

# **Asia Cement (China) Holdings Corporation**

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# 2018 CS R Corporate Social Responsibility Report

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Overview

# **Dear Readers**

The "2018 Asia Cement (China) Corporate Social Responsibility Report" is elaborately prepared for the stakeholders to learn more about how Asia Cement (China) is devoted to establish a complete sustainable corporate development. This report used the framework of Global Reporting Initiative(GRI) 2016. It's based on the [Comprehensive] options, and to provide reliable public information for readers.

# **Green Sustainable Circulation**

On the basis of combining Asia Cement (China)'s business and implementing the reporting principles, this report responses to the topics concerned by various parties, and present our effort put into economic, social and environmental aspects through the green sustainable circulation and sustainable governance circulation, in a view to show stakeholders our commitment.

# **Report Scope**

This report mainly provides the corporate sustainable management and performances in major operation sites of Asia Cement (China) from 1 January 2018 to 31 December 2018. The additional information of the domestic physical operating companies disclosed includes: Jiangxi Yadong, Huanggang Yadong, Nanchang Yadong, Nanchang Yali, Jiangxi Yali, Hubei Yadong, Wuhan Yaxin, Wuhan Yadong, Wuhan Yali, Hubei Yali, Sichuan Yadong, Sichuan Lanfeng, Sichuan Yali, Chengdu Yali, Sichuan Yali, Yangzhou Yali, Shanghai Yali, Taizhou Yadong. The financial statement is published after being certified by the certified public accountant. Parts of the figures are quoted from the annual report, government sectors, and the public information disclosed on the relevant websites and is presented in the conventional manner. Exceptions will be elaborated in the contents of the report.

It is the fifth year to issue this report, and the previous issuance date is June 2018. This report is issued once a year and the expected issuance date next time will be June 2020.



Circulation

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Overview

(China), our focus remains on economic, social and environmental sustainability, as we have been engaged in active transformation, constant growth, stronger government-enterprise cooperation and ramp-up of the Group's overall efficiency. Meanwhile, we sustained our drive to provide quality products and service, and took on our mission of serving local development through corporate activities. By doing so, we aim to build our brand image as an excellent cement enterprise supported by both customers and the general public, deliver the positive side of Asia Cement (China), and help us move towards our goal of sustainable development.

> In 2018, Asia Cement (China) saw marked improvement in its overall operations, with a fresh historic high in results. Combined revenue and net operating profit for the year amounted to RMB11.3 billion and RMB3.5 billion, respectively. As a top-10 cement and clinker producer in China, we will adapt to the state of industry competition, optimize production technology, perfect our green and intelligent control system, and promote "sustainable green cycle" and "sustainable governance cycle" to realize sustainable corporate development.

In the fifth corporate social

responsibility report of Asia Cement

In terms of sustainable green recycle, we work to promote technological innovation and digital mines. The Company

invested a total of RMB48.16 million in building national green mines. Our Jiangxi Yadong and Huanggang Yadong received the third prize and the individual third prize of the Green Mine Science and Technology Award. In addition, we are continuously engaged in low-carbon intelligent production of cement. In 2018, our CO<sub>2</sub> emission was reduced by a total of 205.000 tons, with a 29.55% in residual heat power generation, the highest rate in years. At the same time, we ramped up the collaborative waste disposal technology for cement kilns, disposing a total of 12.017 tons of wastes. We also commenced our R&D and application for the utilization of industrial slag, with an aggregate of 6.15 million tons of industrial slag utilized. Such results demonstrate our dedication to corporate and environmental sustainability.

In terms of sustainable governance cycle, we have fully implemented the strategy of "boosting a company by developing talents". To accelerate talent training and meet the operational demand of the Company, Asia Cement (China) invested RMB4.23 million in establishing and improving its training system. Apart from continuous training for new recruits, team execution and QCC training, MTP training for intermediate directors, training classes for the second-generation talents and exchange and study tours to Taiwan, we added the advanced TWI training. Industry 4.0 & AI intelligence courses and TTT & OJT training, to offer talent support

to the Company's development. In 2018, such training totaled 66,990 hours.

In the corporate spirit of "Taking from Society and Giving Back to Society", Asia Cement (China) delivers sustainable social care, with active engagement in public welfare causes, including giving back to communities, caring for the supporting underprivileged. local education, and sponsoring/participating in charity activities. In 2018, our social expenditure stability totaled approximately RMB1.58 million, as we spread our love and fulfilled our corporate responsibility.

Looking into the future, Asia Cement (China) will regard "operations expansion", R&D and innovation", "boosting "enhancing overall efficiency" and "promoting green development and sustainable growth" as the core development strategies, and work towards the goal of a first-class industry player. We will remain committed to our founding spirit of "Sincerity, Diligence, Thrift, Prudence and Innovation", proactively work on transformation and never cease to create new value for our customers, shareholders, employees and society.

# **Operator's Words**



Asia Cement (China) Holdings Corporation HSU, Shu-tong Chairman



# Economic

Integration of resources, sustainable and innovative products, create cost-effectiveness and highest value

# **Environment**

Building green homeland by implementing energy saving and carbon emission reduction, achieving sustainable environment by strengthening ecological education.

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# Social

Creating an integrated society by building pleasurable workplace, helping vulnerable groups and developing and passing culture.



# Vision

To be the model of cement industry driven by continuously pursuing high quality, high efficiency, high environmental protection, low cost and innovative changes.

# Asia Cement (China) Founding Spirit



Sincerity with faith, exert the spirit of teamwork.



Diligence with devotion, make efficient operation.

Thrift **K** 

Thrift with humble attitude, execute the duty realistically.



Prudence with consideration, pay attention to the personnel and property safety.



For years, the employees follow this model. This has become the corporate spirit of Asia Cement (China). President Hsu expects the employees to be "clean and clear with final analysis until done". He also emphasizes to increase the service quality and emphasis on the efficiency so that Asia Cement (China) may grow sustainably.

#### ustainable Ilation

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# Asia Cement (China) CSR Performance Highlights of 2018

CSR Performance Highlights of 2018

Green Circulation 1: Sustainable Mines	<ul> <li>RMB48.16 million was invested in green mines.</li> <li>35.65 hectares of mines went through reclamation, with more than 6,000 meters of mined-final-wall.</li> <li>Technological innovation and digital mines are promoted. Our Jiangxi Yadong and Huanggang Yadong received the third prize and the individual third prize of the Green Mine Science and Technology Award.</li> <li>Negotiation and communication took place with local residents to address disputes. In 2018, we had a total of 30 communication sessions with 190 local residents.</li> </ul>
Green Circulation 2: Low-carbon Green Intelligent Manufacturing	<ul> <li>8.96 million KWh of electricity was saved, which was equivalent to reducing 7,000 tons of CO<sub>2</sub> emissions. 198,000 tons of carbon was spared from emission due to our efforts to save clinker. In aggregate, our carbon reduction amounted to approximately 205,000 tons of CO<sub>2</sub>.</li> <li>GHG emission intensity was controlled under 0.9, with a CO<sub>2</sub> emission intensity of 0.884 in 2018.</li> <li>A net amount of 636,198 MWh of electricity was generated from residual heat recovery, with the proportion of residual heat power generation reaching 29.55%, the highest in years.</li> <li>In 2018, we invested approximately RMB140 million in pollution control and prevention.</li> </ul>
Green Circulation 3: Recycling Economy	<ul> <li>We continued to optimize production technology and expand the types and volume of industrial slag for utilization. As a result, an aggregate of 6.15 million tons of industrial slag was utilized.</li> <li>We continued to improve the collaborative waste disposal technology and environment protection solutions for cement kilns. Our wastes disposal totaled 12,017 tons.</li> </ul>
Green Circulation 4: Social Care	<ul> <li>Our Employee Care Education Fund sustained its support to Yadong Hope Primary School.</li> <li>Our social stability expenditure amounted to RMB1.58 million.</li> <li>We continued to care for underprivileged groups and actively engage in charity activities to fulfill our corporate responsibility.</li> <li>We worked with education institutions to promote industry-academy internships, in a bid to identify and provide talents for our society.</li> </ul>
Governance Circulation 4: Happy Workplace	<ul> <li>We adjust remuneration on a collective and regular basis. In 2018, the remuneration of our employees rose by 10.36% on average. Coupled with decent profits and higher bonuses, the employee satisfaction amounted to 64.04%.</li> <li>At Asia Cement (China), 73% of our employees are locals.</li> <li>The Company invested RMB4.23 million in establishing and improving its training system, so as to accelerate talent training. In 2018, we added the advanced TWI training, Industry 4.0 &amp; AI intelligence function courses, and TTT &amp; OJT, with total training hours amounting to 66,990 hours.</li> </ul>

# Green Sustainable Circulation

#### **Sustainable Mines**

- 1.1 Mining Control and Mine Safety
- 1.2 Re-vegetation in Mines
- 1.3 Sustainable Planning for Mines
- 1.4 Sustainable Mine Performance
- 1.5 Employment and Communication of Local Residents

#### Low-carbon Green Intelligent Manufacturing

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- 2.1 Low-carbon Green Leadership2.2 Intelligent Manufacturing Cement 4.02.3 GHG and Energy Management2.4 Water Resource Management
  - and Pollution Prevention

#### Recycling Economy

3

3.1 Comprehensive Utilization of Industrial Wastes Resources3.2 Wastes Disposal

#### Social Care

- 4.1 Local Communities and Vulnerable Care
   4.2 Humanistic Science Education
- 4.3 Support to Education Undertakings
- 4.4 Social Care Expenditure

#### **Environmental Education**

5 -----• 5.1 Greenery cultivation 5.2 Jiangxi Yadong's Mine Agricultural Park



# Green Sustainable Circulation 1 : Sustainable Mines

Our mines will complete the accreditation process to be included in the directory of green mines at provincial and above levels by the end of 2020.

objective

## **Sustainable Mines--Management Policy**

Pursuant to the Opinions on Accelerating the Construction of Green Mines (Guo Tu Zi Gui [2017] No.4) (国土资源部《关于加快建设绿色矿山的实施意见》(国土资规〔2017]4号)) issued by the Ministry of Land and Resources in March 2017 and the Specification for Construction of Green Mines of Cement Limestone (《水泥灰岩绿色矿山建设规范》) (DZ/T0318-2018) issued by the Ministry of Natural Resources on 2 July 2018, Asia Cement (China) carried out a new mining development model for its mines which fit into the requirements for ecological civilization. The model works on six aspects, namely, the environment of the mining areas, resource development methods, integrated resource utilization, energy saving and emissions reduction, technological innovation and digital mines, corporate management and image. Under the model, green mine construction plan and implementation solutions are prepared according to the characteristics of each mine and carried out accordingly, to promote reasonable resource utilization, energy saving and emissions reduction, protection of the ecological environment and harmony between mines and land. Ultimately, the model is designed to coordinate and balance the economic, ecological and social benefits of resource development.

# Evaluation Methods:

An intelligent control system is established to achieve accurate management of information and promote the production safety of mines.

Each year, our CSR report continues to track and review whether the objectives are met.

# Policy and Commitment:

Our mining areas demonstrate standard and clean environment, as we utilize resources reasonably, protect and restore the ecological environment of the mining areas, establish modern digital mines and build the positive image of a mining enterprise.

### Specific Actions and Initiatives:

Setting up special teams for execution

To show our determination, the highest leadership of our Company acted as the convener to establish special teams for execution. Such work was completed on 15 January 2018.

Preparing specific plans

1. Our subsidiaries finished preparing specific plans based on the characteristics of their respective mines by 15 April 2018, coupled with deployment for implementation.

 The Construction Plan of Green Mines for Ma Tou Limestone Mine by Ruichang Manufacturing Plant (瑞昌制造厂码头灰岩矿绿色矿山建设方案) prepared by Jiangxi Yadong has been listed in the National Green Mine Directory (全国绿色矿山名录) for management.

