



**2013**

CHINA NATIONAL BUILDING MATERIALS GROUP CORPORATION

**Social Responsibility Report**



# Preparation Notes

## About this Report

This is the fifth social responsibility report released by China National Building Materials Group Corporation (CNBM). This Report gives a true picture of CNBM's commitment to sustainable development.

## Period Covered by the Report

1 January to 31 December 2013; given the progressing continuity of certain businesses or projects, some contents relate to the first and second quarters of 2014, 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.

## Referential Guidelines

Sustainable Development Report (G4) published by the Global Reporting Initiatives (GRI); 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.

## 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 to Get this Report

Please ask for the printed version of this 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 version of this Report and get more related information.



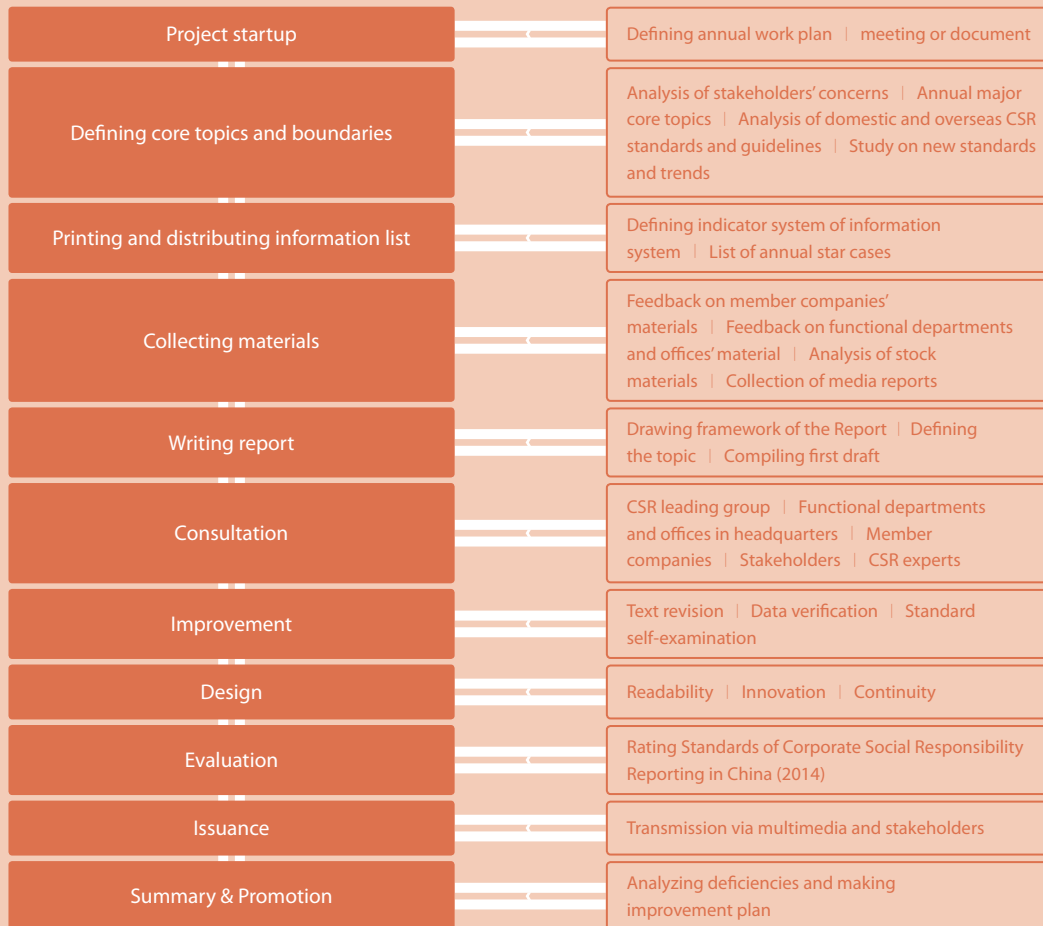
## Assurances

The financial data in the Report are derived from CNBM 2013 Annual Financial Statement which has been audited by Baker Tilly China.

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%.

External data in the Report are derived from those released by third parties through media, sources of which are indicated in the Report.

## Preparation Process



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## Executive's Address

# // **Innovation** Brings about Vitalities, **Coopetition** Promotes Win-win Situation. //

In 2013, on the principle of “increasing efficiency and reducing liabilities through integration and optimization”, CNBM emphasized deepened innovation, integration, transformation and upgrade, increased its development quality and benefits. With the annual revenue of RMB 252.3 billion and a total profit of RMB 11.5 billion, we had ranked among the Fortune Global 500 for four consecutive years, climbing to the 267th, and maintaining the leading role as the world's second largest building materials enterprise and the largest cement producer and marketer.

In 2002, CNBM's sales revenue only reached RMB 2 billion, and was a “grassroots central state-owned enterprise” to the letter. In over a decade, CNBM has overcome difficulties, conducted innovation, proposed and carried out such operation and management models as “Market-oriented Operation of Central State-owned Enterprises”, “Integration and Optimization” and “Grid” management, and realized leapfrog development.

CNBM has established standard parent-subsidiary corporate governance system. As the strategic, resource and cultural center, the headquarters of the Group exercise the rights and functions of investor. As business platforms, subsidiary (sub-group) corporations highlight core specialties and main businesses, and build profit centers on the basis of brand popularity and market share. As operation units, grassroots enterprises strictly control costs under the

premise of guaranteed quality. Through years of standard operation, the Group has formed “eight management measures”, applying simple and practical methods to deal with complicated affairs. This business management pack combines marketing with cost control, ensures the success of combination and restructuring, and creates a favorable atmosphere of “six-star enterprise”, namely good performance, delicacy management, first-rate environmental protection, famous brand, advance and simplicity, safety and stability.

Our active exploration for mixed ownership promotes healthy development of the market of the industry. During the process of promoting combination and restructuring, CNBM always upholds the concept that “the industry benefit is above that of enterprise, and enterprise benefit originates from that of the industry”, adheres to the integration formula of “strength of central state-owned enterprise + vitality of private enterprise = competitiveness of an enterprise”, establishes a fully reinforced mixed ownership industrial platform, and greatly transforms the overall status and development mode of the industry while achieving self-improvement. Most basic raw material industries encountered economic difficulties in 2013, but China's cement industry obtained the profit of RMB 76.6 billion, and increased its concentration ratio from 16% of 2008 to 53% of 2013, which exceeded the goal set in the “Twelfth Five-Year Plan”.



We have established a vigorous internal mechanism through the mixed ownership. Motivated by the mixed ownership, CNBM has upgraded management system, operation system, concepts of staff. We have practiced the operation model of "Market-oriented Operation of Central State-owned Enterprises", obtained finance from the capital market, and realized diversified equities. We have also realized the standardization of governance structure through management integration based on market rules, practiced the marketization of internal mechanism to satisfy the development of various talents, and provided motivation to enterprise development through integrated innovations, driven by the market.

Our active exploration for mixed ownership has promoted the harmony and win-win development of the society. When developing the mixed ownership, we always follow such principles as normative operation, mutual benefit and mutual respect, and long-term cooperation. We combine the development of enterprise with local economic and social constructions and prosperities. We continuously contribute to the harmonious development of regions where our companies are located through paying taxes, driving the development of supply chains and SMEs, creating jobs, supporting local infrastructure constructions, and participating in social public benefit activities. The Group paid taxes amounting to RMB 13.17 billion, and donated RMB 21.95 million in 2013.

Confronted with a more complicated economic, social and environmental situation, we will adhere to the guideline of deepening innovation throughout the development, continue to explore effective methods to develop mixed ownership, timely spread and share beneficial experiences, and cooperate with stakeholders to harvest achievements of reform.

A handwritten signature in black ink, appearing to read 'Song Zhiping', written in a cursive style.

SONG ZHIPING  
CHAIRMAN OF CNBM

# Overview

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, 46th among the Top 500 Enterprises in China in 2013 and 267th among the Fortune Global 500. Up to the end of 2013, the total assets of the Group amounted to RMB 364.42 billion and the total number of employees reached 179,000. In 2013, CNBM achieved revenue of RMB 252.26 billion with total profit of RMB 11.51 billion, whilst taxes paid amounted to RMB 13.17 billion.

With the objective to maximize corporate value and improve core competence, CNBM has developed into a comprehensive building material 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 1,113 holding 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 and over 30 overseas countries and regions, whose businesses cover over 120 countries and regions in the world.

Total assets of RMB **364.42** billion in 2013



Revenue of RMB **252.26** billion in 2013



World second largest building materials enterprise

Total profit of RMB **11.51** billion in 2013



Member companies are located in 30 provinces, municipalities and autonomous regions

Total import and export of USD **5.69** billion in 2013



Businesses cover over 120 countries and regions in the world





# Business Activities

## Manufacturing

With China National Building Materials Company Limited, CNBM Glass Company and China New Building Group Corporation as the mainstay of manufacturing businesses, CNBM has built strong cement, glass, light-weight building material, new building, glass fiber, composites, and refractory platforms, through undertaking consolidation of strategic resources 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 hi-tech companies. We also have a national scientific innovation platform, which comprise 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.

### Cement

The annual capacity of cement is about 400 million tons, ready-mixed concrete is 410 million m<sup>3</sup>, both of which rank the first in the world. CNBM achieved scale advantage through combination and restructuring, realized energy conservation and emission reduction through technical progress, restrained cutthroat competition through industrial self-discipline, improved profitability through management integration, and showed its value through capital market. At present, CNBM has formed four strategic zones, namely Huaihai Economic Zone, Southeast Economic Zone, North Zone and Southwest Zone, and become leader of industrial integration and development in these zones.

### Light-weight building material

The light-weight building material industrial platform includes four business sectors, namely the wall and suspended ceiling system, the housing parts and architectural energy conservation system, the exterior building envelope system, and the new factory housing system. It also possesses internationally recognized high-end brands and proprietary intellectual property rights, as well as 54 major industrial bases, which are rationally distributed all over the country. Its annual productivity of gypsum plasterboard exceeds 1.65 billion m<sup>2</sup>, ranking the first in the world. The platform provides application solutions pack for public buildings and family housing with its complete product system.

### Carbon fiber

We have the 1,000-ton carbon fiber production line, which owns largest scale and most advanced technology in China. We've reached the annual productivity of 10,000 tons PAN silk and 4,000 tons carbon fiber. We are China's first production line successfully producing high-quality T700 PAN silk and carbon fiber, with the productivity of T700 silk reaching 5,500 tons and that of T700 carbon fiber SYT-45 reaching 2,200 tons.

### Glass

The glass industrial platform can produce high-quality float glass in various colors and specifications with processing capacity of 10 million m<sup>2</sup>, covering products of vehicle glass, architectural fabricated glass, and decorative glass. We can produce 0.33 mm ultra-thin glass, the thinnest in China, and have the productivity of 40 million pieces of ITO electropane. We also have an industrial base, capable of producing 0.4 mm and 0.5 mm crystal glass substrates.

### Fiberglass

The total productivity of fiberglass has reached 1 million tons, which ranks the first in the world. With four production bases in China and Egypt, and the largest fiberglass R&D center and laboratory with the most advanced equipment in China, it also possesses world-leading technology of fiberglass tank furnace design and building, such as the world's largest alkali-free tank furnace production line with an annual productivity of 160,000 tons, the alkali tank furnace production line with an annual productivity of 40,000 tons, and alkali-free environmentally-friendly tank furnace production line with an annual productivity of 30,000 tons, which utilizes only wasted silk as raw material.

### Rotor blades

We are China's largest and world's top three manufacturer of megawatt rotor blades, covering most complete megawatt blade products in China with categories varying from 1.25 MW to 6 MW, and length of blade varying from 31.5 meters to 62 meters. Our products cover all categories of products for land and marine use. We have established a R&D center in Germany and other four production bases, with a total productivity of 15,000 blades. We also own a national blade testing center and overseas R&D subsidiaries, possessing strong R&D and technical abilities.

### 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.

**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 technology, fine equipment, advanced techniques, and complete supporting services.

**Logistics and Trading**

Based on the experience and advantages of international trade of bulk building materials, our logistics and trading business utilizes our experience of new Internet technology and e-commerce operation, and adopts the mode of cross-border e-commerce+ oversea location. We have rationally and effectively integrated suppliers of bulk building materials, banks, logistics and transportation, insurance, inspection and quarantine, distributors, and purchasing agents; we provide comprehensive solutions covering all links of international trade, including customs clearance, storage, logistics, insurance, financing, credit information, certification; we have established an integrated service platform for the supply chain of international building materials trade, which provides online one-stop management of export services. With products and brands enjoying international popularity and independent intellectual property, we've become a comprehensive building materials service provider for the international market, and listed as key export support enterprise and key commercial distribution enterprise by MOFCOM.

**Technology Service**

Our technology service business consists of technology consulting, testing and verification. It is CNBM's practical measures in service-oriented transformation of traditional building materials industry. Backed by the Group's strong research and technical capabilities, the technology service business covers design, contracting, consultation, supervision of international and domestic construction projects, as well as other testing and verification service, 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.



**Refractories**

We have a world's largest professional production base of fusion-cast refractory, whose annual productivity is nearly 40,000 tons, an automatic production line of unshaped refractory with an annual productivity of 100,000 tons, an industrial production base of "environmentally-friendly basic refractory for cement kiln", which is included in the "863" Plan of the State, and the industrial base of "research and development of excellent silica refractory", which is a national major scientific and technical support program of the "Eleventh Five-Year Plan". Our products include

refractories of fusion-cast zirconia alumina and fusion-cast aluminum oxide series, and unshaped, basic, alumina-silica and silica refractories. Our comprehensive strength, product quality and service level are all at a leading position in the world.

**Pre-fab housing**

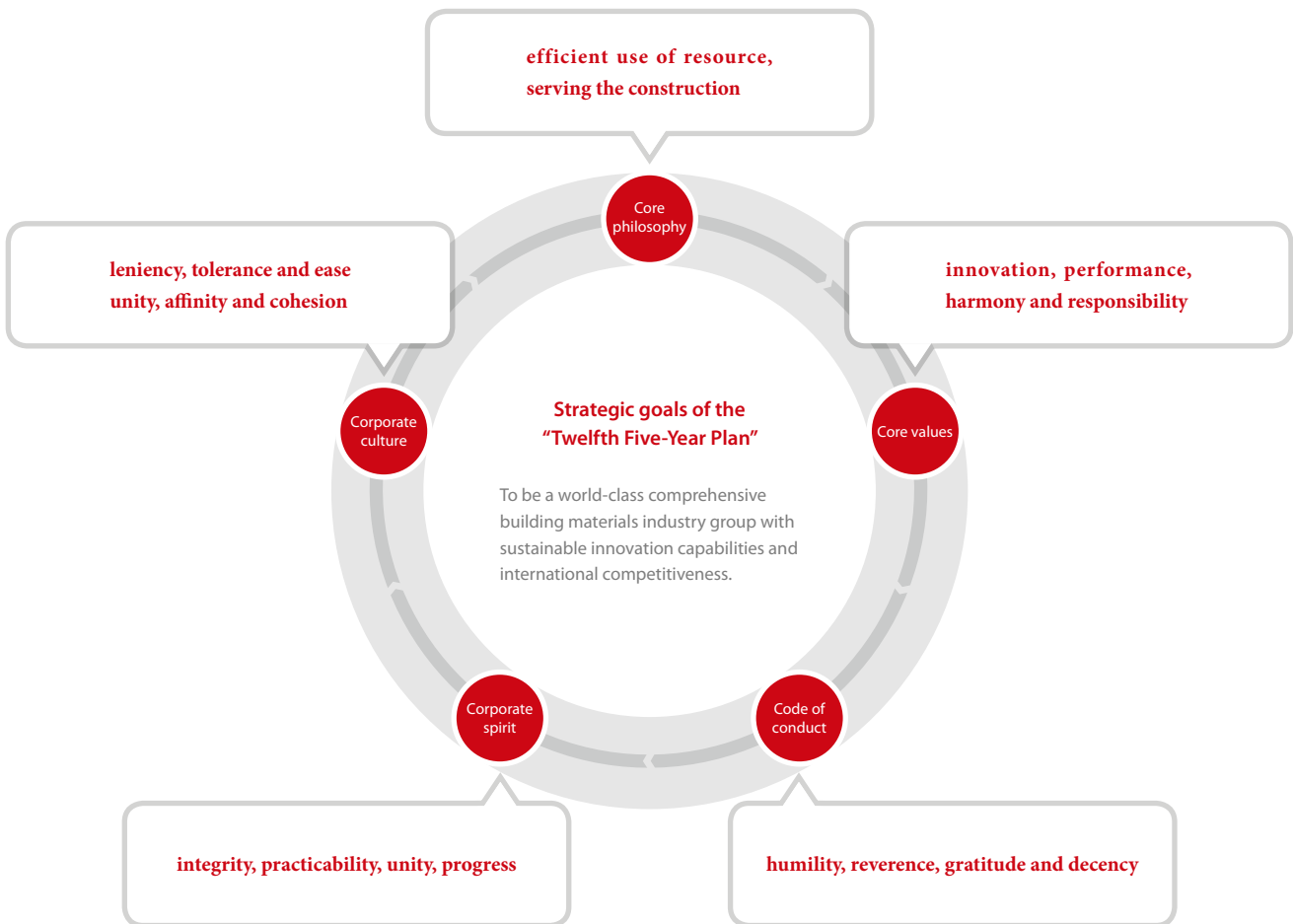
As the amateur and promoter of the environment-friendly and energy-conservation pre-fab housing industry of China, we integrate R&D, design, production and installation with system integration. As one of the first national demonstration bases of housing industrialization, we have many demonstration bases of pre-fab housing in China.

# Strategic Philosophy

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 material, 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.

CNBM implements three major strategies: first of all, “scientific innovation”, namely to enhance core competitiveness of the enterprise with scientific innovation; secondly, “internationalized grand building materials”, which includes “grand building material” strategy and internationalized development; thirdly, “vitalizing enterprise through talents”—we firmly believe that talents are the key for an enterprise to develop competence, and we should be in full swing to cultivate and introduce talents, establishing professional human resource management teams.

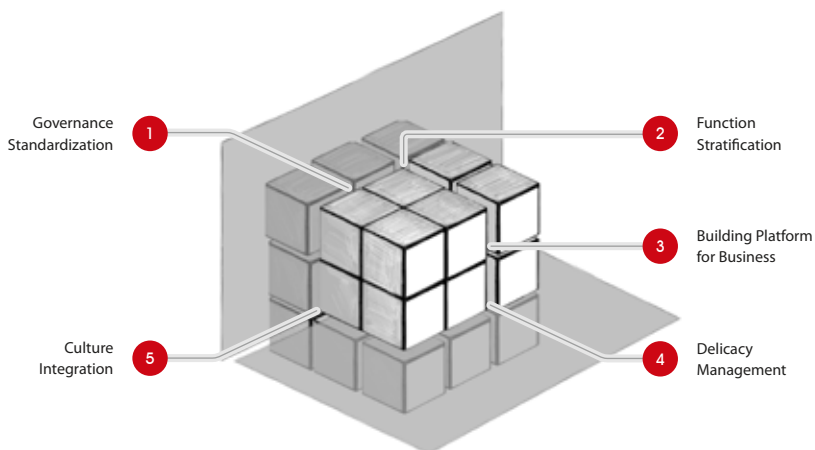


# Operational Strategy

## Management mode

### - "grid" management and control

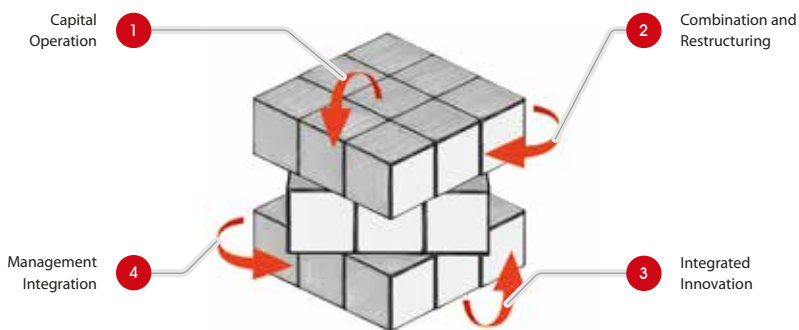
We promote "grid" management and cooperation mode, and fix the function division, operation mode and development orientation of the enterprise in specific grid through accurate management and control, thus keeping orderly and concerted operation in each enterprise. This management and control system include governance standardization, function stratification, building platform for business, delicacy management and culture integration.



## Development mode

### - "four wheels"

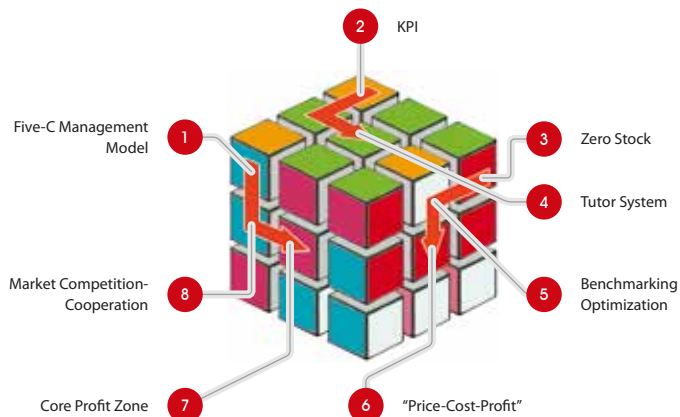
We have resolutely followed the development path of capital operation, combination and restructuring, management integration and integrated innovation, managed to find the sources of capital, resources and core competitiveness, realized the rapid development of enterprises, and promoted the transformation and upgrade of the industry.



## Management method

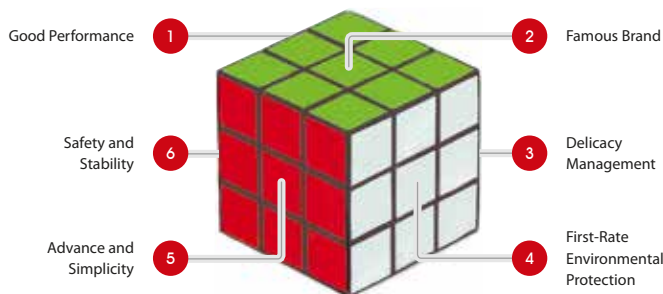
### - "eight management measures"

We constantly improve management integration method, and have formed "eight management measures", applying simple and practical methods to deal with complicated affairs. This business management pack combines marketing with cost control, creating a favorable atmosphere of "six-star enterprise", namely good performance, delicacy management, first-rate environmental protection, famous brand, advance and simplicity, safety and stability, contributing to the increase of enterprise competitiveness.

