovation, development scale through new business models, and higher benefits and lower costs through management innovation by continuously speeding up transformation and upgrading and timely adjusting our strategic path.





#### Vitalizing the Enterprise Through Mechanism Innovation

As an enterprise in the fields with full competition, overcapacity, low industry concentration, and out-of-order competition. during its merger and reorganization, CNBM develops a new path that features market-oriented reform and industrial restructuring via "simultaneous advance of SOE and POE" by following the model of "market-oriented operation of central SOEs", the compound principle of "normative operation, mutual benefits and win-win results, mutual respect, and long-term cooperation" and the combination formula of "the strength of central SOEs + the energy of POEs = competitiveness of enterprises". During the past over ten years, sales revenue and total profit of CNBM respectively grew by 100 times. We have developed from a "grass-roots central enterprise to an enterprise ranking on the list of Fortune Global 500. We maintain the leading role as the world's second largest building materials enterprise and are honored as "an example of fast-growing enterprises in the fields with full competition".

## Stronger Competitiveness based on Technological Innovation

We continuously optimize the commodity structure in traditional sectors and extend our industrial chain. In the sector of cement, we pursue the development of high-grade, specialized, readymixed, and commercialized cement. We have established four specialized cement bases and national technology centers, with over 20 million tons of specialized cement provided each year. In the sector of glass, we stop manufacturing traditional common and float glass and start to develop "e-glass, photovoltaic glass, intelligent glass, and energy-efficient glass". The "Three New" strategy of new building materials, new houses, and new energy materials is a new growth engine. We independently develop plasterboard production line with an annual capacity of 50 million m2, glass fiber pool kiln wiredrawing production line with an annual capacity of 120,000 tons, T700 carbon fiber production line with an annual capacity of over 1,000 tons, and 6 MW large-scale wind turbine blade production line. All of these can represent top industrial technologies in the world.

## Market Performance

#### Professional Platforms Opelicacy

Management

Function Stratification

#### Industrial Upgrading Driven by Model Innovation

The transformation from manufacturing sector into manufacturing services sector is a general development trend of global manufacturing sector. It is also the only road to developing high-end "made in China". We advance personalized services of new building materials and new houses and launch our business in research and development, design, and sales services through various ways, including out-souring, integration, etc. Presently, a customer can select house types from over 1,000 proposals; we continuously expand our service scope and increase value added by adopting Internet technology and exploring the construction of intelligent factories and the new business model of "Internet plus"; we explore the integration of industry and finance, C2B, outsourcing, Rolls-Royce's model (selling services instead of products), and Tyreplus' model (connecting upstream and downstream industrial chains) of existing businesses; by transferring competitive industries, we carry out industrial investment overseas; we break technological barriers by overseas technological merger and acquisition, establishing research alliances, and implementing integrated innovation, and launch high-end business by utilizing developed countries' advantages in branding and technology.

#### To Improve Operation Quality Through Management Innovation

In the area of corporate management and control, we adopt "grid" management and control model, where we fix the function division, operation mode and development orientation of the enterprise in specific grid through accurate management and control, thus avoiding "out-of-order rights exercise and investment" and keeping rights exercise smooth and operation in each enterprise orderly and concerted. In terms of management method, we adhere to the rules of "sixstar enterprise", "eight management measures", and "increasing income and reducing expenditures and consumption working method". The rule of "six-star enterprise" covers six standards that we set for a good enterprise; "eight management measures" represents a set of effective experience that is obtained during reorganization and integration, combining marketing with cost control and helping CNBM steadily keep good benefits with new normal. "Increasing income and reducing expenditures and consumption working method" requires us to promote activities that can help us increase revenue, economize, and reduce consumption by virtue of project management, where, with all staff's participation, we continuously promote enterprises to improve their operation quality through fundamental innovation and management optimization.

#### **Eight Management Measures**

Grid management

and control

**1**.....

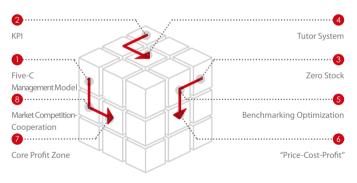
Standardization

Governance

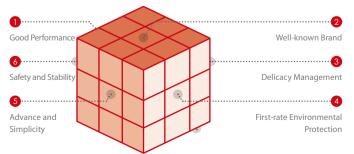
**5** 

Culture

Integration



#### Six-star Enterprise



## Expenditure, Consumption and Costs Reduction —— Lower Costs and Higher Efficiency

2014 witnessed many challenges and tests. With Chinese economy entering into new normal, industrial development also reached a plateau. In this year, we strove for strategy-driven growth and acted according to our goals. By firmly adhering to principle of "increasing efficiency and reducing liabilities through integration and optimization" and the six-character guideline of "stabilize prices, reduce costs, make collections", we fully implemented our costs reduction plan and achieved sharp reduction in raw materials, manufacturing, and management costs through a series of effective measures, including delicacy management, technological innovation, management innovation, etc. The prices of our main products were stable; costs continuously declined; gross profit rate went up; revenue and profit rose steadily.

## Lower Costs based on All Staff's Innovation

That's how much Jushi Group's cost reduction based on the working methods of increasing efficiency and reducing expenditures and consumption from 2012 to 2014.

**3884** That's the number of Jushi Group's parents by the end of 2014. Jushi Group Co., Ltd. advances the implementation of the working method of "increasing income and reducing expenditures and consumption", which is an innovation model with all staff's participation. In this model. "workers propose their ideas; technicians transfer their ideas into feasible technology schemes; finished products are experimented within a small scope; achievements are demonstrated and fully publicized. Project-based management is carried out in the model, with projects divided into three categories, namely major scientific projects, general innovations and improvement projects, and rationalization proposals. Major scientific projects

should conform to the enterprise's future technological direction, include major product innovation projects, have technological breakthroughs and proprietary intellectual property rights, and aim at restructuring the company's products, expanding the share of high-end products, and stabilizing Jushi Group's voice in the industry of glass fiber; general innovations and improvement projects conform to the enterprise's current management and technological progress, include general product innovations, expenditure and consumption reduction, and energy conservation and emission reduction projects, and aim at improving the enterprise's management, technology and

product quality; rationalization proposals refer to small reforms for the purpose of achieving partial improvements and optimizations. From 2012 to 2014, thanks to the working method of "increasing income and reducing expenditures and consumption", Jushi Group's accumulated cost savings hit RMB 1.1 billion; the number of its newlydeveloped products reached 44, 49% of which are high-end products; it possessed 384 patents, including 41 invention patents.

#### Cost Reduction based on Centralized Procurement

**18.7**% That's the rate of expenditure reduction of Xuzhou China United's centralized procurement in 2014.



That's the amount of procurement cost Xuzhou China United saved in 2014.

In terms of procurement stratification and approach, China United Cement Xuzhou Co., Ltd. timely formulates and implements specific procurement tactics in accordance with the supply and demand features of materials and market changes. As to coal resources, the company adopts the model of "small amount at each batch and a large amount of batches" to control stock. When purchasing such resource materials as ferrous material and siliceous material, bidding negotiation and price competition will be

employed. The company controls procurement costs and meets production demands through establishing risk reserve system and seasonal reserve system. It adjusts stock according to market conditions and reduces funds for stock by transferring stock to suppliers. Given seasonal short supply of mineral additive, it has signed contracts with large power enterprises, under which the company purchases pulverized coal ash in certain amount at fixed prices during a certain period. Bidding procurement is adopted

for purchase to meet the gap between supply and demand. By virtue of "fixed amount, price, and time", the company shares risks with suppliers so as to relieve price upsurge at the stage of short supply and controls comprehensive procurement prices better. In 2014, Xuzhou China United saved approximately RMB 65 million by centralized procurement, with its accumulated rate of expenditure reduction based on centralized procurement hitting 13.7%.

#### Innovation for Cost Control



That's the percentage Zhongfu Lianzhong reduced the direct materials cost for blades in the area of blades of 40.3 to 55 meters in 2014.

## Expenditure Reduction based on Delicacy

Management

## **25**[°]

That's how much travel expense of Nanjing Kisen declined on a year-onyear basis.

## **18**

That's how much office expense of Nanjing Kisen declined on a year-onyear basis.

#### Lianyungang Zhongfu Lianzhong Composite Material Group Company Limited controls its costs through technological innovation. The company effectively reduces cost of raw materials by accelerating the trial of raw material replacements, operation cost by optimizing technique, waste caused by defective products by improving product quality, and labor and energy cost by process management and control. In the area of blades, the company has reduced adhesive consumption for each blade by 10%- 15% by

In the area of control management expenditure, Nanjing Kisen International Engineering Co., Ltd. implements double management and control through full budget management and management system, and adheres to the principle of planning and prediction before an event, control during an event, and assessment and evaluation after an event. During the specific implementation, the company disburses in strict accordance with budget and any expense excess of budget shall be submitted to and approved by budget leading

bettering technological equipment and process: by strengthening quality management and process control, the company adopts single-laver vacuum bag film to replace double-layer vacuum bag film; through mold improvement, the company improves the positioning accuracy of baffle rings, and the length of reserved part in root segment has been reduced to 30 mm from 80 mm, with less cut waste made. Through the above-mentioned technical improvements, in the area of blades of 40.3 to 55 meters, the direct materials cost

ag190 kg while the share of glazent,cost decreased from 2% to 0.7%;the unit weight of eyelet fabric oflining in a tube declined to 30g/m2edfrom 65g/m2, thus reducing theusage amount of resin and makingthe product more infiltrative, andthe eyelet fabric cost of a DN 1000tube declined by 50%.

for blades declined by about

for 50 tons of desulfurization

2%. As to winding products, the

usage amount of glaze required

products declined from 550 kg to

group. As to travel expense control, the company strictly regularizes standards on reimbursement for travel expense and review and approval procedure and authority; reimbursement for travel expense shall be made in accordance with established standards and any overspending will not be allowed. Additionally, travel times and the number of people for travel should be controlled in strict accordance with actual project conditions, and travel costs can be reduced through centralized purchasing tickets. In terms of office expense. standardized office supplies

and engineering equipment are purchased in a centralized way, with a centralized procurement rate of over 95%; rationing is carried out to ensure that the consumption per capita will not be higher than the average of similar enterprises; the company implements asset register-based management to eradicate waste or loss. In 2014, on a year-on-year basis, its entertainment expense declined by 25%, travel expense by 11% and office expense by 18%.

#### Cost Reduction based on Benchmarking

Sichuan Yunlian Southwest Cement Co., Ltd. implements "Three-Five" benchmarking through benchmarking against three most critical management indicators for an enterprise' production and operation, namely "human resource, financial resource, and materials". "Human resources" refer to "morality, capacity, attendance, performance, and integrity"; "financial resources" refer to "price, cost, profit, loans receivable, and cash flow"; "materials" refer to "output, sales, quality, coal consumption, and power consumption". According to its actual conditions, Yunlian Southwest makes new benchmarking forms and expands its benchmarking scope by including all factors concerned with its production and operation into benchmarking, with a closed circle of management procedure from problem input to result output formed. Through advancing "Three-Five" benchmarking, Yunlian Southwest well controls the costs and its manufacturing cost of clinker has declined for three consecutive years.

## Tap Potential Through the Integration of Informationization and Industrialization —— Refined Management

Information technology and Internet will bring new develop space for manufacturing industry. Based on existing industries, the transformation and upgrading of traditional industries is conducted through industrial innovation and integration of various sectors, with internet thinking and methods adopted to improve efficiency and quality, reduce costs, and finally bring upgrading and updating. We actively explore how to utilize internet technologies to create new business models. Cement enterprises strongly advance "the integration of informationization and industrialization" to achieve intelligent production model of "cement + mouse", namely "Internet+ cement manufacturing", and explore how to develop world-class intelligent factories; through the foreign trading model of "cross-border e-commerce + overseas warehousing", trading enterprises build up "Internet + building materials products manufacturing + finance + logistics..." comprehensive service platform that covers the whole industrial chain, which represents that traditional building materials manufacturing sector and circulation sector are actively moving towards intelligent manufacturing industry and modern service industry.

#### **Smart Services**

#### - "Internet Plus" Service Platform Throughout the Whole Industrial Chain

By virtue of www.okorder.com, www.dz18.com, and www.cnbmtendering.com, China National Building Materials& Import & Export Corporation endeavors to establish "Internet plus" service platform throughout the whole industrial chain by combining traditional building materials manufacturing and marketing with new generation of information technologies, such as Internet of things, cloud computing, big data, etc.

#### The Website of

www.okorder.com

The website of www.okorder. com is a cross-border B2B trading platform for building materials industry, where domestic suppliers, banks, logistics resources, export credit insurance (ECI), customs, and purchasers are effectively combined to set up a full-range, controllable, creditable and value-added crossborder service pattern. Presently, it has become the best cross-border spot trading platform of building materials in China. The website transforms traditional foreign trade into cross-border e-commerce through supply chain integration and overseas warehousing and logistics parks based on new type Internet technologies, with building material resources rationally allocated worldwide.