# 1.1 Mining Control and Mine Safety

# **Smart Mining**

Jiangxi Yadong has invested RMB500,000 in a smart mining management system, which encompasses five aspects, namely, remote monitoring of open-pit mining equipment, 3D live scene of the mines, remote monitoring of mine production, remote video monitoring of mines, and mine reserve management. Through remote video monitoring, the management personnel of our mines can conduct real-time management control over important parts such as mining, processing and production, to realize remote command and promote the production safety of the mines. The installation of video surveillance systems at key locations, such as maintenance areas, living areas, and oil depots, provides robust protection for the property safety of mining enterprises and reduced the occurrence of thefts and damages. Huanggang Yadong has set up its production control and remote monitoring system, to effectively monitor the mining activities of its mining area. In 2018, the company spent RMB150,000 to install online dust and noise monitoring equipment at four locations of the mine, enabling it to conduct real-time monitor of PM2.5, PM10, noise, wind speed and wind direction and release the data to the public.



Smart Mining Management System

Online Dust Monitoring

### **Insensitive Blasting**

All the mines of the Company have adopted Orica high-precision detonators for long-hole blasting on a hole-by-hole basis, which can effectively control the noise, dust and vibration generated by blasting. In 2018, Huanggang Yadong enhanced its blasting technology research, and published a paper titled "Mining Blasting Principle and the Application at the Rock Stratum Level" in the bulletin of China Cement Association in December 2018. In order to enhance communication with nearby residents, our mine supervisors reached the neighboring villages to check the vibration with the villagers during the blasting operation. This allowed us to effective clarify the impact of our blasting operation on the villagers' life and turn resistance into assistance to build good relations with the villagers, which has become an important window to present a good image of the mine.

# Mine Drainage and Side Slope Safety

sprinkle water on roads, and water tree saplings.

environment of nearby villages.

3. Pre-splitting blasting: Jiangxi Yadong and

2. Constructing grit chambers and debris dams:

Runoff water is collected in grit chambers before being discharged as clear water, to avoid polluting the

Huanggang Yadong have attained initial success in some side slope tests, which effectively reduced the ultimate

slope rock fragmentation and increased slope stability.



Primary Sedimentation Tank at Jiangxi Yadong Mine



Sedimentation Tank at the Foot of Huanggang Yadong Mine



# A Sustainable Cycle for Mining and Restoration of the Mining Area

- 1. Jiangxi Yadong transformed a disused factory with an area of 10 hectares into an ecological agricultural park.
- 2. Huanggang Yadong sorted out and landscaped the environment around the mine entrance, the nursery, the office of the former excavation team and the parking lot.

On 18 December 2017, Huanggang Yadong Mine completed the construction of its greening nursery, seedbed frame and seedbed room. Local native tree species have started to be cultivated in the mine in 2018, with greenery teams organized to cultivate tree saplings including red locust (赤槐), camphor tree, Chinese scholar tree, beech, golden rain tree, Taiwan acacia, soapberry, honey locust, cedrus and Boston ivy.



company	Actual performance in 2010
Jiangxi Yadong	More than 4,000 square meters of south slope were reclaimed, with 24 hectares greened, 5,000 tree saplings planted, 5,300 kilograms of grass seeds sown, as well as 9.2 hectares of turf and 40,100 seedlings planted.
Huanggang Yadong	Approximately 2,000 square meters of side slope were reclaimed (approximately 50,000 tons of soil replanted with vegetation, which was calculated by the final residual section of 5 meters), with 1.3 hectares greened, 3,400 trees planted, as well as 100 kilograms of tree seeds and 100 kilograms of grass seeds sown.
Sichuan Yadong	10.35 hectares were greened, with 150 tree saplings planted and 800 kilograms of grass seeds sown.



Jiangxi Yadong Agricultural Park

Before Rectification ---- After Rectification



1.







Year-on-year reclamation from top to bottom of the side slope in Huanggang Yadong



Backfilling foreign soil on the side slope in Sichuan Yadong

#### Implementation Method of Dust Suppression for Mines:

- A total of 11 sprinkler trucks provided.
- 1,167 meters of auto sprinklers installed.
- Hardening roads and the crusher hopper platform, to reduce the difficulties of road surface mud and dust control. 5,000 meters and 535 meters of roads were hardened in Jiangxi Yadong Mine and Huanggang Yadong Mine, respectively.
- A new high-pressure wheel washer was added, to prevent vehicles from bringing out pollutants along with tires when exiting the mine.
- Jiangxi Yadong closed all its crusher plants to reduce unorganized emission and diffusion due to the crushing operation in the mine.

#### **Results of Integrated Resource Utilization:**

Jiangxi Yadong

Approximately 3.58 million tons of construction fillers have been produced from high-magnesium limestone under integrated utilization.

Huanggang Yadong

A total of 6.7 million tons of materials have been produced from the integrated utilization of 1.58 million tons of cement limestone and 0.72 million tons of high-magnesium waste rocks used for angles, which translates into an integrated resource utilization rate of 34.3%.

Sichuan Yadong

A total of 10.025 million tons of materials have been produced from the integrated utilization of approximately 2 million tons of low-quality limestone and topsoil, which translates into an integrated resource utilization rate of approximately 20%.

investment in Green Mines			
Company	Investment project	Total ( Unit: 0,000RMB )	
Jiangxi Yadong	<ul> <li>Project investment: 1644</li> <li>187 projects in total: <ul> <li>68 environmental projects for the mining area, with an investment of RMB6.07 million</li> <li>21 projects relating to resource development methods, with an investment of RMB1.31 million</li> <li>11 projects relating to integrated resource utilization, with an investment of RMB0.58 million</li> <li>41 projects relating to energy saving and emissions reduction, with an investment of RMB2.98 million</li> <li>21 projects relating to technological innovation and digital mines, with an investment of RMB3.59 million</li> <li>25 projects relating to corporate management and image, with an investment of RMB3.59 million.</li> </ul> </li> <li>Rental of heavy machinery: RMB8.25 million</li> <li>Concrete materials: RMB5.63 million</li> <li>Manpower: RMB0.5 million</li> </ul>	3082	
Huanggang Yadong	Overhaul of equipment for integrated resource utilization: RMB4 million Ecological protection and restoration: RMB3.39 million Water and soil conservation, and mine-land coordination and balance: RMB0.65 million	804	
Sichuan Yadong	Overhaul of equipment for integrated resource utilization: RMB8.40 million Side slope treatment: RMB0.9 million	930	
Total		4816	

Investment in Green Mines

## **Technological Innovation and Digital Mines**

The Company aims to adopt information network control technology to realize informationbased control of mine operation, production decision-making, production safety management and equipment control. This is planned to be implemented in three stages. The first stage comprises real-time management, which reduces manpower management through wireless transmission of production information to the control center based on perception or logical judgment. The second stage represents system optimization, which leverages on logical judgment and intelligent analysis to improve the performance of the production system, boost production capacity effectively and reduce energy consumption. The third stage is optimal decision-making of the system, which provides judgements on future trends by collecting a massive amount of data and analyzing the historical relationship between different production modules. The structural plan of digital mines was completed in 2018 and pilot implementation.

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Green Sustainable

# **21.3** Sustainable Planning for Mines



In May 2018, Jiangxi Yadong received the third prize and the individual third prize of the Green Mine Science and Technology Award from ZHONGGUANCUN Green Mine Industry Alliance for "comprehensive utilization of the dirt scrap from limestone topsoil (灰岩矿表层土夹石剥离废料综合利用)." Jiangxi Yadong have also received multiple supervision and guidance visits from the Ministry of Natural Resources, the Department of Land and Resources, Jiujiang Land Resources Bureau (九江市国土资源局), Jiujiang Administration for Work Safety Supervision (九江市安全生产监督管理局) and Ruichang Municipal People's Government (瑞昌市人民政府).。



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Jiangxi Yadong Receiving the Green Mine Science and Technology Award



Technical Director CHANG, Zheng-kun Receiving the Individual Prize on behalf of Huanggang Yadong

In May 2018, Huanggang Yadong received the third prize and the individual third prize of the first Green Mine Science Technology and Award from ZHONGGUANCUN Green Mine Industry Alliance for the "project for integrated utilization of scrap from high-magnesium limestone" (高镁灰岩剥离废料综合利用项 目). The prizes were registered as Award No. 265 in the Social Science Awards Directory (《社会科技奖励名录》) kept by the National Office for Science & Technology Awards.

# **21.5** Employment and Communication of Local Residents

## **Providing Employment Opportunities**

Manufacturing plants and grinding plants of Asia Cement (China) are primarily located in remote towns, where we highly respect local customs, laws and culture. Based on our compliance with local policies and regulations, we implemented localized policies, hired local employees and provided employment opportunities for local people, to narrow the gap between urban and rural areas, promote the stability, prosperity and development of local economy, and take care of local residents with concrete action. In 2018, local employees accounted for 73% of the entire workforce of Asia Cement (China).

		Local employees	
Company	Total	Number of employees	Percentage
Jiangxi Yadong	1028	732	74%
Huanggang Yadong	286	220	76%
Nanchang Yadong	50	30	59%
Nanchang Yali	109	44	40%
Jiangxi Yali	123	83	67%
Hubei Yadong	400	284	67%
Wuhan Yaxin	288	266	92%
Wuhan Yadong	81	30	36%
Wuhan Yali	58	43	74%
Hubei Yali	99	91	93%
Sichuan Yadong	568	395	68%
Sichuan Lanfeng	417	339	81%
Sichuan Yali	48	31	65%
Chengdu Yali	39	38	97%
Sichuan Yali	84	82	98%
Yangzhou Yadong	164	101	61%
Shanghai Yali	14	6	38%
Taizhou Yadong	31	27	82%
Total	3887	2842	73%

# **Valuing Local Employees**

The total number of competent employees in Asia Cement (China) is 519, and local competent employees is 310, accounting for 59.73%.

Company	Competent employee ( tenth ( including tenth ) position or above)	Local Competent employee	Percentage
Jiangxi Yadong	166	91	54.82%
Huanggang Yadong	39	18	46.15%
Nanchang Yadong	8	7	87.50%
Nanchang Yali	13	11	84.62%
Jiangxi Yali	11	10	90.91%
Hubei Yadong	77	54	70.13%
Wuhan Yaxin	30	18	60%
Wuhan Yadong	12	10	83.33%
Wuhan Yali	7	5	71.43%
Hubei Yali	6	4	66.67%
Sichuan Yadong	77	35	45.45%
Sichuan Lanfeng	35	21	60%
Sichuan Yali	5	3	60%
Chengdu Yali	4	3	75%
Sichuan Yali	6	5	83.33%
Yangzhou Yadong	18	13	72.22%
Shanghai Yali	3	2	66.67%
Taizhou Yadong	2	0	0 %
Total	519	310	59.73%

# **Giving Back to Locals**

In 2018, Asia Cement (China) invested over RMB1.33 million in community care and beautification, as we maintained friendly relations with the communities and strived to create harmonious and pleasant life circles. Our efforts to give back to locals are summarized as follows. Other local social care is detailed in "Green Sustainable Cycle 4-Social Care".

ltem	Amount/RMB
Provide home repair services	23776
Community auxiliary facilities and services	74675
Promoting community education services	158750
Maintaining friendly relations with the communities	26100
Community interaction – Assisting communities in environmental beautification through its specialty of ecological greening	314600
Community welfare – Meeting community demand through its specialty in engineering	735580
Total	1333481

# **Community Negotiation and Communication**

Asia Cement (China) has always valued the rights and interests of local residents. We actively negotiate and communicate with local residents to settle disputes and create a harmonious atmosphere together. As a result, we have won positive comments and praises from local governments and the general public.

Negotiation and Communication with Local Residents in 2018			
Item	Number of Sessions	Number of Participants	
Settlement of production disputes between plants and mines	25	70	
Factory visits by local party member representatives	5	120	

Green Sustainable Circulation 2: Low-carbon Green Intelligent Manufacturing

# Low-carbon Green Intelligent Manufacturing--Management Policy

Asia Cement (China) has put the replacement of manual production with advanced equipment, established intelligent control system to improve production and equipment operation efficiency, used cement kilns to coordinate the waste disposal and used SAP and Notes system to efficiently manage the company, which lays a solid foundation for the Company's automated production, industrial upgrading and sustainable development.