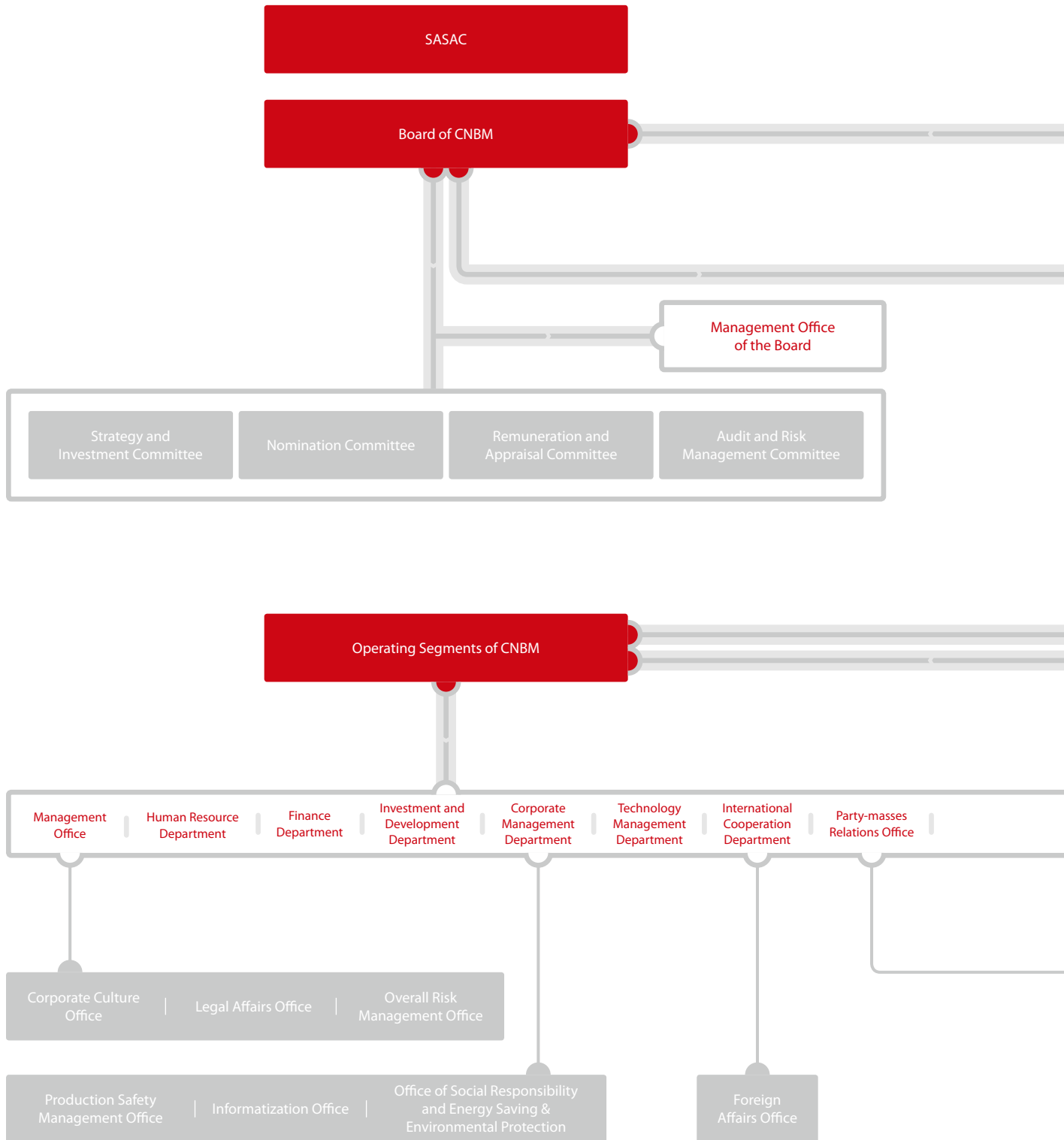


## Management goal

### - "six-star enterprise"



# Governance Structure



## Member Companies

Supervisory 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.  
 Zhongfu Shenyang Carbon Fiber Co., Ltd.  
**China Triumph International Engineering Co., Ltd.**  
 Nanjing Kisen International Engineering Co., Ltd.  
**China Fiberglass Co., Ltd.**  
 Jushi Group 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**  
**Bengbu Design & Research Institute for Glass Industry**  
 Anhui Huaguang Photoelectricity Materials Technology Group Co., Ltd.  
**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**

### 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.**  
**China National United Equipment Group Co., Ltd.**  
**China New Building Group Corporation**  
**CNBM Glass Co., Ltd.**  
**China Luoyang Float Glass Group Co., Ltd.**  
**Henan Zhonglian Glass Co., Ltd.**  
**CNBM Assets Management Corp.**  
**Zhejiang Leomax Group Co., Ltd.**

Disciplinary  
Inspection &  
Supervision Office

Audit  
Department

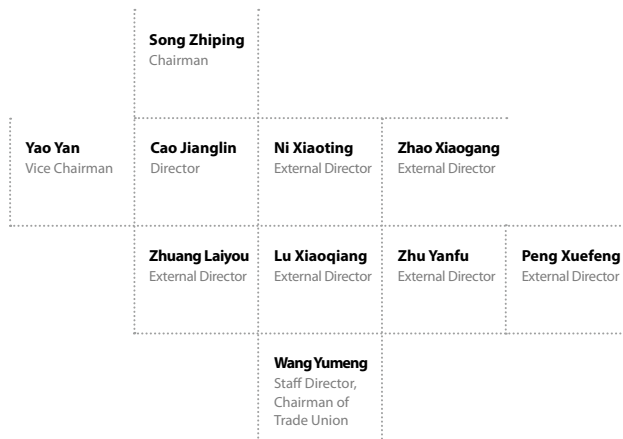
Trade Union  
Office

Letters and  
Calls Office

## Management Team



## Board of Directors







## Management

<b>Cao Jianglin</b> General Manager	<b>Hao Zhenhua</b> Deputy Secretary of Party Committee	<b>Guo Chaomin</b> Deputy General Manager		
		<b>Ma Jianguo</b> Deputy General Manager	<b>Huang Anzhong</b> Deputy General Manager	<b>Wu Jiwei</b> Chief Accountant

# Responsibility Footprints

## 2010.1

CNBM organized the study on and arranged the promotion of social responsibilities work.

## 2010.2.1

CNBM started the preparation for CNBM 2009 Social Responsibility Report—the first social responsibility report.

## 2010.5.13

CNBM established “CNBM Leading Group to Advance Social Responsibility Work” with Chairman Song Zhiping as the group leader.

2010

## 2010.5.19

CNBM employed international verification group to review and verify the report.

## 2010.9.20

As the first enterprise releasing an annual corporate social responsibility report in the building materials industry of China, CNBM released 2009 Social Responsibility Report.

## 2011.1.21

CNBM established Social Responsibility and Energy Saving and Emission Reduction Office, which is responsible for social responsibility work of CNBM.

## 2011.4.20

CNBM prepared and applied CNBM Social Responsibilities Management Data Indicator System, which included 319 quantitative indexes.

## 2011.6.17

CNBM, awarded with the highest honor of “Special Award of Social Responsibility” in 2011 China Corporate Social Responsibility Annual Meeting, was the only enterprise in the building materials industry listed in the “Top 100 Enterprises of Social Responsibilities”.

2011

## 2011.6.27

CNBM released 2010 Social Responsibility Report of CHINA NATIONAL BUILDING MATERIALS GROUP CORPORATION themed on “Innovation for Sustainable Development in the Future”, which was the first themed report in the building materials industry. The Report was rated 4-star and excellent by CSR Research Center of Chinese Academy of Social Sciences, which was the highest evaluation among CSR reports in the building materials industry.

## 2011.7.28

CNBM formulated annual promotion plan for CSR.

## 2011.11.8

In 2011 Research Report on CSR of China released by Chinese Academy of Social Sciences, the “social responsibility development index” of CNBM ranked the 15th, which was among the leading group.

## 2012.3.3

CNBM enabled the mechanism of internal expert’s advice and feedback for social responsibility, and took advice from internal stakeholders into social responsibility management.

## 2012.4.18

CNBM enabled CNBM Information System of Social Responsibility Management to collect data of social responsibility management.

## 2012.6.30

CNBM released 2011 Social Responsibility Report. The Report was rated 4.5-star by Chinese Academy of Social Sciences, which was the highest evaluation among CSR reports in building materials industry.

2012

## 2012.7.30

CNBM released the English version of 2011 Social Responsibility Report, which was the first English report in the building materials industry.

## 2012.12.22

Social Responsibility Management System Construction of Large Building Materials Enterprise with Sustainable Development as the Guide, the social responsibility management practice of the Group, was awarded with the second prize of the 19th National Award for Innovation Achievements in Modernization of Management, and the first prize of Innovation Achievements in Modernization of Management of the Building Materials Industry.

**2013.1.14**

CNBM was awarded with the Award of "2012 People's Enterprise of Social Responsibility" in the "Positive Energy · the 7th People's Award of Social Responsibility" hosted by People's Daily Online.

**2013.2.26**

CNBM officially issued three management systems, including CNBM Instructions on Implementation of Social Responsibility.

**2013.6.30**

CNBM released 2012 Social Responsibility Report. The Report was rated 5-star by Chinese Academy of Social Sciences, which was the highest evaluation among CSR reports in the building materials industry.

2013

**2013.11.14**

Research Center Social for Corporate Responsibility of Chinese Academy of Social Sciences officially released 2013 Blue Book of Corporate Social Responsibility, in which the social responsibility development index of CNBM was 80.5 marks, ranking the 7th among top 100 enterprises in China. CNBM managed to break into the team of "excellence" among Chinese enterprises in terms of corporate social responsibilities.

**2013.12.20**

CNBM was awarded with the "2013 Demonstration Enterprise Award of Public Transparency Among Top 50 Enterprises in China".

**2014.1.17**

CSR Research Center of Chinese Academy 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.

**2014.2.25**

CNBM joined United Nations Global Compact, and attended the annual meeting of Global Compact Network China and the transition meeting of presidium as the member of presidium of Network China. Chairman Song Zhiping was named as member of the second presidium of Global Compact Network China.

**2014.6.6**

"Green Town" Facilitates the Construction of New Urbanization" project of BNBMPublic Limited Company, was listed as an example case of products and services for sustainable development.

**2014.6.26**

Chairman Song Zhiping attended 2014 China Summit on Caring for Climate of UN Global Compact China Network and delivered a keynote speech. CNBM was awarded with the honor of "2014 Pioneer Enterprise of 'Care for Climate · Ecological Civilization".

2014

**2010-2013**

**CORPORATE SOCIAL RESPONSIBILITY DEVELOPMENT INDEX OF CNBM**



Source: Research Report on CSR of China (2011-2013)

# Responsibility Performance

## Market Performance

### 2012-2014

Fortune Global Top 500 Building Materials Enterprises

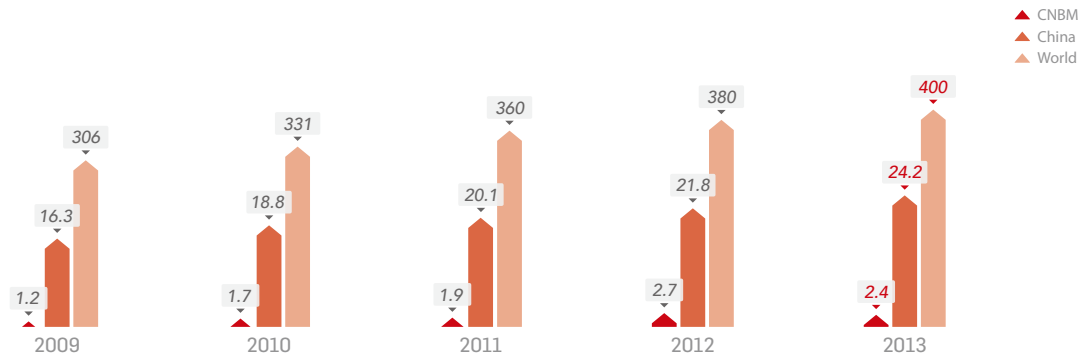
2014 Ranking	2013 Ranking	2012 Ranking	Company	Operating revenue in 2013 (US\$ million)	Profit in 2013 (US\$ million)	Country
180	171	161	Saint-Gobain	55790.8	789.9	France
267	319	365	CNBM	41027.9	435.3	China
497	486	435	CRH	23937.3	-393.0	Ireland
—	—	474	Holcim	—	—	Switzerland
—	—	480	Lafarge	—	—	France

Source: Fortunechina.com

### 2009-2013

Cement Yield

Unit: 00' million tons



Source: United States Geological Survey

### 2013

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	0.1600	1.0672
BNBM	Shenzhen Stock Exchange	000786.SZ	0.4300	1.5740
China Fiberglass	Shanghai Stock Exchange	600176.SH	0.1200	0.3657
Fangxing Science & Technology	Shanghai Stock Exchange	600552.SH	0.0650	0.6500
CLFG	Shanghai Stock Exchange	600876.SH	—	-0.2000
Luoyang Glass	Hong Kong Exchanges and Clearing	1108.HK	—	-0.2560
Ruitai Technology	Shenzhen Stock Exchange	002066.SZ	—	-0.5858

### 2009-2013

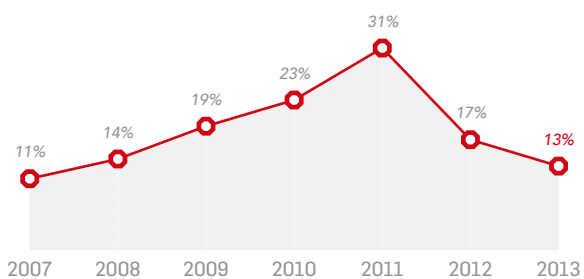
#### Main Business Revenue and Total Profit

Unit: RMB 00' million



### 2007-2013

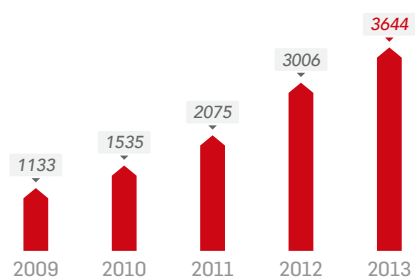
#### Return on Equity



### 2009-2013

#### Total Assets

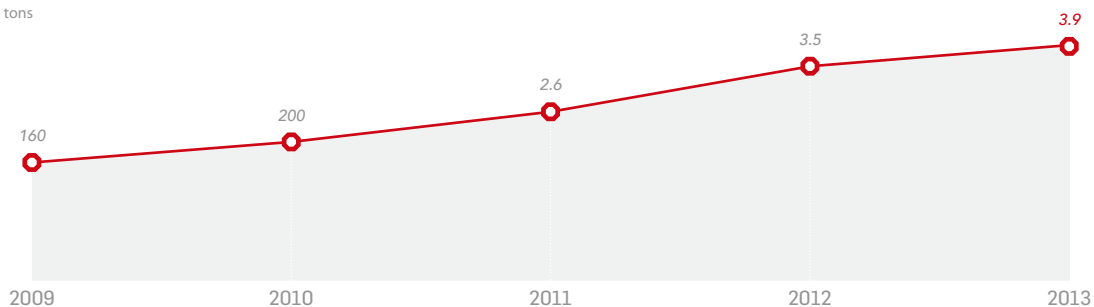
Unit: RMB 00' million



### 2009-2013

#### Cement Production Capacity

Unit: 00' million tons

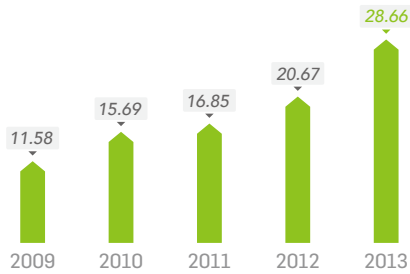


## Energy Saving & Environmental Protection

### 2009-2013

#### Energy Consumption

Unit: Million tons of standard coal



### 2009-2013

#### Comprehensive Energy Consumption per RMB 1,000 Output Value

Unit: tons of standard coal per RMB 1,000 output value



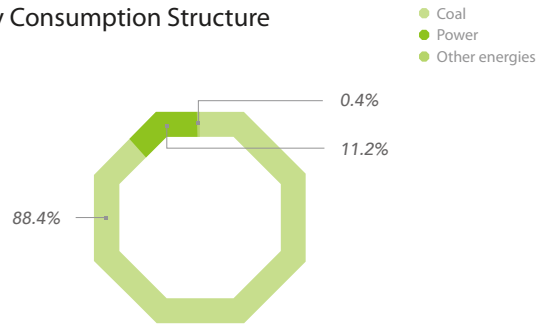
### 2013

#### Main Energy Consumptions

Indicator	Unit	Consumption
Total Energy Consumption	Million tons of standard coal	28.66
Of which: Coal	Million tons of standard coal	24.68
Power	GWh	25794.57
Natural Gas	Million standard m <sup>3</sup>	283.80
Other Resources	Thousand tons of standard coal	489.5

### 2013

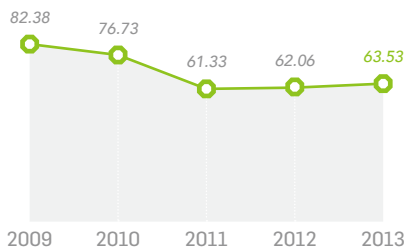
#### Energy Consumption Structure



### 2009-2013

#### Unit Energy Consumption of Cement Products

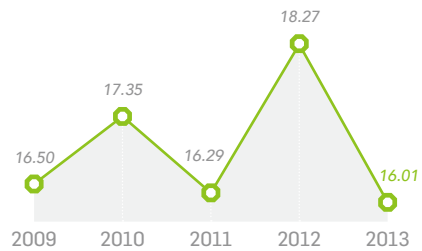
Unit: kg standard coal/ton



### 2009-2013

#### Unit Energy Consumption of Glass Products

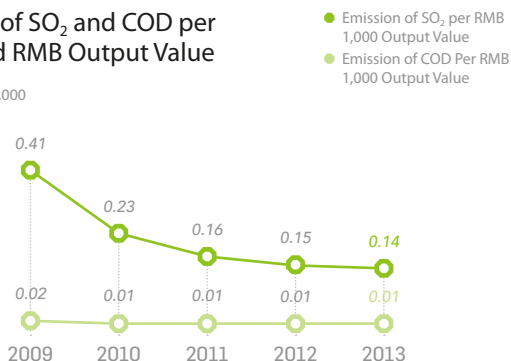
Unit: kg standard coal/weight case



### 2009-2013

#### Emission of SO<sub>2</sub> and COD per Thousand RMB Output Value

Unit: kg/ RMB 1,000



### 2010-2013

#### Emission of NO<sub>x</sub> per Cement Product Unit

Unit: tons of standard coal per RMB 1,000 output value



### 2013

#### Treatment and Cyclic Utilization of Solid Waste

Indicator	Unit	Value
Volume of Treated Solid Waste	Thousand Tons	61911.6
Of which: Municipal Waste	Thousand Tons	82.3
Sludge	Thousand Tons	103.2
Volume of Hazard-free Treated Hazardous Solid Waste	Thousand Tons	1019.1
Treatment Rate of Self-produced Solid Waste	%	99.17

### 2013

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

Indicator	Unit	Value
Consumption of fresh water per RMB 1,000 of output value	Ton/ RMB 1,000	0.80
Consumption of fresh water per ton of cement clinker	Ton/ton cement clinker	0.41
Utilization rate of circulating water	%	96.44
Installed capacity of cogeneration	Megawatt	1605.56
Actual generating capacity of cogeneration	TWh	6.01

### 2010-2013

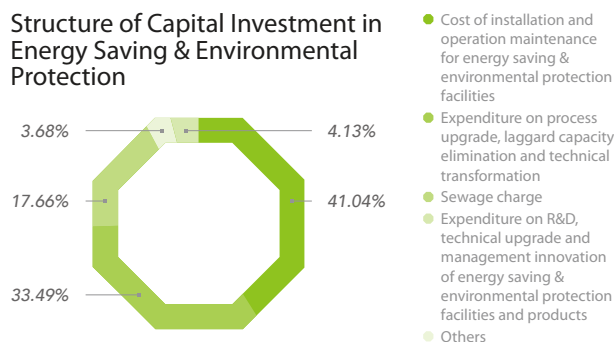
#### Capital Investment for Energy Saving & Environmental Protection

Unit: RMB Million



### 2013

#### Structure of Capital Investment in Energy Saving & Environmental Protection

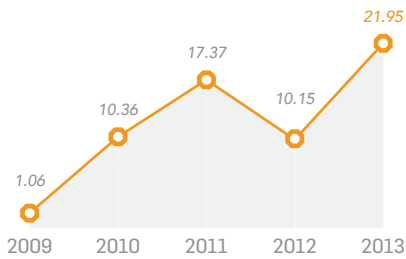


## Corporate Citizen

### 2009-2013

#### Expenditure on Social Welfare Activities

Unit: RMB Million



### 2009-2013

#### Number of Supported Social Welfare Projects

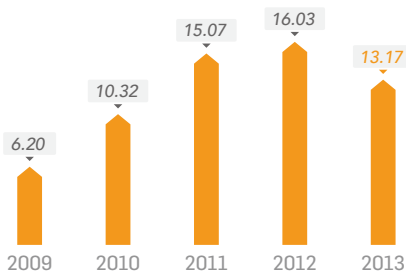
Unit: Number



### 2009-2013

#### Tax Paid

Unit: RMB Billion



### 2011-2013

#### Performance of Creating Employment Opportunities

Unit: person

Indicator	2011	2012	2013
New jobs created	21182	15901	16081
Of which: Graduating students recruited	4276	3743	4383
Demobilized soldiers recruited	241	521	158

### 2013

#### Incentives for Students

Indicator	Unit	2013
Special scholarship	Number	18
Total scholarship	RMB 1,000	1120
Students awarded or subsidized	Person	506
Probation bases established	Person	119
Inter posts provided to students at school	Person-day	36530

### 2013

#### Volunteer Activities

Indicator	Unit	2013
Volunteer teams	Team	109
Investment in supporting volunteer activities	RMB 1,000	1446.9
Number of employee volunteers	Person	4864
Voluntary service time	Hour	10681



## Employee Care

### 2010-2013

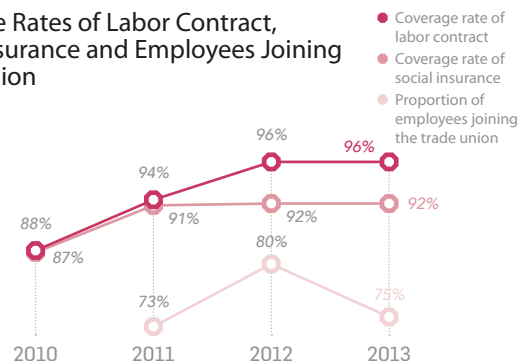
#### Employee Profile

Unit: Person

	2010	2011	2012	2013
Total number of employees	112676	126385	165652	179421
Employees from foreign countries, Hong Kong, Macau and Taiwan	397	594	1190	1234
Employees of ethnic minorities	1566	3516	2706	3031
Employees with disabilities	599	1023	1620	1685
Proportion of female employees in management	24%	11.6%	13.5%	18.1%

### 2010-2013

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



### 2010-2013

#### Progress of Enterprise Annuity

	2010	2011	2012	2013
Number of member enterprises participated in enterprise annuity	38	53	66	67
Number of employees participated in enterprise annuity	12811	13368	20392	21131

### 2011-2013

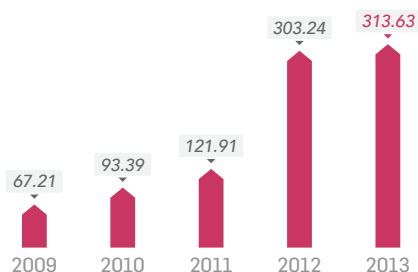
#### Performance of Staff Training

Indicator	2011	2012	2013
Employee training programs	11975	21028	37491
Training time	1080 (thousand hours)	630 (thousand person-times)	1642 (thousand hours)
Number of diplomas or degrees obtained by in-service employees with our assistance	1580	1138	2387