#### The Website of

www.dz18.com

The website of www.dz18.com is a bulk commodities spot exchange and comprehensive service platform, with a purpose of integrating the whole industrial chain of iron and steel industry. Based on cloud computing, big data, and mobile Internet technology, spot trading, supply chain financing, logistics, and big data analysis are integrated. By virtue of data integration, process integration, application integration, and supply chain synergy technologies, www.dz18. com is combined with ERP system, SCR system, warehousing system, transportation system, and bank system, with real-time full-range sharing of trading data and business collaboration achieved. By virtue of "Internet plus" services, enterprises are provided with a comprehensive value-added service framework of "raw materials supply + processing deal + e-commerce + logistics distribution + financial services"; it "integrates the sector of iron and steel" through focusing on industrial chain integration and reshaping the value of supply chain.

#### The Website of

www.cnbmtendering.com

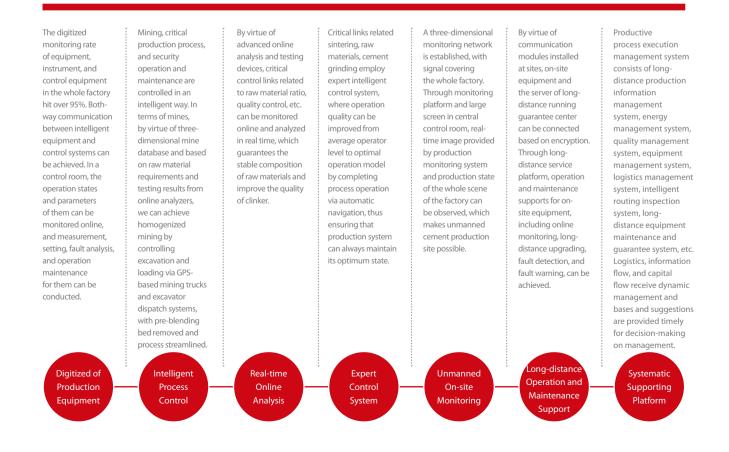
The website of www. cnbmtendering.com is CNBM's centralized procurement platform and public bidding system towards outside, mainly serving goods bidding, engineering bidding, and service bidding. It works as an online information exchange platform for projects owners, construction contractors, deign units, and supplier; it can help project owners find out construction contractors and suppliers that they are satisfied with; it provides construction units and suppliers with services that can help them expand business, reduce market development costs, and improve competitiveness; additionally, it can provide technical and service supports for sunshine procurement and sunshine bidding.



#### Intelligent Factory

#### - Intelligent Production Model of "Cement + Mouse"

China United Cement Taishan Co., Ltd/s intelligent cement factory with a capacity of 5,000t/d, namely world demonstration production line of low energy consumption, is designed and generally contracted by Nanjing Kisen. Under this project, six-stage cyclone preheater system, two-gear rotary furnace, and fourth generation grate cooler technology with central roll crusher are adopted; intelligent technologies including digitized mining, automatic proportioning, intelligent control of kiln and mill, intelligent routing inspection, etc. are employed to integrate several intelligent sub-systems related mines, raw materials, sintering, grinding, etc. into a short-process, full-automatic, and intelligent cement manufacturing system. Such a breakthrough in cement technical process layout effectively shortens manufacturing process.





## **Energy Saving** & Environmental Protection

We comprehensively utilize industrial and urban waste resource and manufacture low carbon products with minimal consumption and emissions; we are committed to providing the society with green and environmentfriendly building materials with reliable quality and providing product and service support for new energy industry; we are delighted to share effective energy saving technologies and management experience, explore development mode for the industry and the nature to co-exist in harmony, and advocate sustainable development of the whole industry and society.





## Responsibility Performance Mechanism of Energy Saving & Environmental Protection

## RMB **100** billion was invested for energy savin and environmental protection

and environmental protection in 2014.

**2,003** 

That's the installed capacity of cogeneration in 2014.

of solid waste was treated a

151

That's number of environmental protection organizations CNBM joined in 2014.

#### **Compliance to Laws and Regulations**

- We strictly abide by industrial access system, resolutely close down outdated production facilities, and constantly implement process upgrades.
- We strictly implement the national quota on energy consumption, continuously improve the efficiency of energy utilization, and keep the energy consumption of such main products as cement clinker, glass fiber, gypsum board, etc. at an advanced level.
- We strictly abide by standards on pollutant emission, improve emission reduction and monitoring measures, and ensure clean production and that the emission reaches the standards.
- Mining is carried out according to the Green Mine Convention. We timely carry out ecological restoration during developing limestone mines.

- We respect the Convention on Biological Diversity; carry out strict arguments on the site selections and layouts of factories; protect natural habitats, wetland, forests, corridors for wildlife and agricultural land during the construction of the projects; and reduce the adverse effect on surrounding environment and communities to the minimum.
- We strictly perform the approval procedures of project environmental assessment, implement the "three meanwhile" requirement of energy saving and environmental protection for fixed-asset investment projects, and earnestly organize and carry out the feasibility evaluation and environmental impact evaluation for new reconstruction or expansion projects.
- We establish the environmental risk warning mechanism, prepare contingency plans, and prevent and reduce potential environmental hazards.



#### Systematic Management

- We've set up a leading group responsible for energy saving and emission reduction, established a social responsibility and energy saving and emission reduction office at the headquarters of the Group. Member companies have established energy saving and emission reduction functional organizations of different categories and levels, achieving an overall coverage for the Group's energy saving and emission reduction management system.
- We attach great importance to the construction of energy saving and emission reduction team. Our industrial enterprises assign personnel to be in charge of energy saving and emission reduction in accordance with relevant national laws and regulations. Management personnel on key positions have obtained professional certificates. We make full use of internal and external educational resources to intensify the training provided for management personnel on

#### **Green Synergy**

- We establish the information open mechanism. We regularly report energy consumption and pollutant emission to stakeholders, disclose annual energy saving and environmental protection performance via annual CSR reports, and accept the supervision of stakeholders. During the feasibility study, construction, reconstruction and acceptance of project, we take advice from residents nearby and stakeholders in the region, and reduce the adverse impact of operation activities of enterprises on the environment and society to the minimum
- We devour to become a practitioner, fugleman, and advocator in coping with climate change. We resolutely close down outdated production facilities, take such measures as stopping production, reducing production and staggered shifts on product to relieve excess production capacity and realize energy saving and emission reduction. We actively undertake national energy saving and emission reduction

key positions, enrich employees' knowledge on energy saving and emission reduction, and improve the management competence of employees.

- We make strategies, general policies, plans and systems on energy saving and emission reduction, and improve our work through three systems covering measurement and statistics, monitoring and analysis, evaluation and assessment. We implement category-based management for the Group's member companies and formulate classified objectives and assessment schemes according to the characteristics of member companies.
- We implement standardization management system, and realize energy saving, consumption reduction and clean production through refined management. Manufacturing companies of

the Group have established standardization management systems regarding quality, environment, and energy, most of which have been certified.

- We integrate annual fund for energy saving and emission reduction into the overall budget management system, formulate expenditure plan for energy saving and emissions reduction, and guarantee the implementation of technological upgrades and management improvement. In order to ensure investment in energy-saving technological transformation, we support enterprises to use cooperative energy conservation and environmental protection such as energy performance contracting, clean development mechanism, etc.
- Adhering to the concept of green office, we have formulated detailed plans on green office. Performance on green office is included in routine monitoring and evaluation system. We actively promote the construction of video conference system to reduce the number of on-site conferences; we arrange business travel in a scientific way and prefer low-carbon vehicles.

**422,000** employees of the Group attended training in regard of energy saving and environmental protection in 2014.

**227** on-site conferences were replaced by video conferences in 2014.

missions, have initiated and signed conventions and written proposals, and advocate responses to climate change, environmental protection, dust-haze treatment, and lowcarbon development.

- We implement green procurement. In the procurement of raw materials, we give priority to products which are low-carbon and environment-friendly in the production and have a lower degree of damage to the environment; when selecting energies, we choose clean energy, and vigorously promote the use of such non-fossil energies as low-grade energy, municipal refuse, biomass energy, etc.; when choosing daily office supplies and other consumer goods, we prefer to choose products with simple packages and convenient for recycling.
- CNBM advocates the policy of simple pack. We insist on promoting bulk packaging for cement products and bare packaging for glass products. We seek to simplify the packaging of

products including gypsum board, glass fiber, etc. and maximize the use of recyclable packing materials to reduce packaging waste while ensuring the quality of products and transportation safety.

- We adopt green sale model. We reduce resource occupation and improve marketing efficiency through establishing modern logistic parks and rational plans on supply, marketing and logistics. We provide online transaction service for worldwide building materials products and reduce the carbon released by business travel of clients and sales personnel through establishing online marketing platform.
- 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; we

organize and launch exhibitions and promotion activities for energy saving and environmental protection technologies for green manufacturing and low-carbon development of the industry; we actively promote the knowledge of energy conservation, low-carbon life and green consumption.

Energy Saving & Environmental Protection

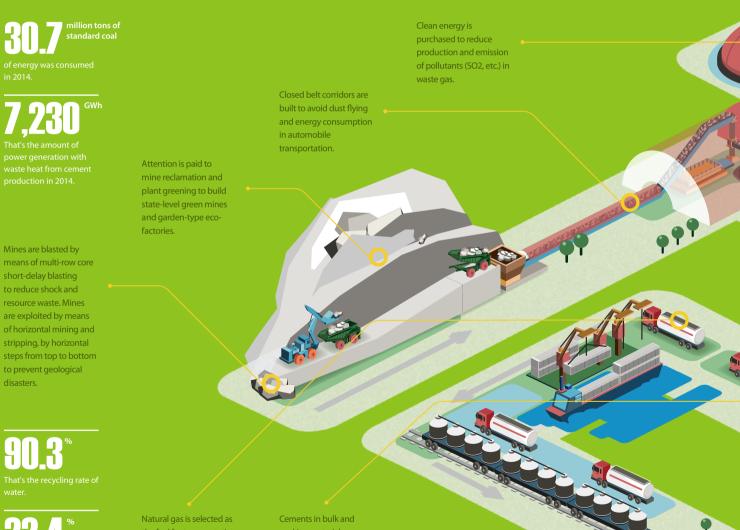
## 693

publicity events on environmental protection were organized or participated in 2014.

**37.5**^{°°}

of suppliers established longterm cooperation with member companies of the Group passed the environmental management system certification in 2014.

## A Low-carbon and Environment — friendly Travel – Green Manufacturing



to reduce environmental pollution of tail gas.

 the fuel for transportation

packing material minimization are promoted, and regional marketing systems are built to reduce energy consumption in transportation and packing.

Low-grade energy and renewable energy are made full use of. Flammable wastes like gangue, sludge and urban refuse are comprehensively used on production line to replace fossil fuels (coal, etc.). Outdated production equipment are timely put out of service. Kilns and furnaces are reconstructed and upgraded to improve combustion efficiency. Denitration systems are built to significantly reduce emission of NOx. Information-based control technologies are adopted to reasonably control consumption of reductant, prolong service life of system and control cost of denitration. The technological transformation of staged combustion is carried out to improve energy efficiency meanwhile control production of pollutants (NOx, etc.). Hazardous wastes, urban refuses and sludge are copressed, and ecological services are offered.

Electricity-saving measures like VF reconstruction of motor system, expert control system and peak-shifting production are taken to improve efficiency and safety of electricity utilization.

Waste heat generation units are provided on eligible production lines to convert waste heat to electricity, which is returned to and consumed on production lines. This reduces purchase of electricity.

Components of mineral resource batches are accurately measured to establish reasonable proportions, effectively use low-grade ores, improve homogenization and give full play to value of mineral resource.

With attention paid to water resource protection, water recycling is realized in both waste gas systems and cooling systems. Auxiliary process water (washing water, etc.) is also effectively recycled through sedimentation and sewage treatment system. Industrial wastewater is drained up to standard.

The technology of bagtype dust collection is adopted to bring emission of industrial dust and smoke up to standard in waste gas.

is optimized. Measures like physical isolation, greening shield and occupational protection are taken to reduce noise, reach national standards on noise treatment and relieve the impact of noise on staffs and communities around.

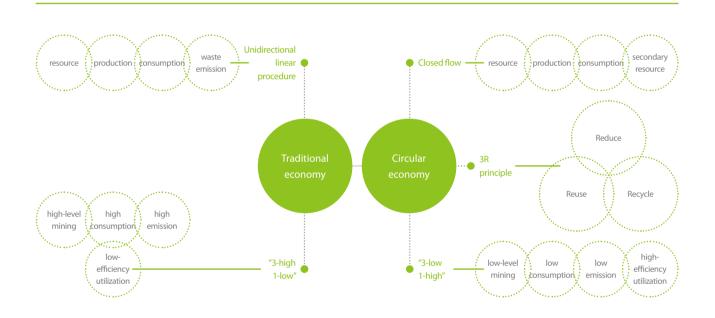
Layout of production line

Trest Au

Waste residues from production, reclaimed packing materials and non-conformity products are re-treated, and recycled as raw material after passing inspections. This realizes recycling of self-produced solid waste. Industrial solid wastes are treated upon cooperation to reduce consumption of natural mineral resource.

# A Refuse-to-Resource Revolution – Ecological Service

Resource exhaustion, land occupation by refuse and waste and environmental protection are urgent environmental problems at present. The industry of building materials is inherently advantageous in term of developing circular economy, and the transformation from traditional economy to circular economy is an inevitable choice for the industry of building materials. Giving play to the strength of scientific research and the advantage of production capacity, we comprehensively utilize and dispose of industrial refuses, urban refuses and construction wastes by means of technological reconstruction and upgrade, based on assurance of quality, safety and environmental friendliness, and arouse a refuse-to-resource revolution to offer ecological services to environmental protection, resource regeneration and urban construction.