In the future, Asia Cement (China) will continue to develop and use big data analysis, realizing cloud monitoring, intellectualized decision-making, increasing production efficiency and Intelligent manufacturing in the entire production process

# > Evaluation Methods:

- Data analysis and application, building various information models, improving the efficiency and reuse of information analysis, and improving the quality of decision-making.
- ② Holding regular review meetings to confirm the implementation status of the plan and target attainment reports.
- 3 Preparing management plans and establishing key performance indicators for management.
- ④ Conducting regular review and improvement on substandard projects, and implementing improvement measures.

# > Policy and Commitment:

Applying Industry 4.0 to cement manufacturing process, establishing intelligent control
systems, raising production and equipment efficiency, and preparing for automatic
production and industrial upgrade of the cement industry.

Shaping our vision of sustainable green environment through effectively use of all energies and resources, reduction of energy consumption and emissions, and promotion of intelligent environmental protection management.

# Specific Actions and Initiatives:

1

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- Sustaining the efforts of reducing greenhouse gases.
  - Adopting big data analysis and AI intelligence to optimize production management and promote the 4.0 cement manufacturing process.



Asia Cement (China) actively responds to national policies and has been following the longterm sustainable development strategy of "implementing energy conservation and carbon reduction, building green homes, strengthening ecological education and achieving environmental sustainability". We have independently transformed, introduced and innovated various energy saving and carbon reduction projects, shouldering the social responsibility of enterprises and doing our part for the country.

Since its establishment in 2000, Asia Cement (China) has obtained various national environmental protection subsidies and passed the national assessment of "Hundreds of demonstration enterprises for energy conservation", which is undoubtedly a recognition of us.

Residual heat power Beneration system

Trucks have been replaced by conveyor belts to transport the limestone raw materials from mines, saving manpower and reducing greenhouse gas emissions.

> Construction of conveyor belts

> > Steel balls replicing the steel balls replic

Cement rotary kilns have adopted residual heat power generation to save electricity and coal consumption.

Low-carbon denitration technology

Our pioneering lownitrogen combustion denitration technology and introduction of slaked lime dry powder desulfurization process can effectively control pollutant emissions, and meet and even exceed national environmental discharge requirements.

Steel balls have been replaced by ceramic ones for cement ball-milling to saves electricity of the factory.

Development of sandstone grinding improves the burnability of raw materials and saves the comprehensive coal consumption of clinker. .

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# Model Student for Low-carbon Manufacturing Process and Technology

2018 Sichuan Yadong completed a 13.7 kilometer conveyor belt to replace traditional trucks for transporting limestone raw material. Jiangxi Yadong cement grinding balls are replaced with ceramic ones to reduce motor load and reduce electricity consumption by 1.8 million kWh per year. Sichuan Lanfeng's fire and circulating water system transformation saves 2,400 MWh of electricity per year.

# 2016

- Jiangxi Yadong won the "Benchmark Enterprise for Environmental Protection among Major Chinese Cement Groups (中国大型水泥集团环 保标杆企业)".
- It received RMB18 million in environmental protection subsidies.
- Exhaust from both terminals of kilns have been utilized for power generation (residual heat power generation), which resulted in the total power generation of 591 million kWh, equivalent to saving 189,900 tons of standard coal and reducing 505,000 tons of greenhouse gases.

- We established our presence in smart cement manufacturing 4.0, using highefficiency intelligent equipment and big data analysis to carry out intelligent production.
- We obtained utility model patents for rawmaterial two-way curved belt conveyor, limestone downhill powered belt transportation, and new kiln-mouth cover iron.
- Practical Yangfang cement grinding aid reduces the clinker ratio and saves about 600,000 tons of clinker.

- Our pioneering low-nitrogen combustion denitration process was launched. The slaked lime dry powder desulfurization process has also been added, which effectively controlled the SO<sub>2</sub> content of the kiln tail exhaust below 200mg/m<sup>3</sup>.
- Jiangxi Yadong built its 7# sandstone mill, which can save 3.359 million tons of electricity and 9,789 tons of coal each year.

2015

2017



# **Measures under Intelligent Manufacturing Cement 4.0**

Asia Cement (China) takes "Made in China 2025" as an opportunity to establish its presence in smart cement manufacturing 4.0, as it taps into the advantages of connecting people with objects, data, as well as the merits of efficient and intelligent equipment and robust control systems. We adopt big data analysis and AI intelligence to carry out intelligent production, delivery and management, to keep reducing production costs and improving product quality.

# **Objectives for Intelligent Manufacturing Cement 4.0**



# The implementation of smart cement manufacturing 4.0 of Asia Cement (China) in 2018 is summarized in the following table:

Smart Manufacturing Project	Implementation	Expected Result
Smart mining	Establishing a limestone quality database in the mining area to guide the pre- homogenization and proportioning of the mine; studying the use of an appropriate online detection system to provide real-time analysis of the limestone quality of the mine; conducting software analysis of the fluctuation of limestone quality; and timely adjusting the mining area and proportion.	Optimizing the reasonable use of limestone and spoil of the mine, reducing resource wastage; improving the quality stability of limestone blanking of the mine, mitigating the fluctuation of raw material ingredients in the plant, and improving the quality of sintered clinker.
Smart production process	Adopting sandstone grinding technology, ammonia-free denitration process, and ceramic-ball cement-grinding production technology.	Lowering cement production costs and improving cement quality; reducing NOx emissions from the kiln tail to meet environmental requirements on ultra-low pollutant emission; and reducing energy consumption in cement production, and producing low-carbon green cement.
Smart control system	Installing permanent-magnet motors and the variable-frequency motor control system.	Reducing the frequency of switching on and off equipment, the likelihood of equipment damage and power consumption, and improving the stable operation rate of equipment.
Smart maintenance	Carrying out intelligent inspection, equipment vibration analysis, and establishing an equipment repair and maintenance database.	Providing equipment maintenance on a planned basis, reducing equipment failure rate, and improving equipment operation rate and product quality stability; and using the equipment repair and maintenance database to timely analyze various equipment abnormalities with guided solutions, to reduce the duration of kiln shutdown and grinding suspension due to maintenance of equipment malfunctions.
Smart quality control	Establishing a Big Database for clinker and cement quality, using software to analyze abnormalities, timely reporting and addressing abnormalities, and planning a system for automatic coal sampling and sample preparation, and an online system for analyzing the granularity of cement particles.	Actively analyzing and improving the clinker and cement quality of group companies, reducing production costs, and timely addressing various abnormalities to effectively lower the risk of substandard product quality; mitigating the labor cost and human influence of coal sampling and sample preparation, to ensure the reliability of coal inspection data and provide a reliable basis for clinker sintering; and providing automatic and timely feedback on the granularity of cement grinding products to optimize production control and reduce power consumption.
Smart delivery	Conducting research and development of cement sales software	Enabling customer self-service order placement and product collection, simplifying the sales and delivery processes, and improving management efficiency.



#### **GHG Emission and Reduction Measures**

An augmented greenhouse effect caused by human activities is the most important reason for climate change. In the face of global climate change, protection actions need to be accelerated, and reducing greenhouse gas emissions is at the center of risk prevention and control. In recent years, Asia Cement (China) has actively improved energy conservation and carbon reduction measures, and has done a solid job in the construction of the national carbon emission trading market, implemented the carbon emission data base, ensured data quality, and consciously abided by the national greenhouse gas emissions and relevant regulations and documents. Its production of low-carbon green cement products is a response to the national environmental protection principle on reducing greenhouse gas emissions, energy conservation and carbon emissions reduction.

## **GHG Emission**

Asia Cement (China) has implemented climate change in accordance with [2017] No.1989 (The notification of the 2016/2017 carbon emission report and verification and the notification of development of emission monitoring plan) requires a greenhouse gas emission inspection certificate.



Emission of GHG (CO<sub>2</sub>) of Clinker Products in Asia Cement (China)'s Consistent Cement Companies

Note : Emission intensity of CO2=Total emission of CO2 /Clinker output

Company	Year	Clinker output/0,000 tons	Total emission of CO <sub>2</sub> /0,000 tons	Emission intensity of $CO_2$
	2016	1139.4	1001.1	0.879
Jiangxi Yadong	2017	1168.3	1000.6	0.856
	2018	1175.4	1014.5	0.863
	2016	160.8	149.9	0.932
Huanggang Yadong	2017	163.8	141.7	0.865
	2018	167.3	151.2	0.904
	2016	328.4	302.7	0.922
Hubei Yadong	2017	344.6	290.9	0.844
	2018	329.8	315.9	0.958
	2016	97.2	91	0.936
Wuhan Yaxin	2017	91.7	77.1	0.841
	2018	85.2	79.9	0.938
	2016	438.6	398	0.907
Sichuan Yadong	2017	372.8	325.4	0.873
	2018	413.1	361.6	0.875
	2016	267	242.7	0.909
Sichuan Lanfeng	2017	275.4	241.1	0.875
	2018	309.2	269.4	0.871

Since the Development and Reform Office implemented the greenhouse gas emission monitoring program in 2017, Asia Cement (China) has been active in improving greenhouse gas emissions - online monitoring, collecting real-time data, and taking GHG emission reduction measures as one of the top priorities. So far, the GHG emission intensity of Asia Cement (China) has been controlled to below 0.9, indicating the Company's sustained efforts to reduce GHG emissions and fulfill its social responsibility for environmental protection.



#### Average Emission Intensity of Greenhouse Gas (CO<sub>2</sub>) in Asia Cement (China)

# Measures to Reduce GHG (CO<sub>2</sub>) Emissions from Cement Kilns:

Choose a reasonable cement preparation formulae to improve burnability of raw materials, reduce burning coal of during clinker calcination process and consumption and heat.

# Under the premise of guaranteeing the quality of cement clinker, decrease the Ca0 content in clinker appropriately, and reduce the usage of calcium carbonate in cement clinker.

3

Reduce the amount of clinker used in cement production: blend in industrial wastes such as slag, fly-ash, coal slag, etc. in appropriate proportions to replace some of the clinker during the cement production process; appropriate amounts of cement grinding aids are added in cement grinding to increase production of cement mills and reduce ratio of cement clinker; can greatly reduce the  $CO_2$  emissions generated by clinker.

Replace fuel with combustible waste, e.g. industrial waste and urban sewage sludge.

Continuously optimize and reform production equipment to save energy.

# Social Care

# Environmental Education

#### **Result of Energy Saving and Carbon Reduction**

In compliance with "The 13th Five-Year Plan" Integrated Work Program for Energy-saving and Emission Reduction of the state council, all cement companies under Asia Cement (China) strengthened scientific management and implemented tasks related to energy saving and emission reduction. Main energy saving measures and results in 2018: Reduced electricity consumption by 8960 MWh, which is equivalent to reducing a total of 7,000 tons in  $CO_2$  emission. The clinker consumption is reduced by 198,000 tons of  $CO_2$ , a total of about 205,000 tons of  $CO_2$ .