### 2009-2013

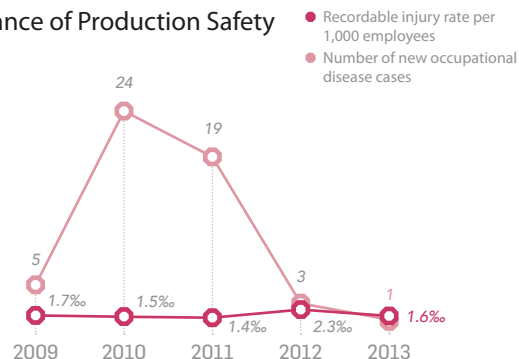
#### Investment in Production Safety

Unit: RMB Million



### 2009-2013

#### Performance of Production Safety



## Technological Innovation

### 2009-2013

#### Technology Awards at Provincial and Ministerial Levels

Unit: Number of Awards	2009	2010	2011	2012	2013
Scientific and technological awards at Provincial and Ministerial level or above	90	63	132	152	145
Of which: National level Scientific and technological awards	1	0	2	0	1
Technical innovation awards	21	17	46	89	54

### 2009-2013

#### The Standards of Presiding or Participating in Preparation or Amendment

Unit: Number of Standards	2009	2010	2011	2012	2013
Total number of standards	100	79	28	22	59
Of which: International	0	0	1	1	1
National	62	30	15	5	8
Industrial	38	49	12	16	50

### 2009-2013

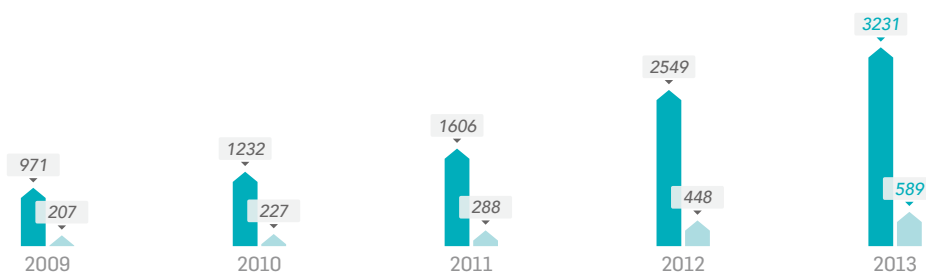
#### Application and Grant of Patents

Unit: Number of applications and patents	2009	2010	2011	2012	2013
New applied patent	430	514	630	766	1262
Of which: invention patents	144	173	170	228	373
Newly granted patents	202	420	487	729	848
Of which: granted invention patents	34	54	80	143	128

### 2009-2013 Accumulative Patents Owned

Unit: Number of Patents

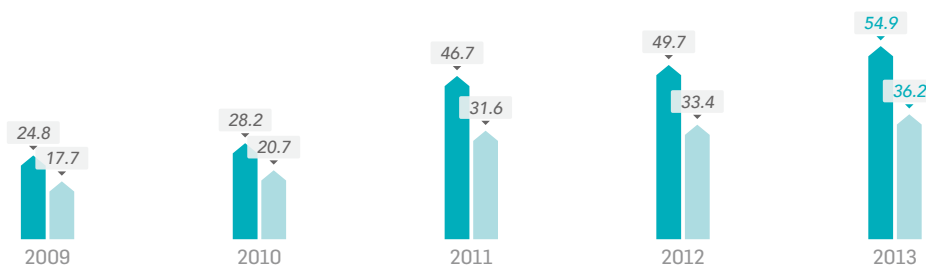
▲ Accumulative patents owned  
▲ Of which: invention patents



### 2009-2013 Expenditure on R&D Activities

Unit: RMB 00' million

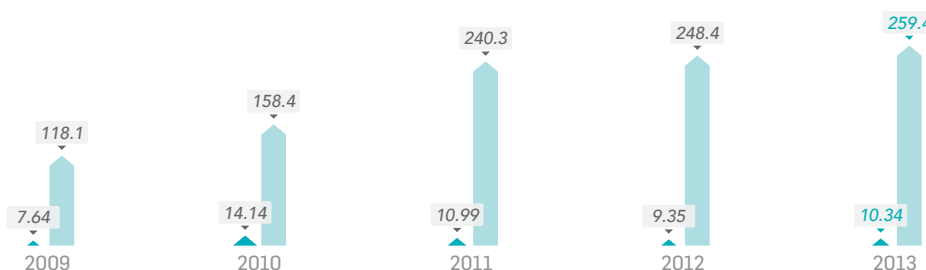
▲ Expenditure on R&D activities  
▲ Expenditure on research and experimental development

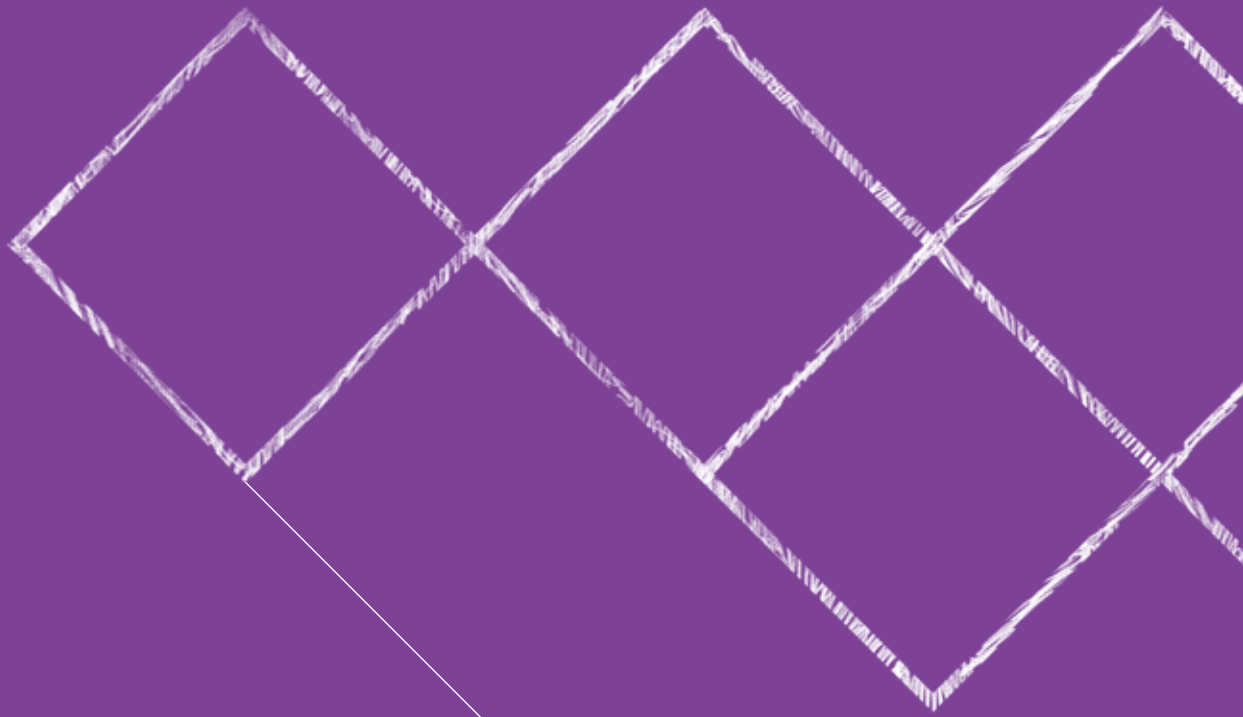


### 2009-2013 Income of Technological Innovation and Sales Revenue of New Products

Unit: RMB 00' million

▲ Income of technological innovation  
▲ Sales revenue of new products





**343**

quantitative indicators  
for social responsibility  
management



# Responsibility Management

We pay close attention to the demand of stakeholders, including investors, employees, clients, partners, related groups, communities, media, environment and government. We adhere to the core philosophy of “efficient use of resource, serving the construction”. We integrate social responsibility with daily management, practically implementing the idea in five aspects, namely market performance, energy saving & environmental protection, corporate citizen, employee care and technological innovation.

- 26 Responsibility Philosophy
- 28 Responsibility Governance
- 30 Promotion of Responsibility
- 32 Responsibility Communication
- 34 Sharing Responsibility



**7<sup>th</sup>**

in CSR Development Index  
of Top 100 Enterprises in  
China in 2013

**2<sup>nd</sup>**

in China's CSR Report  
Evaluation and  
Ranking in 2013

## Responsibility Philosophy

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, nature, employees and society, performing social responsibility in five aspects namely market performance, science & tech innovation, energy saving & environmental protection, employee care and corporate citizenship. We are committed to becoming a world-class comprehensive building materials industry group with sustainable innovation capabilities and outstanding international competitiveness.

### Core Topics

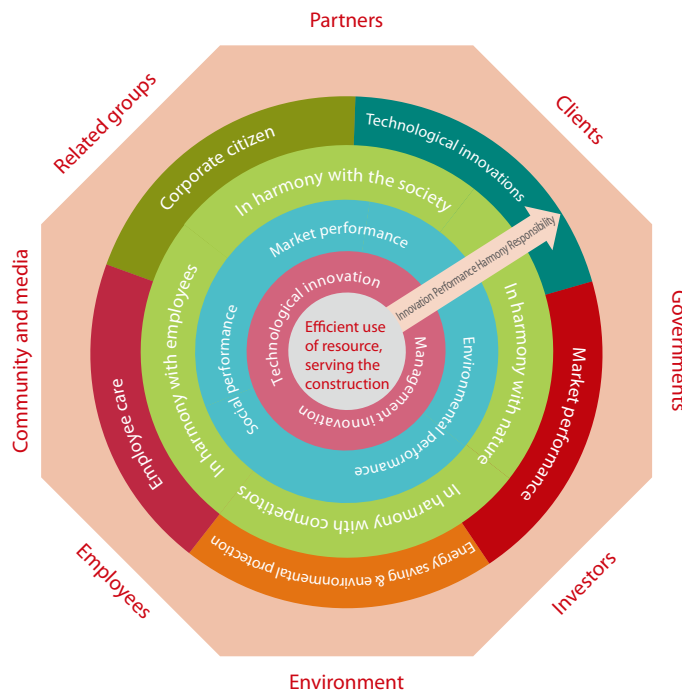


We reward our shareholders and investors with excellent operating results, serve our clients with quality products and services, growing together with our suppliers and industrial partners, and providing a platform for all the stakeholders to create values. Meanwhile, upholding the philosophy of “industry 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.



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 greener, more comfortable and intelligent living environment.

## Responsibility Model





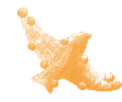
### Energy Saving & Environmental Protection

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.



### 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.

#### DEMANDS OF STAKEHOLDERS IS THE DRIVING FORCE OF THE ESTABLISHMENT OF SOCIAL RESPONSIBILITY SYSTEM

The development of an enterprise depends on the environment where it operates, and even more on the harmonious coexistence and mutual progress between the enterprise and its stakeholders. For the sake of a truly sustainable development, an enterprise shall maximize its value while satisfying the demands of all stakeholders, which are the essence of corporate social responsibility and the inevitable choice of enterprises.

We value the demands of stakeholders, adhere to the corporate's core philosophy, define the philosophy, vision and values of corporate responsibility, and establish the social responsibility mode. We respect the management experience and performance of advanced enterprises, and take an active part in benchmarking with leading enterprises both at home and abroad. Based on report studies, face-to-face interviews, on-site investigations and surveys, we have explored and established a social responsibility management system, which conforms to the actual situation of the enterprise and interests of stakeholders.

## Responsibility Governance

### Organizational System

Organizations and personnel are the organizational guarantee for the implementation of social responsibility. With several years' effort, we have established a top-down organizational system of social responsibility, and formed a social responsibility management network covering organizations at all levels and member companies all over the Group, jointly performing the Group's social responsibility.

We take 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 making decisions for social responsibility initiatives.

We rely on the social responsibility management functional organization of the headquarters to organize and coordinate social responsibility management, directing and supervising member companies in performing their responsibilities.

According to the unified requirement of the headquarters, each member company defines functional departments and assigns management personnel to perform social responsibility plan and scheme of the group and satisfy work requirements.

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 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.

#### RESPONSIBILITIES OF CNBM SOCIAL RESPONSIBILITY MANAGEMENT DEPARTMENT

- To organize the preparation of the Group's strategic goals, planning, annual plan and implementation programs of corporate social responsibility;
- To establish and constantly improve the management system of social responsibility, and to prepare the Group's CSR management system;
- To establish and maintain the Group's organization and management system of CSR; to guide, assist and urge member companies to orderly implement social responsibility;
- To organize the preparation and release of the Group's annual CRS report; to guide, approve and assess the preparation and release of each member company's CRS report;
- To establish and constantly improve the social responsibility management performance indicator system; to organize, guide and assess the social responsibility information management quality of the Group.
- To establish and constantly improve the communication mechanism with stakeholders; to guide, trace and assess the communication performance with stakeholders of the enterprise.
- To organize and implement social responsibility publicity and philosophy promotion; to supervise and advance the disclosure of social responsibility information of member companies at all levels;
- To establish and constantly improve the evaluation system of social responsibility performance; to organize and carry out the evaluation of social responsibility management performance in member companies; to organize the appraisal of social responsibility; to release notifications and announcements related to social responsibility management;
- To organize and develop talent team building of social responsibility management and training sessions for social responsibility management personnel;
- To organize study on theory and practice of social responsibility, and to constantly improve the management level of social responsibility.





## System Guarantee

CNBM Instructions on Performing Social Responsibility, CNBM Methods of Social Responsibility Management and CNBM Methods of Information Collection of Social Responsibility Management are released and implemented. We aim at

systematically and normatively promoting the fulfillment of social responsibility by our member companies and make our social responsibility management system systematic, institutional, procedural and standardized.

**3** social responsibility management systems are released.



## Promotion of Responsibility

### Responsibility Planning

Incorporating management of social responsibility into the Group's strategic management and the overall development planning, we define work goals, guarantee measures and promotion plans, and continuously improve the performance of social responsibility management. Based

on the improvement activities of enterprise management and the benchmarking system of social responsibility management improvement, we made the implementation plan clearer in 2013, striving to reach world's advanced level before the end of 2018.

### CNBM Social Responsibility Implementation Goals

Social Responsibility Philosophy	<ul style="list-style-type: none"> <li>• Social responsibility philosophy and key topics have certain international influence, and have already become global typical cases.</li> </ul>
Social Responsibility Strategy	<ul style="list-style-type: none"> <li>• Taking harmonious development between enterprise and social environment as the core philosophy of the enterprise's development strategy.</li> </ul>
Social Responsibility Work System	<ul style="list-style-type: none"> <li>• The managers in charge of the enterprise are the primary persons responsible for social responsibility matters.</li> <li>• Developing effective and feasible social responsibility management tools, and applying these tools in the daily social responsibility management.</li> <li>• Participating in the preparation of domestic and international social responsibility standards with certain authority.</li> </ul>
Fully Incorporation of Social Responsibility into the Operation of Enterprise	<ul style="list-style-type: none"> <li>• Good performance in integrating CSR into corporate management with certain international influence.</li> </ul>
Social Responsibility Report	<ul style="list-style-type: none"> <li>• The quality of CSR report has some international influence, and is highly appreciated by international authoritative organizations.</li> </ul>
Participation of Stakeholder	<ul style="list-style-type: none"> <li>• Innovating participation mechanism of stakeholders as an important member of respected international organizations.</li> </ul>
Social Responsibility Indicator System	<ul style="list-style-type: none"> <li>• Social responsibility indicator system has certain international influence, contributing to the improvement of global social responsibility indicator system.</li> </ul>

### Ability Improvement



We establish the social responsibility information management system and the efficiency of social responsibility management is improved through networked management.

We highly regard the spread of the concept of social responsibility, raising the awareness of people in charge of business enterprises about this issue through general meetings and specific meetings. The competence of our social responsibility management personnel is enhanced through organizing special training, encouraging enterprises to carry out independent training ,etc. We promote the idea and basic knowledge of social

responsibility through our corporate website and internal publication so that the sense of responsibility of our Group's employees could be improved and that such corporate culture could be developed.

We will continue to improve both quantity and quality of the annual social responsibility reports of our member companies so that the channels for disclosure of the Group's social responsibility information can be widened. We will also establish a multi-dimensional social responsibility information disclosure system for better responding the demands of stakeholders.



## Performance Evaluation

Social responsibility performance evaluation is an important method to review the corporate's responsibility performance. We take an active part in the external performance evaluation, analyze evaluation results and define key issues for improvement. We organize internal evaluations, review member companies' performance in their implementation of social responsibility through the performance evaluation system, and guide the social responsibility work of the enterprise.

We implement the external rating of the annual social responsibility report, and improve the quality of report according to the rating and suggestions of experts. We participate in performance evaluation of CRS, and carry out performance benchmarking

with corporates in this industry, and review our work progress and responsibility performance. We constantly improve and enrich the internal indicator system of social responsibility key performance, providing data basis for external submission of evaluation information and internal monitoring.

We expand the coverage of social responsibility management, and promote the performance evaluation of social responsibility management among member companies. Through comprehensive evaluation of the establishment of CRS management system, we analyze the current situation of CRS management, and formulate improvement schemes and promotion plans, continuously improving the management level.

**343**  
quantitative indicators of social responsibility management.

**7<sup>th</sup>**  
in Top 100 Enterprises of CSR Development Index of China in 2013.

**2<sup>nd</sup>**  
in the evaluation and ranking of Chinese Corporate Social Responsibility Report in 2013.

### TO CONTINUOUSLY IMPROVE SOCIAL RESPONSIBILITY MANAGEMENT INDICATOR SYSTEM

Social responsibility management indicator is an important standard for social responsibility management, an important tool in defining the scope and content of social responsibility management, as well as an important yardstick for the evaluation of social responsibility management performance. The establishment of social responsibility management indicator system should keep some stability for benchmarking with historical data to realize self-improvement, and advance with the time to suit the development of society and enterprise. To guarantee the scientificity and feasibility of the social responsibility management indicator system, we revised the System of Social Responsibility Management Indicators of CNBM with reference to standardization documents at home and abroad, including Guidelines for Sustainable Development Report (G4) published by the Global Reporting Initiatives, and CSR Reporting Guidelines for Enterprises in China (CASS-CSR3.0) issued by the Chinese Academy of Social Sciences, incorporating features of our industry as well as the development of the Group. We added new monitoring indicators, simplified similar indicators, and deleted some inapplicable indicators. The adjusted indicator system includes six parts, namely Corporate Profile, Market Performance, Technological Innovation, Energy Saving & Environmental Protection, Employee Care, and Corporate Citizen; and the number of quantitative indicators is reduced to 343.

## Responsibility Communication

Communication is the best way to enhance understanding and build trust. Effective communication not only enables stakeholders to know whether enterprises live up to their responsibilities, but also increases transparency of enterprise operation and allows us to stay updated on the opinions and advice of internal and external stakeholders.

We analyze and streamline the objects of responsibility by the principle of “Triple Bottom Line” and categorize them according to influence, dependency, and representativeness. In light of the model of stakeholders of similar enterprises, we finally identify eight major groups of stakeholders concerned with CNBM. We regard communication with stakeholders

as an important link of social responsibility management, start by working on the focuses of stakeholders, and adopt effective communication ways and responding measures to timely, transparently, and systematically respond to the demands of stakeholders, setting up a social responsibility communication system with CNBM features.

Stakeholders	Communication Way	Focus	Responding Measures
Investors	Regular reports Corporate reports Marketing activities Shareholder dialogues and feedbacks	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, environment 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
Community and media	Signing public welfare agreements Taking part in voluntary service Daily contacts	Environment protection Jointly building a harmonious community	Timely information disclosure Increasing participation in public welfare Participating in community activities
Social organization	Taking part in meetings or activities regularly Daily contacts	Environment protection Jointly advocating sustainable development	Playing the role as a member Offering economic and technical support Building cooperative relationship

We have established a sustainable communication mechanism with external stakeholders, continuously expanding the channels and scope of communication. We value communication and cooperation in our daily operation and integrate the idea of social responsibility into our daily operation and communication; we inquire opinions and suggestions through questionnaires, visit important stakeholders to understand their demands. We have built a convenient and smooth online feedback channel, keeping us informed of the opinions of stakeholders. We regularly collect and collate the evaluations from stakeholders, which become important reference for the management decision; based on the feedback of stakeholders, we continuously improve our work and respond in an active manner.

The management of the Group highly values social responsibility communication. They participate in social responsibility communication activities at various levels and scopes. Through the means of forums, leader mailbox and meeting

of employee representatives, they have actively communicated with internal stakeholders; they are also presented at the communication activities with external stakeholders, timely arrange improvements according to key opinions and suggestions; when taking part in external activities, they are willing to share their experience in fulfilling social responsibility, playing an active role in spreading the idea of social responsibility. The active participation and promotion from management of the Group have significantly enhanced the performance and quality of the Group in fulfilling social responsibility.

We timely publish information regarding responsibility fulfillment in the column of social responsibility on our corporate website, continue to issue annual social responsibility reports, present our achievements in social responsibility and respond to the demands from stakeholders; we have established information release mechanism on emergencies for timely information disclosure, enhancing the enterprise's transparency and credulity.

Nearly

**18,000**

person-times participated in the external communication of stakeholders in 2013.

**5,068**

occasions of communication with external stakeholders were presented with corporate senior management in 2013.



## Sharing Responsibility

### Organizational Action

As a member of United Nations Global Compact, we consciously abide by international conventions and actively participate in activities organized by UN Global Compact Network China. Our senior management has presented at the events organized by UN Global Compact Network China and delivered keynote speeches for many years. At those events, we actively share practice experience in fulfilling social responsibility and discuss with experts and practitioners about the best way to improve the capacity and performance of fulfilling social responsibility. Through Global Compact, we communicate and exchange ideas with stakeholders, further expand the scope and channel of communication.

As a member of the Cement Sustainability Initiative (CSI), we actively attend the CSI annual activities, participate in the research and discussion about the effective ways to cope with climate change and achieve sustainable development of cement industry. Li Juan, a senior engineer from China Building Materials Academy, a member company of the Group, is appointed as chief liaison officer of CSI China office. There are other 13 experts from our Group, who have participated in four CSI working groups, including Climate Protection, Resources and Fuel Utilization, Health and Safety as well as Mine Rehabilitation and Biodiversity.

#### United Nations Global Compact

United Nations Global Compact is the world's largest and supreme initiative on corporate social responsibility and sustainable development with most extensive influence. The organization was proposed by Kofi Annan, then Secretary General of the United Nations, in 1999 at the annual meeting of the World Economic Forum in Davos and officially launched at UN Headquarters in July 2000. "Global Compact" is established to mobilize worldwide enterprises to abide by the standards with shared values, implement a set of necessary social rules, directly participate in the actions for reducing negative impacts of globalization, and guide globalization towards a positive direction.

### Responsibility Research

We have actively participated in compilation and specific studies of social responsibility standards. We have continuously assigned management experts to join the compilation of amendment to the "Guidelines on Corporate Social Responsibility Reporting for Chinese Enterprises 3.0", an authoritative standard issued by Chinese Academy of Social Sciences on preparation of social responsibility reports in China; we participated in the studies of "Social Responsibility, Corporate Governance, and Internal Control Programs" hosted by China Group Companies Association and provided opinions for Chinese enterprises to fulfill social responsibility and achieve sustainable development. We have also actively participated in events specialized in social responsibility, focused on the latest trends in the field of social responsibility to acquire information resources for the Group's continuous improvement in fulfilling social responsibility.

We attach great importance to the research of social responsibility management. Through the research and benchmarking, we have further improved the management system and continuously enhanced the competence of our management. Based on a thorough research on relevant standards concerning social responsibility management and sustainable development at home and abroad, we have established an indicator

system for the Group's social responsibility management; based on the results from benchmarking on social responsibility management systems of overseas building materials companies and domestic enterprises, the framework of the Group's social responsibility management system has been set up and improved. We carefully organize benchmarking for the improvement of the enterprise's management and the benchmarking of social management, further define the focus and goal of improvement, solidify and maintain the leadership of the enterprises and strive to reach world class through specific improvement.