## Reclamation of Industrial Waste

In the cement segment, first, fly ash from power plant, slag from boiler factory, pyrite cinder, carbide slag, non-ferrous smelting slag, red mud, waste foundry sand from casting, waste ore from beneficiation and DICY residue from pharmaceutical factory are used as materials for clinker calcination, to partly replace natural ores (limestone, sand-shale, clay, etc.); second, fly ash, calcination gangue, granulating slag from steelwork, steel slag, desulfurization gypsum, ardealite and fluorgypsum are used as admixture and retarder and mixed into clinker, followed by pulverizing to cement of required

grade; third, effluent, gangue, oil shale and sludge with flammable components are used to partly replace fossil fuels and natural materials.

In the new-type wall material segment, desulfurization gypsum is used in place of natural gypsum in production of high-performance gypsum board.

Besides manufacturers of cement and new-type wall material, nonconformity wastes and materials from manufacturers of glass and glass fiber can also be treated for recycling. **78.8** million tons of solid waste was digested in 2014.

### Comparison of Refuse Treatment Index between Waste-toenergy Power Plant and Co-processing in Cement Kiln





Waste-to-energy power plant (treatment capacity: 1,000t/d)	Index	Cement plant (clinker production capacity: 5,000t/d)	
1,000t	Daily treatment capacity	1,000t	
RMB 400~600 million	Total investment	RMB 400~500 million*	
≤ 70%	Equipment localization rate	≥ 90%	
70-80%	Annual operating rate	85-90%	
250,000~290,000t	Annual treatment capacity	300,000~330,000t	
High requirements for quantity and quality of refuse	Operational stability	Highly adaptable to fluctuation in quantity and quality of refuse	
Ash from incineration needing special treatment	Secondary pollution	None	

Note: * If the existing new-type dry-process cement kiln is used, the total investment will be no more than RMB 30 million, as expected.

## Harmless Treatment of Urban Refuse

There are mainly two ways for treating urban refuses. One is building a waste-to-energy power plant to convert heat from refuse incineration to electricity. The other is landfilling. According to experience of developed countries, treating refuses in cement plant is a more direct approach higher in economic benefit, efficiency and safety. Refuses properly pretreated are delivered to cement kiln for combustion, and digested when clinkers are normally produced. The heat produced in refuse incineration can be directly

used for clinker calcination, proportionally reducing consumption of or replacing the coal for clinker calcination. The process is called "co-processing in cement kiln". Compared to building a waste-to-energy power plant, the process can bring better economic benefits, environmental benefits and social benefits. Provided with a complete set of technologies for harmless treatment of refuse, we have carried out explorations and practices in quantity in terms of technical equipment, standard & specification, environmental

protection, safety protection, cement/concrete performance and quality, pilot experiment, commercial test, industrial operation control, normal production management and talent training, and proactively made attempts in production bases of CNBM. Based on such sufficient preparation, once proper policies are published, we will be capable of offering urban refuse treatment services with higher safety, reliability, efficiency, environmental friendliness and cost performance.

## Reclamation of Construction Waste

After sorting, rejection or pulverizing, most of construction wastes can be recycled. Based on R & D and achievement transformation within the frame of the National Key Technology R & D Program, Xi'an Research & Design Institute of Wall & Roof Materials promotes the project "Construction Waste Reclamation Line". The project can reject pieces of wood, polyphenyl particles, rags and shredded paper among construction wastes by a rate above 95%, and output regenerated aggregates qualitatively similar to natural aggregate. Such regenerated aggregate can be directly used in recycled concrete, masonry mortar, plastering mortar, etc., and used to produce building materials like paving brick and lattice brick.

# A Competition between Building and Energy Consumption —— Green Products

In the broad sense, building energy consumption encompasses the energy consumption of respectively building materials manufacturing, building construction, and building usage. China's building-related energy consumption accounts for nearly 50% of its overall energy consumption. In order to take the initiative in this competition between building and energy consumption, we reduce energy consumption for producing building materials by sticking to green manufacturing on the one hand, and research, develop and produce green building materials and prefab housing systems to support reducing energy consumption of building usage and building construction on the other. The prefab housing products not only integrate high-performance green building materials, but also joint seamlessly with new energy technologies and intelligent control technologies, thus turning into zero-emission, plus-energy, future-core dream homes.

#### **Green Building Materials**

We research and develop new building materials, which is carried out in accordance with four core concepts, namely energy saving, safety, comfort, and ecology. We aim to enhance the thermal insulation property of products. For example, by adding phase change gypsum board of mixed phase change microcapsules into wall boards, we can control the indoor temperature in a narrow range of variation, make the living environment more comfortable and reduce the energy consumption of buildings. We choose environment friendly and safe raw materials to ensure

the using and living safety. For example, we have developed and produced formaldehydefree gypsum board, into which formaldehyde decomposer is added to effectively decompose formaldehyde in the environment, the purification rate of which reaches 93.9%. Therefore, building materials is not the source of formaldehvde anv more, but a purifier of formaldehyde. We improve the quality of products, extend the service life of products, and reduce repetitive production. We develop and use industrial waste resources as raw materials to produce building materials to

reduce the consumption of natural mineral resources, and achieve maximized recycle and effective disposal after service life. Currently, the system of new building materials, including gypsum plaster board, GeiL board, GeiL tile, etc. is widely used in architectures at home and abroad, contributing to energy conservation in the building industry.

#### High proportion of effective area

With less bearing partition indoor, flexible layout, wall with half thickness of traditional structure, 10% more usable area inside, and an efficiency rate of 92%.

#### Moisture-proof

We adopt the design of open ventilation layer according to the principle of air heat cycle to achieve cross-ventilation and indoor air ventilation; the main structure and the decoration layer of exterior walls are directly equipped with "one-way breathing paper", an effective barrier to the entrance of external moisture and other corrosive gases into the main structure, through which the indoor moisture can go out.

#### Heat insulation

"Dual heat insulation (internal and external heat insulation of exterior walls) + double interlayers (open ventilation layer and closed air layer)", effectively avoid "dew formation in the winter" and "damp in the summer", with energy consumption declining by over 75% compared with traditional housing structures.

#### Sound insulation

Compound walls with multilayer cavities made of different textures and of various thicknesses provide even better performance in sound insulation than five-star hotels.

#### Anti-seismic and wind-proof

Massive flexible structure, 30% of the weight of traditional brickconcrete structure, lightly respond to earthquakes, with anti-seismic and fastened joint components; it can meet the requirements for protection against 9.0-magnitude earthquake and 12-class typhoon.

#### The prevention

The materials of exterior walls and for heat insulation are level-A nonflammable materials that can fully meet the national requirements for small and medium-sized buildings to prevent fire.

#### **Green Housing System**

We provide the building industry and residents with systematic solutions and construction program of building materials products. "Constructing houses as if we are making a car", we manufacture building components in the modern factory and turn the construction site into an "assembly shop". The construction process is a dry-method one, with the water consumed being only 10% of the building of a traditional house. Besides, the construction is not subject to seasonal effects, the construction period is short, and no construction waste and noise is produced. The building construction energy consumption and emissions are therefore sharply reduced. "Decorating houses in the way aircraft interiors are arranged", we integrate decoration, furniture, and green technologies into a whole during the construction, thereby achieving better design and quality. 39

#### **New Energy Technologies**

We combine the prefab housing technologies perfectly with the new energy technologies. The roof solar photovoltaic integrated technology enables the house to run solely on solar energy. The roof adopts siphon-type drainage, with each module separately finding the slope from south to north. The concentrated rainwater comes together at the biological purification pool located at the north side, and can be used as pure water after being filtrated and sterilized through the sediment and cleaning equipment. Additionally, depending on needs, such green technologies may be used: integrated roof and vertical greening, interior lighting energysaving design, multi-purpose utilization project of rainwater, central ventilation system, PM2.5 processing system, ground-source heat pump system, light-pipe underground garage spotlight, minisized wind power generation, small-scale hydro power, solar water heater and methane fuel cell. Such technologies can help reduce reliance on active heating or cooling systems, and transmit extra energy to the grid, so as to achieve "zero emissions" and "plus energy".

#### Environment-friendly and

Industrialized prefabrication, field assembly, short-term construction; environment-friendly construction site, no pollution of noise, dust or sewage.

## Intelligent Control Technologies

We implant intelligent control, micro-grid systems, and other new techniques and new ideas into the housing system. Living in a house with intelligent learning capability, the occupant can use the handheld terminal's mode choosing to record his/her own habits, and send the record to the information cloud. After some time, the house will learn and then grasp his/her time schedule, favorite temperature and most commonly used illumination level, etc, thus making the house more suitable for private residence and more energy efficient.

#### Intelligent compatibility

A variety of devices and pipelines can be embedded in compound walls and floor structure; intelligent control is adopted; visual intercom for burglary prevention, fresh air ventilation, central air-conditioning, central dust removal system, ground source heat pump, rainwater collection, and solar system can be integrated well.

#### Highly-galvanized process is adopted

for the corrosion prevention of structural steel and bolts; the main structure employs a safe structural design for 95-year service life.

#### Extensive application

Applicable to a variety of climatic zone (severe-cold or tropical zones), landforms (islands in the sea, flat ground, sloping fields, mountainous regions, desert, etc.), and geological conditions (sandy soil, weak soil, rock, etc.)

Over 90% materials of the house's main parts can be recycled, which can eliminate massive building rubbish caused by demolishing the house.



# Employee Care

We make every effort to safeguard the rights of our employees, respect their differences and make the company a reliable partner, and a happy and comfortable home for the employees. We try to build a sustainable and better future together with all our employees and deliver our happiness to the





# Responsibility Performance Mechanism of Employee Care



member companies had carried out employee satisfaction surveys as of 2014.

That's the employee turnover rate in 2014.

## Equality and Respect

- 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 employees, and strictly prohibit and reject employing child labor in any form.
- We adhere to equal employment, respect and equally treat employees of different nationalities, ethnics, genders, ages, religions and cultural backgrounds. Employees are recruited and employed in an open, fair and impartial manner.

# Compliance to Laws and Regulations

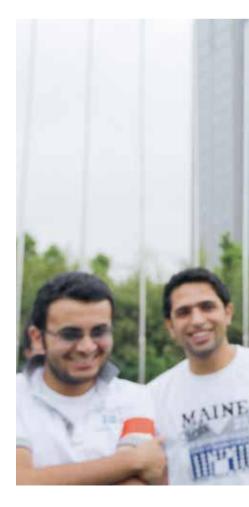
- In strict compliance with "Labor Contract Law of the People's Republic of China" and relevant laws and regulations, we sign labor contracts with our employees and standardize the labor contract management.
- We pay basic pension insurance, basic medical insurance, unemployment insurance, work injury insurance, maternity insurance and other social insurances for our employees in accordance with laws, and establish schemes of supplementary medical insurance, corporate pension, and periodical physical examination system. We also encourage our member companies to purchase accident comprehensive insurance and other supplementary insurances for employees in line with their actual conditions.

**311-1** That's the ratio of average salary of male employees to that of female employees in 2014.



- In line with the principle of equal pay for equal work, we equally treat part-time employees, day laborers, and the workers of our subcontractors. Their legitimate rights and interests are well protected.
- We respect the privacy of employees, and have established a privacy management system covering such management links as recruitment, assessment, health records, etc.

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



## Democracy and Open

- We keep widening our trade union network, set up and improve the trade union organizations and work organizations at all levels; develop members of these organizations, and make trade unions more attractive and cohesive.
- We support employees to express their rational appeals and safeguard 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 disclosure of factory affairs, and ensure employees' rights regarding participation, information and supervision. We share the corporate operation information with the employees through channels such as the disclosure board of factory affairs, employees discussion meetings, manager's mailbox and the company's website.

# **27.3**[%]

That's our coverage rate of collective bargaining and contracts in 2014.



## Cultivation and Development

- We establish a scientific remuneration system and incentive mechanism; set two career paths for employees' promotion, leading to management positions and professional positions respectively, through which we manage to meet the development needs of different kinds of talents.
- We spare no efforts in the construction of learning groups. We aim to build a multi-channel, multiform, multi-level and differentiated employee cultivating and training platform. Following the training approach of "based on internal training and supplemented by external training", we share the education resources to build a comprehensive training system for the Group.
- We implement the mechanism of intra-group communication and on-position learning for employees, thus effectively allocating the human resources within the Group and providing a broad platform for the employees to develop their careers.
- We encourage enterprises to carry out corporate pension plans according to the actual situation, provide work meals, sports venues, mental health counseling for employees, and provide transportation and housing subsidies for specific employees. We have continued to improve the payment and welfare guarantee system.

**566.2**[%] of our member companies with an

average salary higher than that of the local level in 2014.



That's the number of hours our employees attended training for in 2014.



That's the number of employees we supported to gain in-service degrees in 2014.

Employee Care



43

# **Safety for All**

We have established a domestically top-ranking management system for safe production with safe production accountability system as the core, the standardization of safe production and the post safety technical regulations as the emphases, troubleshooting and treatment of accident potentials as the methods, the informatization of safety management as the tool, and the development of safety culture as the guarantee, to ensure the safe production and occupational health of staffs.