Company	Main Energy-saving Measures	Energy-Saving Results
Jiangxi Yadong	Transformation of ceramic grinding medium in the chamber 2 of #6#7#8 cement grinding ball mills.	Reduced electricity consumption by 399 MWh
	The grinding sanding time #4 raw material mill accounts for about 25% of the grinding machine running time, and the system windmill baffle opening degree is about 65%; the windmill has poor operating efficiency and generates considerable wastage. Under the transformation, a new 2500KW system windmill has been installed and dedicated to sandstone powder grinding, which can reduce power consumption.	Reduced electricity consumption by 1761 MWh
	#3#4 pre-heaters went through a low-nitrogen combustion transformation project, to change the coal injection point of the preheater, and changes the coal injection of the preheaters from the original three tubes into the ascending channel, which reduces nitrogen oxides and denitrifying ammonia consumption.	Saving 2,000 tons of ammonia
	14126 belt conveyor transformation project.	Reduced electricity consumption by 53 MWh
	#7sandstone mill liner transformation.	Reduced electricity consumption by 1,676 MWh
	Transformation of the sandstone crushing system with installation of screening machines.	Reduced electricity consumption by 18 MWh
	Transformation of raw material mill feeding machines.	Reduced electricity consumption by 1,300 MWh
	The raw material inbound system with a small dust collector suspended.	Reduced electricity consumption by 36 MWh
luanggang Yadong	Application of 205 tons of cement grinding aids to reducing the ratio of cement clinker.	Reduced clinker consumption by 18,000 tons of CO <sub>2</sub>
	Chain alteration of the clinker outbound conveyor allows the conveyor to stop operation when unused.	Reduced electricity consumption by 173 MWh
Hubei Yadong	Changing the built-up welding size of the grinding disc of the cement mill increases the stability of the mill and reduce the volume of water spray, which leads to a lower ratio of cement clinker, higher hourly output and less coal powder consumption for drying purposes.	Saving 141.48 tons of coal Reduced electricity consumption by 3,183 MWh Reduced clinker consumption by 24,000 tons of CO <sub>2</sub>
	Optimization of ammonia spray guns (SNCR).	Saving 730 tons of ammonia
Sichuan Yadong	Air compressors change from fixed frequency to permanent magnetism frequency (two units).	Reduced electricity consumption by 240 MWh
	Optimization of fuel injectors for drying kilns (per time).	Saving 8 tons of ammonia
	Application of cement grinding aids to reducing the ratio of cement clinker.	Reduced clinker consumption by 156,000 tons of CO <sub>2</sub>
Sichuan Lanfeng	Denitrification transformation of #1#2 kilns in 2018.	Saving 1,400 tons of ammonia
	Recycling and reuse of the water discharged from residual heat power generation.	Saving 150,000 tons of water
	Replacement with 11 sets of energy-saving motors, with an aggregate capacity of 531KW.	Reduced electricity consumption by 67 MWh
Taxin	Replacement with 36 sets of electrodeless lamps and 38 sets of LED lamps.	Reduced electricity consumption by 35 MWh
	Energy-saving transformation of the capacitors of Wu 34 substation (saving 6KW of electricity per hour).	Reduced electricity consumption by 19 MWh

# **Energy Density**

Asia Cement (China) is implemented in accordance with the national standard "Energy Management System Requirements" (GB/T23331-2012/ISO50001: 2011) and "Energy Consumption Limit for Cement Unit Products" (GB16780-2012), and set up a long-term energy saving goal. We actively implement energy conservation and efficiency, and work hard to reduce energy intensity. Energy intensity in 2018 was 0.01GJ/ ton lower than that in 2017.



Energy consumption of cement (MCAL/ton) — Energy density (GJ/ton cement)

Asia Cement (China)'s Cement output (ton)			
2016	2017	2018	
24949810	24081816	25479957	

## **Waste Heat Power Generation System**

Each cement company of Asia Cement (China) has a residual heat power generation system that uses the residual heat generated by the rotary kiln system to produce hot water, then provides generator power through high-pressure steam generated by the boiler. Through recovering residual heat from the cement kiln to generate electricity not only saves energy and reduces carbon, but also protects the environment.

According to the statistics of waste heat power generation and plant electricity consumption of the six cement companies of Asia Cement (China) for the period 2015-2018, compared with the previous two years, the proportion of waste heat power generation in 2018 reached 29.55%, which was the highest in the past years, and the performance of energy saving and carbon reduction was good.



## **Implementation of Energy Management**

Each cement company of Asia Cement (China) actively performs energy conservation related work with the company's energy management policy. Examines the abnormality of production equipment through daily production line of coal consumption, electricity, oil and other statistical data, strengthen the control of energy consumption process, identify and control each factor that's affecting energy consumption, and implement specific operations of departments, posts, and personnel to achieve systematic management; review of energy consumption and implementation progress of energy-saving projects on a monthly basis; analyze and review the status of the implementation of energy saving and performance on a quarterly basis, and conduct annual energy management system review, etc.; constantly improving the level of energy management and energy efficiency, and optimize and reform energy-consuming equipment, or replace high energyconsuming equipment, improve the production process, reduce the overall energy consumption of the product, and achieve sustainable development of the Company.



# 2.4 Water Resource Management and Pollution **Prevention**

Asia Cement (China) shall consume appropriate amount of water resources in the production process, and always regards water resources management as an important task. By analyzing statistics of water used and water produced in daily production lines to better control the use of water, it identifies and controls every factor that affects the consumption of water resources, and implements specific water conservation measures for departments, posts, and personnel. It also conducts review of water resources consumption on a monthly basis, and compares, analyzes and reviews the implementation of water conservation and performance on a quarterly basis in order to constantly improve the level of water resources management and water-use efficiency, and eventually achieve sustainable corporate development.

### Water Resource Utilization

#### Water Sources and Water Consumption

Cement companies under Asia Cement (China) usually supply water for production and domestic usage through self-built water station and its water sources derive mainly from surface water of rivers near the companies, while cement grinding companies mainly use city tap water.

Water Sources of Cement Companies under Asia Cement (China) Company Water Sources Jiangxi Yadong Upstream section of the Yangtze River in Matou town Huanggang Yadong Wuxue section of the Yangtze River Nanchang Yadong Tap water in Nanchang City ..... Hubei Yadong Yangluo section of the Yangtze River Wuhan Yaxin Tap water in Jiangxia District, Wuhan City Wuhan Yadong Tap water in Dongxihu District, Wuhan City Sichuan Yadong Renminqu, Dujiangyan, Pengzhou City, Chengdu City Sichuan Lanfeng Aishanhe & Renmingu, Pengzhou City, Chengdu City Yangzhou Yadong Tap water in Yangzhou City

Water resources used in production of cement companies under Asia Cement (China) are mainly component cooling water and they use water recycling system which can recycle water after cooling, significantly reducing water consumption with a small amount of evaporation loss and no emission. The sewage is mainly from staffs' domestic water and they use rain-sewage separation system which can recycle sewage as water for afforestation, car washing, floor washing, dust control or can be discharged into the local municipal sewage pipe network.



Yaxin

Yadong

Yadong

Lanfeng

Yadong

### Water Usage Process of Each Cement Company of Asia Cement (China):

Yadong

Yadong

Yadong

Yadong



## Purification Method of Self-owned Water Station:

Mainly for precipitation, filtration and add the appropriate chemicals to purify water. Take Jiangxi Yadong for example, firstly, the drawn water will be removed sands and precipitated. Secondly, it will be added aluminium polychlorid to the water as flocculants to separate the sludge and impurities during sedimentation. And then, the water will be drawn to the water purifier for secondary filtration after sedimentation. Finally, after adding chlorine dioxide to the filtered water for disinfection, the clean water will be drawn to clean water tank for production and domestic uses.

# The Flow Chart of Purification Treatment of Jiangxi Yadong's Water Station :



#### Efficient Use of water for production and water conservation measures

The water used in production process by each cement company of Asia Cement (China) is recycled and reused. Taking Jiangxi Yadong as an example, the raw water from the upstream section

of the Yangtze River in Matou town is purified and then sent to the reservoir on Mopan Mountain for storage as tap water by using pumps. When using water during production, the downstream from high to low levels will be used to provide cool water and residual heat power generation for each equipment. Afterwards, the used water will be cooled by the cooling tower and flows back to the wells, then be pumped back to the reservoir on Mopan Mountain for storage and reuse. During



the production process, while the water-use measures mentioned above could lead to a small amount of water being evaporated, the rest of the water can be recycled and reused, achieving the efficient use of water resources management and the concept of water conservation.

## **Treatment Measures of Domestic Sewage**

Domestic sewage of cement companies under Asia Cement (China) is treated by "Biological contact Oxidation". The contact oxidation tank uses TDK elastic space packing of easy conjunctiva which possesses large specific surface and good oxidation resistance, while the oxidation pond uses submerged underwater aerators with low noise pollution. The removal rate of CODcr and BOD<sub>5</sub> is up to 73% and 88%, respectively. The processing rate of ammonia nitrogen is up to 71%. The quality of water generated can reach Grade I standard as set out in the Integrated Waste Water Discharge Standard (《污水综合排放标准》) (GB8978-1996).

#### Sewage Treatment Flowchart:



First, by cleaning the grilles on a regular basis, we remove large suspended solids of the water which is pumped into grease trap. With the rationale of water inflow from the top and water outflow from the bottom, the grease trap removes grease from the surface of sewage, which then flows into the adjustment tank, a device that homogenizes the quality and quantity of sewage. Afterwards, sewage is pumped into contact oxidation tanks, where such water fully contacts with the activated sludge produced by aeration devices and aerobic bacteria degrade organic pollutants. Finally, the water enters sedimentation tanks which separate the activated sludge arising from aeration through gravity, with the upper purified liquid to enter into clear water tanks and can be reused for afforestation, car washing, floor washing and dust control or discharged into the local municipal sewage pipeline network. The quality of the discharged water complies with the local sewage discharge limit.

Company	Water quality project	РН	Suspended solids mg/L	Chemical oxygen demand mg/L	Biological oxygen demand mg/L	Ammonia nitrogen mg/L	Total phosphorus mg/L	Oil type mg/L	Animal and vegetable oils mg/L	Qualified
Jiangxi	Emission limits of sewage	6-9	≤70	≤100	≤20	≤15	≤0.5	≤5	-	v
Yadong	Average value of measurement	7.1	8	10	3.5	0.066	0.9	-	-	v
Huanggang	Emission limits of sewage	6-9	≤70	≤100	≤20	≤15	≤0.5	-	-	.,
Yadong	Average value of measurement	7.59	9	24	10.3	0.827	0.11	-	-	V
Nanchang	Emission limits of sewage	6-9	≤70	≤100	≤20	≤15	≤8	-	-	
Yadong	Average value of measurement	7.45	24	39	10.3	14.6	2.04	-	-	V
Hubei	Emission limits of sewage	6-9	≤400	≤500	≤300	-	-	≤20	-	
Yadong	Average value of measurement	7.53	14	62	11.2	5.58	1.5	0.13	-	V
Wuhan	Emission limits of sewage	6-9	≤70	≤100	≤20				≤10	
Yaxin	Average value of measurement	7	52	65	17	-	-	-	7	V
Wuhan	Emission limits of sewage	6-9	≤70	≤100	≤20	≤15	≤0.5	-	-	
Yadong	Average value of measurement	7.4	8	15	3	0.145	0.304	-	-	V
Sichuan	Emission limits of sewage	6-9	≤20	≤60	≤20	≤8	≤1	≤3	-	
Yadong	Average value of measurement	7.12	6	5	0.9	1.48	0.147	0.06	-	V
Sichuan	Emission limits of sewage	6-9	≤150	≤150	≤30	≤25	-	≤10	≤15	.,
Lanfeng	Average value of measurement	7.55	12	34.5	16	7.05	-	0.16	0.25	v
Yangzhou	Emission limits of sewage	≤9	≤400	≤500	-	≤35	≤20	-	-	.,
Yadong	Average value of measurement	7.18	4.5	15.5	-	3.811	2.35	-	-	v

Low-carbon Green Intelligent Manufacturing

SO₂/ton

53

Particulate pollutant/ton

Nitrogen oxide/ton

953

#### Water Conservation Management Measures

Install flowmeters and water meters in main water- using areas and workshops to monitor water production and usage on a daily basis, and to analyze water usage by comparing the data recorded so as to strictly prevent pouring, dripping and leakage of water; review water consumption on a monthly basis, and compare, analyze, and review the implementation and performance of water conservation measures on a quarterly basis.

> Strengthen the propaganda of water conservation and raise employees' awareness of water conservation

4

Recycle the cooling water used in production equipment, reasonable control water temperature and water consumption, reduce the use of new water consumption And strengthen the field equipment management, prevent equipment leakage and other fault pollution of circulating cooling water.