## Responsibility Spread

**2** external researches on social responsibility were participated in 2013.

**31** national social organizations were joined by the headquarters of the Group.

**2** international organizations for social responsibility and sustainable development were joined.

We endeavor to disseminate the concept of responsibility to suppliers, clients, and industrial partners through value chain-based activities and cooperate with them to carry out responsibility-based activities. We share knowledge in social responsibility management and publicize corporate practices of social responsibility on corporate website; we actively participate in professional forums, share achievements in social responsibility management, and advocate the culture of social responsibility; suppliers' grade on quality, creditability, environmental protection, occupational health, and employees' rights are included

into evaluation system, and they are provided with free trainings on safety, laws, and environmental protection. We guide suppliers to provide responsible products and services, introduce green and environmental concept into the system of products and services, disseminate the concept of green consumption and low-carbon life among consumers; we consciously abide by industrial self-discipline rules, advocate industrial reengineering and value improvement, and cooperate with industrial partners for sustainable development.



Executive's Address



Market Performance



Science & Tech Innovation



Energy Saving & Environmental Protection



Employee Care



Corporate Citizen



# 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.

- |  |  |
|--|--|
| <b>38</b> Excellent Corporate Management | <b>44</b> Driving Supply Chain to Perform Responsibilities |
| <b>39</b> Creating Excellent Performance | <b>45</b> Compliant Management                             |
| <b>42</b> Providing Quality Service      | <b>46</b> Mutual Trust and Benefits                        |



Total profit in 2013

RMB **11.51** billion



Taxes paid in 2013

RMB **13.17** billion

Sales revenue in 2013

RMB **252.26** billion

## Excellent Corporate Management

CNBM establishes a standard parent-sub subsidiary corporation management system. As the strategic, resource and cultural center, the headquarters of the Group exercises the rights and functions of capital contributor. The subsidiaries (sub-Group) serve as business platforms, focusing on their expertise and principal businesses to develop profit centers based on their brand awareness and market share. As operating entities, the enterprises at the primary level implement strict cost control while assuring quality. By establishing and implementing a “standardized and stratified model” of management, we align the pace of different enterprises with orderly management in the course of rapid development.

We create new development concept and transform development mode, through which we not only achieve our own leaping development, but also lead the industry of building materials in China to a significant transformation of traditional operation mode and promote the transformation and restructuring of the industry. We adhere to the path of capital operation, consolidation and restructuring, and integrated innovation, creatively propose and implement a series of new concepts and measures, namely “market-oriented operation of central SOEs”, “five-mode management”, “instructor system”, etc., which help us not only achieve leaping development and become one of Fortune Global 500, but also provide solutions to the sustainable development of the industry with overcapacity and enterprises in the fields with full competition, boosting the development of enterprises with ownerships, providing new perspective of market-oriented reform for central SOEs’.

We focus on the problems occurred during the process of rapid expansion through consolidation and restructuring, and theorize the typical practices and understanding learned from management, with the concepts of “eight management measures” and “six-star enterprises” proposed.



### “EIGHT MANAGEMENT MEASURES” - BENCHMARKING MANAGEMENT

The purpose of benchmarking management is to improve and progress through learning from better enterprises. Through systematically benchmarking against management indicators of advanced enterprises in “human resource, financial resource, and materials”. Sichuan Yunlian Southwest Cement Co., Ltd. (hereinafter referred to as Yunlian Southwest” includes all factors concerned with its production and operation into benchmarking, with a closed circle of management procedure from problem input to result output formed, which is necessary for the company promoting digitalized and standardized management. The indicators of “human resources” refer to “morality, capacity, attendance, performance, and integrity”; the indicators of “financial resources” refer to “price, cost, profit, loans receivable, and cash flow”; the indicators of “materials” refer to “output, sales, quality, coal consumption, and power consumption”. According to its actual conditions, Yunlian Southwest has achieved gradual improvement (from revision to standardization and then innovation) through making new benchmarking forms and crosswise and vertically expanding benchmarking from up to down and from inside to outside. It has become one of the benchmarks in corporate cost, innovation, and performance for CNBM. In 2013, the clinker cost of Yunlian Southwest declined by 26.5% compared with that in 2011 and the corporate profit rose sharply.

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, complete the mid-term review on the implementation of "Twelfth Five-Year Plan", and launch the formulation of "Three New" strategy and development planning on the development of glass sector; we improve the assessment on business performance, deeply advance EVA evaluation, intensify the guidance in restructuring and scientific innovation, and utilize the leading role of performance assessment; we continue to streamline and integrate companies to shorten management chain and improve operation efficiency; we strictly control guarantee risk and further guide companies to reduce capital costs and preventing business risk; we deeply investigate and immediately adjust the thinking for risk management and expand all-round risk management and the

coverage of prevention against legal risk; we intensify the management on the audit plans of subsidiaries, with 614 audit projects implemented in the full year.

We firmly transform the Group's control and management from qualitative mode to quantitative mode, from administrative management to business management, and from consolidation prior to integration to consolidation and integration at the same time through the integration of informationization and industrialization. Five subsidiary enterprises of the Group have been successively honored as "Benchmark Enterprises for Integration of Informationization and Industrialization" by the Ministry of Industry and Information Technology; The Construction of Safe Production Management Information System For Improving the Groups' Capacity of Management and Control was awarded with the 2nd Prize of the National Awards for Innovative and Modern Corporate Management; 14 projects concerned with the integration of informationization and

industrialization, including The Research and Application of Production Management Information System for Cement Production Line with a Daily Capacity of 10,000 tons, have been awarded with 1st Prize and 2nd Prize of Modern and Innovative Management Achievement in the National Building Materials Industry.

## Creating Excellent Performance

The domestic building materials industry revived in 2013. Data published by Ministry of Industry and Information Technology indicated that over the year, the main operating income of the industry achieved RMB 6.3 trillion (increasing by 16.3% on a year-on-year basis) and the profit of RMB 452.6 billion (increasing by 18.2% on a year-on-year basis); the domestic cement output was 2.42 billion tons, increasing by 9.6% on a year-on-year basis; the domestic sheet glass output was 0.78 billion weight cases, increasing by 11.2% on a year-on-year basis; the commercial concrete output was 1.17 billion m<sup>3</sup>, increasing by 22.5% on a year-on-year basis. An initial success has

been achieved in curbing excess production capacity in the fields of cement and sheet glass. A good development trend has been presented and a positive progress in structural adjustment has been made in both fields of building materials product and deep processing.

In 2013, to actively address the challenges of economic slowdown, short demand, excess production capacity and price fall, we carefully studied on the market situation, timely adjusted the operation strategy, and took effective measures according to the deployment of "integration, optimization, efficiency improving, debt reducing", based

on which, stable progress has been made. By Dec 31, 2013, the total assets of CNBM have reached RMB 364.4 billion, accompanied with the operating revenue of RMB 252.3 billion (increasing by 16% on a year-on-year basis), a total profit of RMB 11.5 billion (increasing by 3% on a year-on-year basis), a net profit of RMB 8.8 billion (increasing by 2% on a year-on-year basis) and paid taxes of RMB 13.2 billion. In the end of 2013, asset-liability ratio was 81.89%, decreasing by 0.06 percentage points on a year-on-year basis; the SSCM (security surplus cash multiples) was 1.6, increasing by 0.29 times on a year-on-year basis.



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Employee Care



Corporate Citizen

**Wang Yong, State Councilor**

"In recent years, by persistently implementing requirements of the Party Central Committee, the State Council and the SASAC, CNBM has not only opened up an innovative developing path for traditional central SOEs in the fields of industrial development, technological innovation, transformation & upgrading, management improvement and modern enterprise system, but also made outstanding achievements in respect of asset, income, profits, fulfillment of military production, civil production and research tasks.



The sales of cement up to 220 million tons (increasing by 33% on a year-on-year basis); sales of commercial concrete reaches about 87 million m<sup>3</sup> (increasing by 174% on a year-on-year basis) based on favorable interaction with market; benefited from the value of international brand in the plasterboard business, sales of plasterboards reaches 1.23 billion m<sup>2</sup> (increasing by 17% on a year-on-year basis); more than 3200 pieces of fan blades are sold based on "dual adjustment of customer and product; sales of glass fibers reaches 820,000 tons by giving play to the advantages in technology and cost; an anti-trend increase is realized in engineering service sector by vigorously developing solar engineering service based on the glass and cement engineering services.

The revenue of the inspection and certification service of China Building Materials Academy (CBMA) increases substantially, and multiple results, including cement application in hydropower project, optical fiber product, etc. are transformed to new growth points. Besides, CBMA offers special cement technologies to cement enterprises of the Group Hefei Cement Research and Design Institute enhances promotion of its pillar products to the outside and accelerates upgrading and transformation of technologies and products. It has signed 34 EPC contracts in the flue gas denitrification business over the year. Bengbu Design and Research Institute for Glass Industry insists on the strategy of vigorously developing emerging industries (new glass, new materials, new energy, and new equipment). It is ranked 1st in the world in sales volumes of ITO electropane and high-purity capacitor zirconia. Harbin FRP Institute accelerates transformation of technological results by means of technology investment, and is activated by its carbon core business for future development. Based on its traditional advantages, China New Building Materials Design & Research Institute vigorously develops the new-type building materials engineering business and expands pre-fab housing project.

We firmly push high-quality growth, realize the import-export volume of USD 5.69 billion. CBMIE achieves the objective of benefit growth faster than scale growth by innovating commercial modes and expanding business fields. BNBM continues to actively carry forward the internationalized strategy of "wood, steel, prefab house", and realizes stable development.





## PROTECTING SHAREHOLDERS' RIGHTS AND INTERESTS

As a foregoer of developing mixed ownership economy, the Group holds 6 domestic and overseas listed companies. Non-governmental capitals account for two thirds of the member companies' total capitals. Aiming at maintaining all shareholders' interests, the listed company members, such as China National Building Materials Company Limited, strictly obey related laws and regulations and the articles of association, continuously improve their governance structures, and perfect their governance systems and internal management flows. They practically protect shareholders' interests by continuously enhancing system building and improving the quality and efficiency of investor relation management. Shareholders of company exercise their rights by holding shareholders meetings, including the rights to know, make suggestions on and inquire the operation of the company. They implement daily operation, supervision and management of the company through the board of directors and the board of supervisors. With close attention paid to protecting the rights of medium and small investors to get involved in operational decision-making, these companies give full play to the role of independent directors in protecting interests of such investors, and set up an effective mechanism to maintain seats for and allow disinvestment by such investor. Decision-making by major shareholders or controlling shareholders and their control over board of directors and board of supervisors are regulated to protect interests of medium and small investors. According to the requirements for corporate supervision in listing rules and Information Disclosure System, these companies truthfully, accurately, completely and compliantly disclose periodic financial data, significant matters and the matters required to be disclosed. In case a company encountered 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. Through multiple channels, such as information collection, research analyst's report, road show by management level, attendance at shareholders meeting, inviting investors for field survey and receiving visiting investors, these companies analyzed appeals of interested parties, and built a harmonious relation with shareholders and investors with mutual trusts and win-win situation.

## Providing Quality Service

We are dedicated to offering safe, reliable, energy-saving and environment-friendly building materials and convenient services to customers, offering material supports and technical services to important projects and urban infrastructures of the state, and offering systemic building materials

solutions to residents' daily life. Our various products, sufficient production capacity, reliable quality assurance, globalized marketing system as well as convenient and friendly service system are widely recognized and respected by customers.

## Customer Experience

We are dedicated to continuously offering returns beyond commercial values to customers during product marketing. Service systems for pre-sales consultation, sales reception and after-sales service are well established.

We own professional customer service teams and partners. They regularly and professionally train our agencies to improve professional proficiency and service competence. Customer training meetings 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, who thus are able to correctly select and use our products and get satisfied.

With attention paid to protecting customer privacy, we execute a strict confidentiality system for customers' personal information. An effective communication platform has been set up to involve customers in product R & D and service improvement plan, continuously enhancing service values and quality. Complaints and inquiries from customers are responded to and handled without any delay.

Sparing no efforts to meet customer demands, our production enterprises try their best to offer convenient and quick delivery services to customers. To offer convenient services and trustworthy building materials, we have continuously enhanced product and service innovation, deeply transformed operation modes, and

improved information-based systems and channels. By the development of building materials online customization system, personalized building materials services are offered to customers based on instant and direct customer experience. The first spot building materials trading platform, www.okorder.com, has been carried out to offer "one-stop, whole-process, standardized" spot building materials trading services.

**37,000**

individuals participated in product knowledge popularization and customer training in 2013.

**7**

"China Top Brand".

### RANKED 1ST IN BRAND VALUE IN METALLURGY AND BUILDING MATERIALS INDUSTRIES

We cultivate our own brands depending on core technologies, forming brand awareness through consolidation and maintaining brand images with high quality. Deeply realizing the significance of a brand for enterprise development as well as the market value contained in a brand, we continuously enhance brand building, perfect brand planning, innovate brand concepts, strictly control product quality for firm branding foundation, enrich brand connotation based on technological innovation, build brand images by fulfilling social responsibilities and strengthen publicity and promotion to enhance brand influences. Brand building is taken as an effective means for sharpening competitive edge and enhancing sustainable development capacity. As a result, our brands are widely accepted by markets and customers. We own seven products titled as "China Top Brand" and five "China Well-known Trademark". In 2013, for the first time, the program "CCTV Financial Forum" published the results of assessing values of proprietary brands in China's manufacturing industry. As indicated, CNBM was ranked 1st in brand strength (82.80) and brand value (RMB 29.17 billion) in the metallurgy and building materials industries, and closely followed by South Cement Company Limited ("South Cement", 2nd) and China United Cement Corporation (CUCC, 3rd), both of which are subordinate to CNBM.

## Quality Assurance

Based on years of production practice, we have built complete quality management systems and process to implement quality management throughout the procedure from procurement of raw materials to delivery of products. To lay a firm foundation for product quality from the source, we pay close attention to quality inspection and ratio of materials. To assure the quality control level during production based on complete organization systems and procedure control mechanisms, our member companies are instructed to build standard quality management systems. By means of multiple mechanisms and activities (quality group activity, quality benchmarking, quality appraisal, etc.), we continuously improve quality management level and

product quality. Customers are actively invited to get involved in product quality control, and a customer evaluation & feedback mechanism is built to timely and continuously improve product quality upon feedbacks from customers. Our efforts are recognized by customers and national quality supervision and inspection departments. Our products and member companies have been titled as national/provincial/municipal inspection-free products and quality products for many times. In 2013, in the 14th Cement Quality Indicator Inspection & Comparison, 144 enterprises under the Group stood out in near 1000 participants, and five of them won the "Special Prize for Cement Enterprise".

In 2013, the pass rate of quality standard system certification on manufacturing enterprises was

**82.6%**



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## Driving Supply Chain to Perform Responsibilities

### Supply Chain Evaluation

Performing social responsibilities is included in supplier evaluation system. Our suppliers are 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, supervise and push suppliers to pay attention to physical and psychological health of their staffs, and irregularly assess responsibility management. In each bidding for production line construction, 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.

### Responsibility Procurement

The concept of social responsibility has been integrated into procurement management. We stick to "sunshine procurement", and spare no efforts to eradicate commercial bribes in procurement by pushing regional procurement-bidding integration, bidding process normalization, bidding performance opening and information-based bidding management. The concept of sustainable development has been integrated into our procurement system. In purchasing materials, the products that are manufactured with low-carbon environment-friendly processes and harmless to environment are preferred; in selection of energy, non-fossil energy (low-grade energy, urban refuses, biomass energy, etc.) is vigorously preferred; recyclable products with simple package are preferred in purchasing office supplies and other consumer goods.

In 2013, the pass rate of quality management system certification on suppliers in long-term cooperation with CNBM was

**61.4%**

In 2013, the pass rate of occupational health and safety management system certification on suppliers in long-term cooperation with CNBM was

**44.3%**

In 2013, the rate of responsibility-based procurement was

**93.2%**

**17,000**

person-times of subcontractors' and suppliers' employees participated in safety, energy and law training in 2013.





## Compliant Management

### Lawful Operation

We insist on the working rules of law compliance and honest operation. A perfect legal affair management mechanism has been built. 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 affair department.

We insist on the integration of law popularizing activities with legal affair management for interactive promotion. The concept of "compliance creates value" is deeply publicized by means of law-popularizing activities in different forms (National Legal Publicity Day, legal training lecture, legal knowledge contest, etc.). To prevent risks in a systemic way, practical experience is shared in legal case explanations and exchange of experience in legal affair management.



### Anti-corruption

We're fully aware that anti-corruption is as important as marketing and management. Both operation performance and anti-corruption are mandatory quotas decisive for development. Anti-corruption is firmly considered as a major agenda, integrated into all tasks of reform, development and stabilization.

We persistently develop anti-corruption and anti-bribery systems, and continuously push high-efficiency running of normalized management activities. With attention paid to integrity in work, efforts are made to build the culture of integrity; to give full play to its effects, efforts are made in efficiency supervision and inspection.

Organizations and teams for discipline inspection and supervision are further

developed. The member enterprises are pushed to establish and perfect bodies for discipline inspection and supervision, organize professional training for discipline inspection and supervision cadres, thus continuously improving work efficiency and quality.



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## Mutual Trust and Benefits

### Honest Operation

Integrity has always been our value orientation and code of conduct. The member companies' conducts are widely recognized and reported by the society. Multiple banks have signed

cooperative agreements with us to offer general credit limits. We were again awarded as AAA in credit rating by China United Assets Appraisal Group in 2013.

In 2013, the performance rate of business contract was

**98.0%**

### Fair Competition

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 operational activities, the concept of "harmonious relationship with competitors" is observed, voluntarily

maintaining harmonious environment of the industry with fair competition. 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 for fair competition training.

**22,000**

person-times of employees participated in honest operation and fair competition trainings in 2013.



## Industry Reconstruction

Keeping the responsibilities of leading enterprises in mind, we serve economic and social development with unremitting efforts, offer opportunities of employment, pay taxes and support programs for public good during our growth, making contributions to national economy and harmonious development of the society. Under the concept of "industry interest overweighs and breeds corporate interest", we vigorously advocate the inclusive multi-win co-competition mode. We advocate and implement the transformation of development mode, and execute the industry reconstruction strategy that features expansion based on stock combination, technological transformation and upgrading based on increment input and benefit creation based on management integration, improve concentration ratio of the industry, create a new intra-industry eco-

system, optimize resource allocation thus implement value sharing among related enterprises in the industry and the industry chain. In 2013, four enterprises subordinate to the Group, together with other 11 large cement enterprises, jointly advocated giving play to the leading role of large enterprises in regional markets, and reached agreements (e.g. Convention of China's Cement Field on Self-Discipline and Coordination) on the issues concerned.

We take the lead in structural adjustment, consolidation, energy saving and emission reduction in the traditional building materials industry, and insist on guiding the cement field to develop towards "high-grade, specialized, ready-mixed, commercialized" and the glass field to develop towards "high-end,

LOW-E, ultra-thin, high-performance". Efforts are made to push technological upgrading for traditional building materials and equipment (cement, commercial concrete, glass, etc.) to enhance energy efficiency and emission reduction, shut down outdated production facilities and promote clean production. Taking full advantage of the opportunity brought by urbanization, "Three New" industries are further cultivated to vigorously promote new-type energy-saving houses, and drive application of new-type building materials and materials. On the basis, a range of key technologies and high-end products are generated, leading sustainable development of the industry.

## Strategy Sharing

We are seeking long-term strategic partnerships with our partners, and making efforts to bring mutual benefits through multi-level platforms and flexible and effective mechanisms for strategy sharing.

We have built partnerships with multiple provinces and municipalities to deeply explore regional resource advantages, give play to our strong points, search for win-win fields and modes thus boom regional economies and realize our healthy growth.

We emphasize cooperation with institutions of higher education and research institutions.

To jointly push industrial upgrading and result transformation, the key technological fields (study on advanced appropriate technologies, R & D of new products, etc.) are studied together with them based on research

alliances and production-research synergy. To jointly plan future development of the industry, communication with advanced enterprises of the industry is kept, and appropriate technologies and advanced experience are shared in high profile visits, inter-enterprise cooperation and management benchmarking communication.

We are willing to build sharing platforms, hold high-standard exhibitions and forums to gather professional elites to discuss and share frontier information, for the purpose of win-win cooperation. Knowledge and cooperation opportunities are shared through academic journals and professional websites, and information exchange platforms are made available to customers and suppliers of related fields.

# 2,066

communication sessions about strategic cooperation with related enterprises were held in 2013.



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Energy Saving &amp; Environmental Protection



Employee Care



Corporate Citizen



# 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 environment-friendly building materials with reliable quality and providing product and service support for new energy industry; we are delighted to share effective energy saving technology and management experience, explore green development mode, and advocate sustainable development of the whole industry and society.

- |                                       |   |
|---------------------------------------|---|
| <b>50</b> Coping with Climate Changes | <b>56</b> Protecting Ecological Environment |
| <b>52</b> Green Management            | <b>58</b> Green Products System             |
| <b>54</b> Resources conservation      | <b>62</b> Green Service Industry            |

In 2013, investment for energy saving and environment protection reached

RMB **1.45** billion

In 2013, installed capacity of residual heat  
power generation reached

**1,606** MW

In 2013, treated and reused solid waste reached

**61.91** million tons



## Coping with Climate Changes

Since the world today is facing an environmental status quo with resource exhaustion, worsening ecological system, and extreme weather events, all walks of life are highly concerned about climate change and actively exploring an effective way to achieve sustainable environmental development. With great concern over climate change, the concept of sustainable development is integrated into our

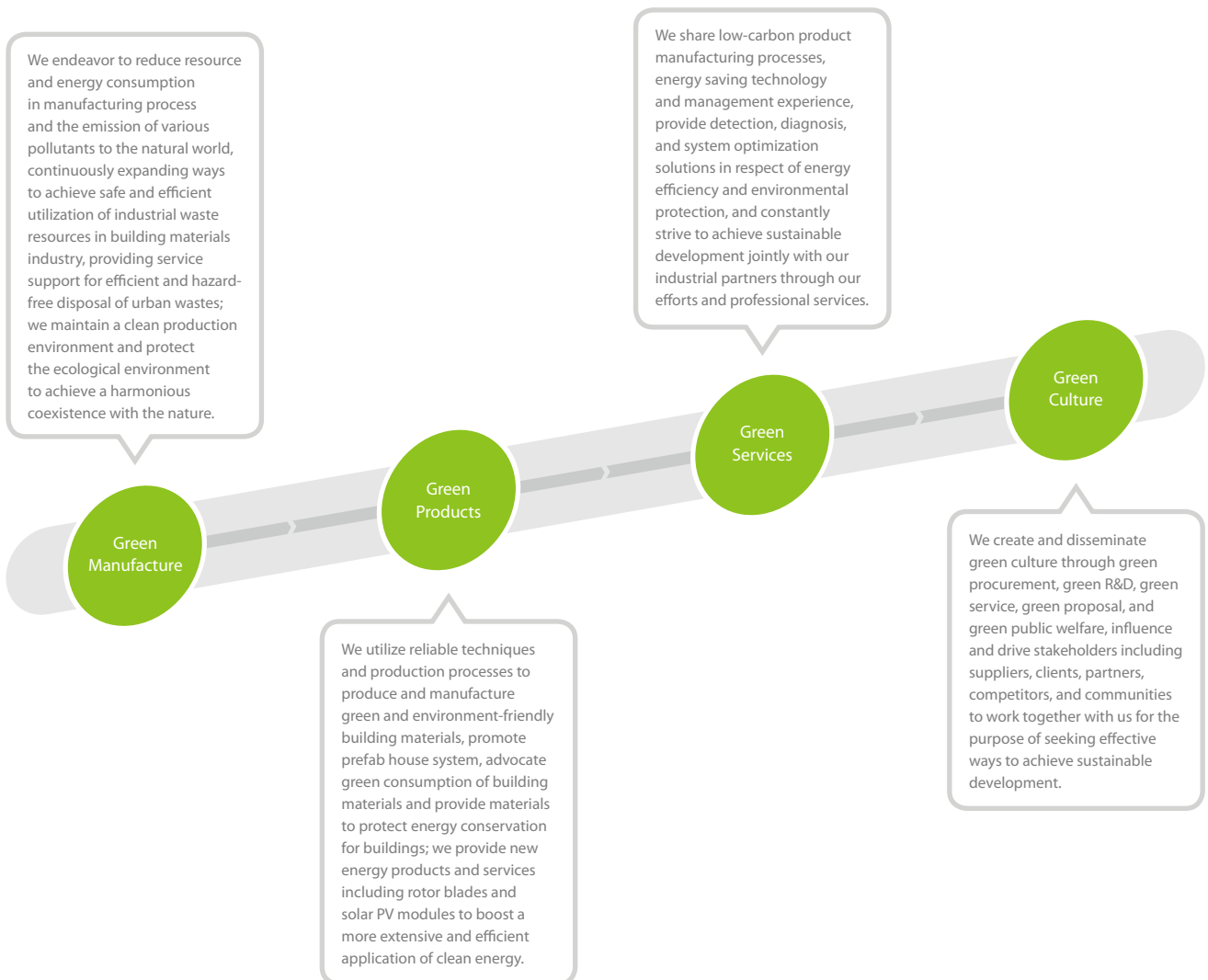
development strategy. From the perspective of stakeholders, low-carbon development concept is integrated into the whole process covering product R&D, technical design, selection of raw materials, field management, and customer services. We have established a distinctive and highly effective business model for sustainable development to cope with climate change together with stakeholders.