## Tamp the Management Foundation





We set up the organizational system for safe production with the principles of comprehensive coverage and practicality. The managers in charge would be the primary persons responsible for safety in the workplace and 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 staffs to participate in safety management.

We attach great importance to building up a 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 CNBM Safety Training Rules, ensuring the popularization of safety knowledge, the execution of safety procedures, the implementation of contingency plans, the knowledge of occupational hazards, and the self-protection abilities through training and assessment.

We give importance to investment in safety in order to provide financial support for improving and maintaining the safety equipment and facilities, implementing technical innovations for the purpose of essential safety, organizing training in safety procedures, spreading safety culture, etc.

## Improve the Management Mechanism





We have established safety production management system covering penalty for safety violations, etc. We have also introduced special regulations and work guidelines for managing occupational health, major hazard sources, overseas projects and non-coal mines, etc.

We implement the standard safety management, and actively push member companies to implement occupational health system certification. As a national pilot enterprise in standard safe production, we actively promote the work of reaching standards of standard safety of cement enterprises, improve the safety management system, increase the safety management level, and boost the safety management performance. Informatization technology is applied for the purpose of safe production management. The safety management information system independently developed by CNBM has also been included as one of the "Integration of Informationization and Industrialization" key projects by the Ministry of Industry and Information Technology. Online management has covered all key procedures and links of safe production management, including qualification management for safe production, basic files of safe production, eradication of hidden dangers, danger source management, safety checks, and safety training.

We continue to improve the emergency management system. In the system that covers all layers of the Group, the Group's emergency management team takes the general charge, while the emergency management teams of the member companies would be responsible for specific measures. A comprehensive emergency response plan is established, supplemented by special emergency response plans and on-site response schemes. We organize member companies to check the reserves of emergency supplies regularly, take emergency response drills, and give onsite instruction on emergency response work.



#### Value Occupational Health

We have installed and optimized supporting facilities for dust prevention, gas defense, noise reduction and emergency alerts as well as first-aid equipment in the production place, based on our in-depth study and analysis on the features of building materials production. For the purpose of labor protection, we offer labor protection articles like overalls, helmets, protective footwear, gloves, noise-proof ear covers and anti-dust masks, which are put in place and replaced in a timely manner to ensure their efficacy.

It's an established practice to organize employees to take health examinations, arrange extra heath checks for staffs in jobs with exposure to dust or radiation, establish Personal Health Record and keep reexamination.

We gradually incorporate mental health into the occupational health management. We encourage member companies to set up mental health consultancies or cooperate with mental health institutions to build health record archives and pay attention to the mental health of our employees.

## Strengthen Hidden Hazards Elimination

We take the building of "capacity to reject and prevent hidden hazards" as an important part of the effort to improve the basic management level of enterprise safety, and promote the closed-loop control, composed of "basic capacity building---assessment and control of latent dangers of accident---work and performance reward assessment---the ability to enhance the safe operation", to achieve the PDCA's continuous improvement. We explore and establish a sixin-one screening and governing system of accident potential, the six respectively being "focusing on the job responsibilities fulfillment, using listed investigation standards as a tool, taking the close-loop selfexamination and self-reporting of hidden hazards as the means, basing on team construction and all-staff participation, taking reward and punishment system as the safeguard, and being

**18.8**°

2014.

That's how much the recordable injury

rate per 1,000 employees decreased in

That's the completion rate of physical

examination of employees in 2014.

supported by information-based management tools". In 2014, the Group released and implemented the "Management Methods on Checking and Eliminating Accident Potential in Safety Production". The Group organized a specific project of fighting illegal acts and rule violations, during which we carried out spot checks on 76 member companies, and network inspections on 237 companies.

Employee Care

#### Spread Safety Concepts

We actively organize safety promotion activities like "Safe Production Month" and "Safe Production Year", prepare and issue safety culture manuals, and incorporate the idea of "people first and life foremost" into the corporate culture. We attach great importance to safety and occupational health management of suppliers and subcontractors, include terms on safety and occupational health into service contracts, and cooperate with companies in the supply chain to carry out routine safety checks, training, emergency response drills, and culture transmission.

# **Happy CNBM Family**

We always adhere to the "people-oriented" management concept, promote the environment of "San Kuan San Li" (being lenience, tolerance and ease; unity, affinity and cohesion), value the growth of both employees and member companies, try our best to satisfy needs for development and appeals from different employee groups, pay attention to employees' families and life quality, and strive to create a "one-CNBM family" corporate environment. Our work has also been recognized by the community. Our efforts have been recognized by the staffs, as indicated by the ever-increasing employee satisfaction level.

### Care for You and Her

We care for the health and life of female employees, value their professional growth and treat them equally with male counterparts in salary, management position, professional training and vocational development opportunities. In order to safeguard female employees' legal and special interests, we buy maternity insurance for them and implement flextime for those in maternity and lactation. We also provide antenatal examination. maternity leave, breastfeeding leave, and birth allowance for female employees.

We are concerned about the work, life and mental needs of young employees. We bring young people together through the communist youth league, providing them a platform to demonstrate their talents and exchange ideas. We hold parties for young single employees to create opportunity for romance and organize group weddings to send the best wishes from the Group.

We care for the work and life of expatriates, especially those who station abroad or in the communities of minority ethnic groups for long, offer regular home leave, hold special afterwork activities and provide mental health counseling so as to relieve their pressure and promote happiness.

We respect disabled employees, pay close attention to their working environment and living quality, and provide them with a convenient working environment and necessary amenities.



**3,120** That's the number of minority employees in 2014.

**2,263** That's the number of disabled employees in 2014.

Caring for You and Your Family



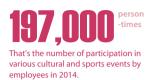


We continuously improve the system of employee support and relief, and help employees to overcome difficulties by various ways. We do practical things, solve tricky problems and do good deeds for employees in difficulty, and make such actions regular, institutionalized and standardized. We create and maintain the records of poor employees to keep track of the practical situation of poor households and give them timely assistance through many channels and in various forms.

To help employees suffering serious and severe illness, we set up a mutual fund to combat serious illness; we help the employees children in need to complete education with the "Goldenautumn Grant-in aid" program; we help the employees' children in need to find jobs after graduation and help their laid off family members for re-employment; we stick to the custom of visiting needy groups in winter and two major festivals, mainly including childless and widowed elderly people, families of martyrs and poor retired employees.

## A Healthy and Happy CNBM Family

We encourage member companies to strengthen the construction of gymnasiums, recreation rooms, reading rooms and psychological counseling rooms, providing staffs with places for recreation activities; organize colorful cultural and art activities and sport competitions to offer a broad stage for the staffs to show their gifts; arrange various visits and trips, and pay close attention to the development of the staffs' abilities and awareness of self-improvement, family care and giving back to society. We assist in the establishment of clubs and associations of photography, cooking and dancing where employees receive professional instruction and communicate with likeminded colleagues. Through continuously improve employees' physical qualities, cultural literacy and life qualities, we strive to make the company a reliable partner and a happy and comfortable home for staffs.





# **Exemplary CNBMers**

CNBM's happy corporate culture and harmonious working atmosphere help construct a stage for employees to serve the enterprise, serve the society and achieve personal values. Our employees have become, in their respective professional fields, a pioneer in research, a moral model and an exemplar of integrity, and rewarded the society and inspired others through their words and deeds.

# A happy Life in Pursuit of Scientific Research

Bao Yiwang, currently doctoral supervisor at the China Building Materials Academy (CBMA), deputy chief engineer and chief scientist at the China Building Materials Certification & Inspection Group Co., Ltd., and a professor, stayed at the CBMA and engaged in the scientific research work on the performance evaluation of inorganic non-metallic materials after gaining his doctoral degree in 1990. He studied successively with the older-generation famous dynamicist Prof. Wang Longfu, Prof. Jin Zongzhe and Academician Wu Zhonawei, After finishina his post-doctoral research at the Germany's Alexander Von Humboldt Foundation in 1997, he gave up the opportunity to work in America recommended by his supervisor, and determinedly returned to CBMA. He has ever since worked diligently in the field of China's building materials industry. In his work, Mr. Bao created new methods and technologies to promote the development of the discipline of brittle material mechanics: led the development of some international standards, propelling China's independent intellectual property rights and technologies onto world stage; defied hardships and dangers to overcome the

problems in evaluating material performance in extreme and ultrahigh temperatures; produced innovative outcomes that have advanced industrial progress and society's development; independently researched and developed special instruments to boost research innovation and industrial development; gave sustaining and equal attention research and education, and has trained research personnel for the country.

Prof. Bao inherits from the oldergeneration scientists the fine traditions of assiduous studying and devotion to science, and constantly explores and makes innovations, illustrated by his exceptional achievements in the testing and evaluation of mechanical properties of brittle materials. He has successively completed over 20 national and provincial-level scientific research projects, including projects under the "973" program, the "863" program, the National Science Fund for Distinguished Young Scholars, the Special Program on National Major Scientific Instrument Development, the Chinese Academy of Sciences' "Hundred Talents" program, and the Beijing Municipality Major

Science and Technology Plan. Prof. Bao has published more than 200 papers on academic journals at home and abroad, of which 113 are included by SCI, over 160 are included by EI: obtained more than 40 national patents, published two monographs; played a leading role in formulating six international standards and 17 national and industry standards; won two awards of the National State Science and Technology Progress Second Prize, three awards of the provincial-level science and technology progress first prize and six awards of the second prize at this level, and won the title of "National Model Worker" in 2015.

Prof. Bao believes that the happiest person in the world is he who dedicates himself to the cause he loves with his own work and, hence, serves more people. And he wants to be exactly that person. Stand fast till the last minute of withdrawal

In March 2015, the situation in Yemen deteriorated, threatening the life safety of CNBM International Engineering Co., Ltd. employees stationed in Yemen. CNBM immediately launched an emergency plan, set up an emergency working group to track developments in real-time, and arranged for emergency deployment. The employees in Yemen were divided into seven action groups with designated leaders and interpreters, so that they could evacuate in a safe, orderly and efficient manner. Under the government's leadership, with

the help of Chinese Embassy in Yemen and Chinese Embassy in Aden, Yemen UCC cement plant workers boarded the ships of the Chinese naval escort fleet on March 29, were successfully transferred from the Yemeni port of Aden to Djibouti, and then with the help of Chinese embassy in Djibouti, went by air to Addis Ababa. On March 31, all evacuated staff finally took the flight from Addis Ababa bound for China, and returned safely to the motherland.

The production management team of the Yemen UCC Cement Plant

built cement factories for Yemen and provided operation services. For a long time, the team overcame various difficulties, contributed wholeheartedly, and strove ceaselessly. After the fighting broke out, the workers stuck to original production plan while preparing for evacuation, and shut down the production until the last minute before withdrawal. Local proprietors were deeply moved by the integrity and professionalism of Chinese enterprises, and expressed the hope to cooperate with CNBM and more Chinese teams and strive for better outcomes.

Employee Car

49

"

Prof. Bao believes that the happiest person in the world is he who dedicates himself to the cause he loves with his own work and, hence, serves more people. And he wants to be exactly that person.





# **Corporate** Citizen

During production and operation, we seek to achieve mutual development with the region where we operate. Our accomplishment cannot be achieved without the support of the stakeholders and people from all walks of life; we reward the society through unique social welfare projects. Our employees are delighted to make contributions and dedicated to volunteer activities, exercising their responsibilities as corporate citizens with their actions.



JUSH/ 巨石埃及公司 环红海徒步比表



巨石埃及公司 2014 环红海徒步比赛 سلقة تتركة جوشر مسر للمشي حوطات البحر الأصر لمر 11

# Responsibility Performance Mechanism of Corporate Citizen

# **24,000** That's the number of new

**10_0** billion

That's the amount of taxes paid to local governments in 2014.

# **51** Fhat's the numbe

organizations, e.g. associations etc. the headquarters of the Group took posts in 2014.

# **20.8** million That's the amount of dona

in 2014.

## Stick to All-win Situation among Regions

- Being honest and law-abiding. We strictly comply with international conventions and local laws and regulations, pay due taxes, and protect environment; we respect local religious beliefs and customs.
- Serving the construction. We build for developing countries and areas advanced cement and glass production lines to meet local construction needs; we popularize systematic solutions of new building materials and prefab housing products, advocate green consumption ideas and provide support for energy saving construction products; we construct large logistics parks and selling networks, providing systematic trading service to promote optimum distribution of regional resources.
- Efficient use of resources. We make good use of local superior resources, combine them with enterprise technologies and management advantages to create a value chain with a competitive edge, provide value-added space for the raw material suppliers and product vendors in the local economy, and create tax revenue.
- Risk management and control. We strengthen the management of overseas enterprises and projects, All-round risk management system covering risk factors faced by the overseas companies is established, including political risk, country risk, financial risk, legal risk, risk concerned with bidding, tax risk, labor service risk, and industrial risk, as well as an early warning system with risk analysis and emergency mechanism to guarantee safety of staff and assets.

That's the rate of responsibility-based

procurement in 2014



- Responsibility spread. We insist on public bidding and lawful procurement: we evaluate the business capacity, credit status, and management of our subcontractors and cooperate with subcontractors that have good performance in social responsibilities. In the contracts, we explicitly stipulate the protection of lawful rights and interests, occupational safety and health of employees of sub-contractors, and during the protection, the management regulations on sub-contractors shall be strictly executed.
- Building harmonious community. We strictly carry out the impact assessment of new projects, reconstruction ones and expansion ones, fully solicit the views of interested parties on the economic and environmental benefits, and minimize the negative impact of business operations on the environment and society; we actively participate in local public welfare and community activities to create a favorable image.