Recycle and reuse domestic sewage after treatment to clean the wheels of outgoing raw material vehicles, spray on roads to reduce dust, go green, wash car, etc.

Nitrogen oxide/ton

### **Air Pollution Prevention**

Particulate pollutant/ton

In recent years, Asia Cement (China) responds to the national plan for accelerating the green development of cement industry, Adopting advanced and optimized manufacturing technology and various pollution prevention and control measures according to the latest national environmental protection requirements, so that each pollutant emission index is better than the national environmental protection requirements.

3



■ SO<sub>2</sub>/ton

# Total Emission of Main Air Pollutants in Asia Cement (China)'s Consistent

	2016	261	726	4617
Jiangxi Yadong	2017	244	1182	4624
	2018	257	1368	5447
	2016	29.1	84.6	985
Huanggang Yadong	2017	27.6	105.6	688.6
	2018	39.3	43	613.6
	2016	163	338.4	1301
Hubei Yadong	2017	183.6	131.8	1171
	2018	90	88	1064
	2016	55.4	49	504.5
Wuhan Yaxin	2017	51.8	10	489.6
	2018	21.9	19.6	453.8
	2016	239.4	111.5	2460
Sichuan Yadong	2017	160.4	89.6	1927
	2018	71.4	49.1	1073
	2016	150.7	135.9	1294
Sichuan Lanfeng	2017	172	85	1662

### **Prevention and Control of Major Pollutants**

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#### Particulate Pollutants Treatment

2018

Types of emissions

Asia Cement (China) has adopted the most advanced dust collecting devices and extensively used the dust collection bag device to collect fine particles of raw materials and cement. For example, we have adopted heat resistant (NOMEX, 240°C) bag dust collectors for the collectors of our head kilns, while installing our proprietary dust collection covers and equipment for loading packaged cement. Such devices control the unorganized dust emission concentration of the packaged cement loading system to below 1.5mg/m<sup>3</sup>, thus significantly improving the working environment for workers and achieving clean production within the packaging workshops.

#### Particles (soot and dust) emission concentration of each cement companies of Asia Cement (China)

Average concentration o	f particles	; (mg/	′m°)
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	2016		2017			2018		
Company	Upper limit of emission	Annual average	Upper limit of emission	Annual average measured value		Upper limit of emission	Annual average measured value	
	standards	measured value	standards	Soot	粉尘	standards	Soot	粉尘
Jiangxi Yadong	Soot:30	10.7	Soot:30	9.1		Soot:30 Dust:20 Soot:20 Dust:10	16.9	14.3
Huanggang Yadong		17.6	Dust:20	15.25			8.38	12.31
Hubei Yadong		14	Soot:20 Dust:10	13	6.6		8.6	5.2
Wuhan Yaxin	Dust:20	14	Soot:20 Dust:20	7.43	7.43		4.65	6.9
Sichuan Yadong		8.8	Soot:20 Dust:10	17.3	8.9		3.34	3
Sichuan Lanfeng		13.3		9	6		8	2

Particles (dust) emission concentration of three cement grinding companies under Asia Cement (China)

Average concentration of particles (mg/m <sup>3</sup> )								
	20:	16	2	017	2018			
Company	Upper limit of emission standards	Annual average measured value	Upper limit of emission standards	Annual average measured value	Upper limit of emission standards	Annual average measured value		
Wuhan		#1cement grinding=10		8.4	#1cement grinding=10	7.7		
Yadong	20	13.0	#2cement grinding=20	0.4	#2cement grinding=20	10.3		
Nanchang Yadong	20	9.2	20	8.2	20	9.7		
Yangzhou Yadong		15	10	5.1	10	3.5		

### Nitrogen oxide (NOx) prevention and control

Six consistent cement companies under Asia Cement (China) adopt low-nitrogen combustion denitrification and ammonia denitrification technology to significantly reduce the concentration of NOx emission from the smoke of kilns.

#### Sulfur dioxide (SO<sub>2</sub>) prevention and control

In order to control the emission of sulfur dioxide, on the one hand, the six consistent cement companies under Asia Cement (China) try their best to use fuel with low sulfur, controlling the emissions of sulfur dioxide from the source; on the other hand, they actively improve the production technology. For example, Hubei Yadong newly added slaked lime dry powder desulfurization technology, which successfully applied the addition of appropriate amount of slaked lime powder into kiln system preheater and raw materials into the large bag collectors at the end of kilns when the raw meal mills was stopped, to substantially collect the SO<sub>2</sub> from the kilns' waste gas, effectively controlling the concentration of SO<sub>2</sub> emissions from the kilns' waste gas below  $100 \text{mg/m}^3$ .



Note : The above is the emission concentration of six consistent cement companies under Asia Cement (China) )

# **Expenditure on Pollution Prevention and Control**

In 2018, the consistent cement companies and cement grinding companies under Asia Cement (China) invested RMB136,340,973 in pollutants control, which covered the operation expense for dust collection, desulfurization and denitrification devices, the expense for treating pollutants discharge in the factory area, and the environmental protection tax.

Dust removal equipment	Operation expense for big bag dust collectors, bag collectors and static dust-eliminating devices (RMB)	Denitrification operation expense (RMB)	Desulfurization operation expense (RMB)	Pollutants discharge fee paid and environmental protection tax to the government (RMB)
Jiangxi Yadong	28340474	19980284	9189282	8174745
Huanggang Yadong	2930000	2148000	-	1764716
Hubei Yadong	4400000	5170000	2410000	2801692
Wuhan Yaxin	520467	1111598	66000	1163000
Sichuan Yadong	21669796	5929263	0	3115950
Sichuan Lanfeng	1827000	5695000	0	2316069
Wuhan Yadong	511432	-	-	68982
Nanchang Yadong	3989000	-	-	100000
Yangzhou Yadong	926217	-	-	22006
Total	65114386	40034145	11665282	19527160

### Other pollution prevention and control measures and operating costs:

Company	Control Measures	Pollutants discharge fee paid and environmental protection tax to th government (RMB)
Huanggang Yadong	Sewage treatment stations	150000
	Installing anti-dust fog cannons (8st) on the trunk roads of the factory area to control dust	40000
Wuhan Yaxin	Sealing the factory of the manufacturing team and the vehicle assembling system of warehouse affairs team to control dust and noise	180000
	Installing dust collectors (1st) in the cement packaging workshop of the warehouse affairs team to control dust	350000
Sichuan Lanfeng	Installing sound insulation barriers and mufflers in our factory area to control noise	700000
Wuhan Yadong	Underground sewage processors	20000
	Installing the car washing platform	26000
Nanahang Vadang	Covering the stockyard with dust proof nets	10414
Nanchang Yadong	Installing anti-dust fog cannons to reduce dust	8652
	Installing environmental monitoring devices	95200
Yangzhou Yadong	Using sewage in the production of concrete	5000
Chengdu Yali	Installing water spray devices on the site and maintaining and repairing spray devices	14000
Sichuan Yali	Sprinkler trucks of Sichuan Yadong washing the factory area on every Monday, Wednesday and Friday	0
	Installing a car sprinkling system at the entrance of the Company to reduce dust	4200
	Total	1603466

# Penalties Concerning Environmental Protection

The Penalties Concerning Environmental Protection in 2018 include Hubei Yadong、Wuhan Yadong and Yangzhou Yadong, the statistics of companies' environmental penalties are as follows:

Company	Times of being fined for violation of environmental laws	Amount fined for violation of environmental laws (RMB' 0,000)	Description
Hubei Yadong	1	35	On 3 September 2018, Wuhan Environmental Protection Bureau conducted a site inspection at the Company and found no centralized collection and processing measure in place for coal powder (raw coal) in our coal storehouse, desulfurization gypsum, limestone, non-ferrous metal slag, sandstone, fly ash feeds and coal unloading points for vehicles, which resulted in significant unorganized dust emissions. Therefore, the Bureau imposed an environmental administration penalty of RMB350,000 (RMB50,000 per site) to our Company.
Wuhan Yadong	1	11	On 18 September 2018, the Inspection Detachment of Wuhan Environmental Protection Bureau conducted a site inspection and found no centralized collection and processing measure in place at Feeds 1 and 2, the clinker feed, the slag stockyard, as well as raw material conveyor belts 1 and 2, which resulted in significant unorganized dust emissions. Therefore, the Bureau imposed an administrative penalty of RMB110,000 to our Company.
Yangzhou Yadong	2	10	Two RMB50,000 fines was imposed successively for no proper coverage by dust proof nets for some raw materials at the gravel stockyard of the manufacturing factories.

Green Sustainable Circulation 3: Recycling Economy

# **Recycling Economy--Management Policy**

Asia Cement (China) vigorously promotes circular economy under the orientation of resource conservation, recycling and reuse, and works on the application of various industrial wastes to cement production. In addition, we continuously study and develop new technologies to improve the amount of waste utilization, , increase the types of waste as alternatives raw material and fuel for green cement production. The move is designed to effectively reduce the pollution of soil, water, air and surrounding environment by long-term storage of various wastes and alleviate the excessive dependence on natural resources, while actively responding to state policies with low consumption, low discharge and high efficiency as our goals to create harmonious progress between economic development and our ecosystem.

The cement process has superior 3T characteristics (high temperature, long time residence, strong turbulence), so the development of Recycling Economy in cement plants is the most essential strategic direction.



# **3.1** Comprehensive Utilization of Industrial Wastes Resources

Asia Cement (China) leverages its advanced production technologies by using waste ingredients such as limestone powder, converter slag, non-ferrous metal slag, electric furnace slag, sulfate slag and tailings during raw material production, with less consumption of clay, sandstone and iron ore during the production to reduce our dependence on natural mineral resource. In our cement production, some cement clinker and natural gypsum have been replaced by slags such as fly ash, coal slag, limestone powder, desulfurized gypsum, phosphor gypsum and construction waste to produce green cement of high quality and with low energy consumption.

Asia Cement (China) continuously optimizes production technique and broadens the type and quantity of slags utilized, with a view to creating the maximum benefit of the Recycling Economy, win the "Blue Sky Campaign" and make unremitting efforts to offer our next generations a pleasant environment with green mountains and clear water.

# The Total Utilization Volume of Industrial Slag

#### The Total Utilization Volume of Industrial Slag by Consistent Cement Companies under Asia Cement (China) (0,000 tons)



# The Utilization Volume of Industrial Slag by Cement Companies under Asia Cement (China) in 2018 (ton)

Company Industrial wastes	Jiangxi Yadong	Huanggang Yadong	Nanchang Yadong	Hubei Yadong	Wuhan Yaxin	Wuhan Yadong	Sichuan Yadong	Sichuan Lanfeng	Yangzhou Yadong
Fly-ash	95403	45004	86476	356614	0	23242	0	0	98735
Coal slag	134071	59446	0	0	19188	88888	0	12060	19102
Limestone powder	0	176092	91351	744046	735121	72126	0	0	66925
Desulfurization gypsum	394643	107959	0	237906	65842	69898	119543	0	118878
Phosphogypsum	24428	16938	0	7174	0	4167	205559	160822	0
Converter slag	0	15451	0	0	0	0	0	0	0
Non-ferrous metal slag	0	0	2935	52066	0	66088	36931	21880	0
Electric furnace slag	0	0	0	132040	42358	0	27298	8472	76318
Sulfate slag	0	0	0	0	0	0	99042	74889	0
Tailings	641868	73123	0	0	0	0	10066	0	0
Construction waste	49845	0	5	0	0	0	0	26977	0
Others	0	0	0	5613	0	0	196805	34537	0
Subtotal	1340258	494013	180767	1535459	862509	324409	695244	339637	379958

# g Economy

# 3.2 Wastes Disposal

Waste produced by companies under Asia Cement (China) during the production and transportation processes are mainly general production and household wastes. Its disposal strictly follows the national environmental protection requirements. We adopt categorized waste processing in response to the state policy and concept that "green mountains and clear water are the most precious assets" (绿水青山就是金山银山) and "we shall not be engaged in destructive development, but properly work on environmental conservation" (不搞大开发共抓大保护).of which the recyclable wastes were recycled before reuse, for instance, waste oil is recycled for use in the lubrication of field equipment such as scrapers and reels, and waste refractory bricks are recycled and reused by qualified institutions commissioned by the Company; non-recyclable waste is considered to be used as a furnish when it is incinerated into the kiln or into the raw material mill; the waste batteries were recycled and disposed of by gualified institutions commissioned in accordance with environmental regulations. In the production process, following the three principles of "reduction, reuse, and recycling" of recycling economy, recycling materials are used as many times as possible, converting wastes into resources for reuse, which can minimize the impact on the natural environment. Meanwhile, in view of the high temperature of cement kilns and the high compatibility of cement clinker, we are actively engaged in collaborative cement kiln disposal of domestic waste and sludge as well as industrial waste produced during social and production life, so as to build a pleasant living environment with well-preserved nature and ecology.