**Ban Ki-moon:**

"The Positive Action of Chinese Enterprises like CNBM Tackling Climate Change Is Impressive



## Energy-saving and Environment-friendly Management Model of CNBM



## Responsible and Exemplary

We keep corporate responsibilities in mind and endeavour to become a practitioner, fuleman, and advocator in coping with climate change. We actively undertake the task of energy saving and emission reduction, contributing to China's national low-carbon action. From 2011 to 2015, 214 member companies of the Group will reduce energy consumption by approximately 4 million tons of standard coal under "10,000 Enterprises Energy Conservation

Low Carbon Action Program" to practically implement corporate responsibilities in environment. We strictly comply with laws and regulations, firmly implement standards with regard to energy consumption and environmental protection by eliminating backward production and observing access system, demonstrate the action principles of a responsible enterprise. We launch and lead the signing of conventions and written proposals advocating responses

to climate change, environmental protection, dust-haze treatment, and low-carbon development, leading the industry of building materials to sustainable development.

It is estimated that from 2011 to 2015, the emission of CO<sub>2</sub> will decline by

**9.26** million tons

### COPING WITH CLIMATE CHANGE AND WORK TOGETHER FOR A BEAUTIFUL CHINA

In addition to creating social wealth and pursuing economic benefits, enterprises should also focus on social and environmental benefits, adopt the model that is beneficial to both ecological cultivation and corporate development, and achieve sustainable development and win-win cooperation with stakeholders through responsible investment and production and operation. At "China Summit on Caring for Climate" held on July 30, 2013, CNBM and other 50 enterprises jointly signed Proposal for Chinese Enterprises on Coping with Climate Change that was launched by China Enterprise Confederation, China Federation of Industrial Economics, and China Association for Public Companies, promising that: adhering to the general policy of giving priority to saving, protection and natural resilience, focusing on green development, cycle development, low-carbon development, forming an energy-saving and environment-friendly production model, reversing the trend of worsening ecological environment at source, creating a good environment for people to produce and live, contributing to global ecological security.

**207**

proposals on environmental protection were signed or joined.

## Disseminating Low-carbon Culture

We disseminate environmental protection concept to suppliers through green procurement. We prefer low-carbon green products that bring less negative impacts on the environment during production while procuring raw materials; we vigorously promote the utilization of low-grade energy, urban waste, biomass energy and other non-fossil energy; as for daily office supplies and other consumables, we choose simply packed and easily recycled products.

We are active in environmental protection welfare and publicity activities, doing our best to promote environmental protection

concept; 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.

**855**

publicity events were organized and participated on environmental protection in 2013.

**44.7%**

suppliers established long-term cooperation with member companies of the Group passed the environmental management system certification in 2013.



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## Green Management

Based on the characteristics of the building materials industry, we set up a green management system, which is appropriate for a diversified and comprehensive industrial Group, aiming at building an energy-saving and environment-friendly enterprise. We strictly abide by national laws and regulations, national quota on energy consumption and emission standard, and execute procedure for examination and approval; we establish and develop institutional system, assign professional managers, and continuously improve the quality of the management on energy saving and emission reduction; we make management strategy, objective, and management system on energy saving and emission reduction, as well as guide, monitor, and assess the energy-saving and emission-reduction practices of member companies;

we carry out standardization management to achieve energy saving and consumption reduction by efficient management; we advocate the implementation of new management methods and mechanisms on energy saving and environmental protection, finance through multiple channels, expand investment in energy saving and emission reduction to ensure available financing and remarkable benefits; we establish information disclosure mechanism, consciously accept the supervision from stakeholders, and integrate the opinions of stakeholders into energy saving and environmental protection management system; we propose green office and create strong low-carbon culture through characteristic publicity and experience activities.



### Energy Saving and Environmental Protection Management System of CNBM

1

We strictly implement relevant national laws, regulations and standards. We strictly abide by industry access system, quota on energy saving, standard on pollutant emission, and requirements on clean production, carry out "three simultaneousness" policy for energy saving and environmental protection on fixed assets investment projects, and carefully perform feasibility and environmental impact assessment of new, rehabilitated, or expanded projects. We establish early warning system for environmental risk and contingency plan to prevent and reduce possible environmental hazards.

2

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.

6

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.

7

We gradually establish and improve information disclosure mechanisms for energy saving and emission reduction. We regularly report information about energy consumption and pollutant emission to stakeholders and accept the supervision of stakeholders by releasing annual energy saving and environmental protection performance via annual social responsibility report. We continuously improve the communication mechanism for stakeholders and regularly report environmental performance to local residents.

**57,000**

employees of the Group attended trainings in regard of energy saving and environmental protection in 2013.

Approximately

**70**

on-site conferences were replaced by video conferences in 2013.





3

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

4

We make strategies, general policies, plans and systems on energy saving and emission reduction, improving 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.

5

Standardization management system is implemented. Manufacturing companies of the Group have established standardization management systems regarding quality, environment, and energy, most of which have been certified.

8

During the feasibility research, construction, renovation, and acceptance check of projects, we actively collect advice from local residents and main local stakeholders, minimizing the negative impact of our business activities on society and environment.

Adhering to the concept of green office, we have formulated detailed plan on saving electricity, water, and office consumables. Performance on green office is included in routine monitoring and evaluation system. We actively promote the construction of video conference system to reduce on-site conferences; we arrange business travel in a scientific way and prefer low-carbon vehicles.



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## Resource Conservation

### Production Improvement and Consumption Reduction

We value mineral resources. In respect of mine production and development, we adopt top-down bench mining approaches, combining with open-pit mining, road development, lateral stripping and bench mining, so as to prevent geological disasters at the mining areas. In respect of production blasting, multi-row hole and millisecond blasting method is adopted to reduce the waste of resources and environmental pollution caused by blasting vibration. In respect of ore crushing and transportation, ores are usually transported

by conveyer belts connecting pits and plant areas. These conveyer belts are enclosed, thus avoiding fugitive dust caused by vehicles transport and reducing energy consumption as well lessening the impact on the surrounding living environment. In respect of mineral resources utilization, we accurately determine the composition of mineral resources of different batches, make reasonable formula for raw materials compounding, efficiently using low-grade ore and fully demonstrating the value of every mineral resource.

### Efficient Use of Energy

We strive to improve energy utilization efficiency and level. Effective transformation of energy-saving techniques is implemented for the purpose of achieving continuous reduction in consumption and emission per unit of products. Backward production equipment is eliminated timely. Combustion efficiency is continuously improved through upgrading furnaces; power utilization efficiency is increased through promoting energy conservation of motor systems; the consumption of fuel oil for transportation is reduced through performance assessment and benchmarking. The Group's energy consumption for per unit of main products continues to be leading in the industry.

We strive to reduce use of fossil energy in the production process and make full use of low-grade energy and renewable energy, with comprehensive utilization of coal gangue, sludge, urban wastes and other combustible wastes to replace fossil energy including coal at our production lines.

We have constructed cogeneration systems at our qualified cement and glass production lines, recycling and converting the waste heat produced during production into electricity for production purpose, reducing the amount of our purchased electricity. Cement manufacturers newly incorporated into our Group have actively carried out technical verifications and developed plans for the construction and coverage of waste-heat systems. To constantly improve the efficiency of waste heat reclamation, on one hand, we improve management and include the rate of service power at waste heat power station and cogeneration rate per unit of products into the system of key monitoring indicators and constantly improve operation through benchmarking and assessment; on the other hand, through active technical innovation and renovation, we operate intelligent control and improve overall efficiency of the system.

In 2013, the percentage that the cement-related cogeneration output accounted for the total electricity consumption was

**23.3%**

In 2013, the energy consumption per output value of RMB 10,000 declined by (on a year on year basis)

**6.0%**

## Water Conservation

We attach great importance to the protection of water resources. The water used in residual heat systems and cooling systems of our manufacturing member companies is recycled. Other water resources for auxiliary processes such as flushing are effectively recycled through the settlement and sewage systems treatment. In 2013, the Group's commercial concrete business expanded further. Due to its production process, compared with cement production, concrete products consume much more water, which

affects the Group's water consumption structure. Fresh water consumption per unit of output value rose on a year-on-year basis. We took the water consumption per unit of cement products as a key monitoring indicator and enhanced benchmarking with water consumption indicators of advanced enterprises to continuously improve our capacity and efficiency in water conservation and ensure efficient and rational utilization of water resource.

In 2013, the utilization of recycled water accounted for

**96.4%**

## Recycle

We make full use of our edges over techniques to recycle industrial waste resources. Under the precondition of guaranteeing quality and safety, we continuously expand portfolio of waste resources that can be recycled and increase the utilization efficiency. We have gradually achieved effective utilization and harmless

disposal of industrial waste, industrial byproducts, environmental by-products, sludge of sewage plant, construction waste, and urban waste at production lines of building materials, thus avoiding resource waste or environmental pollution.

**61.91** million

tons of industrial by-products and solid wasted were consumed by the Group.

**82,000**

tons of urban waste were consumed by the Group in 2013.

### COMPARISON OF INDICATORS RELATED TO CO-PRESSING WASTE BETWEEN NEWLY-BUILT REFUSE INCINERATION POWER PLANT AND CEMENT KILNS



Newly-built refuse incineration power plant with a daily disposal capacity of 1,000 tons



Newly-built cement plant with daily output of clinker of 5,000 tons

1,000 tons	Comparison indicators	1,000 tons
RMB 400 to 600 million	Daily refuse disposal capacity	RMB 400 to 500 million *
≤70%	Total investment	≥90%
70-80%	Proportion of domestic equipment	85-90%
250,000 to 290,000 tons	Annual running rate	300,000 to 330,000 tons
Strict requirements for the quantity and quality of refuse	Annual refuse disposal capacity	High adaptability to the quantity and quality of refuse
Stove ash produced during incineration must be specially disposed.	Stability of operation	Without secondary pollution
	Secondary pollution	

Note: \*If we utilize the existing cement kilns with new-type dry process, the estimated investment will be about RMB 30 million.

## Protecting Ecological Environment

### Environmental Improvement

We are committed to development in harmony with nature and endeavor to reduce environmental pollution and ecocide caused by the companies' operation.

We strictly abide by relevant national laws and regulations, policies and standards on environmental protection, and strive to reduce the discharge of wastewater, waste gas and waste residue in the production process. Through effective technologies on environmental improvement and delicacy management systems, we have reduced discharge of wastewater, waste gases and residues discharges at production lines to or below the national emission limit.

We reduce the formation and emissions of pollutants such as SO<sub>2</sub> and NO<sub>x</sub> in waste gas through the application of clean energy and increase of oxygen content in combustion systems. We actively advance the construction of denitration systems

in cement production, under which we can sharply reduce the emission of NO<sub>x</sub> by effectively utilizing technologies on low-nitrogen combustion and selective reduction; we explore the construction of matching information control system, rationally control the usage amount of reducer, extend the service life of the system, and control the consumption of reducer and the cost of denitration; the dust in waste gas is effectively reduced through dust removal technologies, namely bag type dust removal. We have achieved integrated utilization of technologies on desulfurization and denitration, dust removal, and residue heat power generation to systematically control the quality of waste gases. We strive to achieve "zero" discharge of wastewater through the construction of sewage treatment and recycling system at the production base of galls fiber.

We attach great importance to waste residue management. Through technological innovation and delicacy management, we have been able to reprocess wastes generated in production process, recovered product packaging and substandard products and recycle those are tested to be qualified as raw materials, thus realizing the recycling of self-produced solid wastes. We pay close attention to noise control and employee protection, monitor and control the impact of production noise on the health of our employees and neighboring communities in accordance with national noise control standards. We strive to reduce noise hazards through optimized layout of production lines, use of physical isolation, green shielding and occupational protection. 93.6% of our manufacturing member companies reach the noise control standards.

#### REFINED PRESENTATIVE OF WANGCANG

Cement industry, a resource-intensive industry, the pollutants of which cause relatively heavy environmental load. Backward cement production always leaves an impression of dirty air and smoke obscuring the sky. Sichuan Wangcang Southwest Cement Co., Ltd. joined CNBM as a member company in 2012. Located in Guangyuan, Sichuan, where there are many mountainous regions and criss-cross ravines and gullies. It is difficult to find a large flat ground. The plant's production is closely related to surrounding environment and residents, with much attention attracted by environmental security.

Wangcang Southwest attaches great importance to protecting ecological environment, proposing the improvement goals of "no dust in windy days, no mud in rainy days, no complaint from employees or the public, satisfaction of shareholders, and social recognition", improving environmental image in accordance with high standards and strict requirements. In respect of technical transformation, the average equipment rate of devices for dust removal, noise reduction, and waste disposal hit 150% as required by environmental assessment through expanding capital investment, thus increasing the proportion of environmental protection investment in corporate construction investment to over 10%; in respect of environmental management, the company improves institutional management and assessment, online monitor system scanning test record, operation record of dust collectors, scanning test record of sewage disposal equipment, and expands rigorous assessment system to all production links. The whole production process is a totally enclosed assembly line, covering derivation from raw materials, clinker incineration, and polishing finished products. Yanglaogou Gully, a branch of Baishui River, is the source of drinking water for local people. It goes through the plant, dividing the plant's area into two parts, living and office, and production. The river water is clean and clear, with gravels easily seen, creating a beautiful landscape together with the green area accounting for 30% of the plant's area.

Linking corporate development with the development of local economy, the company actively reports information about the measures taken for environmental improvement to surrounding residents, invites residents to visit production site and collect advice from them continuously creates jobs for local villagers, assists local village communities with founding transportation team and labor service company, and helps villagers increase their incomes; when major festivals come, the company actively cooperates with local government to organize widely participated activities.

The sincerity and efforts of Wangcang Southwest Cement have been recognized and supported by local government and surrounding residents; the environment-friendly image of Wangcang Southwest Cement has become a refined business card; many mainstream media have reported the methods and effect of clean production and other green practices. The head of local town government said that such a responsible company is the fortune of Wangcang, Baishui, and residents of Lujiba.



## Ecological Protection

We strive to explore an effective mode for the industry to harmoniously coexist with the nature and the society. We conduct strict verification for site selection and layout planning of our plants, protecting natural habitats, wet lands, forests, wildlife corridors and agricultural lands during the process of engineering and project construction, trying our best to minimize the adverse impact of our activities on the environment and communities in surrounding areas.

Great attention is paid to the greening works in the plant and neighboring areas, integrating industrial production with landscape architectures, animals, and plants. Under the precondition of guaranteeing safety, we provide exercise and leisure space for employees and community residents,

building garden-like plants and realizing coexistence between industrial activities and surrounding ecology.

We timely carry out ecological restoration during developing limestone mines. Mining is carried out according to Green Mine Convention. We protect the vegetation on unmined areas and reduce the damages caused by slope material to vegetation on the hillside under mining platform; in respect of damages to vegetation, we timely sow seeds and replant seedling to minimize the adverse impact to ecological environment. Guided by the goal of creating a "resource-saving and environment-friendly" company, six mines of the Group have been recognized as national green mines.

# 6

national green mines

In 2013, average greening rate of our plant areas reached

# 22.1%



Executive's Address



Market Performance



Science & Tech Innovation



Energy Saving & Environmental Protection



Employee Care



Corporate Citizen

## Green Products System

We integrate low-carbon and environment-friendly concept into the whole production process, including R&D, design, production, package, sale, and recovery of products, providing clients with systematic low-carbon and environment-friendly products and

services. We endeavor to promote low-carbon achievements, provide green services, and disseminate environment-friendly concept to contribute to the sustainable development of the whole society.

### 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 effectively barrier to the entrance of external moisture and other corrosive gases into the main structure, through which the indoor moisture can go out.

### Anti-seismic and wind-proof

Massive flexible structure, 30% of the weight of traditional brick-concrete 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.

### Heat insulation

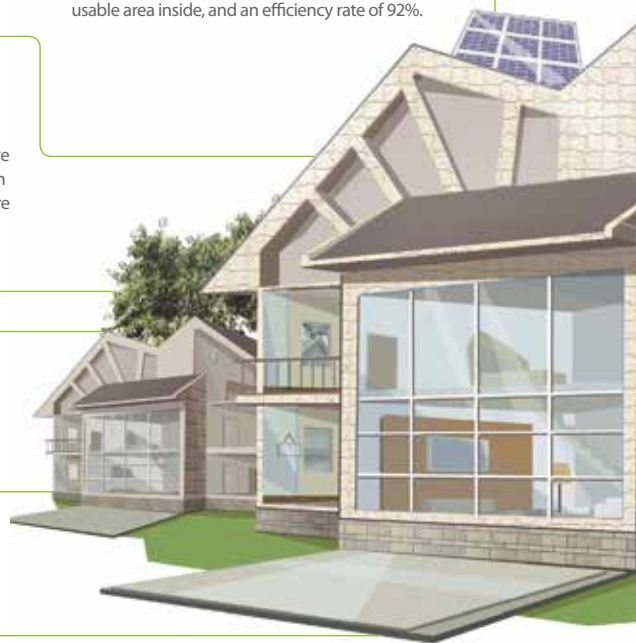
"Dual heat insulation (internal and external heat insulation of exterior walls) + double interlayers (open ventilation layer and closed air layer)", effectively avoid "dew formation in the winter" and "damp in the summer", with energy consumption declining by over 75% compared with traditional housing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

### Fire 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 Building Materials

We adjust the product structure of basic building materials. We actively push cement industry to produce "high-grade, specialized, ready-mixed and commercialized" cement, providing clients with green low-carbon cement products of high quality. We lead the glass sector to manufacture "high-end, LOW-E, ultra-thin and high-performance" glass, with a focus on LOW-E glass, enhancing the functionality of building glass products and offering materials support to architectural energy conservation.

We make 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 to reduce energy consumption, minimize the use of raw materials that are radioactive, poisonous or harmful, so as to guarantee safe use and living, highlight functions in sound insulation, moisture-proof and permeability to improve living comfort, 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 building industry.



**Environment-friendly and convenient**

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

**Long Durability**

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.)

**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.

**Recycling**

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

## Pre-fab Housing

We supply integration service on housing products, providing the construction industry and residents with systematic construction product solutions and building schemes. Through an industrialized operation mode featuring industrial design and production, field assembly, green and environment-friendly integration of building materials, and rich ecologically functional interfaces, we make the architecture with "negative energy consumption" and "zero release" possible.

### BNBM HOMES ASSISTS THE TEAM OF TSINGHUA WITH BUILDING "O-HOUSE"

BNBM HOMES Co., Ltd. (hereunder abbreviated as "BNBM HOMES") has always been committed to providing clients with one-stop "Energy House" housing solution. Thanks to its technological advantages in building structure and walls' energy saving and heat insulation, BNBM HOMES participated in Solar Decathlon together with Tsinghua University and University of Florida as a partner of "O-House", a kind of "zero-energy consumption" building products. After intense competition in ten events, "O-House" obtained good results – ranking 5th in terms of comprehensive performance and ranking 1st in three single areas including "indoor comfort".

The design of "O-House" gives prominence to four features: "Garden-style" residence with cultural connotation, "modularized" residence with redefinition, perfect "zero-energy consumption" residence, and intelligent and considerate "future-chip" residence. In terms of modular structural design, the wall of each module is equipped with waterproof layer and reinforced insulating layer to ensure self-sufficiency of energy of each module; targeted clients can select different compound modes according to the living needs of residents. In respect of building energy consumption, the energy consumption for house operation can be fully covered by solar energy. The roof of building siphon drainage, with slope independently formed in each module from south to north and rainwater flowing into the pool for biological cleaning; after the sediment is filtered and the water is disinfected via cleaning equipment, the water is transformed into purified water for use. In terms of technology, the house organically integrates intelligent control with the concept and program of micro-grid system. After a period, the house can clearly aware of the most habitual schedule for working and resting, most comfortable luminance and temperature to the dweller, which can make the house more suitable for individual demands and energy saving. The successful construction of "O-House" demonstrates an environment-friendly living option to the public through utilizing clean energy and recyclable products for construction practices.



Executive's Address



Market Performance



Science & Tech Innovation



Energy Saving & Environmental Protection



Employee Care



Corporate Citizen



## Clean Energy

We support the development of new energy industry. We develop and manufacture new energy materials, energy utilization technology and product system, providing high-quality products and technological support in large scale for the development of new energy industry. We develop and manufacture megawatt-class rotor blades. Depending upon our own strength in scientific research, we continuously improve the quality and expand the range of our products to meet the operating requirements of oversized units

in ocean and land environments; through the adoption of new raw materials, we solve the problem related to the degradation of blade products. We have become a technological pioneer in rotor blades and the largest supplier of megawatt-class rotor blades in China.

We develop and manufacture thin film solar cell module, independently develop and design the production lines of thin film solar photovoltaic products, and provide package of design and construction related to solar

roof, solar charging station, and photovoltaic building. Through international scientific cooperation, we continuously improve the transformation efficiency of thin film solar photovoltaic products and strive to make them effectively replace the monocrystalline and polycrystalline silicon series products in the near future, which can make solar industry a really low-carbon and environment-friendly energy industry.