**5/.4** That's the hiring rate of local senior management in 2014.

**677.7**% That's the hiring rate of local employees in 2014.

## Supporting Programs for Public Good

- We establish emergency response mechanisms, to provide first-time disaster relief, civil defense and other public safety matters.
- We standardize donation management regulatory. We establish and improve the donation organization and management system, and strictly implement the annual budget and procedure for examination and approval of process; we have established a mechanism for periodically analyzing and reporting the donation project progress, evaluating effects and conducting return visits when the project ends, and reject apportioned, duplicated, ineffective, poorly run public welfare projects as well as ones that are beyond the enterprise's

capacity, so as to focus on the donation's effect and guarantee the interests of investors.

- 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, so as to support the development of society.
- We make innovations in poverty alleviation mechanisms. We have achieved the transition from providing funding for poor areas, to developing industries in poor areas, using science and technology to support poor areas and introducing talents to poor areas. We organically integrate enterprise development

and poverty alleviation building in order to fully exploit the channels and space for poverty-stricken areas to be lifted out of poverty.

 We support volunteer activities, providing the activities with guarantee and support in terms of institutional framework, working mechanism, scheduling, financial support, communication and liaison, etc. **3.0** That's the total amount of input in environmental protection and public welfare in 2014.

мв		million	
	Ð		

That's the input in voluntary activities in 2014.



That's the local employment rate of overseas companies in 2014.

# "One Belt and One Road" and Promising Outlook —— Regional Common Growth

The "One Belt and One Road" strategy is a brand new probe into new models for global international cooperation and global governance. That China's economic development drives the common development of countries along the belt and the road is the best interpretation of win-win cooperation, which is also of epoch-making significance. After years of development, relying on the strength of science and technology and complete equipment, CNBM has established a world-class cluster of complete equipment and packaged technologies. We have not only accumulated a certain amount of strength, but also achieved some results. The responsible and sustainable business philosophy makes us highly recognized and fully accredited in local areas as we engage in "going out". We will strengthen cooperation in the future, combine with financial leasing and other financial instruments, make use of the Internet, informatization, intelligentization and other technologies, and integrate investment, management follow-up service into our whole industry chain, with the aim of harvesting more fruits along the "Belt" and the "Road".

#### **Overseas Operation**





## Growing Together Bit by Bit —— Social Welfare

We firmly believe that a responsible social welfare system is the basis for promoting social justice and for enterprises to fulfill social responsibility, and more importantly, it is an important measure to protect the interests of investors. In the principle of being accountable for beneficiaries 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 the public rights and interests by evaluating importance of projects, reliability of executing units of projects, and public benefits of projects as well as our annual business performance; we reject apportioned, duplicated, ineffective, poorly run public welfare projects as well as ones that are beyond the enterprise's capacity to ensure public interests. We respond to national calls to seriously promote poverty reduction work in specific areas, give special attention to the development of environmental protection and education; at the same time relying on the support from Communist Youth League organizations, we continue to promote volunteer activities, and has achieved positive results.

### Innovations in Poverty Alleviation Mechanisms

Population120,000 (2013 data)Area1,403 km²FeaturesThe County has mouth

The County has mountainous area account for 88% of its total area, and is a typical alpine region "with 90% being mountainous, 5% being covered with water and 5% being arable land". It is also quite unique as it combines the features of being amidst high mountains, an immigrant reservoir area, a nature reserve, an old revolutionary base area and an area prone to natural disasters.



ravines and gullies crisscrossing, and an elevation of 1.248-2.942 meters, the County is a typical loess hilly-gully region. Its fragile ecological environment is prone to natural disasters. drought in particular. There is even the saving that "Of ten vears, nine will see the onslaught of drought". The region cannot independently feed its own people. Per capita water resources quantity is 14.8% of the national average.

We always focus on poverty reduction to fulfill our social responsibilities. Since 2002, CNBM has established site-specific povertyreduction relationships with Shitai County of Anhui Province, Jingyuan County of Ningxia and Zhaoyang District of Zhaotong City, Yunnan Province. By donating poverty alleviation funds, we help local areas to withstand natural disasters,



Jingyuan County

of Guyuan City,

Ningxia Hui

Region

Source: Baidu Encyclopedia

improve educational environment, solve housing difficulties, repair roads and build electricity and water conservancy facilities. Meanwhile, in order to help poor areas to rid themselves of poverty completely. the Group actively transforms poverty reduction thinking and creates new modes to reduce poverty. Focusing on alleviating poverty through improving education, developing industries, introducing talents, protecting ecology and developing integrated resources, we invest in the construction of advantageous industrial projects, get senior management personnel stationed there, conduct multidimensional poverty alleviation work, and earnestly solve the basic needs of poor people, so that the poverty alleviation can truely improve people's living standards.

Population850,000 (2012 data)Area2,167 km²FeaturesLocated in the low-

2,167 km² Located in the low-latitude high-altitude region and having complex climate conditions, the District experiences an average economic loss of about 146 million vuan caused by natural disasters every year: with its population density high, reclamation index high, land barren, and soil in serious erosion, the area has no strong industrial support, and would readily return to poverty in the aftermath of a maior natural disaster

RMB **20.8** million That's the total foreign donations for 2014.

**310** That's the number of foreign donation projects for 2014.

" Zhaoyang District of Zhaotong City, Yunnan Province

### **Building Beautiful Homes**

Due to the lack of diversity of income sources, people at Songjiashan Natural Village of Huluping Village Committee, Shouwang Township, Zhaoyang District, in Zhaotong City, Yunnan have insufficient production and living conditions, great traveling difficulties, and houses that are mostly rammed earth construction with poor seismic resistance. To improve their production and living conditions and build a beautiful village with well-rounded functions, a beautiful environment and a civilized and harmonious atmosphere, the Group donated 3.5 million yuan of relief fund in 2014 to help ease housing problems of over 300 households and potable-water shortage for more than 60,000 people. After the planning and wide publicizing by the village functionaries, the first-phase construction project of Songjiashan Beautiful Village was launched, with the aim of completing the building of 103 houses.



# Building Future Bit by Bit —— Voluntary Activities

We advocate a harmonious social atmosphere, and provide guarantee and support, in terms of mechanism and funding, for our employees to participate in voluntary activities. We encourage them to provide voluntary services and participate in social welfare activities. Under the volunteer service system with the Communist Youth League at the core, companies at different levels establish several volunteer activity groups, carry out varied volunteer activities, which demonstrate participants' enthusiasm and spread happiness.

#### Into the Sun Village

Sun Village is a grassroots relief agency committed to raising and teaching minor children of prisoners and other children in difficulties free of charge. The children's living, learning and other expenses come from contributions made by people from all sectors of society. The founder of Sun Village, Ms Zhang Shuqin, is a gentle and kind lady in her 70s, affectionately called Granny



Zhang by people at the Village. She founded the Sun Village, with the following intentions: first, as a mother, she could not bear to see young children displaced, discriminated against, and neglected by society; second, as a retired prison guard, she hopes that inmates after knowing their children have been taken good care of could be rehabilitated without distraction; third, as a citizen, she hopes that these children can grow up healthily, rather than become potential threats to society. With the help of caring people at home and abroad as well as her own unremitting efforts, Granny Zhang has already founded eight Sun Villages around the country, and for 16 years, has helped more than 4,000 children. By chance, the volunteer team of **CNBM Information Technology** Co., Ltd. (hereinafter referred to as the CNBM Info) entered the Sun Village, thereby initiating the warm story of how it has supported the Village.

#### **Charity Dormitory**

The Sun Village in Beijing currently takes in over 100 kids, averaging about 10 years old, with the youngest just 2 years old while the oldest having graduated from college. As they grow older, the Village's existing dormitories and beds become increasingly a concern. In order for kids to have a more comfortable living environment, the CNBM Info invited the brother unit Beixin Integrated Housing Beijing Co., Ltd. to construct the "Charity Dormitory" with the funds raised from its employees. The project costs RMB 350 thousand and adopts the CNBM's prefab housing system. Compared with the traditional architecture, these houses are extraordinarily safe, comfortable, energy-efficient and environment-friendly. Volunteers also raise funds to purchase new furniture and appliances for the kids, so that they can grow up healthily in a comfortable new home.



### Care and Attention



Since getting attached to the Sun Village, things, ranging from the special purchases for the Spring Festival, Children's Day stationery, thermal underwear wore in winter, green beans and mosquito coils in summer, have became a concern for the volunteers from the CNBM Info. In order to cultivate the children's love for life, self-reliance, and hard-working characters as well as popularize agricultural knowledge, the Sun Village built a welfare farm. Learning that the farm's greenhouse construction ran into difficulties, volunteers at the CNBM Info purchased cement and other basic materials immediately and had them sent to the Sun Village, to ensure the

construction and operation of the welfare farm. Currently the farm has become a platform for children and kind visitors to share the fruits of labor as well as kindness and warmth. The charity tree adopting, charity family mini-farm and other activities also lead the kids living in cities to learn more about agriculture and environmental knowledge, and to grow together.



## Keeping Company of Kids and their Growth

With their parents absent, kids at the Sun Village crave even more for love and care while they grow. In addition to donations, volunteers at the CNBM Info usually visit the kids there. Together, they sow seeds, weed, write characters, paint, put on performance, and cook food. The volunteers give kids solid arms and warm embraces, creating an environment overflowing with happiness for their growth.

Corporate Citizen





# **Technological** Innovation

We shoulder the responsibility of innovation for the industry by leveraging our strong research capabilities. We also promote the transformation and upgrades to the industry with our foresight, vision and advanced technology. We promote and share our technical information. We are committed to building a more environment-friendly, comfortable and intelligent living environment and creating a sustainable future.





# Responsibility Performance Mechanism of Technological Innovation

was spent in scientific and technological activities in 2014.

RMB **2900** billion was recorded from sales of new products in 2014.

# 13,000

That's the number of personnel engaged in scientific and technological activities in the Group in 2014.

7.3

That's the percentage that the science and technology personnel of the Group accounted for the total number of employees.

## Integrating Innovation Resources

- We establish an integrated scientific research innovation center that comprises national research and design institutes, state's and industry's key laboratories, national research centers, technology development and promotion centers, scientific and technological cooperation demonstration bases. and public service demonstration platforms. We intend to build China's largest integrated scientific research platform with the greatest strenath in the field of building materials and inorganic nonmetal materials.
- We build a strong contingent of scientific researchers by attracting and cultivating scientists and engineers. We set up the academician workstation, postdoctoral research stations and

workstations, and implement the "Thousand-talent Program" in order to keep smooth the channels for introducing and exchanging highcaliber talents from overseas and domestic universities and institutes. We make innovations in incentive mechanisms and improve property protection to retain talents, as well as emphasize the inheriting of scientific research and personnel training by fostering key innovation talents among young employees.

 We lay emphasis on science and technology investment.
We increase financial support for hardware construction and scientific research rewards, etc., and boost, in particular, our investment in the R&D of lowcarbon environmental protection technologies and products.

## Improve the Innovation Mechanism

- 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 system with the requirement of risk management, and formed a scientific research management system which conforms to national requirements of scientific research management and has the feature of building materials industry, providing the efficient progress of scientific researches with mechanism guarantee.
- We have gradually established the talent development mechanism to promote the development of talents, and the assessment and reward mechanism according to their performance and contribution. Inside the Group, we provide "Scientific and Technological Progress Award", "Technical Improvement Award" and "Group Technical Center Project" to boost researchers' enthusiasm for innovation.
- We have established the Youth Science Foundation, and organize youth scientific research competitions to inject vigor into the scientific research teams of the Group.

- We prompt the close combination of production, learning and research and the commercialization of research findings, establish a new production-study-research relationship on the basis of mutual benefits and cooperation, and build up a technical innovation cooperation system outside of the Group.
- We attach great importance to cooperation with famous universities and professional institutions in jointly tackling key problems, technical cooperation, academic exchanges, talent cultivation, incubation and transformation of achievements, etc., establishing an innovation alliance with various levels.
- We explore the establishment of an open scientific research system, set up research hotspots and challenges which attract attentions from the country and the industry, and mobilize social technological resources to tackle difficult problems through such ways as collaborative innovation, joint innovation, and competing innovation, etc.

## **Prosperous Innovation Culture**

- We undertake secretariat work of standardization organizations, industrial organizations, professional societies and scientific agencies, and serve the industry extensively.
- Industry websites and professional publications are run to timely publish frontier information and share technological results and commercial messages. By building resource repositories (technical innovation institutional repository, technological result database, etc.) and information inquiry platforms, we offer multiple channels of information exchange and technical communication to building materials enterprises.
- To give a play to our role as a demonstrating base for international scientific and technical cooperation, we hold overseas and domestic academic meetings, run forums, develop activities of exchange and visits to offer platforms of communication and promotion to specialists and scholars, serve innovation and common progress, accelerate technological upgrading and reform in the industry and related fields, and motivate technological innovations to faster and more effectively serve sustainable development of the society.
- Professional exhibitions are undertaken to collectively exhibit and recommend new technologies and products, offering platforms and services to technological result industrialization, thus pushing technological progress and result sharing in the industry.

# 503

academic exchange activities were held and organized in 2014.