# **Type of Wastes**



Wastes Disposal (ton) Type of wastes	2016	2017	2018
Household wastes	1440	1512	1365
Cement kilns coordinate waste disposal ( domestic sludge )	0	1200	5268
Waste soil, gravel, waste concrete, and test blocks	8934	7931	2179
Refractory bricks	170	572	477
Waste metal	2586	2572	2270
Waste paper	5	5	6.2
Waste belts and tires	171	588	58.2
Waste lubricating oil and engine oil	358	162	344
Waste chemical test solution	2.2	4	4.2
Waste cable and batteries	2.6	4	9.8
Others (waste wood)	0.06	14	35.6
Subtotal	13669	13364	12017



# **Social Care--Management Policy**

Based on the sustainable development strategies on the social aspect of "create a happy work place, support the vulnerable groups, promote the fine culture, and create a harmony society", Asia Cement (China) will accomplish its social care mission of becoming "the first choice partner for building a sustainable green home" by community activities, donation to the vulnerable groups, human science education and ecology environment protection. This helps us to promote the positive energy throughout society.

Focusing on the community and becoming a partner that grows together with the community help to create a win-win situation, which can be linked to the sustainable growth of Asia Cement (China). At the beginning of each construction, we will conduct impact assessment on the community where our factory operates, continuously discuss with the community to reach consensus, make efforts in the community development plan and other activities. By doing so, we will achieve our social care mission of becoming "the first choice partner for building a sustainable green home".

# Evaluation Methods:

- ① We keep tracking the attainment of our action plans through the CSR report.
- We evaluate our social expenditure items and expense breakdown, which is collated by the CSR Committee and submitted to the committee chairperson for approval.

## > Policy and Commitment:

Asia Cement (China) provides all necessary assistance for the caring and education of underprivileged groups.

# **Specific Actions and Initiatives:**

# Community Infrastructure Construction

Support community activities
 Assist post-disaster reconstruction of surrounding villages
 Support community's public welfare undertakings

# Care for the Vulnerable Groups

Participate in public welfare activities
Reaching out to vulnerable groups
Employees help each other

#### Support to Education Undertakings

Support school construction
 Support campus activities
 Award outstanding teachers and students

### Poverty Alleviation

Support the construction of poverty-stricken villages
 Provide subsidies to financially difficult families



# 4.1 Local Communities and Vulnerable Care

### **Community Activities**

Asia Cement (China) spares no efforts in contribution to the local communities. The expenditure on participation in community activities accounted for the first largest share. We actively promote friendly interaction, Good-neighbourliness between operations and local communities. We fully implemented the social sustainable development strategy for creating a harmony society.

In 2018, subsidiaries of Asia Cement (China) have donated cement, concrete and gravel RMB692,427 and cash RMB129,928 to the neighboring communities in a total of 21 times. Cumulative amount RMB8822,355.

NO.	Company	Donor	Donation	Value
1	Jiangxi Yadong	Port Bureau of Jiujiang City	Cement donation	¥3500
2	Jiangxi Yadong	River Bureau of Ruichang City	Cement donation	¥6675
3	Jiangxi Yadong	Dawufeng Village, Hongxia Township, Ruichang City	Cement donation	¥6316
4	Jiangxi Yadong	Sanyuan Village, Ma-Tou Town	Cement donation	¥4250
5	Jiangxi Yadong	Xiazhang Natural Village, Shengli Village, Ma-Tou Town	Cement donation	¥425
6	Jiangxi Yadong	Changzui Village Ma-Tou Town	Cement donation	¥11155
7	Jiangxi Yadong	Tuanjie Village, Shangtian Natural Village, Ma-Tou Town	Cement donation	¥4467
8	Jiangxi Yadong	Shengli Hujia Natural village, Ma-Tou Town	Cement and concrete donation	¥237
9	Jiangxi Yadong	Ma-Tou Central Health Centre	Cement donation	¥667
10	Huanggang Yadong	Lanzhou Community	Cement and crushed stone donation	¥446
11	Huanggang Yadong	Xiazhao Village	Cement donation	¥188
12	Huanggang Yadong	Luohuyu Village	Cement donation	¥376
13	Jiangxi Yali	Nanxia Village, Huayuan Township, Ruichang City	Cement donation	¥495
14	Jiangxi Yali	Longquan Village, Ma-Tou Town, Ruichang City	Cash donation	¥160
15	Wuhan Yaxin	Lingang Village, Zhifang Street, Jiangxia District	Cash donation	¥ 300
16	Wuhan Yaxin	Lingang Village, Zhifang Street, Jiangxia District	Cement donation	¥ 546
17	Wuhan Yaxin	Guanghui Village, Shanpo Street, Jiangxia District	Cement donation	¥ 41
18	Sichuan Yadong	Tianshengqiao Village, Tongji Town, Pengzhou City	Cash donation	¥839
19	Sichuan Yadong	Xinrun Community, Longfeng Town, Pengzhou City	Cement donation	¥117
20	Sichuan Yadong	Zhoujia Community, Tianpeng Town, Pengzhou City	Cement donation	¥7
21	Sichuan Yadong	Shihe Village, Danjingshan Town, Pengzhou City	Cement donation	¥123
		Total		¥8223



Sichuan Yadong's community activities



# **Care for the Vulnerable Groups**

Asia Cement (China) prepares budgets for emergency relief annually. In 2018, the total budgets prepared were RMB379,500 (only the cash portion of annual budgets prepared for emergency relief , excluding the physical budget), for contributing to post-disaster reconstruction and for emergency relief and vulnerable groups. Asia Cement (China) cares in every moment for the elderly singletons and underprivileged families in urgent need, and actively organizes various donation and charity activities to raise funds for and encourage them, and to help the vulnerable groups get out of the plight and embrace love!

# Public welfare activities

Jiangxi Yadong	We joined in the 28th National Day for Helping the Disabled held by Ruichang Disabled Persons' Federation, and donated RMB14,529 to purchase calligraphy and paintings (RMB10,000 from the Company and RMB4,529 from its employees).
Jiangxi Yali	We joined in the 28th National Day for Helping the Disabled held by Ruichang Disabled Persons' Federation, and donated RMB12,000 to purchase calligraphy and paintings.
Yangzhou Yadong	We donated RMB10,000 to underprivileged groups and those in need on the "5•19" Charity Day in Yangzhou.

# Reaching out to vulnerable groups

During the Mid-Autumn Festival, we purchased goods worth RMB7,800 to visit 26 poor households in Huluoyu Village, Shifosi, Wuxue City.

Huanggang Yadong

During the "Support in Pairs for Hubei Province" month (湖北省结对帮扶月) in October, we purchased goods worth RMB5,000 to visit 63 poor households in Fenghuang Village, Yuchuan Township.

# Employees help each other

In a bid to carry forward its motto of "mutual assistance, helping those in need and delivering care", we organized a total of 5 staff donations for mutual support in 2018, raising RMB173,663 to help 5 staff members and their families go through difficulties.



Education is the fundamental task for generations to come. Asia Cement (China) continues to introduce corporate resources, focuses on humanistic science education and cooperates with Yuan Ze University and Yadong Technical College under the Far East Group to carry out the cooperative education. Under the cooperation, the Group has promoted industry-academy internships and talents reserve plans, brought in new blood and revitalized the human resource structure, and it has also cooperated with some professional cement colleges and universities in China to help the students cultivate their abilities to combine theory with practice, which will lay a solid foundation for them to adapt to their work environment and workplaces and integrate into the working team.

Currently, many young people choose to attend the vocational schools, because the vocational schools cooperates with relevant industries to carry out "industry, academic and research" collaboration for mutual development, in addition to preparing young people with skills early. It presents a multi-win situation for the future employment of students, schools' grasp of market demand, and the exploration of talents in the industry. In view of this, Asia Cement (China) and its subsidiaries welcome all organizations from all walks of life and schools to visit the Company, and the Company is willing to make plans for related courses and practical experiences. After the event, all the guests and students will be benefited greatly and the Company will gain popular recognition for this.

#### • 2018.01.18

Teachers and students from Wuhan University of Technology visited Hubei Yadong

#### • 2018.02.26-2018.03.02

Mining engineering students from the School of Environment and Resource of Southwest University of Science and Technology visited the mines of Sichuan Yadong

#### • 2018.07.04

Teachers and students from Wuhan Institute of Technology visited Hubei Yadong

## • 2018.07.01-2018.08.31

Students from Yuan Ze University of Taiwan did their internship at Jiangxi Yadong

#### • 2018.10.21

Sponsoring the 15th Jiangxi Provincial Sports Meet with RMB50,000

Collaboration among industry players, schools and research institutions Cooperative education

Talent schemes

# 4.3 Support to Education Undertakings

#### **Ma-Tou School**



In order to implement the concept of "From the society, for the society", in Dec. 2018, Jiangxi Yadong provided 150 tons of PO32.5 cement (approximately RMB 72,750) to Ma-Tou School for building ancillary facilities around the experimental building.

# **Tian-Zhen Primary School**

Tianzhen Primary School held a large-scale arts performance on Children's Day on 1 June, to support the local education enterprise, and received a sponsorship of RMB20,000 in cash from Huanggang Yadong.

# Xin Xing Yadong Hope Primary School (新兴亚东希望小学)

During the Wenchuan earthquake on 12 May 2008, the schools located at the hardest-hit areas of Pengzhou City suffered serious damage and were in most urgent need of reconstruction for maintaining normal educational activities. In order to implement the Company's long-standing concept and fulfill corporate social responsibility, we decided to donate RMB15 million for supporting the construction of the Xin Xing Yadong Primary School in Pengzhou City, which was completed and formally opened for the purpose of education on 1 September 2009 as scheduled. In order to encourage teachers and students of Yadong Primary School to spend great efforts in teaching and learning and making a firm determination to become successful, we set up the "Employee Care Education Fund" by appropriating part of the monthly salary of every executive in Sichuan Yadong as charitable contributions. The Fund will be utilized on a dedicated-fund-for-dedicated-use basis, for recognizing the outstanding teachers and students selected on Teacher's Day and Children's Day by the school every year.

Every year, on Teacher's Day and Children's Day, Sichuan Yadong will send designated personnel to Xin Xing Yadong Primary School for attending the "Teacher's Day" and "Children's Day" celebrations, at which ten distinguished teachers and thirty outstanding students will be selected, and each teacher will be awarded RMB1,000 and each student will be awarded RMB200.





## Social Stabilization Expenditure

In 2018, Asia Cement (China) spent a total of approximately RMB1.58 million in social expenditure. The main expenditure categories were community construction and Environmental Education of approximately RMB1.2 million, accounting for approximately 76%.







Support community activities
 Donation to Vulnerable Groups
 Support to Education Undertakings
 Support/participate in cultural activities
 Environmental protection







# Green Sustainable Circulation 5: Environmental Education

# **Environmental Education--Management Policy**

Asia Cement (China) is committed to building a "garden-style factory". It is committed to the concept of greening empty spaces and no wasteland in the factory area, striving to offer a good working and leisure environment to its staff.