### CHINA'S LONGEST ROTOR BLADE ROLLING OFF THE PRODUCTION LINE

Depending on national postdoctoral program and corporate technology center, Lianyungang Zhongfu Lianzhong Composite Materials Group Company Limited ("Zhongfu Lianzhong") continuously improves the capacity of technological innovation to provide clients with high-quality products and services. In March 2013, LZ75-6.0 rotor blade independently developed by Zhongfu Lianzhong rolled off the production line in Lianyungang. With the length of 75 meters, it is the longest blade produced in China, meeting the demands for offshore wind power. During the R&D of LZ75-6.0 carbon fiber blade, through deeply investigation of domestic and international manufacturing processes of carbon fiber blades and large-scale testing, evaluating, screening and optimizing domestic and international carbon fiber and carbon fiber products, the company succeeded in several technological innovations, effectively reducing the cost of carbon fiber blade and supporting the promotion and application of carbon fiber blade. The completion of LZ75-6.0 rotor blade marks that the design and manufacturing of wind-power blade in China has reached the leading level of the world.





In 2013, the proportion of bulk cement products reached

**66.4%**

### Simple Pack

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 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.

### Low-carbon Sale

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

## DEVELOPING BULK CEMENT

Bulk cement means cement is directly delivered from plants to transfer stations or users after produced at factories through specific facilities or containers, without any pouch pack. Using bulk cement can improve the reliability and safety of constructional engineering. When leaving the factories, bulk cement has relatively high stability and quality. During transportation and storage, they cannot be easily deteriorated by moisture, thus avoiding strength decrease caused by moisture. Developing bulk cement can improve the working condition of workers and achieve civilized production of cement enterprises. If cement leaves factories in traditional paper bag packing, workers will have to face very bad working conditions given that physical labor and semi-mechanization operation account for the main works in packing workshops. Such a working condition will seriously affect their physical and psychological health. If cement leaves factories in the form of bulk, complete mechanization and automation can be achieved, which not only reduces much hand labor, but also improves the production environment of the factories. It will advance manufacturers of cement to develop from labor-intensive type into knowledge-intensive type and from operators of an industry that creates a great deal of pollution to garden-style civilized manufacturers. Developing bulk cement, which can reduce environmental pollution, is conducive to people's health. When cement in bags are loaded, uploaded and transported, loss is usually caused by the breakage of paper bags, which also pollutes surrounding environment; the on-site concrete mixing causes noise pollution to surrounding area. The above-mentioned problems can be well solved through bulk cement and the matching station of ready-mixed concrete. Developing bulk cement can reduce timber resources and environmental load, protecting ecological balance. To produce the paper material adopted for packing cement in bags requires timber resource, causing damage to forest; the composite materials adopted cannot be easily degraded and recycled, causing relatively heavy environmental load. It is estimated that 60 tons of packaging paper can be saved per 10,000 tons of bulk cement; and to produce 60 tons of packaging paper requires 330 m<sup>3</sup> of timber, 72,000 kilowatt-hours of power, 78 tons of coal, and 22 tons of caustic soda; in addition, the cement loss caused by transporting per 10,000 tons of bulk cement can decline by 4% compared with cement packed in bags.



## Green Service Industry

We take our advantages in technology and innovation, closely adhere to the mainstream of low-carbon economic development, and insist on serving the society through independent innovation. We designate green service industry as the new development priority of the Group, creating more environmental and social benefits while bringing economic benefits to the Group. Through years of efforts, depending

on detection and diagnosis, technical transformation, consultation with experts, and financing management, we have gradually established three energy-saving service systems, namely technology-based energy saving, intelligent control-based energy saving, and management-based energy saving, providing green service industry system that includes detection and diagnosis on energy efficiency and environment,

technical transformation for technological equipment, intelligent information-based control, consulting and certification services for management and control system of energy saving and environmental protection, and energy performance contracting for building materials industry and concerned industries, contributing to the improvement of energy efficiency and environmental protection in the industry of building materials.

## Three Energy-saving Paths

### Technological Energy Saving

Technological energy saving is critical for improving energy efficiency. Advanced, matching, and effective technological equipment is the guarantee for continuous, safe and optimized production. We provide clients with diagnosis on energy efficiency of technological system, evaluation of equipment, technical upgrading scheme and integrated upgrading service, practically increasing their productivity and efficiency.

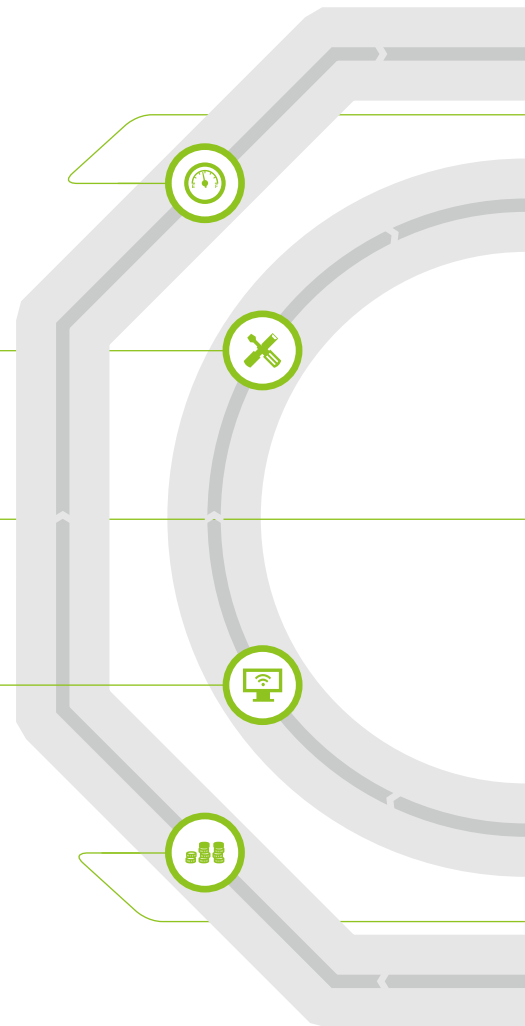
### Management-based Energy Saving

Delicacy management is an effective way to expand space for energy saving. Through management methods such as establishing standardization system for energy management, implementing energy audit, clean production verification, and carbon check, we can effectively improve the efficiency of energy management, minimize the "problems related to formulating and implementing management system", deeply tap into the potential of energy saving, and continuously improve energy efficiency.

### Intelligent control-based Energy Saving

We advance the deep integration of intelligent control system and industrialized production. The effective application of informationized technology provides guarantee in intelligent control for the optimized operation of production lines. Depending upon high-quality database resources, we achieve unattended and expert-level management through the utilization of online simulation system and expert control system; we realize the effective link between production

management and current management through the seamless integration of production system and decision-making system for current management; remote control system helps the Group to establish an intelligent control-based energy saving system covering the whole Group from the headquarters to the production base.





## Four Service Systems



### Technological Transformation

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 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. We are committed to advancing the deep integration of industrialization and informatization, integrating intelligent control technology into the manufacturing of outfit and providing 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.



### Test and Diagnosis

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

### 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, and help enterprises deeply tap into the potential of energy saving. We provide services related to management and consultation, including energy audit, clean production verification, and carbon check, to help companies determine improvement path, working goals, and gradually advance energy saving and emission reduction according to the plan.



### Financing Management

We provide financing services to those enterprises with financial difficulties in technological transformation of process and informationized energy saving through energy performance contracting, and operation, maintain services for energy saving system, share financial risk and energy-saving benefits with the enterprises.



# 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 dedicated to volunteer activities, exercising their responsibilities as corporate citizens with their actions.

- 66 Harmonious International Operation
- 68 Regional Common Growth
- 69 Commitment to Social Welfare
- 70 Warm Ya'an with Love
- 72 Volunteer Activities

Hours of volunteer services provided by our employees in 2013 hit approximately

**11,000** hours



Number of projects of donation in 2013 was

**332**

Total amount of donation in 2013 was

RMB **21.95** million



## Harmonious International Operation

We value the Group's responsibility-related image in overseas operation. In order to bring mutual benefits with host countries and realize coexistence with local societies, we respect local religions and customs, adhere to lawful and honest operation, observe international conventions and local laws, pay due taxes, provide employment opportunities, protect environment, committed to social welfare, and persist in combining our internationalization with local social development.

We bring prosperity and mutual development to local areas through our business in that region. Till the end of 2013, the Group had 45 companies and offices in 30 countries and regions, with overseas assets amounting to RMB 6.35 billion, covering areas of manufacturing, engineering services and logistics. We advocate localized operating management for overseas enterprises, providing employment opportunities to local areas, training local employees and popularizing advanced management philosophy, with a view to realize common and sound development with local societies and environment. Till the end of 2013, the number of employees at the Group's overseas companies hit 1,564, including

1,234 local employees. The localized employment rate hit 79%.

We provide high-quality products, and advanced technologies and management concepts for rapid and continuous development in local areas. We build cement and glass production lines for developing countries and regions with our advanced technologies, quality services and reasonable prices, to fully support local construction; we popularize systematic solutions of new building materials and pre-fab 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.

We improve management on overseas enterprises and projects, reinforce risk control and performance assessment to guarantee the interests of shareholders and employees. All-round risk management system covering risk factors the overseas companies face 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 early warning system with risk analysis and emergency mechanism to guarantee a safe and steady internationalization.

We value management on sub-contractors and drive partners to fulfill social responsibilities through cooperation. We insist on public bidding and lawful procurement; besides price and quality, we also evaluate the business capacity, credit status, and management of our sub-contractors and cooperate with sub-contractors 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.

Our efforts in striving for harmonious coexistence and mutual development are fully recognized by local government and residents; our member companies win honors from governments of the counties or regions where they operate for several times.



Approximately

**80%**

of the employees of our overseas enterprises were local people in 2013.

**30**

countries and regions were covered by our overseas enterprises in 2013.

In 2013, the overseas asset amounted to

RMB **6.35** billion

### “CHINESE TECHNOLOGIES, CHINESE MANAGEMENT, OVERSEAS MANUFACTURE, OVERSEAS MARKETING”

On September 8th, 2013, a direct-melt glass fiber production line with an annual capacity of 80,000 tons, which is invested by China Fiberglass Co., Ltd. subordinated to CNBM, was completed and put into operation. It is located in Suez Economic and Trade Cooperation Zone that is close to the Red Sea. As China's first overseas large glass fiber production line, it marks Chinese fiberglass industry's first independent investment in overseas large production line, and fills the gap of glass fiber manufacturing in Middle East and North Africa.

As a key and backbone enterprise of CNBM, Jushi Group Co., Ltd. has been leading technological upgrade of glass fiber industry for many years. The Egypt-based project of Jushi Group is a typical project of CNBM's exploration in the new model of “Chinese Technologies, Chinese Management, Overseas Manufacturing, Overseas Marketing” and “Internationalization”, with world-class indicators concerned with technology, environmental protection, etc., which is a significant step CNBM takes to implement our globalization strategy and a milestone in the course. Jushi's Egypt-based Project, an important achievement of China-Egypt economic cooperation, with largest investment, most advanced equipment and fastest construction time among China's industrial projects in Egypt, opens a field of industrial cooperation between the two countries. The project is located in Suez Economic and Trade Cooperation Zone in Suez province, Egypt, with Phase-I investment of USD 223 million and an annual capacity of 80,000 tons. Presently, over 800 Egyptians have been employed under the project, with a view to gradually realize localization of management in three years; in the future, Jushi Egypt Company will invest additional USD 300 million according to market changes to set up the only world-class large manufacturing base of glass fiber in Africa, with an annual capacity of 200,000 tons, which will meet the growing and diversified demands from surrounding areas. The completion and operation of the project will not only promote the development of the company, but also help Egypt establish and develop the industry of fiberglass composite materials, contributing to the economic and social development of Egypt.

As the achievement of China-Egypt cooperation in economic special zone and CNBM's first overseas extra-large glass fiber project with new technology, advanced equipment, and large investment, CNBM will endeavor to make good construction, operation and management for the project and help the regions expand employment, increase tax revenue, and promote development, thus developing the project into a sample case for Chinese enterprises to operate in North Africa.



Executive's Address



Market Performance



Science &amp; Tech Innovation



Energy Saving &amp; Environmental Protection



Employee Care



Corporate Citizen

## Regional Common Growth

We continuously contribute to the harmonious development of the local region through creating tax revenue, driving the development of supply chain and small and medium enterprises, providing jobs, supporting the construction of local infrastructures, and committing to social welfare.

By means of localized operation, we've always been devoted to integrating the growth and development of the enterprise with local economic and social construction and prosperity.

We actively promote localization of human resources, through which hiring rate of local employees has reached 69.4% in enterprises producing bulk building materials products (such as cement, glass and gypsum boards) which offer relatively more jobs.

We've put great efforts in popularizing localized procurement strategy, implementation of which drives co-growth of supply chain enterprises and fosters a large amount of suppliers and retailers of high

quality. In 2013, 90% of raw and fuel materials of the Group's manufacturing enterprises were procured from local areas.

The taxes we paid and prosperity brought to local economy have won us extensive recognition from local governments and all walks of life. Long-term strategic win-win cooperation mechanism has been established with nearly one hundred local governments. The taxes we paid to local government in 2013 amounted to RMB 9.06 billion.

We value the opinions of stakeholders. Prior to the construction, reconstruction and expansion or suspension, merger, and production change, we strictly implement project impact assessment, evaluate the economic and environmental benefits of our projects, and fully collect the opinions from stakeholders of local regions according to national regulations, striving to meet the demands of stakeholders and minimizing the adverse environmental and social impacts of corporate operations.

With great concern over regional social welfare, we innovate poverty relief and assistance mechanism, actively implement technology and industry-based poverty relief by combining poverty relief to specified assistance recipients with strategic corporate distribution, combining local resource advantages with corporate premium resources.

In 2013, the number of new employed persons hit

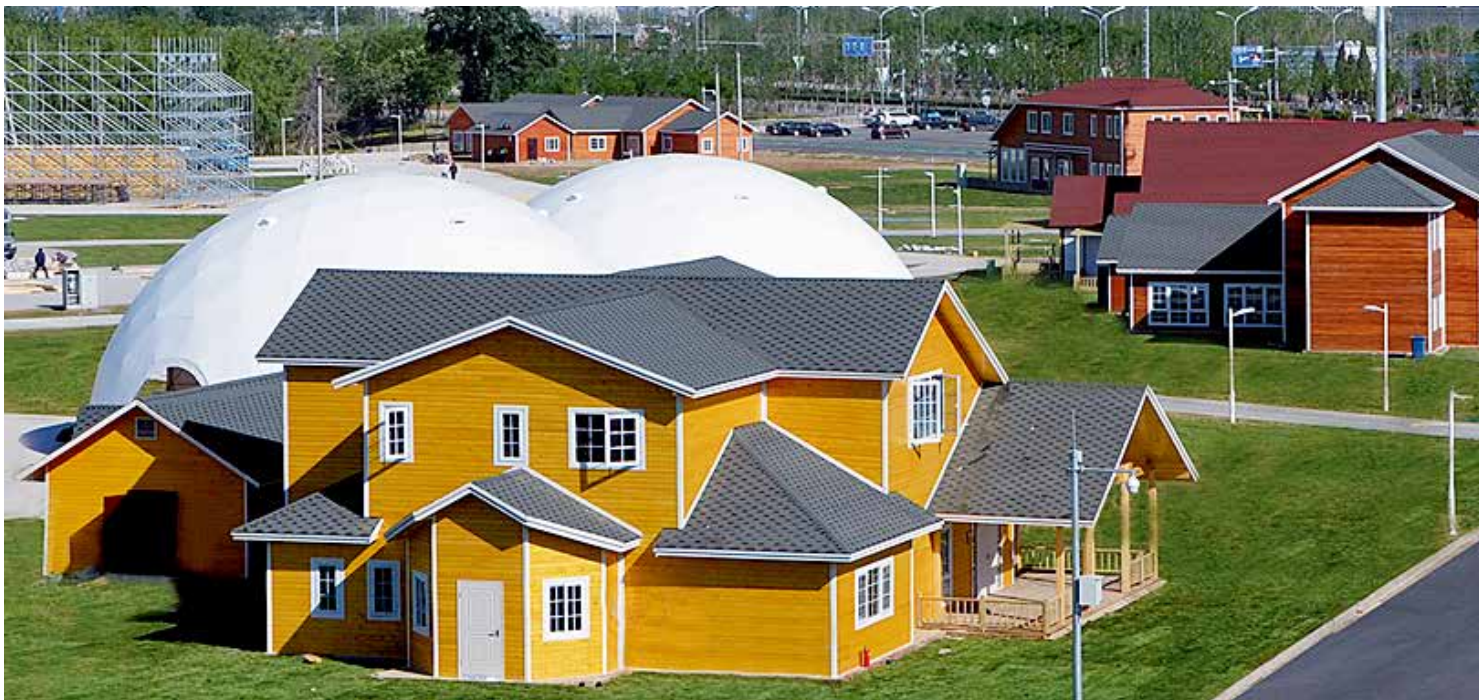
**16,000**

In 2013, the amount of taxes paid to local governments was

RMB **9.06** billion

In 2013, the hiring rate of local employees reached

**69.4%**





## Commitment to Social Welfare

Adhering to the principle of making donations on a voluntary basis, with clearly defined responsibility and subject to our resource capability, 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. We put our best efforts in supporting social development by facilitating mutual development in the areas where we run our business.

We believe that a comprehensive donation management system is not only beneficial for us to play a better role in national disaster relief, help the distressed, promote social equality and perform the social responsibility of a central SOE, but also important for safeguarding contributor's interests and national assets. When major natural disasters hit, we provide support in kind and capital as soon as possible; we are committed to supporting the social welfare and public facilities construction; we pay special attention to the development of environmental protection and education causes. In line with

the principle of guaranteeing the rights and interests of stakeholders 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.

Our donation management system is established and improved. We have established and perfected management and organization system, formulated management measures on donation, and made strict donation approval process, and managed our member companies in a unified way. The donation outlay has been incorporated into the budget management system; limits and authorities relating to donation expenditure are specified; the approval and filing system of donation has been carried through; we provide statistical analysis of donations in each quarter and intensify internal supervision; we have established a

mechanism for periodically analyzing and reporting the donation project progress, evaluating effects and conducting return visits when the project ends, so as to guarantee that the donation projects serve social welfare purpose as expected.

In 2013, the Group and its member companies carried out 332 donation projects, with the amount of donations up to RMB 21.95 million, of which 31% was donated for the construction of public utilities, 15% for disaster-affected areas, 11% for designated poverty alleviation regions and 8% for social welfare and charity.

In 2013, the amount of donation hit

RMB **21.95** million

In 2013, the number of donation projects was

**332**



### SUPPORT KNOWLEDGE-BASED FUTURE

We have developed close cooperation and consecutively entered into strategic cooperation agreements with a number of renowned universities and colleges, including Wuhan University of Technology, Tongji University, Nanjing University of Technology, etc., pursuant to which fellowship and scholarship are founded to help needy students finish their studies and for brilliant students to make their dreams come true. We take advantage of our top-ranking production, experiment and application platforms, and establish an experimental teaching base for teenage students and an internship base for college graduates, providing opportunities for young students to practice or even start their own business. Teenage students can therefore get access to combine their knowledge with production and corporate management, laying a solid foundation for their future career.

A post-doctoral research center and post-doctoral research workstation are established in the Group, which becomes a channel for universities, R&D institutions, and enterprises to communicate and cooperate in the fields of talent, technology, and project, providing guarantees in capital and practical environment for excellent scientific research personnel. It also prompts the close combination of production, learning and research and the commercialization of research findings, establishes a new production-study-research relationship on the basis of mutual benefit.



Executive's Address



Market Performance



Science & Tech Innovation



Energy Saving & Environmental Protection



Employee Care



Corporate Citizen

## Warm Ya'an with Love

In 2013, the amount of donation made to Ya'an earthquake reached

**3**  
RMB million

On April 20, 2013, 7.0-magnitude earthquake hit Ya'an of Sichuan, causing mass human casualties and property loss in disaster-affected areas.

After the earthquake, CNBM quickly launched the earthquake contingency plan and established "Emergency Command Center for 4+20 Earthquake Relief" to arrange and deploy emergency rescue, securing the safety of our employees and their families, minimizing property loss, resuming production as soon as possible, and guaranteeing the supply of basic building materials in the affected areas. The member companies in Sichuan were required to strengthen their leadership and organization, well check and monitor dangerous cases to prevent secondary disasters, investigate disaster situations of the companies, make careful statistics analysis, and officially launch information releasing

platform for earthquake relief, carefully and immediately managing the submission and release of related information. Our achievement in the earthquake relief work was substantial, with no casualty among employees or their families. Three days after the earthquake, Shifang Southwest Cement resumed its production, providing building materials for disaster relief and post-disaster reconstruction.

The Group's enterprises at all levels utilize their advantages to actively participate in earthquake relief, reconstruction and recovery in affected areas. The Group's member companies and employees donated RMB 3 million to support earthquake relief and post-disaster reconstruction in Ya'an. The enterprises in the area increased the output of various building materials and anti-seismic houses required by earthquake relief and reconstruction to ensure market supply and relief demands, effectively maintained the production, operation, and market order in the affected areas. Three days after the earthquake, the enterprises provided the first batch of 100 tons of cement to power supply bureau of Tianquan County, Ya'an City to ensure immediate reinstatement of power supply in the affected area; Shifang Southwest Cement Company dispatched professionals in civil engineering, electromechanical, and technique areas to those affected enterprises in Tianquan County, assisting them with hidden dangers assessment, rescue and relief; China Triumph International Engineering Co., Ltd.(CTIEC) dispatched professionals in civil engineering and machinery fitting to Tianquan County, Ya'an City, providing professional assistance for affected enterprises to resume production; INTECH Building Co., Ltd. has been organizing technical experts to research and compile technical proposal for anti-seismic houses in Ya'an; scientific research institutions and enterprises of the Group utilize their specific advantages and technical excellences to actively provide expostulation and suggestions for earthquake relief, reconstruction and recovery.





#### "DREAMY" HOUSES HELPED THE AGED PEOPLE IN THE AFFECTED AREA REALIZE THEIR HOUSING DREAMS

To relieve the difficulty in resettling the aged people in the affected area, Jackie Chan and Jackie Chan Charitable Foundation Beijing worked together with BNBM Public Limited Company (BNBM PLC) to provide assistance in constructing nursing home for the aged people in Tianquan County, Ya'an City. Overcoming a number of adverse conditions in the affected area, including the blocked roads, uneven ground, rainstorm, etc., BNBM PLC completed the design and construction of eight buildings in two months, including residencies and supporting public facilities, which covers an area of about 3,700m<sup>2</sup>. In terms of design, BNBM PLC fully considered the safety of usage and barrier-free design for passageways. In terms of selecting materials, BNBM PLC adopted the package of its "Longpai" series products: world-leading wall structure-based thermal insulation and energy saving technology through "double thermal insulation" and "double interlayers" result in over 75% of building energy reduction; the unique design of open ventilating zone can prevent the immersion of moisture or other corrosive gases into the main structure; "one-way breath paper" between the main structure and decorations on exterior wall can help indoor moisture go out and prevent outdoor moisture; the sound insulation meets the national standard for five-star hotels; the main housing structure meets the requirements of the safe design of a 95-year structure and can resist 9 magnitude earthquake.

"Tianquan County Tianmin Heyuan Nursing Home for Aged People" was officially put into service on September 8, 2013. The construction implemented by BNBM PLC, with disaster prevention, environmental protection, livability as the core, provided a sample for reconstruction work in the affected area and won wide acclaim from local government, residents, and all circles of society. The aged people who live in the nursing home were very excited and said "The house is good! The house is good. Thanks to Mr. Jackie Chan, Jackie Chan Foundation, constructors of BNBM PLC, and the government! Living in such a good house represents the realization of our Chinese Dream!"