China Building Materials Academy (Beijing

Headquarters) Hefei Cement Research & Design Institute Bengbu Design & Research Institute for Glass

Industry

CNBM Design & Research Institute Harbin FRP Institute

Qinhuangdao Glass Industry Research and

Design Institution

Xi'an Research & Design Institute of Wall & Roof Materials

Xianyang Research & Design Institute of Ceramics Hangzhou Mechanical and Electrical Design and Research Institute of Light Industry

Horological Research Institute of Light Industry Light Industrial Xi'an Mechanic Design and Research Institute

The Research Institute for Automation of Light Industry

Suzhou Waterproof Research Institute

13 National Scientific Research and Design Institutes







# 117

scientific and technological awards at provincial or ministerial level were gained in 2014.

21

national scientific research subjects were undertook in 2014.

Building Materials Industry High-performance Ceramics and Refined Processes Key Laboratory of Building Materials Industry

Quartz Glass Key Laboratory of Building Materials Industry

Cement-based Materials Science Key Laboratory of

3 Industrial Key Laboratories

Mobile Post-doctoral Scientific Workstation of China Building Materials Academy

1 Mobile Post-doctoral Scientific Workstation

1 Academician Workstation Academician Workstation of China Building

Materials Academy

2 National Key Laboratories

National Key Laboratory for Green Building Materials National Key Laboratory for New Technologies of Float Glass



3 National Research Centers

National Glass Deep Processing Engineering Technology Research Center National Resin Matrix Composites Engineering Technology Research Center National and Local United Engineering Research Center for Glass Industry Energy-saving Technology

# From Professionalism to Sharing – Serve Nationwide Innovation

We integrate scientific research resources, gather scientific research talents, guarantee input in scientific researches, and build a leading company of scientific researches in the industry. We implement the innovation mode which combines independent innovation, joint innovation and integrated innovation; promote technological breakthroughs, the transformation of achievements, and information sharing; strive to build the largest comprehensive scientific research platform with the strongest power in the building materials and inorganic nonmetallic materials fields of China, and provide service and guarantee for the nationwide innovation.



# From "Manufacturing" to "Creating" —— Furthering the Integration of Production and Research

CNBM continues to promote a production-research technology innovation system with national enterprise technology centers at the core. An innovation system integrating research, development and production has taken shape. At present, the Group has eight state-level enterprise technology (sub) centers in five fields, namely, composite materials, equipment manufacturing, fiberglass, cement equipment, and special cement. A number of major production-research results have emerged during the Group's transformation from "being a manufacturer" to "being a creator". In 2014, China United Cement Corporation was awarded the "Innovation Prize in Industry-University-Research Cooperation of China for 2014"; two achievements that won the "Innovation Achievement Prize in Industry-University-Research Cooperation of China for 2014" were respectively the "R&D and Industrialization of Key Technologies in High-performance Alkali-free Glass Fiber" from Jushi Group Co., Ltd., and the "R&D and Large-scale Industrial Application of Carbon Fiber Composite-core Wire Technology" from the Zhongfu Carbon Fiber Core Cable Technology Co., Ltd.

Shattering International Barriers through Independent Innovation That's the revenues of Jushi Group in 2014.



As the world's largest glass fiber manufacturer, Jushi Group Co., Ltd. constantly intensifies the industryuniversity-research cooperation and collaborative innovation, especially the cooperation with world-class innovation teams. Its E6 high-performance alkali-free fiberglass formula became China's first fiberglass patented formula to gain an international patent license, breaking the monopoly of international fiberglass giants in fiberglass patented formula. Its large-scale fiberglass tank furnace oxy-fuel firing technology has reduced fuel consumption and emissions respectively by 50% and 80% as well as cut NOx production from the source, sending it to the

international advanced level. The group has now completed its four production bases respectively in Tongxiang, Jiujiang, Chengdu, and Egypt and promotes the technology comprehensively, Jushi Group Co., Ltd has successively won the "China Industry-University-Research Cooperative Innovation Award", which was awarded for the first time, won the title of Zhejiang Province Industry-University-Research Cooperation Model Enterprise, and been ranked among the first batch of International Scientific and Technological Cooperation Bases in Zhejiang. It has yielded significant economic and social benefits.

## Innovation in Industrial Chain Serving Smart Grids

The Zhongfu Carbon Fiber Core Cable Technology Co., Ltd. is a high-tech enterprise incubated from the patented technology of carbon fiber composite core and wire technology held by Harbin FRP Institute through industryuniversity-research cooperation. It has completed CNBM's industrial chain from carbon fiber precursor, carbon fiber composite mandrel, to carbon fiber composite core wire. The company's products were successfully combined to the grid in the 220-kilovolt Swallow Rock Long-span Reconstruction Project of Nanjing Yangtze River Bridge's Rexiao Line. This project is the world's first long-span (maximum span of 1,107 meters) project using carbon fiber composite core wire.



**Production-research** Integration to Promote **Structural Adjustment** and Energy Saving



## Special Cement Serving National Construction

power plant cement, road cement, oil well cement and reference As one of CNBM's important special cement R&D and production bases. Sichuan Jiahua Enterprise (Group) Co., Ltd. has become a cement manufacturer with the largest variety of special cement, its leading products covering three series---oil well cementing materials, hydropower, nuclear power and other special engineering materials, and roofing materials. It has an annual production capacity of 6 million tons of special cement. In recent years, continuous

China United Cement Corporation

importance to the combination of

industry, university and research.

has always attached great

It continuously strengthens cooperation with CNBM's internal resources as well as universities and research institutes, such as China Building Materials Academy, Hefei Cement Research & Design Institute, Nanjing Kisen International Engineering Co., Ltd. Besides, it has built up an industry-university-research cooperation atmosphere and innovation system of "comparing, learning, catching up, helping

and surpassing". Therefore,

its technological innovation

and economic efficiency have

improved significantly. It has

independently designed and built

an internationally advanced ten-

thousand-ton cement production

line. It has developed a number of

new products, including nuclear

technological innovation and product development have significantly enhanced its market competitiveness. As its hydraulic engineering cement has been sold to large enterprises and groups, it is the only cement enterprise in the southwest of China that sells products across valleys of seven rivers, Jinsha River, Dadu River, Minjiang River, Jialing River, Ya-lung River, Lancang River and Yarlung Zangbo River. The self-developed oil well cement is widely used in China's major oil fields. Jiahua

Group was awarded the "Prize for Outstanding Contribution to China's Special Cement over Six Decades" by the China Cement Association's special cement branch, its several achievements gained national and provincial scientific and technological achievement awards, and the high belite cement developed by it in collaboration with China Building Materials Academy won the Second Prize of National Technology Invention for 2006.

## CNBM's Enterprise Technology Center State-level enterprise technology centers

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Eight statelevel enterprise technology (sub) centers of CNBM

#### State-level enterprise technology subcenters

Beijing New Building Materials Group Co., Ltd. Technology Center Ò China Luoyang Float Glass Group Co., Ltd. Technology Center ò Lianyungang Zhongfu Lianzhong Composites Group Co., Ltd. Technology Center Hefei Smarter Technology Co., Ltd. Technology Center Jushi Group Co., Ltd. Technology Center Ò Hefei Cement Research and Design Institute Technology Center

ò Sichuan Jiahua Enterprise (Group) Co., Ltd. Technology Center



new technical equipment and new technologies, applied to the technological transformation of cement production lines. The seven enterprises subordinate to China United Cement Corporation became the first batch of traditional building materials enterprises to gain China Lowcarbon Production certification: its two production-research results,

cement, and a large number of

for nuclear power, are included in the state's key new products; it has a total of 349 active patents, including 24 patents for invention. The comprehensive energy consumption of one ton of cement clinker is close to the international advanced level, giving a strong impetus to the company's energy saving and restructuring effort.

road cement and special cement

# From Innovation to Service — Boosting Green Industry

By giving play to CNBM's combined advantages in scientific research and development, inspection and certification and complete sets of equipment, we follow closely the main line of low-carbon economic development and commit ourselves to boosting green industry through integrated innovation. Taking as its goal the establishment of a sustainable green industry, resorting to source reduction, process control and end treatment, CNBM provides industrial enterprises with five low-carbon services----detection and diagnosis, transformation and upgrading, intelligent control systems, expert consultation and financing management--- in the three areas of technological innovation, intelligent control and lean management. Hence, we have contributed our share to continuously enhancing industrial energy efficiency and environmental performance as well as achieving sustainable development.



## Contents of Lowcarbon Service

#### **Test and Diagnosis**

Transformation and

Upgrade

We provide assessment service on energy and environmental protection performance, identifying problems for enterprises in the building materials and related industries, providing energy efficiency diagnosis and environmental

#### We are committed to providing the industry with efficient and environment-friendly manufacturing process and technology; our independently developed technologies related to cogeneration, desulfurization and denitrification, full-oxygen combustion and integrated

assessment covering the whole production circle, from procurement of raw materials to delivery of products, serving technological transformation and refined management as the basis of data analysis and guarantee of benchmarking improvement.

utilization technology of solid waste are extensively applied; several technologies have been included into the national list of promoted technologies and equipment for saving energy and water, environmental protection, and recycling of resources.

#### **Smart control system**

We integrate smart control technology into the manufacturing of outfit, and provide large and intelligent outfits for our clients; according to the demands for intelligent manufacturing in the field of building materials manufacturing, we provide production and operation control systems, including energy efficiency control system, environmental protection system, expert control system, online simulation system, safe operation system, etc., and transformation into intelligent factories with functions of procurement, production, sale and current management and into digitalized workshops based on remote control technology.

## assigned operation utility of CDM.

management and consultation,

including energy audit, clean

production verification, and carbon check, to help companies

determine improvement path,

emission reduction according to

working goals, and gradually

advance energy saving and

the plan.

#### **Experts Consultation**

We employ experts in technology, energy efficiency, environmental protection, and management in the industry to provide enterprises with standard implementation and certification concerned with standardization management systems on energy, environment. We provide services related to

#### **Financing Management**

We provide financing services to those enterprises with financial difficulties in technological transformation of process and informationized energy saving through energy management contracting, and operation, maintain services for energy saving system, and share financial risk and energy-saving benefits with the enterprises. technical service agencies of energysaving and environmental protection. Fechnological Innovatior

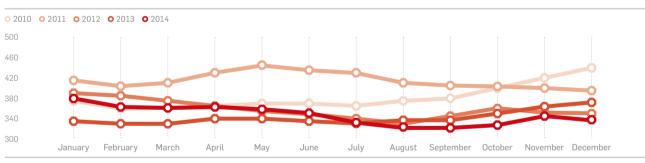
# **Responsibility Performance**

#### **Market Performance**

#### 2015 Fortune Global Top 500 Building Materials Enterprises

2015 Ranking	Company	Operating revenue in 2014 (US\$ million)	Profit in 2014 (US\$ million)	Country
192	Saint-Gobain	54459.4	1264.2	France
270	CNBM	40644.4	477.8	China
475	CRH	25087.3	772	Ireland

Source: Fortunechina.com



2010-2014 P.O.42.5 Price of Bulk Cement in China

Source: Digital Cement

2010-2014 Cement Yield Unit: 00' million tons 🗢 CNBM 🛛 China 💭 World 41.8 40.0 38.0 36.0 33.1 24.2 24.8 21.8 20.1 18.8 2.5 1.7 10 24

2012

2013

2014

Source: United States Geological Survey

2011

2010

2010-2014 Sales Revenue and Total Profit of the Chinese Unit: **Cement Industry** RMB 00' million

2010-2014 Main Business Revenue and Total Profit of Scale

37,170.0

Companies in the Chinese Building Materials Industry

3.037.1

Source: China Building Materials Quantitative Economics Supervision Society

2011

Business Revenue
Total Proft

2.404.8 2010

26,474.5

33.394.6

Unit:

RMB 00' million

3,356.3

Unit: RMB / ton

2014

48,135.0

3,168.5

2013

43,384.4

2,848.0

2012

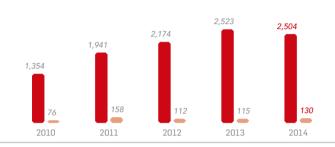




#### 2010-2014 Business Revenue and Total Profit

🛑 Business Revenue 🛛 🛑 Total Profit

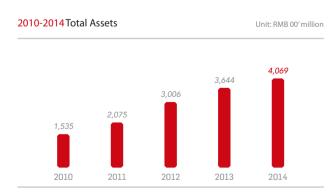




## 2014 Performance of Holding Listed Companies

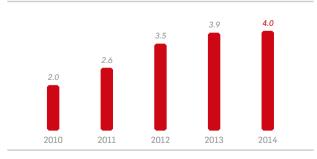
Stock Name	Stock Exchanges	Stock Code	Dividend per Share (RMB)	Earnings per Share (RMB)
CNBM	Hong Kong Exchanges and Clearing	3323.HK	0.1650	1.1000
BNBM	Shenzhen Stock Exchange	000786.SZ	4.2500	1.8200
China Jushi Co Ltd	Shanghai Stock Exchange	600176.SH	0.1650	0.5438
Anhui Fangxing Science & Technology	Shanghai Stock Exchange	600552.SH		0.3053
Luoyang Glass Company Limited	Hong Kong Exchanges and Clearing	1108.HK		0.0320
Luoyang Glass	Shanghai Stock Exchange	600876.SH		0.0320
Ruitai Technology	Shenzhen Stock Exchange	002066.SZ		0.0290

Note: In March, 2015, "China Fiberglass" was renamed as "Jushi Group", while its stock code stayed the same.