Asia Cement (China) has actively responded to the government's environmental protection policy to promote environmental sustainability, with heavy investments in manpower, materials and financial resources. Each company has set up its special unit as well as green technology staff and workers to grow green plants in living quarters, factory areas and both sides of the road, as a way to demonstrate our commitment to environmental sustainability.

# **Evaluation Methods:**

Each company is equipped with environmental preservation professionals to assess the effectiveness of its plan based on the implementation of environmental protection programs.

# > Policy and Commitment:

- Protecting the ecosystem and raising the awareness.
  - Providing free guided tours and commentaries on environmental preservation.

# Specific Actions and

**Initiatives:** 

- Cultivating green plants
- Transforming the ecological agriculture park of the mine



There is a flower garden and seeds cultivation center in Jiangxi Yadong, Huanggang Yadong, Nanchang Yadong, Hubei Yadong, Sichuan Yadong, Sichuan Lanfeng. It is equipped with greenhouses, shady nets and other facilities to cultivate a variety of seasonal flowers such as dahlia, jellyfish, zinnia, violet, calendula, various chrysanthemums, etc









	Company	Green plant species
	Jiangxi Yadong	Camphor, Sakura, Lily Magnolia, Sago Palm, Ginkgo, Bamboo, Osmanthus, Multiflora Rose, Dahlia, Begonia, Zinnia, Violet, Marigold, etc.
	Huanggang Yadong	Osmanthus, Camphor, Elaeocarpus Decipiens, etc.
	Nanchang Yadong	Ginkgo, Camphora, Violet, Osmanthus, etc.
	Hubei Yadong	Photinia Fraseri, French Holly, Sago Palm, Pile Bokeh, Red Maple, Autumn Zephyrlily, Azalea, Ligustrum Japonicum Thunb, Loropetalum Chinense Var. Rubrum, etc.
	Sichuan Yadong	Ficus Virens, Michelia Chapensis, Camphor, Elaeocarpus Decipiens, Geranium, Red Plum, Sakura, Osmanthus, Weeping Willow, Loropetalum Chinense Var. Rubrum, Ligustrum Vicaryi, Clove, Gardenia, Japanese Serissa, etc.
	Sichuan Lanfeng	Red Plum, Begonia, Winter Sweet, Evergreen Mucuna Stem, Winter Jasmine, lawns, Scarlet Sage, etc.

**5.2** Jiangxi Yadong's Mine Agriculture Park





Jiangxi Yadong promotes environmental education and strives to build a national-level green mine. Apart from building small leisure gardens on both sides of the mine roads, the company has transformed the nearby waste mine storage yard into a nearly 100-acre ecological agriculture park in the mine area. The pond before the agricultural park was also redrained, with 500 kilograms of fry placed in there. Within the park, various fruits and vegetables grow well, with the harvested watermelons, beans, cucumbers and hot chili consumed for food. The staff of the company remarked that "we feel more reassured eating the green vegetables grown by ourselves!"

Three

# Sustainable Governance Circulation

3

#### Corporate Governance

- 1.1 Corporate and Governance Overview
- 1.2 Products and Economy Performance
- 1.3 Climate Change Adaptation and Mitigation
- 1.4 Supply Chain Management
- 1.5 Customer Service

1

# Happy Workplace

- 2.1 Employee Structure
- 2.2 Welfare Competitiveness
- 2.3 Capacity Competitiveness
- 2.4 Occupation Safety and Health

#### Sustainable Topics Management

- 3.1 Sustainable Topics Identification
- 3.2 Stakeholders Assessment and Engagement
- 3.3 Management and Disclosure of Significant Topics
- 3.4 Links to Significant Topics

# Sustainable Action Initiative

- 4.1 ISO 26000 Corporate Social Responsibility Guidelines
- 4.2 ESG Report Index



Sustainable Governance Circulation 1: Corporate Governance

## **Corporate Governance--Management Policy**

With the operation concept of "high quality, high efficiency, high environmental protection, and low cost," Asia Cement (China) not only produces high quality products but also is proud of upholding the highest environmental standard and high efficient production. Besides the cement business, Asia Cement (China) also engages in marine transport and cement mix businesses. It endeavors to create the best value for the Company and biggest interest for the shareholders by integrating relevant resources in the multi-angle operation and to become the first choice partner for building sustainable green home.

# **21.1** Corporate and Governance Overview

Asia Cement (China) operates its business with the principal of sincerity and strives to improve the governance structure of the Company so as to perform its sustainable operating responsibilities. A healthy and efficient board is the governing basis to govern a company well. The Board is committed to maintaining high standards of corporate governance practices to safeguard the interests of the Company's shareholders. Audit Committee, Remuneration Committee, Nomination Committee and Independent Committee were set up under the Board to assist the Board performing company governing rules. Company website have set up special column of investors' relations as a pipeline of delivering and communicating information.

#### Management and Organization Structure of Asia Cement (China)

# Evaluation Methods:

We keep tracking the attainment of our objectives and action plans through the CSR report.

# Policy and Commitment:

- Annual dividend distribution rate remains above 80%.
- We push forward the adaptation and mitigation plan for climate change and participate in carbon disclosure projects each year.

Specific Actions and Initiatives:

1

- Our continuous development of sustainable and innovative products has yielded both economic and environmental benefits.
- Our value chain integration has delivered comprehensive economic benefits.



# **Basic Information**

Company	Asia Cement ( China ) Holdings Corporation	
Employees	3,887 employees.	
Paid-in capital	RMB9.7 billion	
Establish/listing date	March 2006/2008 (stock code: 00743)	
Main product and service	Different types of "Skyscraper" ("洋房牌" ) cement and clinker manufactured by Asia Cement (China)	
Chairman /Director	HSU, Shu-tong/WU, Chung-lih	
Headquarters	No. 6 Yadong Avenue Ma-Tou Town, Ruichang City Jiangxi Province	
Main operation sites of cement production	Jiangxi Yadong、Huanggang Yadong、 Nanchang Yadong、 Hubei Yadong、 Wuhan Yaxin、 Wuhan Yadong、 Sichuan Yadong、 Sichuan Lanfeng、 Yangzhou Yadong	
Production lines and capacity	Jiangxi Yadong has six production lines with an annual output of 11.70 million tons of clinker and 10.50 million tons of cement. Huanggang Yadong has one production line with an annual output of 1.68 million tons of clinker and 2 million tons of cement. Nanchang Yadong has one cement mill with an annual output of 0.6 million tons of cement. Hubei Yadong has two production lines with an annual output of 3.40 million tons of clinker and 4.70 million tons of cement. Wuhan Yaxin has one production line with an annual output of 1 million tons of clinker and 1.50 million tons of cement. Wuhan Yadong has two cement mills with an annual output of 2.30 million tons of clinker and 6 million tons of cement. Sichuan Yadong has three production lines with an annual output of 5 million tons of clinker and 6 million tons of cement. Sichuan Lanfeng has two production lines with an annual output of 3 million tons of clinker and 4 million tons of cement. Yangzhou Yadong has three cement mills with an annual output of 2.30 million tons of cement. Total production capacity amount to 25.78 million tons of clinker and 33.90 million tons of cement.	
Net sales	Clinker and cement sales volume: Asia Cement (China) 30,651,000 tons. Clinker and cement sales amount: Asia Cement (China) RMB 12,120 million.	
Providing services market	Domestic sales covers Jiangxi, Hubei, Sichuan, Jiangsu, Shanghai, Hunan, Henan, Anhui, Zhejiang, Fujian, while some are sold for export to Singapore and the US.	
Sales network	Fifteen sale offices in the PRC: Nanchang, Jiujiang, Ruichang, Shanghai, Wuchang, Hankou, Yangluo, Wuxue, Jiangxia, Xinzhou, Xiaogan, Chengdu, Pengzhou, Yangzhou and Taizhou sale offices. Number of distributors in the PRC: 525.	
Main entities of the consolidated financial reports	Jiangxi Yadong, Huanggang Yadong, Nanchang Yadong, Nanchang Yali, Jiangxi Yali, Hubei Yadong, Wuhan Yaxin, Wuhan Yadong, Wuhan Yali, Hubei Yali, Sichuan Yadong, Sichuan Lanfeng, Sichuan Yali, Chengdu Yali, Sichuan Yali, Yangzhou Yadong, Taizhou Yadong, Shanghai Yali	
Country and region	PRC	

# **Composition and Operation of the Board**

The Board of Asia Cement (China) is its supreme governance unit and major operation decision-making center. The Company recognizes the importance of diversification of board members to the corporate governance and effective operation of the Board. The Company adopts the diversification policy for board members to ensure that the board members of the Company achieve proper balance in diversified aspects like skills, experiences and perspectives so as to improve the effective operation of the Board and maintain high standard corporate governance level. The Nomination Committee under the Board is responsible for identifying qualified persons to act as directors based on a series of diversified category and with reference to the Company's business model and specific needs.

The Board of Asia Cement (China) comprises 11 directors equipped with the knowledge, skills and attainment for their duties.

Title	Name	Main Experience
Chairman	HSU,Shu-tong	Chairman of Far Eastern New Century Corporation Chairman of Far EasTone Telecommunications Co. Ltd. Chairman of Far Eastern Department Stores Ltd.
Vice Chairman	HSU,Shu-ping	Vice Chairman of Far Eastern New Century Corporation Vice Chairman of Far EasTone Telecommunications Co. Ltd.
	CHANG,Tsai-hsiung	Advisor of Asia Cement (China) Director of U-Ming Marine Transport Corporation Supervisor of Far Eastern New Century Corporation
	WU,Chung-lih	CEO of Asia Cement (China) Chairman of Jiangxi Yadong Chairman of Huanggang Yadong Chairman of Yangzhou Yadong
Executive Directors	CHANG,Chen-kuen	Chairman of Hubei Yadong Chairman of Wuhan Yadong General Manager of Jiangxi Yadong
	LIN,Seng-chang	Chairman of Sichuan Yadong Chairman of Nanchang Yadong General Manager of Hubei Yadong
	WU,Ling-ling	Deputy General Manager of Asia Cement (China) Vice Chairman of Shanshui Cement Group Co. Ltd. Chairman of Oriental Holding Chairman of Sichuan Lanfeng Chairman of Wuhan Yaxin
	TSIM,Tak-lung Dominic	Non-executive Director of Playmates Holdings Limited Non-executive Director of Greater China Fund. Inc.
Independent	WANG,Wei	Former Vice President of China National Materials Company Limited Former Vice President of China Building Materials Federation Former Vice President of China Cement Association
Directors	LEE,Kao-chao	Former Director of Economic Research Department in Council for Economic Planning and Development Former Director of the Board of Taipei City Bank Former Independent Director of Asia Cement Corporations
	WANG,Kuo-ming	Former President of Yuan Ze University Former President of Nan Kai University of Technology
#### **Duty of the Board**

Under the leadership of Chairman HSU, Shu-tong, the primary responsibility of the Board is to supervise, and through setting up various Committees thereunder, to improve the supervision and decision-making quality of the Chairman. The Board of Asia Cement (China) convenes at least one meeting every quarter to listen to the operation report and understand the issues encountered during the operation through conversations with the operating team, and if necessary, to urge the team to make some adjustment. The management and the Board of Asia Cement (China) maintain clear and good communication to execute instructions of the Board and business operations, to create the biggest interests for the shareholders together. Total 6 Board meetings were held in 2018.