Executive's Address



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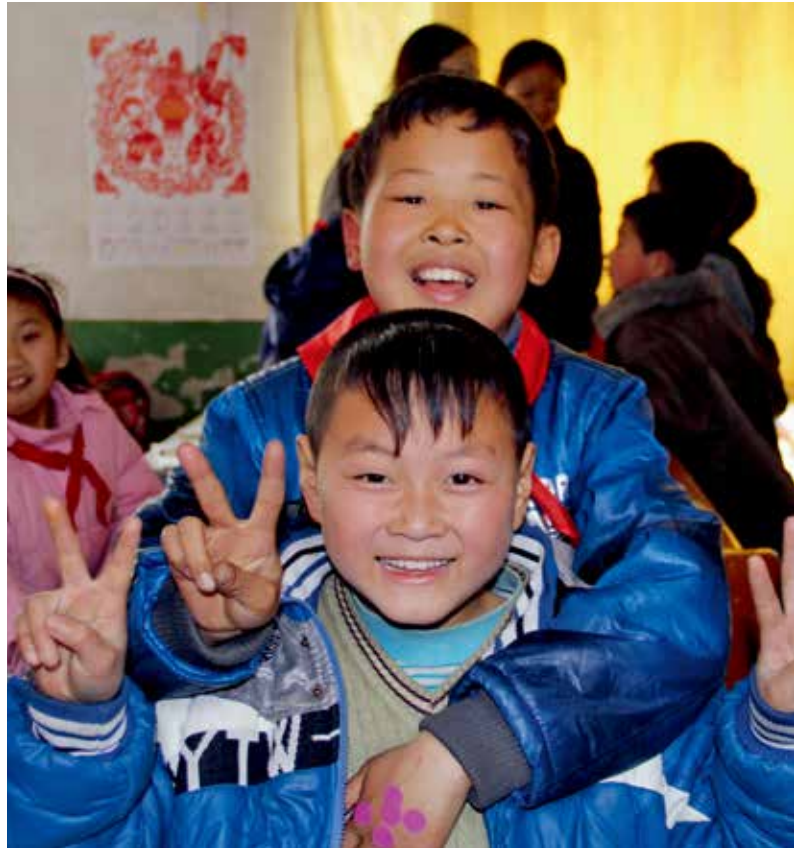


Employee Care



Corporate Citizen

## Volunteer Activities



We advocate a harmonious social atmosphere. To this end, we encourage and support our employees to participate in social welfare activities and provide volunteer activities.

Adhering to the principle of serving enterprises, the young and the society, and taking the communist youth league organizations as our core, we proactively commence and advance volunteer activities, unite and lead League members to spread love and care, make enthusiastic dedication,

fulfill social responsibilities, practice the Group's corporate culture and demonstrate the Group's youth image, making our own contribution to a more harmonious society, happier people and better environment!

An extensive platform is established to guarantee and support the launch of volunteer activities in terms of organization, work mechanism, time arrangement, capital support and communications.

Our employees are actively engaged in the volunteer activities. Member companies, such as China National Building Materials Import & Export Corporation, BNB Public Limited Company and, Bengbu Design & Research Institute for Glass Industry have launched diverse volunteer activities and obtained positive effects.



**109**

volunteer groups were established in 2013.

**1.45**

RMB million was invested into volunteer activities in 2013.

Approximately

**11,000**

hours of volunteer services were provided by our employees in 2013.

**4,864**

employees became volunteers in 2013.

### "LEI FENG AROUND YOU" MODEL TEAM

Association of Young Volunteers of China National Building Materials Import & Export Corporation was founded in April 2011, with the purpose of systematically organizing and guiding the activities of young volunteers in the enterprises. The association advocates the spirit of "Boundless Love, Dedication, Inclusiveness, and Fraternity", aiming to enhance the responsibility sense of young employees, assuming the social responsibility of the enterprises, promoting social harmony and progress, and implementing the principle of "serving the society and disseminating civilization". The association combines young employees' competence improvement and talents show with activities concerned with social welfare, continuously carrying out activities concerned with environmental protection, as well as children and old people care. Since the foundation of the association, it has carried out over 20 social welfare activities, including planting trees, teaching at schools for migrant workers' children, caring for autistic children, donating clothes to poverty-stricken areas, caring for old people in nursing home and community, etc., with over 400 person-times of participation, 75-hour service per capita. The number of donated clothes and books hit over 6,000, amounting to the value of RMB 500,000.

The continuous efforts of young volunteers make love boundless, help more people in need, attract more young volunteers to join the association to help others, making greater contributions to the construction of a harmonious society, assuming corporate social responsibilities, and improving the competence of young people. In 2013, the Capital Civilization Office hosted the event of "Lei Feng around You – the Most Beautiful Beijing People", in which Association of Young Volunteers of China National Building Materials Import & Export Corporation was honored with the title of "Lei Feng around You" Model Team.



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At the end of 2013, the total number of employees reached about

**179,000**

## Employee Care

We make every effort to safeguard the rights of our employees, respect their differences and make the company a reliable partner, 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 society.

- |           |   |           |                                  |
|-----------|---|-----------|----------------------------------|
| <b>76</b> | Protection of Employees' Rights and Interests | <b>82</b> | Supporting Employees' Growth     |
| <b>77</b> | Implementing Democratic Management            | <b>83</b> | Creating Happiness for Employees |
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RMB **310** million  
was invested in occupational  
health and safety in 2013.

In 2013, our employees  
attended training for

**1.64** million hours



## Protection of Employees' Rights and Interests

The ratio of salary of male employees to that of female employees was

**2.8:1**

In 2013, our coverage rate of collective bargaining and contracts was approximately

**35.7%**

We respect and support the international covenants on human rights and labor standards and strictly prohibit and reject employing child laborer in any form according to laws including "Law of the People's Republic of China on the Protection of Minors", "Provisions on Prohibition of Child Labor", etc.

Forced labor and discrimination are strictly forbidden. Employees are guaranteed with a decent working environment of freedom, fairness, safety and dignity.

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. 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.

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 respect the working privacy right of employees and establish a privacy

management system that covers all of links of human resource management, including recruitment, assessment, health files, etc.

We pay our employees basic pension insurance, basic medical insurance, unemployment insurance, work injury insurance, maternity insurance and other social insurances 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.

We adopt a paid leave system according to laws, give our employees access to physical examination and health assessment, and continuously carry forward the corporate pension scheme. We encourage member companies to offer employees working lunch, recreational and sports activities, and mental health consultation, provide traffic and housing allowances for special employees in accordance with actual conditions in a bid to provide a complete remuneration and welfare security system for employees.





## Implementing Democratic Management

We keep widening our trade union network, setting up and improving the trade union organizations and work organizations at all levels; newly established enterprises and the enterprises newly affiliated to the Group are required to set up and improve trade unions to boost unionization and to make trade unions more attractive and cohesive.

We implement the Workers' Congress system, through which employees

participate in corporate management, express legitimate appeals and defend their own rights and interests. Mainly through the Workers' Congress, the member companies pursue democratic management and push ahead with the establishment of a managerial mechanism featuring democratic participation, management and supervision.

We consistently promote dialogues and collective bargaining, encourage employees to deal with the issues of their concern through collective bargaining, thereby fully protecting their rights and interests.

We have set up channels through which the employees could freely send their suggestions to the senior management. Through the trade unions, we collect proposals and reasonable recommendations from the staff, drawing on the talent and wisdom to sustain the growth of enterprises.

We continuously consolidate, deepen and perfect the disclosure mechanism of factory affairs and take the hot, tough and key issues of concern to the employees as the priorities in the disclosure of factory affairs, so as to expand their 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.

# 90.7%

of the proposals of the Workers' Congress were handled and settled in 2013.

### PARTICIPATION OF EMPLOYEES IS THE GOLD KEY TO ENTERPRISE MANAGEMENT

The Logistics Center of Beijing New Building Materials (Group) Co., Ltd. is an operation and service platform integrating metal trades, storage and logistics. For years, taking employees' rational suggestions as the entry point, the Logistics Center adheres to the participation of employees in management, respects the initiative spirit of employees, optimizes its management process, and increases its operation performance. It proves that employee is a strong supporter for the management of enterprise, and the participation of employees is the golden key to enterprise management.

Since employees work at the site of management, they have the clearest picture of problems and hidden dangers in field management, and their suggestions are the most authoritative. The Logistics Center takes the participation of employees in the management as a kind of management philosophy and system standard, giving a full play to the enthusiasm of employees at all posts, including field operation, business operation, marketing, risk management; respecting employees and listening to employees' rational suggestions on their posts and the enterprise. They believe and rely on employees, eliminating their worries and allowing them to propose their ideas freely; as for suggestions of employees, leaders of the Center always respond timely, and solve problems one after another. They directly include valuable suggestions into management system or process, and improve the performance of posts and the management of the enterprise.

When their suggestions are respected, the employees will have the sense of responsibility; when the enterprise cares about employees' lives, they regard the enterprise as their family. The wisdom of employees shines in every aspect of the operation and management of the Center. Participation of employees has already become an important part of the management and decision-making of each department, and drives the increase of the operation performance. Leaders and employees understand, trust and support each other. With employees' rational suggestions, the Center has tackled many problems and difficulties in the work, gives a strong confidence to the employees, improves employees' enthusiasm, and increases their operational performance. In the past six years, the performance of the Center had been increasing year by year, and the Center has been evaluated as "Star Team" for many consecutive years. Every employee has a sense of pride in his heart, and believes that the Center is a big family deserving their care and devotion.



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Science & Tech Innovation



Energy Saving & Environmental Protection



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## Production Safety Guarantee

We have established a domestically top-ranking management system for safe production with safe production accountability system, standardization of safe production, and operation specification of safe production as the core.



1

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 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.

4

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.

5

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

7

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 on-site instruction on emergency response work.



2

We strictly follow CNBM Safety Training Rules, popularizing safety knowledge, enforcing safety procedures, and implementing contingency plan. We provide training for company staff and suppliers' staff to vertically and horizontally establish safety training system with supply chain incorporated.

3

We advocate the implementation of standardized management for production safety. As a state-level pilot enterprise for production safety standardization, we embark on standardization work across the Group by improving the safety management system, as well as safety managerial expertise and performances.

6

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 trainings.

We give importance to financial investment in safety and occupational health in order to improve and maintain the safety equipment and facilities, implement technical innovations for the purpose of essential safety, organize training in safety procedures, raise safety awareness and foster safety culture.

8

We actively carry out benchmarking on safety management compared with renowned transnational enterprises of building materials; we closely follow the Group's development strategy and implement special researches in safe production, covering mines, ready-mixed concrete, and houses; through over-one-year continuous efforts, the Group has steadily improved the production safety and achieved the goal that there was no case of death in line of duty caused by dereliction of the entity with ultimate liability in the full year.

9

We encourage the staff to participate in the management of safe production and occupational health by establishing smooth channel for them to deliver opinions and suggestions to leading bodies, including corporate management committee for safe production, so as to effectively improve the level of essential safety and the management on safe production.

6

national safety standards had been compiled till the end of 2013.

2

national research subjects on safety had been completed till the end of 2013.

**Sun Huashan, vice director of State Administration of Work Safety:**

"CNBM adopts safe production standardization as an effective means to achieve integrated corporate management; through the copy of the management model of safe production standardization, CNBM regularizes and integrates enterprises newly affiliated to the Group, with digestion and absorption achieved quickly, which helps the member companies improve their production environment, guarantee the Group's implementation of large-scale consolidation and restructuring, and contributes to sound and sustainable corporate development."



## Value Occupational Health

Around

**95.4%**

of staff had occupational diseases examinations in 2013.

**99.4%**

of the staff passed occupational disease examination in 2013.

**1**

new case of occupational disease was found in 2013.

**160**

member companies set up mental health management systems for employees in 2013.

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. We provide equal protection of occupational health and safety for part-time employees, contract employees, and day laborers, require our subcontractors to provide occupational and safety protection for their employees according to the Group's regulations on occupational health and safety. We standardize the management system on occupational health and actively implement occupational health system certification.

We attach great importance to the training of occupational health, raise the awareness among the staff of protection against health and occupational hazards and impart relevant knowledge. Through regular training sessions and assessments, we improve the self-protection capacity of our employees.

We put occupational diseases prevention and warning in the first place. It's an established practice to organize employees to take health examinations, arrange extra health checks for staff in jobs with exposure to dust or radiation, establish Personal Health Record and keep reexamination.

We explore ways to establish mental health management system for employees and 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.

### FORGE IRON DEFENDER FOR FRONT-LINE WORKERS

Besides establishing protection system for staff's occupational health, we also actively and continuously improve production environment and the safety of working process through technical upgrade and transformation. The traditional glass production process requires that the stacking and packaging of products are completed in a semi-mechanization way, and the packers face such occupational injuries as incised wound caused by glass fragments produced during the incision and packaging of glass products, dust pollution, etc. To avoid these risks, we transform the stacking and packaging process of glass production lines and adopt precise mechanical arms to achieve fully mechanized operation. It helps operators to avoid injury risks, fully improves packaging efficiency, and guarantees the safety of the employees. Accidents related to cleaning cement warehouse often hit the industry of cement and once such an accident comes, the survival rate is extremely low. We organized resources and independently developed, designed, and manufactured equipment for warehouse cleaning, which completes the cleaning work without personnel entering into the cement warehouse. This project, highly valued and praised by State Administration of Work Safety, has been put into batch manufacturing. Mechanical equipment and devices have become iron defender for front-line workers, which essentially help staff concerned achieve occupational health and safety.



## Disseminating Safety Culture

We actively organize safety promotion activities like “Safe Production Month” and “Safe Production Year”, incorporate the idea of “people first and life foremost” into the corporate culture, and forge corporate atmosphere of safety culture. Additionally, we share safety knowledge and experience in safe production management with suppliers, clients, and communities for creating the culture of safety ecology.

### THE DEVELOPMENT OF THE DEMONSTRATIVE ENTERPRISE IN CREATING ATMOSPHERE OF SAFETY CULTURE

Fuyang Shanya South Cement Co., Ltd. adheres the general management policy of “safety first, prevention prior, and comprehensive improvement”, and follows the development concept of “respect, care for, and take good care of people”, “cherish lives and emphasize civilized production”, and “protect the physical and mental safety and health of labors during production and operation”. The company has established a corporate image and culture that the employees regard the company as their homes and are proud of working in the company. It has put the concept of “striving for safety and efficiency” into the heart of the employees. with safety values belonging to all of employees achieved and corporate safety culture only occupied by Fuyang Shanya formed. The company has successively been honored with titles including “demonstrative enterprise in safe production standardization”, “demonstrative enterprise in occupational sanitary control”, “demonstrative enterprise in safe production training”, “green enterprise”, etc. by Zhejiang Province and Hangzhou Municipality, and determined as “national experimental unit of green mine”. In 2013, Fuyang Shanya South Cement Co., Ltd. was honored with the title of “national demonstrative enterprise in construction safety culture” by State Administration of Work Safety for its long-term attention paid to safe production.



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## Supporting Employees' Growth

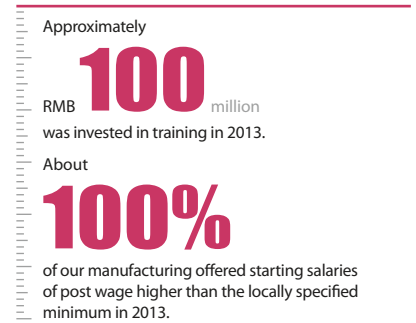


### Employee Incentives

A scientific evaluation system is established; an incentive mechanism is formed and dynamically integrated with the remuneration system, pegging the employees' personal qualities, work performance, contributions to the company and their development potential directly to remuneration and promotion as well as the enterprise's development, and bonding the employees' development to the enterprise's growth. We 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. Grounded on the mechanism of intragroup communication and on-position learning for employees, we effectively allocate the human resources within the Group, and provide a broad platform for the employees to develop their careers.

### Employee Training

We spare no efforts in the construction of learning groups. We aim to build a multi-channel, multi-form, multi-level and differentiated employee cultivating and training platform, taking account of the objectives of promoting employees' occupational abilities and overall qualities as a whole, building sound and harmonious corporate culture which values mutual growth with employees. 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.



## Creating Happiness for Employees

### Helping Employees in Need

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 "Golden-autumn Grant-in aid" program; we implement the "Sunny Employment Project" and give assistance to the "households with nobody working", helping 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.

### Caring about Special Group of Employees

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. We buy maternity insurance for female employees and implement flextime for female employees 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 talent 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 stationed abroad or in the communities of minority ethnic groups for long, offer regular home leave, hold special after-work activities and provide mental health counselling so as to relieve their pressure and promote happiness.

We also pay close attention to the working environment and living quality of disabled employees and provide them with a convenient working environment and necessary amenities.



### Enriching the Life of Staff

In an effort to make the company a reliable partner, a happy and comfortable home of the staff, we establish gymnasiums, recreation rooms, reading rooms and psychological counselling rooms, providing the staff with places for recreation activities; we organize colorful cultural and art activities and sport competitions to offer a broad stage for the staff to show their gifts; we arrange various visits and trips, pay close attention to the development of the staff's 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.



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## The Most Adorable Employee

In 2013, average employee turnover rate was around

**10.8%**

In 2013, the number of member companies carried out employee satisfaction surveys was

**453**

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), vigorously implement the strategy of “talents-invigorate-enterprise” 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 staff, as indicated by the ever-increasing employee satisfaction level. Our employees strive to excel in the Group and in their own professions, serve the companies and the community by strenuous efforts that deliver good results. Our employees show their talents and encourage other people in their own specific fields.







### YOUTH, FAMILY AND COUNTRY, AND DREAM – POSITIVE ENERGY OF WORKERS IN THE NEW ERA

Su Zhixiong, a young man born in the 1980s, was a project director of BNBM Homes Co., Ltd. He led a team to build green pre-fab housing in the desert, overseas, and rural areas. The experience records the lively outline of common workers. The story of Su Zhixiong is not only a story of a person; it is one of thousands of green leaves of the towering tree—CNBM and the song representing the youth of Chinese workers in the new era, through which we can find youth, family, country, dream, and the Post-1980's responsibilities for the country, their careers, and their families.

Workers in the new era keep the country in their hearts and mark their youth with responsibility. When Su Zhixiong went to build Lotus Project in the desert, his wife just got pregnant; when he went to build pre-fab housing in Zambia, his daughter was barely one-month old. However, he was very proud of building Chinese green pre-fab housing overseas. He adhered to the national commitment, by paying attention to details and strictly controlling the quality of the project to carefully defend China's national dignity in housing quality.

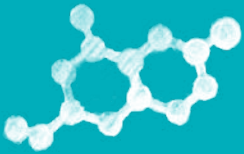
Workers in the new era are professional workers with specific knowledge; they utilize knowledge to pursue their dreams. Su Zhixiong, major in civil works, has strict control over selecting materials and construction of projects. He always solves problems related to construction in innovative ways. According to the report of Xinhua News Agency, we find such a detail – “in China, keel frameworks of pre-fab housing are installed and jointed by specific equipment, but Zambia doesn't have such equipment. How should they do to ensure the progress of the project? To overcome the difficulty, Su Zhixiong made numerous drawings and improved samples for many times; finally, by utilizing basic mechanical principle and handmade methods, he made a simple replacement of the complex and precise equipment, which consists of screw stem, steel tube, and clamping components. Such a simple device not only guarantees the quality of installation, but also reduces the period for jointing by 1/3.” Who can insist that young workers like Su Zhixiong lack the tenacity of the older generations? They are even better.

Young workers in the new era adhere to their dreams, and incorporate their own dreams into “green dream” and “Chinese dream”. Su Zhixiong said: “BNBM Homes Co., Ltd. is my battlefield, green and environmental protection is my dream. For my dreams, I will continue to strive and go forward!” As mentioned in Making Drawings Reality, a report on the front page of Guangming Daily, “Up to now, Su Zhixiong still remember that when he was a child, he wrote the word ‘engineer’ on a questionnaire about his dream at class; at that time, he longed for ‘making a drawing reality’”. As Worker's Daily said, Su Zhixiong is committed to “seeding” green pre-fab housing: “Lotus Project’ attracts wide attention after which he answered many consulting telephones. Every time answering the telephone, he never forgot to emphasize that ‘pre-fab housings are not only beautiful, but also green and environment-friendly.’”

Behind Su Zhixiong, several generations of Chinese workers in building materials once devoted themselves to new-type building materials and pre-fab housing, publicizing green and environment-friendly products. Nowadays, workers like Su Zhixiong make their dreams come true. Excitingly, after the 18th National Congress of the CPC, China's urbanization has opened a new chapter about green building materials. CNBM's dream of “Beautiful China” is being rapidly realized at home and abroad.



RMB **5.49** billion  
was spent in scientific and  
technological activities in 2013.



# Technological Innovation

We shoulder the responsibility of innovation for the industry by leveraging our strong research capabilities. We also promote 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.

- 88 Building a Super Power of Scientific Researches
- 89 Gathering Pioneers of Scientific Researches
- 90 Guarantee of Investment in Scientific Research
- 91 Improvement in Innovation Activities
- 92 Acting as the Engine of Innovation
- 93 Expediting the Transformation of Achievements
- 96 Science and Technology Serve the Society

RMB **25.94** billion  
was recorded from sales of new  
products in 2013.



**3,231**

valid patents had  
been accumulated till  
the end of 2013.

## Building a Super Power of Scientific Researches

Dedicated to developing an innovation engine in the industry, and by integrating and optimizing technological resources under the Group, we have established a science & technology innovation platform and system centered on China Building Materials Academy (CBMA) and become a comprehensive scientific research and development organization of the largest scale and strongest capability in the building materials and inorganic nonmetallic materials sectors in China.

**5**

national and industrial key laboratories.

**3**

national research centers.

**1**

mobile post-doctoral studies.

**1**

academician workstation.

**7**

industrial products quality control and technical assessment laboratories.

**1**

post-doctoral scientific workstation.

**1**

national demonstrative base of international scientific and technological cooperation.



## Gathering Pioneers of Scientific Researches

We pay close attention to the development of scientific research teams. In 2013, the number of personnel engaged in scientific and technological activities in the Group totaled nearly 14,000, approximately accounting for 8% of the total number of employees in the Group. The Group also has 1 academican of Chinese Academy of Engineering, 6,069 R&D personnel, and 13,959 engineering technicians. As a national innovative and venture base for overseas top talents, we attach great importance to the introduction and selection of senior scientific research talents. As of 2013, we had successfully recruited 41 overseas top talents, three of whom were selected in the "Thousand Talents Program".

We continuously deepen talents team building, and spare no efforts to improve the quality and vitality of scientific research teams. 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. Through such ways as establishing the Youth Science Foundation and organizing youth scientific research contests, we promote the development of key young personnel, and provide a continuous flow of talents for the scientific research team of the Group.

In 2013, the number of personnel engaged in scientific and technological activities in the Group was nearly

**14,000**

In 2013, the percentage that the science and technology personnel of the Group accounted for the total number of employees was

**8%**



Executive's Address



Market Performance



Science & Tech Innovation



Energy Saving & Environmental Protection



Employee Care



Corporate Citizen

## Guarantee of Investment in Scientific Research

Financial support for science and technology is an important guarantee for scientific and technological progress, so we attach great importance to the investment in science and technology. In addition to guaranteeing the study of basic theory and cutting-edge technology in materials science, we especially increased investment in research of low-carbon environmental protection technology and R&D of products. In 2013,

the total expenditure of scientific and technological activities was RMB 5.49 billion, taking up 5% of product sales revenue, of which the expenditure of corporate research and experimental development was RMB 3.62 billion, increasing by 8% on a year-on-year basis.