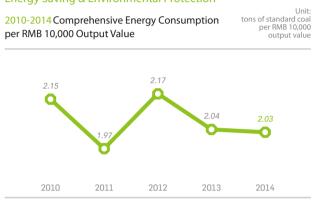


2010-2014 Cement Production Capacity

Unit: 00' million tons



## **Energy Saving & Environmental Protection**

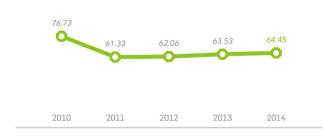


## 2010-2014 Emission of $SO_2$ and COD per 10,000 RMB Output Value

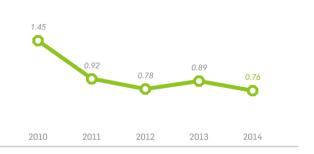


## 2010-2014 Comprehensive Energy

Consumption of Cement Unit: kg of standard coal / ton







### 2014 Treatment and Cyclic Utilization of Solid Waste

	Unit	Value
Volume of Treated Solid Waste	Thousand Tons	78817
Of which:Sludge	Thousand Tons	1370
Volume of Hazard-free Treated Hazardous Solid Waste	Thousand Tons	423
Treatment Rate of Self-produced Solid Waste	%	98.0

### 2014 Performance of Water and Residual Heat Resources Utilization

	Unit	Value
Consumption of fresh water per RMB 10,000 of output value	Ton/ RMB 10,000	6.2
Consumption of fresh water per ton of cement clinker	Ton/ton cement clinker	0.4
Utilization rate of circulating water	%	90.3
Installed capacity of cogeneration	Megawatt	2003.0
Actual generating capacity of cogeneration	Billion KWh	7.2

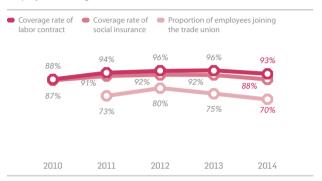
## **Employee** Care

## 2010-2014 Employee Profile

	2010	2011	2012	2013	2014
Total number of employees	112,676	126,385	165,652	179,421	176,854
Employees from foreign countries, Hong Kong, Macau and Taiwan	397	594	1,190	1,234	892
Employees of ethnic minorities	1,566	3,516	2,706	3,031	3,120
Employees with disabilities	599	1,023	1,620	1,685	2,263
Proportion of female employees in management	24.0%	11.6%	13.5%	18.1%	18.4%

Unit: Person

## 2010-2014 Coverage Rates of Labor Contract, Social Insurance and Employees Joining Trade Union



## 2010-2014 Progress of Enterprise Annuity

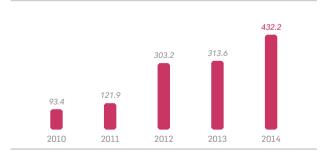
	2010	2011	2012	2013	2014
Number of member enterprises participated in enterprise annuity	38	53	66	67	67
Number of employees participated in enterprise annuity	12,811	13,368	20,392	21,131	21,750

## 2011-2014 Performance of Staff Training

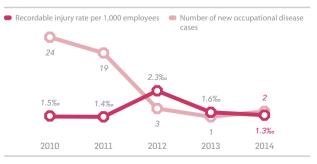
	2011	2012	2013	2014
Number of employee training programs	11,975	21,028	37,491	43,352
Training time (Unit: million hours)	1.1	1.3	1.6	0.9
Number of diplomas or degrees obtained by in- service employees with our assistance	1,580	1,138	2,387	3,520

#### 2010-2014 Investment In Occupational

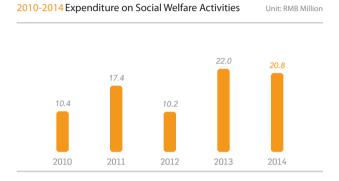
Health and Safety	Unit: RMB million



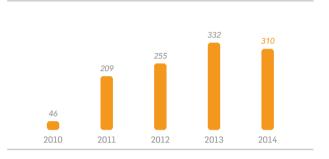
## 2010-2014 Performance of Production Safety



## Corporate Citizen









## 2011-2014 Performance of Creating Employment

			Unit: person
2011	2012	2013	2014
21,182	15,901	16,081	23,617
4,276	3,743	4,383	3,848
241	521	158	46
	21,182 4,276	21,182 15,901   4,276 3,743	21,182     15,901     16,081       4,276     3,743     4,383

### 2014 Incentives for Students

	Unit	2014
Special scholarship	Number	31
Total scholarship	RMB million	0.5
Students awarded or subsidized	Person	227
Probation bases established	Number	97
Intern posts provided to students at school	Person / day	28,619

### 2014 Volunteer Activities

	Unit	2014
Volunteer teams	Team	65
Investment in supporting volunteer activities	RMB million	1.5
Number of employee volunteers	Person	3,400
Voluntary service time	Hour	9,418

## **Technological Innovation**

### 2010-2014 Technology Awards at Provincial and **Ministerial Levels**

Ministerial Levels	l	Jnit: Numbe	er of Awards		
	2010	2011	2012	2013	2014
Scientific and technological awards at Provincial and Ministerial level or above	63	132	152	145	117
Of which: National level scientific and technological awards	0	2	0	1	1
Technical innovation awards	17	46	89	54	48

2010-2014 The Standards of Presiding or Participati	ng	Unit:
in Preparation or Amendment	Number of Stan	dards

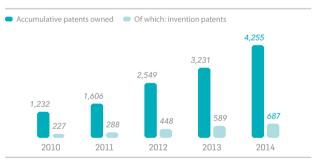
	2010	2011	2012	2013	2014
Number of Standards	79	28	22	59	118
Of which: International	0	1	1	1	17
National	30	15	5	8	35
Industrial	49	12	16	50	66

010-2014 Application and Grant of Patents			Unit:	Number of a	application and patent
	2010	2011	2012	2013	2014
New applied patent	514	630	766	1,262	1,571
Of which: invention patents	173	170	228	373	531
Newly granted patents	420	487	729	848	1,381
Of which: granted invention patents	54	80	143	128	106

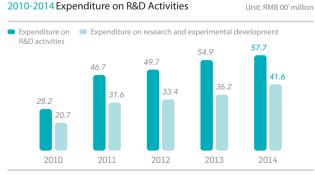
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2010-2014 Accumulative Patents Owned

Unit: Number of Patents

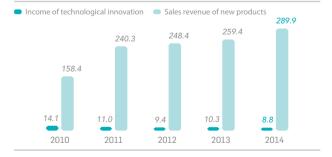


## 2010-2014 Expenditure on R&D Activities



## 2010-2014 Income of Technological Innovation

Unit: RMB 00' million



# Indicator Index (CASS-CSR3.0)

No.	Content of Indicator	Page	Nature of Indicate
Part 1 Pref	ace of Report (P series)		
P1	Scope of report		
P1.1	Process of report quality assurance	P3	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
P2	Report process		
P2.1	Preparation process of the report	P1	Extended
2.2	Selection process of essential topics in the report	P1	Core
2.3	Process and means of stakeholders participating in the preparation of the report	P16-17	Extended
2.5 93	Executives' Address	11017	Extended
93.1	Opportunities and challenges of enterprises in performing social responsibilities	P4-5	Core
3.2	Summary of achievements and deficiencies of annual corporate social responsibility	P4-5	Core
-3.2 24		F4-3	COTE
	Corporate profile	DC 7	Carra
4.1	Company name, nature of ownership, and location of headquarters	P6-7	Core
4.2	Major brands, products and services of enterprise	P8-9	Core
4.3	Region of enterprise's operation, including operational enterprises, subsidiaries, jointly-owned organizations	P6-7	Core
4.4	Service markets divided by industries, customer types and regions	P8-9	Core
4.5	Number of employees reported according to contracts (formal and informal employees) and genders	P74	Core
4.6	List of memberships or other qualifications in associations, national organizations and international organizations	P18/52	Extended
4.7	Major changes in organizational scale, structure, ownership or supply chains in the term of report	N/A	Extended
5	Annual progress		
5.1	Annual major work of social responsibility	P19	Core
5.2	Annual responsibility performance	P70-75	Core
5.3	Annual responsibility honors	P19	Core
Part 2 Res	ponsibility Management (G Series)		
G1	Responsibility strategy		
51.1	Philosophy, vision and values of social responsibility	P12-13	Core
51.2	External social responsibility proposals signed by the enterprise	P18-19	Extended
51.3	Identifying core social responsibility topics of the enterprise	P16	Core
51.4	CSR planning	P18	Extended
52	Responsibility governance	110	Extended
52.1	Leadership organization of social responsibility	P14	Extended
	· · · · ·		
i2.2	Channel and process of communication between stakeholders and the highest governance organization of the enterprise	P16-17	Extended
i2.3	Organizational system of social responsibility	P14	Core
i2.4	Internal responsibilities and division of work of social responsibilities of the enterprise	P14	Core
52.5	Management system of social responsibility	P15	Extended
i3	Responsibility fusion		
53.1	Promoting social responsibility work of subsidiaries	P15	Extended
53.2	Promoting the performance of social responsibility by partners of supply chain	P22	Extended
54	Responsibility performance		
54.1	Constructing indicator system of CSR	P15	Extended
54.2	Conducting performance assessment based on the indicators of CSR	P15	Extended
54.3	Excellence selection of CSR	P15	Extended
54.4	Major accidents of the enterprise in economy, society and environment, impact and punishment incurred, and corresponding countermeasures of the enterprise	P16	Core
i5	Responsibility communication		
5.1	List of stakeholders of the enterprise	P17	Core
5.2	Process of identifying and choosing stakeholders	P16	Extended
5.3	Concerns of stakeholders and response measures of enterprise	P17	Core
55.4	Communication mechanism of corporate internal social responsibility	P16	Core
5.5	Communication mechanism of corporate external social responsibility	P16	Core
	Participation of corporate senior management in communication and exchange of social responsibility	P16	Core
35.6			

No.	Content of Indicator	Page	Nature of Indicato
G6.1	Conducting CSR subject research	P18	Extended
G6.2	Participation in study on and exchanges of social responsibility	P18	Extended
G6.3	Participating in the formulation of domestic and foreign social responsibility standards	P19	Extended
G6.4	Cultivating corporate culture of responsibility through training and other measures	P15	Core
Part 3 Marl	ket Performance (M Series)		
M1	Responsibilities in respect of shareholders		
M1.1	Policy and mechanism of shareholders' participation in the management of enterprise	P23	Core
M1.2	Protecting interests of mid and small investors	P23	Core
M1.3	Normalize disclosure of information	P23	Core
M1.4	Growth	P70-71	Core
M1.5	Profitability	P70-71	Core
M1.6	Safety	P22-23	Core
M2	Responsibilities of customers		
M2.1	Customer relations management system	P23	Core
M2.2	Popularization of product knowledge and customer training	P23	Core
M2.3	Protection of customers' information	P23	Core
M2.4	Stop loss and compensation	P23	Core
M2.5	Product quality management system	P23	Core
M2.6	Product pass rate	N/A	Core
M2.7	System of supporting product and service innovation	P24-25	Core
M2.8	Investment in technology or R&D	P32	Extended
M2.9	Number and proportion of technical personnel	P32	Extended
M2.10	Number of new patents	P75	Extended
M2.11	Sales revenue of new products	P32	Extended
M2.12	Significant innovation awards	P75	Extended
M2.13	Survey on satisfaction of customers and satisfaction of customers	N/A	Core
M2.14	Actively deal with complaints from customers and resolution rate of complaints from customers	P23	Core
M3	Responsibilities in respect of Partners		
M3.1	Strategic sharing mechanism and platform	P23	Core
M3.2	Philosophy of and system guarantee for honest operation	P22	Core
M3.3	Philosophy of and system guarantee for fair competition	P22	Core
M3.4	Economic contract performance rate	P22	Core
M3.5	Identifying and describing the value chain and responsibility influence of the enterprise	P22-23	Extended
M3.6	Initiative and policies of the enterprise in promoting the social responsibility performance of the value chain	P22-23	Extended
M3.7	Social responsibility education and training received by members of the value chain from the enterprise	P22-23	Extended
M3.8	System and (or) policy of responsible procurement of the company	P23	Extended
M3.9	Process and frequency of assessment and survey on social responsibilities of suppliers	P22-23	Extended
M3.10	Ratio of suppliers passing quality, environment, and occupational health and safety management system certifications	P23	Core
M3.11	Number of punishment in such aspects as economy, society and environment against suppliers	Not included in the statistics system	Extended
M3.12	Ratio of responsible procurement	P52	Extended
Part 4 Soci	al Performance (S Series)		
S1	Responsibilities in respect of government		
S1.1	Legal compliance system of enterprise	P22	Core
S1.2	Training of legal compliance	P22	Core
S1.3	Prohibition on commercial bribe and corruption	P22	Core
S1.4	Performance of legal compliance assessment of the enterprise	P22	Extended
S1.5	Total taxes paid	P22	Core
S1.6	Responding to national policies	P22	Core
S1.7	Policies or measures to guarantee and (or) promote employment	P22	Core
S1.8	New employment during the reporting period	P52	Core
S1.0	Responsibilities in respect of employees		
S2.1	Signing rate of labor contract	P73	Core
S2.1	Coverage rate of collective negotiation and contract	P43	Extended
	Democratic management	P43	Core

No.	Content of Indicator	Page	Nature of Indicato
S2.4	Proportion of employees joining the trade union	P73	Extended
S2.5	Number of applied, treated and solved appeals of employees through the appeal mechanism	P43	Extended
S2.6	Management of employees' privacy	P42	Extended
S2.7	Rights and interests protection for part-timers, temporary workers and employees of subcontractor	P42	Extended
52.8	The minimum wage of employees according to the operation region and the minimum wage in the region	P43	Core
S2.9	Coverage rate of social insurance	P73	Core
S2.10	Salary for overtime work	P42	Extended
S2.11	Number of annual per capita paid vacation	P42	Extended
S2.12	Welfare systems according to nature of employment (official, unofficial)	P42	Core
52.13	Proportion of female managers	P73	Core
52.14	Proportion of employees of minorities and other races	P73	Extended
52.15	Ratio or number of disabled employees	P73	Extended
52.16	Proportion of employees in the occupational health and safety committee	N/A	Extended
52.17	Occupational disease prevention and treatment system	P45	Core
52.18	Training of occupational safety and health	P45	Core
52.19	New occupational diseases of the year	P73	Core
52.20	System and measures of prevention against occupational injuries	P44-45	Extended
52.21	Mental health system/measures for employees	P45	Extended
52.22	Coverage rate of physical examination and health records	P45	Core
52.23	Providing equal health and safety protection to part-timers, temporary workers and employees of subcontractor	P45	Extended
52.23	Career development channel for employees	P43	Core
			••••••
2.25	Employee training system	P43	Core
2.26	Employee training performance	P73	Core
52.27	Investment in aiding and supporting employees in difficulties	P46	Core
52.28	Providing special protection for special populations (pregnant woman, nursing woman, etc.)	P46	Extended
52.29	Respect for employees' family responsibilities and life in spare time, and keeping balance between work and life	P47	Extended
52.30	Employee satisfaction	P42	Extended
52.31	Employee turnover rate	P42	Extended
53	Safety production	D44	
53.1	Safety production management system	P44	Core
53.2	Safety emergency management mechanism	P44	Core
3.3	Safety education and training	P45	Core
53.4	Safety training performance	P44	Core
53.5	Investment in safety production	P45	Core
53.6	Number of accidents in production	P44	Core
53.7	Number of employee casualties	P45	Core
54	Responsibilities in respect of community		
54.1	Assessment of impact of enterprise entering or exiting the community on the environment and society of communities	P52	Extended
54.2	Rate of assessment on implementation environment and social influence of new projects	Not included in the statistics system	Extended
4.3	Participation of community representatives in project construction or development	P52	Extended
4.4	Enterprise developed or supported project with social benefits in the community of its operation	P53	Extended
4.5	Employee localization policy	P52	Core
4.6	Proportion of local employment	P52	Extended
54.7	Proportion of local employees in senior executives according to main operation regions	P52	Extended
	Local procurement policy	P52	Extended
4.9	Corporate public welfare policy or main public welfare fields	P53	Core
54.10	Corporate public wehare pointy of main public wehare news	N/A	Extended
54.10 54.11	Overseas public welfare	P54	Extended
••••••		<u> </u>	•••••••
54.12	Total amount of donation	P56	Core
4.13	Policy and measures supporting voluntary service	P53	Core
4.14	Performance of voluntary service of employees	P74	Core
art 5 Envi	ronmental Performance (E Series)		

	Content of Indicator	Page	Nature of Indicato
E1.1	Establishing organizational system and mechanism system of environment management	P33	Core
E1.2	Environment warning and response system	P32	Extended
E1.3	Participation in environmental organizations and proposals	P32	Extended
E1.4	Assessment on impact of enterprise on environment	P32	Core
E1.5	Total investment in environmental protection	P32	Core
E1.6	Training and publicity of environmental protection	P33	Core
E1.7	Environmental protection training performance	P33	Core
E1.8	Disclosure of environment information	P33	Extended
E1.9	Process and frequency of communication with communities on environment	P32	Extended
E1.10	Measures for green office	P33	Core
E1.11	Green office performance	P33	Extended
E1.12	Saving energy by reducing business trips	P33	Extended
E1.13	Green buildings and sales network	N/A	Extended
E1.13	Green factory	14/75	Extended
E2.1	Establishing energy management system	P33	Extended
E2.2	Energy conservation policy and measures	P32-33	Core
E2.3	Total annual energy consumption	P34	Core
		P72	
E2.4	Comprehensive energy consumption per unit output value of the enterprise		Core
E2.5	Policy and measures for utilization of new, renewable or clean energy	P34-35	Extended
E2.6	Utilization amount of new, renewable and clean energy	P72	Extended
E2.7	Policy, measures or technologies for reducing waste gas emission	P34-35	Core
E2.8	Emission and emission reduction of waste gas	P72	Core
E2.9	System, measures or technologies for reducing waste water discharge	P34-35	Core
E2.10	Emission and emission reduction of waste water	P72	Core
E2.11	System, measures or technologies for reducing waste emission	P34-35	Core
E2.12	Emission and emission reduction of waste water	P72	Core
E2.13	Policies and measures for the development of circular economy	P34-35	Core
E2.14	Cyclic utilization rate of renewable resources	P72	Core
E2.15	Building a water-saving enterprise	P34-35	Core
E2.16	Annual consumption of fresh water/ fresh water consumption of unit industrial added value	P72	Core
E2.17	Volume of neutral water reuse	P72	Core
E2.18	Plan and action for the reduction of greenhouse gas emission	P30-39	Core
E2.19	Emission and emission reduction of greenhouse gases	Not included in the statistics system	Extended
E3	Green products		
E3.1	Proportion of suppliers passing ISO Environment Management System Certification	P23	Core
E3.2	Measures to improve suppliers' awareness and capabilities of environmental protection	P22	Extended
E3.3	Number of suppliers receiving punishments in respect of environmental protection, and number of punishments	Not included in the statistics system	Extended
E3.4	Support for R&D and sales of green low-carbon products	P38-39	Extended
E3.5	Measures and performances of waste products recycle	P34-35	Core
E3.6	Policies and performances of package minimization and recycle	P34-35	Core
E4	Green ecology		
E4.1	Protection of biological diversity	P32	Core
E4.2	Protection of natural habitats, wet land, forests, wildlife corridor, and farm land in constructions	P32	Extended
E4.3	Ecological restoration and governance	P32	Extended
E4.4	Rate of ecological restoration and governance	Not included in the statistics system	Extended
E4.5	Public welfare activities for environmental protection	P53	Core
	ort Postscript (A Series)		
A1	Future plan: Corporate planning on social responsibility work	P5、18	Core
	Report Evaluation: Evaluation of experts in social responsibility or industry experts, relevant interested parties or professional organizations on the report	80	Core
A2	or professional organizations on the report		
A2 A3	Reference Index: Application of indicators as required to be disclosed by the guide	76	Extended

## **Rating Report**



Upon the request of CNBM, the Research Center for Corporate Social Responsibility of Economics Division of Chinese Academy of Social Sciences (hereinafter referred to as CSR Center) selected experts from Chinese Expert Committee on CSR Report Rating to form CNBM CSR Report 2014 (hereinafter referred to as the Report) Rating Team.

#### I. Basis of rating

Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises (CASS-CSR 3.0) and Rating Standards of Corporate Social Responsibility Reporting for Chinese Enterprises (2014).

#### II. Rating process

1. Process assessment team interviewed members of Social Responsibility Department of CNBM;

- 2. Process assessment team reviewed materials related to the preparation process of social responsibility report of CNBM and its subordinates;
- 3. Rating team assessed the management process of CSR report and contents disclosed in the Report.

#### III. Conclusions

#### Process $( \star \star \star \star \star )$

Enterprise Management Department of the Group takes the lead to establish the Report Preparation Group. Senior executives are responsible for the preparation, progress and approval of the Report. The Preparation Group identifies stakeholders, and collects their suggestions by questionnaire survey; substantial topics are defined according to the results of survey on stakeholders, major events of the company, related state policies, etc.; it is determined to release the report through press conference, and to present the Report in printed edition, electronic edition and H5 version, which reflects a leading process.

#### Materiality ( $\star \star \star \star \star$ )

The Report gives detailed and sufficient disclosures on the substantive issues of nonmetallic mineral products industry like "Product Quality Management", "Product Innovation", "Occupational Health Management", "Safety Production", "Research, Development and Application of Environmental Facilities and Technology", "Conservation of Energy and Water Resources", "Reduction of Waste Emission", "Governance of Environment around Factories", with good materiality.

#### Completeness ( $\star \star \star \star \star$ )

The Report discloses the key indicators of "Responsibility Management", "Market Performance", "Technological Innovation", "Energy Saving and Environmental Protection", "Employee Care" and "Corporate Citizen", covering 91.0% of core indicators of non-metallic mineral products industry, and can be regarded as fairly complete.

#### Balance $( \star \star \star \star )$

The Report discloses negative data and information on "the injury rate per thousand people", "new cases of occupational diseases", "number of accumulated occupational

#### IV. Recommendations for improvement

Provide further disclosure of negative events to further improve the balance of the Report.

#### Rating team

Team leader: Zhong Hongwu, Director of the Research Center for Corporate Social Responsibility of Economics Division of Chinese Academy of Social Sciences

Team members: Liu Weihua, Deputy Director-general of China Committee of Corporate Citizenship

Wei Xiuli, Associate Professor from the Economics and Management College of North China University of Technology

Wang Mengjuan, Evaluator of Process of the Center

disease cases", etc., and compares them with those of previous years, which shows a good balance.

#### Comparability $( \star \star \star \star \star )$

The Report discloses 54 key performance indicators, including "operating revenue", "total profit", "comprehensive energy consumption of per RMB 10,000 output value", for at least 3 consecutive years, and compared such indicators as "output of cement" and "ranking in Fortune Global 500" with those of international and domestic competitors in the industry; therefore, it shows excellent comparability.

#### Readability ( $\star \star \star \star \star$ )

The Report has a clear framework, fluent description, and detailed cases; it applied many presentation means, such as pictures and tables, which match well with the text; titles of each chapter are in the same form, the words are refined, and the composing is exquisite and comfortable, which increases the readability of the Report and shows a high readability.

#### Creativity $( \star \star \star \star \star )$

The Report breaks the traditional mode. Each chapter pays more attention to responsibility practices than to responsibilities measures. It summarizes "responsibility performance mechanism" at first, and then describe responsibility actions and performances in depth in the form of features. The words are full of wits, and shows a high level of creativity.

#### Overallrating $( \star \star \star \star \star )$

Based on its evaluation, the rating team considered CNBM CSR Report 2014 an outstanding CSR Report by giving it a five-star rating.

Peng Huagang, Chairman of the Rating Expert Committee, Executive Vice President of the Center

客高 神索击

Zhong Hongwu, Team Leader of the Rating Team, Director of the Center

## Feedback



Thank you very much for caring and supporting the social responsibility work of CNBM. Please fill in the questionnaire below, and send it back to us through fax or mail. If the blank space is insufficient for your response, please attach an additional page; if you want to reply by electronic means, please log onto our website at www. cnbm.com.cn, click on "Social Responsibility" and then click on "Social Responsibility" Communications - Feedback". You can also scan the two-dimension code on the left to fill in your feedback via mobile terminal. We will make continuous improvements in our work in the future according to your suggestions and advice.

### Your overall evaluation of CNBM CSR Report 2014:

Overall evaluation	□ Very good	Good	Ordinary	🗌 Not good	Uery poor
Contents	□ Very good	Good	Ordinary	🗌 Not good	□ Very poor
Suitability of page numbers	□ Very good	Good	Ordinary	🗌 Not good	Very poor
Design	□ Very good	Good	Ordinary	🗌 Not good	□ Very poor
Language	□ Very good	Good	Ordinary	🗌 Not good	□ Very poor

#### According to your opinion, what's the core of responsibility performance of CNBM?

Responsibility Governance Operation Performance Technological Innovation Energy Saving & Environmental Protection Employee Care Corporate Citizen

	need to strengthen our effort in?					
Information collection	Development of organizational structure	Talent development	Performance evaluation			
External publicity	Management of stakeholders	Public welfare planning	Preparation of annual report			
Study on social responsibil	ities	Others				
Which means do you want to	learn information about our responsibility performar	ice through?				
Printed report	ocial responsibility" special column on the official we	vebsite 🗌 Public WeChat account				
Professional media of social	l responsibility	Others				
What do you expect to see in the annual CSR Report of CNBM?		Which aspect of CNBM's performanc	e do you pay more attention to?			
Other suggestions and advice	?					

Governments	Institutional investors	Middle or small shareholder	Financing institutions	Industrial associations		
Supplier	Client	Enterprise in the same industry	Partner	Professional CSR institution		
Public welfare organization		🗌 Media	Senior executive of the Group			
Employee of the Group		Others				
In order to keep in touch, reply to your suggestions and advice in time, please provide your contact information. We will keep your information in confidence.						
		0	( )			

Name	Age	Occupation / employer
Gender 🗌 Male 🗌 Female	Department / position	Address
Telephone	Postal Code	E-mail

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Social Responsibility and Energy Saving & Environmental Protection Office China National Building Materials Group Corporation



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