In 2013, the expenditures of scientific and technological activities amounted to

RMB **5.49** billion

In 2013, the expenditures of research and experimental development amounted to

RMB **3.62** billion



## Improvement in Innovation Activities

We have established “Science and Technology Progress Award” and “Technical Innovation Award” within the Group and set up a “Technical Center Project of the Group” to give financial support and incentives. We normalize scientific research activities, demonstrate scientific research practices, and guide scientific researches, providing accumulation and guarantee for tackling difficulties in scientific researches and practicing innovations.

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 provide technical innovation of the Group with strong technical support, building an external system of technical innovation and forming a new mode in which production, study and research are integrated, enterprises and research institutions can develop in coordination.

Focusing on such aspects as the protection of intellectual property, the management

of scientific research funds, and the confidentiality of information, we have combined the development of internal control system and the requirement of risk management, formulated several management systems and methods, 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.



Executive's Address



Market Performance



Science & Tech Innovation



Energy Saving & Environmental Protection



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Corporate Citizen

## Acting as the Engine of Innovation

We actively undertake tasks of tackling key problems and researches of key technologies in related fields, and shoulder the responsibility of technical innovation and upgrade in the industry.



The number of national scientific researches we undertook in 2013 was

28

The number of technology awards (provincial or ministerial level or above) we obtained in 2013 was

145

In 2013, a lot of national key technology projects in such fields were officially initiated, including cement and concrete, energy-saving glass, composite, new building materials, etc.. We have made breakthroughs in many key technologies, including cement and concrete for nuclear power, low-temperature sealing-in of vacuum glass, new technology of hollow/

vacuum glass with low-temperature metal banding, super-high-temperature thermal insulation material, process of surface mirror state of reverse-osmosis pressure shell, etc. We have achieved a lot of fundamental research achievements with international influence, and filled technical vacancies both at home and abroad.

### FLOAT GLASS MICRO-DEFECT AND ENERGY CONSERVATION KEY TECHNOLOGY AND ITS INDUSTRIALIZATION

The project has 3 technical innovations: the first is the successful development of the new-structure glass melter with "congruent width, wide basin, stepped basin bottom, narrow and long neck". Such melter decreases the number of 0.1-0.3mm micro-defects to a level lower than 40 per ton of glass, and reduces the unit energy consumption by more than 15% in comparison to the 600t/d melter, thus improves glass quality and realizes high efficiency and energy conservation all around; the second is the successful development of the quick synchronous batch melting technology. The technology effectively improves melting temperature schedule and distribution of molten glass, thus further improves glass quality and lowers energy consumption; the third is the initial successful development of the 1200t/d high-quality float glass line with the largest scale in the world and complete localization of the outfit. The line brings more stable product quality, and reduces the unit energy consumption by 15% in comparison to the 600t/d melter, internationally leading in energy consumption. This project obtained 9 national inventive patents, unveiled 3 national standards and published 1 monograph. The technologies have been applied in more than 60 production lines at home, occupied more than 80% of the domestic project market, and exported to 5 foreign countries, including India, Iran, Indonesia, etc. The result of the project pushed technical progress and structural upgrade of the domestic float glass industry, and depending on which, the float glass technology of China plays an important role in the global high-end float glass market.





We lead independent innovation and intellectual property protection. The Group's patents increased steadily in 2013. There were 1,262 new patent applications including 373 patents for invention, and 848 newly authorized patents including 128 patents for invention. A total of 3,231 valid patents were accumulated, including 589

patents for invention. The Group has also made breakthrough in the authorization of international patents, with 4 international patents authorized in the US and some other countries.

**848**  
patents were newly authorized in 2013.

## Expediting the Transformation of Achievements

We proactively promote the technology innovation system according to the principle of "enterprise-based, market-oriented, integration of production, study and research", and pay close attention to the transformation and application of scientific achievements. The Group continuously optimizes and integrates its scientific and technological resources; proactively organizes and builds the technical innovation system with the national enterprise technology center as the framework; encourages and guides

enterprises to improve the ability of independent innovation; emphasizes the major position of enterprises' technical innovation and investment in science and technology; and further promotes the core competitiveness of production and manufacturing enterprises in products and technical innovation. In recent years, the Group has gained approvals for national enterprise technology centers in four fields, namely composite, equipment

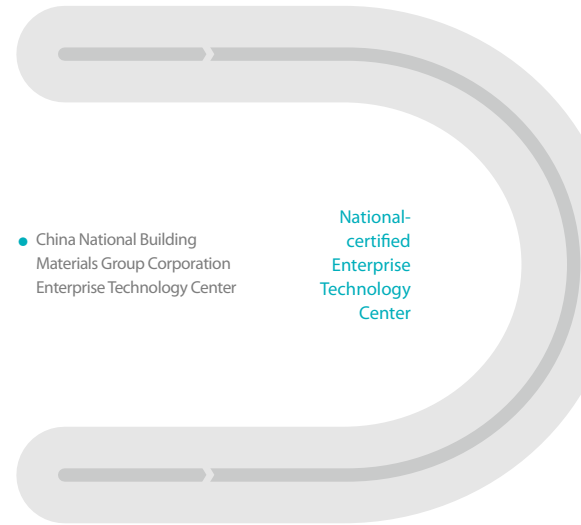
manufacturing, fiberglass, and cement equipment, and built the technical innovation system consisting of one National-certified Enterprise Technology Center (Group), namely CNBM Enterprise Technology Center, and six branches of National-certified Enterprise Technology Center.

### NATIONAL KEY NEW PRODUCT PLAN

Under the technical support of China Building Materials Academy, 3 achievements of production-research cooperation, including special cement for nuclear power project produced by China United Cement Huaihai Co., Ltd., quick-hardening sulphate aluminum cement (L.SAC.42.5) produced by China United Cement Xingtai Co., Ltd., phase-change energy storage gypsum plaster board produced by BNBM Public Limited Company, have been included into the "National Key New Product Plan 2013". As an important part of the technological industrialization in the national technology plan system, National Key New Product Plan pushes development of new products and transformation and industrialization of technological results, speeds up technological progress and improves technological innovation capacity of enterprises, thus driving optimization and upgrading of the domestic industrial structure and adjustment of the product structure through the guidance and support of policies.

We have obtained a number of significant scientific and technological achievements in such fields as new non-metallic materials, high-performance cement, new building materials made through recycling wastes as FGD gypsum, set of equipment of production line of major new dry process cement and float glass, etc., which have been successfully applied in significant engineering and project construction, e.g. Beijing Olympic Games, World Expo, high-speed rail, the Three Gorges, nuclear power plants, civilian aircraft, etc., thus making active contributions to structural adjustment and technology upgrading for building materials industry and construction industry and promoting rapid development of national economy.

### Formation of CNBM National-certified Enterprise Technology Center



● China National Building Materials Group Corporation Enterprise Technology Center

National-certified Enterprise Technology Center

In 2013, the sales revenue of new products amounted to

RMB **25.94** billion

In 2013, relying on the enterprise technology center of the Group, we enhanced the awareness of combining production with research among institutions and enterprises, improved the guidance of combining production with research, carried out special matching in the aspects of building beautiful China, treatment of PM 2.5, clean production, promotion of international standards, etc.; created 11 major projects of production and research, and 11 key laboratory open fund projects; and further improved the "distribution" strategy of production and research projects in the northeast, the east, the north, and the southwest of China. As of 2013, quantity of accumulated production & research projects and technical center reached about 150.

Over 100 technical achievements had been transformed and promoted in the Group in such fields as "Three New" industries, cement products, glass products, etc. A large amount of production and research achievements, including cement for nuclear power, quick-hardening sulfate cement, phase-change energy storage plasterboard, solar battery pack, had been included into the national key new products plan. Some of the Groups' production and research projects, such as exhaust gas treatment of cement furnace and walling furnace, key technical research of special cements, had been listed as key projects of national scientific and technical support program.

Branches of National-certified Enterprise Technology Center

- Beijing New Building Materials (Group) Co., Ltd. Technology Center
- China Luoyang Float Glass Group Co., Ltd. Technology Center
- Lianyungang Zhongfu Lianzhong Composites Group Co., Ltd. Technology Center
- Hefei Smarter Technology Group Corp. Technology Center
- Jushi Group Co., Ltd. Technology Center
- Hefei Cement Research & Design Institute Technology Center



**PUSH APPLICATION OF NEW MATERIALS BASED ON PRODUCTION-RESEARCH INTEGRATION**

Jointly founded by Lianyungang Zhongfu Lianzhong Composites Group Co., Ltd. and Harbin FRP Institute, subordinating to CNBM, Zhongfu Carbon Fiber Core Cable Technology Co., Ltd. is dedicated to R & D, production and sales of carbon fiber compound core conductors in dependence on the advanced technologies of Harbin FRP Institute for producing such conductor. The carbon fiber compound core conductor independently developed and produced by the company is a new-type conductor based on the high strength and excellent corrosion resistance of carbon fiber. Compared to ordinary steel core aluminum strands, it has the advantages of light weight, high tensile strength, high temperature resistance, anticorrosion, large current-carrying capacity, less line loss and less sag. As an energy-saving capacity-increasing conductor with brand-new structure, it is favorable to building a safe, environment-friendly, efficient and energy-saving transmission network. Zhongfu Carbon Fiber Core Cable Technology Co., Ltd. has undertaken the first large-span transmission conductor project (max. span, 1180m), which was the first application of carbon fiber compound core conductor in the world.



Executive's Address



Market Performance



Science & Tech Innovation



Energy Saving & Environmental Protection



Employee Care



Corporate Citizen

## Science and Technology Serve the Society

### Guarding the Development of the Industry

We actively participate in the formulation and amendment of national and industrial standards, and contribute to improving the quality and performance of building materials, reducing pollution and safeguarding employees' health through promoting the application of standards and regulations. In 2013, we formulated and amended 1 international standard, 5 national standards and 50 industrial standards. We also participated in the formulation and amendment of 7 national standards and 9 industrial standards.

In 2013, the Group led the official release of ISO 17095: 2013 Fine Ceramics (Advanced Ceramics, Advanced Technical Ceramics) – Test Method for Interfacial Bond Strength of Ceramic Material at Elevated Temperatures, which effectively solved the technical problems of ceramic material assessment at elevated temperatures, filling the vacancy of strengthen assessment of elevated temperature materials. The international standard, ISO 13124: 2011 Fine Ceramics (Advanced Ceramics, Advanced Technical Ceramics) – Test Method for Interfacial Bond Strength of Ceramic Materials, which was also released by us in 2011, won the second prize of Contribution to standards Innovation in China.

We have test and certification resources and quality control and technical assessment laboratories of industrial products (building materials, ceramic sanitary wares, decorative building materials, wall and roof materials, glass, horologe, light industrial machinery), covering the whole industry. Our business scope includes quality, safety, environment production, low carbon, etc. We provide enterprises and consumers with comprehensive, professional and authoritative services, promote continuous improvement of processes, management, and product quality, contributing to the sound and orderly development of the industrial chain.

We hosted and participated in the formulation and amendment of **71** national and industrial standards in 2013.



#### GREEN SCALEPLATE – GUARD THE DEVELOPMENT OF THE BUILDING MATERIALS INDUSTRY

As a third-party test and certification agency approved by CNCA and accredited by CNAS, CTC is a key high-tech enterprise in the National Torch Plan. CTC, dedicated to five business sectors including building inspection, certification, safety service, R&D of instrument, and extended service, has already been the most authoritative agency providing test, certification and assessment services in the building materials industry. In 2013, CTC undertook numerous test tasks of major projects in China, and issued 550,000 reports in the year. Those projects including nuclear power engineering, Disney Land, the best practice zone of Expo City, main urban rail transit projects in Beijing and Shanghai, providing professional consultation on low-carbon, environmental protection, quality, safety for the main venue of 2014 APEC meetings. It has provided standard assessment services for over 620 enterprises, and offered consultation guarantee for the safe operation of building materials enterprises.



**PRACTITIONER OF INTERNATIONAL TECHNOLOGICAL COOPERATION**

China Building Materials Academy (CBMA) has organized and undertaken high-level international meetings (e.g. International Symposium on Cement & Concrete), joined and taken important posts in multiple international academic organizations (e.g. RILEM). Since the first international standard for the industry published in 2011, CBMA has successfully published 3 international standards for the industry in 3 consecutive years, which significantly improves the authority and influence of China in the international standardization field. To occupy the international commanding height of the industry, CBMA runs and issues English periodicals all over the world. The successful bid to host the 14th International Symposium on Cement & Concrete realizes the long-cherished wish of a few generations of Chinese cement scientists. Depending on the strong power of innovation and the achievements made by active involvement in international technological cooperation, CBMA was highly appreciated, and identified as a state-level "Demonstrative International Technological Cooperation Base" of the industry by Ministry of Science and Technology of PRC.

**Prospering Innovation Culture**

Giving full play to our advantage in scientific research and our influence, we have built platforms for communication, promotion and sharing to drive and prosper the innovation culture.

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 material enterprises.

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.

**622**  
academic exchange activities were held and organized in 2013.

- Executive's Address
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- Energy Saving & Environmental Protection
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# Prospect

Looking forward to the future, a profound change is ongoing in the domestic building materials industry, and structural adjustment and industrial upgrading have been a consensus. Under the new situation, “reform” is a key word for corporate development, and “innovation” is the engine for market competition. The achievements made by CNBM in recent years were attributed to keeping to the path of marketization, observing the model of “Market-oriented Operation of Central State-owned Enterprises”, vigorously developing the mixed ownership and depending on innovations of technology, management and mechanism. On the basis, we have played an active role in making progress while maintaining stability of national economy.

Continue to reform. We will continue to vigorously promote restructuring, transformation and upgrading. On the one hand, the “standardized and stratified” management will be deepened and the “eight management measures” will be put into practice according to the requirements of “beforehand, fine, careful, pragmatic”, to build CNBM as a “six-star enterprise” by seizing opportunities, preventing risks, solidifying the development foundation, enhancing the intrinsic quality and improving quality benefits. On the other hand, the institutional and mechanism innovations will be deepened while adhering to principles and directions, emancipating the mind, focusing on innovation and collaboration, keeping the foundation firm.

Achieve sustainable development. We are fully aware that the reform is to realize sustainability. Consequently, we will continue to firmly and deeply push building enterprises of social responsibility, integrate responsibilities into management, emphasize the role of responsibility management in the group strategy and the development planning, and make efforts to practice and propagate the social responsibility concept with international influence. To be a responsibility-fulfilling enterprise with international influence, we will actively get involved in preparation of domestic and overseas social responsibility standards, publish social responsibility reports based on benchmarking optimization, share the experience in performing social responsibilities, and continuously promote the performance of social responsibility management.

On the principle of “making progress while maintaining stability, reform and innovation”, we will continuously keep the growth, emphasize the reform, adjust the structure, push the transformation and enhance the management, and strive to build ourselves as a “six-star enterprise” (good performance, known brand, excellent environmental protection, fine management, advance & conciseness, safety & stability). For the purpose of sustainable development and harmonious coexistence with the society, staffs, competitors and nature, the shareholders and other interested parties will be required with excellent operating results, and the important mission of innovation will be fulfilled in dependence on the strong force of research, contributions will be made to building “Beautiful China” with energy-saving and environment-friendly industrial product quality, staffs will be sincerely cared for their healthy growth, and the society will be required with various forms of public benefit activities.

# Indicator Index

No.	Content of Indicator	Position in Report	Nature of Indicator
<b>Part 1 Preface of Report (P series)</b>			
(P1)	<b>Scope of report</b>		
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P1.2	Interpretation of data in report	Preparation Notes	Core
P1.3	Boundaries of report	Preparation Notes	Core
P1.4	Report system	Preparation Notes	Core
P1.5	Contact Information	Back Cover	Core
(P2)	<b>Report process</b>		
P2.1	Preparation process of the report	Preparation Notes	Extended
P2.2	Selection process of essential topics in the report	P27	Core
P2.3	Process and means of stakeholders participating in the preparation of the report	Preparation Notes	Extended
(P3)	<b>Executives' Address</b>		
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P3.2	Summary of achievements and deficiencies of annual corporate social responsibility	P2-3	Core
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P4.3	Region of enterprise's operation, including operational enterprises, subsidiaries, jointly-owned organizations	P4-7\P13	Core
P4.4	Service markets divided by industries, customer types and regions	P4-7	Core
P4.5	Number of employees reported according to contracts (formal and informal employees) and genders	P22	Core
P4.6	List of memberships or other qualifications in associations, national organizations and international organizations	P34	Extended
P4.7	Major changes in organizational scale, structure, ownership or supply chains in the term of report	N/A	Extended
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E1.7	Environmental protection training performance	P52-53	Core
E1.8	Disclosure of environment information	P52-53	Extended
E1.9	Process and frequency of communication with communities on environment	P52-53	Extended

No.	Content of Indicator	Position in Report	Nature of Indicator
E1.10	Measures for green office	P52-53	Core
E1.11	Green office performance	P52-53	Extended
E1.12	Saving energy by reducing business trips	P52-53	Extended
E1.13	Green buildings and sales network	N/A	Extended
(E2)	<b>Green factory</b>		
E2.1	Establishing energy management system	P52-53	Extended
E2.2	Energy conservation policy and measures	P52-53	Core
E2.3	Total annual energy consumption	P18	Core
E2.4	Comprehensive energy consumption per unit output value of the enterprise	P18	Core
E2.5	Policy and measures for utilization of new, renewable or clean energy	P54-55	Extended
E2.6	Utilization amount of new, renewable and clean energy	P54-55	Extended
E2.7	Policy, measures or technologies for reducing waste gas emission	P56	Core
E2.8	Emission and emission reduction of waste gas	P19	Core
E2.9	System, measures or technologies for reducing waste water discharge	P56	Core
E2.10	Emission and emission reduction of waste water	P19	Core
E2.11	System, measures or technologies for reducing waste emission	P56	Core
E2.12	Emission and emission reduction of waste water	P19	Core
E2.13	Policies and measures for the development of circular economy	P55	Core
E2.14	Cyclic utilization rate of renewable resources	P54-55	Core
E2.15	Building a water-saving enterprise	P55	Core
E2.16	Annual consumption of fresh water/ fresh water consumption of unit industrial added value	P19	Core
E2.17	Volume of neutral water reuse	P55	Core
E2.18	Plan and action for the reduction of greenhouse gas emission	P50	Core
E2.19	Emission and emission reduction of greenhouse gases	P51	Extended
(E3)	<b>Green products</b>		
E3.1	Proportion of suppliers passing ISO 14000 Environment Management System Certification	P51	Core
E3.2	Measures to improve suppliers' awareness and capabilities of environmental protection	P51	Extended
E3.3	Number of suppliers receiving punishments in respect of environmental protection, and number of punishments	N/A	Extended
E3.4	Support for R&D and sales of green low-carbon products	P58-61	Extended
E3.5	Measures and performances of waste products recycle	P61	Core
E3.6	Policies and performances of package minimization and recycle	P61	Core
(E4)	<b>Green ecology</b>		
E4.1	Protection of biological diversity	P57	Core
E4.2	Protection of natural habitats, wet land, forests, wildlife corridor, and farm land in constructions	P57	Extended
E4.3	Ecological restoration and governance	P57	Extended
E4.4	Rate of ecological restoration and governance	P57	Extended
E4.5	Public welfare activities for environmental protection	P51	Core
<b>Part 6 Report Postscript (A Series)</b>			
(A1)	Future plan: Corporate planning on social responsibility work	P98-99	Core
(A2)	Report Evaluation: Evaluation of experts in social responsibility or industry experts, relevant interested parties or professional organizations on the report	P104	Core
(A3)	Reference Index: Application of indicators as required to be disclosed by the guide	P100-103	Extended
(A4)	Feedback: questionnaire of readers' opinions and feedback channel for readers' opinions	P105	Core

# 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 2013 (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 (★★★★☆)

Social Responsibility and Energy Saving & Environmental Protection Office of Enterprise Management Department of the Group is responsible for the preparation of the Report; senior executives participated in the progress of preparation and the approval of the Report. The enterprise 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 mobile APP, which reflects a leading process.

### Materiality (★★★★★)

The Report gives detailed and sufficient disclosures on the substantive issues of non-metallic 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", "Governance of Environment around Factories", with good materiality.

### Completeness (★★★★★)

The Report discloses the key indicators of "Responsibility Management", "Market Performance", "Technological Innovation", "Energy Saving and Environmental Protection", "Employee Care" and "Corporate Citizen", covering 90.0% core indicators of non-metallic mineral products industry, and can be regarded as fairly complete.

### Balance (★★★★☆)

The Report discloses negative data and information on "the injury rate per thousand people", "person-times of minor wounds", "new cases of occupational diseases", "number of accumulated occupational disease cases", etc., and briefly described improvement measures of subordinates in environment improvement and external exchanges, which shows a good balance.

### Comparability (★★★★★)

The Report discloses 57 key performance indicators, including "operating revenue", "comprehensive energy consumption of per RMB 10,000 output value", "investment in production safety", for at least 3 consecutive years, and compared such indicators as "total volume of profit" and "output of cement" with those of international and domestic competitors in the industry; therefore, it shows excellent comparability.

### Readability (★★★★☆)

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; its design is of a simple style, and the color of each chapter suits its contents, which increases the readability of the Report and shows a high readability.

### Creativity (★★★★★)

Starting with the theme of "responsibility footprint", the Report represents the way of responsibilities of the enterprise in the recent five years, which helps stakeholders to learn the enterprise's performance of responsibility. It also contains evaluations of stakeholders at many places, which increases the objectivity and reliability of the Report. Therefore, the Report can be regarded as creative.

### Overall rating (★★★★★)

Based on its evaluation, the rating team considered CNBM CSR Report 2013 an outstanding CSR Report by giving it a five-star rating.

## IV. Recommendations for improvement

1. 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: Chen Honghui, Professor of Lingnan (University) College, Sun Yat-sen University  
 Han Bin, Director of Global Compact Promotion Office of China Enterprise Confederation  
 Zhai Lifeng and Zhang Xiaodan, Process Evaluators of the Center

Chairman of Chinese Expert Committee on CSR Reporting Rating  
 Vice President of Executive Council of the Center

Head of the rating team  
 Director of the Center



# Feedback

For the purpose of better performing our social responsibilities, we would love to hear your comments and advice and earnestly invite you to put forward your valuable opinions on our work and report. If the blank space is insufficient for your response, please use the opposite side or attach an additional page; if you want to reply by electronic means, please log onto our website at [www.cnbm.com.cn](http://www.cnbm.com.cn), click on "Social Responsibility" and then click on "Social Responsibility Communications - Feedback":

1. Your overall evaluation of CNBM CSR Report 2013:

Very good  Good  Average  Poor  Very poor

2. Your views on CNBM CSR Report 2012:

Contents:  Adequate  Fairly adequate  Average  Inadequate  Very inadequate

Number of Pages:  Appropriate  Fairly appropriate  Average  Few  Very few

Design:  Very Good  Good  Average  Poor  Very poor

Comprehensibility:  Very easy to understand  Fairly easy to understand  Understandable  Hard to understand  
 Very hard to understand

3. What information would you like to get from CNBM CSR Report 2014?

Corporate profile  Responsibility management  Market performance  Technological innovation

Energy saving & environmental protection  Employee care  Corporate citizen  Others

4. Your opinions and suggestions on our work:

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Please provide your contact information so that we can timely respond to your opinions and suggestions. We will keep your information in confidence.

Name: \_\_\_\_\_ Age: \_\_\_\_\_

Gender:  Male  Female Occupation / employer: \_\_\_\_\_

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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