Title	Name	Actual attendance	Actual attendance rate
Chairman	HSU,Shu-tong	6	100%
Vice Chairman	HSU,Shu-ping	6	100%
	CHANG,Tsai-hsiung	6	100%
	WU,Chung-lih	6	100%
Executive Directors	CHANG,Chen-kuen	6	100%
	LIN,Seng-chang	6	100%
	WU,Ling-ling	6	100%
	TSIM,Tak-lung Dominic	6	100%
Independent	WANG,Wei	5	85%
Directors	LEE,Kao-chao	6	100%
	WANG,Kuo-ming	6	100%

#### **Avoid Conflicts of Interest**

According to current Board practice, any material transaction, which involves a conflict of interests due to a substantial shareholder or a director, will be considered and dealt with by the Board at a duly convened Board meeting. The Company's articles of association also contain provisions requiring Directors to abstain from voting and not to be counted in the quorum at meetings for approving transactions in which such directors or any of their associates have a material interest.

#### **Audit Committee**

The committee members are appointed by the Board of the Company from non-executive directors, and the Committee shall act as the communication bridge for other directors, external auditors and internal auditors (if there was internal audit requirements) in connection with financial and other reporting, internal control, external and internal audit matters and other financial and accounting matters as determined by the Board from time to time and assist the Board to provide independent review in connection with the financial reporting procedures, internal control and the effectiveness of risk management systems of the Company and its subsidiaries, as well as supervise the audit process and perform other duties and responsibilities delegated by the Board.

The Audit Committee comprises Mr. TSIM Tak-lung Dominic (Chairman), Mr. HSU, Shu-tong, Mr. LEE Kao-chao. Two meetings were held by Audit Committee in 2018.

Title	Name Actual attendance		Actual attendance rate
Chairman	TSIM,Tak-lung Dominic	2	100%
Member	HSU,Shu-tong	2	100%
Member	LEE,Kao-chao	2	100%

#### **Remuneration Committee**

The Committee comprises three members appointed by the Board of the Company and most committee members are independent non-executive directors of the Company. The Committee shall review and formulate remuneration structure policy for all directors and senior management of the Company, make recommendations to the Board for its consideration; consult the Chairman of the Board and/or chief executive officer or professional advices if necessary regarding to their remuneration proposals for other executive directors. he members of the Remuneration Committee are Mr. WANG, Kuo-ming (Chairman), Mr. HSU, Shu-tong and Mr. TSIM, Tak-lung Dominic. The Remuneration Committee convened one meeting in 2017.

Title	Name Actual attendance		Actual attendance rate
Chairman	WANG,Kuo-ming	1	100%
Member	HSU,Shu-tong	1	100%
Member	TSIM,Tak-lung Dominic	1	100%

#### **Nomination Committee**

The members of Nomination Committee (which comprises three members) are appointed and removed by the Board ("Board"). The Committee shall review the structure, size and members (including skills, knowledge and experience) of the Board at least annually, and make recommendations to the Board in respect of any proposed changes to implement the Company's development strategy; identify individuals qualified to act as Board members and make recommendations to the Board on the selection and nomination of the individuals for directorships; assess the independence of independent non-executive directors; make recommendations to the Board on relevant matters relating to the appointment or re-appointment of directors and succession planning for directors (in particular the Chairman and chief executive officer). The members of the Nomination Committee are Mr. HSU Shu-tong (Chairman), Mr. TSIM Tak-lung Dominic and Mr. WANG Wei. Nomination Committee convened one meeting in 2018.

Title	Name Actual attendance		Actual attendance rate
Chairman	HSU,Shu-tong	1	100%
Member	TSIM,Tak-lung Dominic	1	100%
Member	WANG,Wei	1	100%

#### **Independent Committee**

The Independent Committee comprises Mr. LEE Kao-chao (Chairman), Mr. TSIM Tak-lung Dominic and Mr. WANG Kuo-ming and shall convene at least one meeting annually. Its primary responsibilities include: reviewing all transactions among the Company, Asia Cement Group and Far Eastern Group to ensure that they are conducted on normal commercial terms and in the ordinary and usual course of business of the Group and if necessary, recommending the Board to correct such transactions or cancel them; establishing, where applicable, guidelines for management to follow while conducting continuing transactions among the Company, Asia Cement Group and Far Eastern Group; reviewing and assessing the ongoing relationships of the Company, Asia Cement Group and Far Eastern Group to ensure the Committee guidelines formulated as aforesaid being complied and maintaining such relationship being fair to the Company and analyzing and assessing any potential conflict of interests among the Company, Asia Cement Group. The Independent Committee convened one meeting in 2017.

Title	Title Name Actual attendance		Actual attendance rate
Chairman	LEE,Kao-chao	1	100%
Member	TSIM,Tak-lung Dominic	1	100%
Member	WANG,Kuo-ming	1	100%

#### **Compliance with Ethic and Honesty and Anti-corruption**

The operation concept of "Sincerity, Diligence, Thrift, Prudence and Innovation" of Asia Cement (China) has been deeply rooted in the mind of the employees. Sincerity represents openhearted and zealous; diligence means hardworking and considerate; thrift is frugal and simple; prudence implies cautious and accurate. In short, "be honest, clear, inquisitive, and do the best" has become part of the corporate culture. There was no corruption event in 2018.

Code of Conduct of Purchase Business in Asia Cement (China) Article 5 (Appropriateness of Laws, Compliance and Anti-Bribery) 1. Personnel of purchase business shall develop the relationship with suppliers according to the laws, and comply with all applicable laws and regulations in the business operations. 2. Commitments of the personnel of purchase business to the suppliers must be legally authorized by the Company and shall not be made in the name of an individual. 3. Corruption and bribery are prohibited. All corruption and bribery shall be strictly handled in accordance with the relevant regulations of the Company, and the persons and matters involved in violation of relevant laws shall be referred to the judicial authority for disposal. 4.All staff are forbidden to ask for or accept any pecuniary or nonpecuniary benefit for themselves or for others from the clients or other persons, companies and institutions who have business contacts with the Company.

Article 6 (Customer Exchanges and Report of Conflicts of Interest) 1. Business-related personnel shall avoid trading with clients who have record of dishonest conducts. When dealing with clients, they shall be made understood and respect the Company's code of ethic and conduct, and will be required to provide written commitments stating that they do not engage in illegal business practices and will not provide unjust benefits or bribes to employees of the Company. When signing a contract, it is advised to establish terms of termination or dissolution of the contract in violation of good faith behavior. 2. When a client has a relationship of private interest with a business personnel or a close member of his/her family thereof, the business personnel shall report on his/her own initiative and follow the avoidance principle during the fulfillment of the business. Business personnel shall not sacrifice the interests of the Company in any way, and seek unjust benefits for themselves, the clients or anyone else.

#### **Participation in Association**

Asia cement (China) has participated in all kinds of organizations in different ways in order to keep close contact with the community and seek for cooperative sustainable development apart from engaging in core cement industry. Main associations participated include:

Company	Association	Identity
	The Entrepreneurs Association of Jiangxi Enterprise Confederation 江西省企业联合会企业家协会	General director
Jiangxi Yadong	ZHONGGUANCUN Green Mine Industry Alliance 中关村绿色矿山联盟	General director
Huanggang Yadong	Wuxue Entrepreneurs Association 武穴市企业家协会	General director unit
nualiggalig fauolig	Huanggang Taiwan Compatriots Investment Enterprise Association 黄冈市台湾同胞投资企业协会	Vice president
Nanchang Yadong	Taiwan Asset Enterprise Association Nanchang 南昌市台资企业协会	Member
Jiangxi Yali	Ruichang New Social Class Representatives Union 瑞昌市新的社会阶层代表人士联谊会	Ordinary member
	Hubei Provincial Cement Industry Association 湖北省水泥工业协会	Vice president
	Wuhan Xinzhou Enterprises Confederation 武汉市新州企业联合会	Vice president
Hubei Yadong	Wuhan Association of Enterprises with Foreign Investment 武汉外商投资企业协会	General director
nuber radong	Taiwan Asset Enterprise Association Wuhan 武汉台资企业协会	General director
	Hubei Integrated Resource Utilization Association 湖北省资源综合利用协会	Ordinary member
	Wuhan Xinzhou District Production Safety Association 武汉市新洲区安全生产协会	Director member
Wuhan Yali	Wuhan Concrete (Mortar) Association 武汉市商混协会	Member
	Chengdu Taiwan Compatriots Investment Enterprise Association 成都市台湾同胞投资企业协会	General Vice president
Calcura Vadara	Chengdu Enterprise Federation/Entrepreneur Association 成都企业联合会/企业家协会	Member
Sichuan Yadong	Sichuan Provincial Cement Association 四川省水泥协会	Director member
	Chengdu Building Materials Association 成都市建材协会	General director
Sichuan Yali	Chengdu Concrete Association 成都市混凝土协会	Member
	Yangzhou Taiwan compatriots Investment Enterprise Association 扬州市台胞投资企业协会	Vice president
	Jiangsu Building Materials Association 江苏省建材协会	General director
Yangzhou Yadong	Yangzhou Building Materials Association 扬州市建材协会	Vice director
	Yangzhou Concrete Association 扬州市混凝土协会	Member
Taizhou Yadong	Taiwan Asset Enterprise Association Taizhou 泰州市台资企业协会	Member

#### **Internal Control and Risk Management System**

Asia Cement (China) actively reviews all the risks and opportunities that the Company encounters. With complete risk management and appropriate crisis management, we can prevent the incident and take the opportunity to improve the operation mode. Meanwhile, we achieve long term risk management through achieving corporate sustainability.



#### Audit Items of Risk Identification

#### Occupational safety and health

Audit the occupational safety and operation work to increase the personal safety maintenance of the employees and contractors.

#### Production management

Conduct control over production efficiency and operation, and coordinate advices of production units and promote the communication.

#### **Customer relations management**

Audit relevant customer complaints in operation and production departments to make sure the appropriate treatment of customer complaints by operation and production departments and make recommendations thereon.

#### Corporate Governance

- 1. Audit the meeting procedure of the Board of Directors and make sure that its operation complies with the requirement of laws.
- 2. Audit transactions of associates and make sure that their purposes, prices and conditions are reasonable and their information disclosure is appropriate.
- 3. Implement the control system of internal material information processing and make sure such system follows the related regulations of the Company.
- 4. Audit the operation of Remuneration Committee and make sure that its operation complies with requirements.

#### Responding

Domestically, we stabilized the market position, set up additional market shipping points in Nanchang and Jiujiang and reduced truck transportation, while enhancing the market share, strengthening the operation efficiency of current production, shipping, and marketing teams, and consolidating the channels of midstream and downstream.

01

We newly increased export sale channels, improved the production of rotary kilns and quality of clinker, and continued to select excellent target market, established production and distribution bases, and expanded customers to achieve the pre-determined goals of selling all products produced and making a stable profit.

02

#### **Products and Services**

Asia Cement (China) has established production or dispatching bases in Jiangxi, Hubei, Sichuan, Jiangsu, Shanghai and so on for production and supplying to meet customer's needs. The Company has set up 15 business offices in total with sales network covering nine provinces and one city, detailed information of which as following: business office of Jiangxi Yadong locating in Jiujiang, Ruichang, Nanchang and Shanghai; business office for Hubei province locating in Yangluo, Xinzhou, Hankou, Xiaogan, Wuchang, Jiangxia, Wuxue; the business office for Sichuan province locating in Pengzhou, Chengdu; business office for Jiangsu province locating in Yangzhou, Taizhou. Each business unit is equipped with professional staffs for assisting sales and after-sales service, which has further enhanced the service efficiency of production and sales.

#### **Sales Network**

#### **Specific Audit Department**

Asia Cement (China) has specific audit department in charge of promoting and supervising the establishment of internal control system by each company for the purpose of maintaining an effective risk control; checking and assessing the effectiveness and sufficiency of internal control system in each company and supervising the effective implementation of internal control system; performing regular and special audit plans and following up the improvement on the defects and irregularities of the internal control systems of the companies under investigation to ensure the ongoing effectiveness of design and implementation of internal control system while maintaining and increasing the overall interest of the enterprise. The annual audit plan, audit report and corporate sustainability issues will be presented by Asia Cement (China) each year to the Board of Directors for approval according to the laws.



#### Brand

Based on the operating philosophy of "high quality, high efficiency, high environmental protection and low cost", the Company has created an outstanding brand image for the "Skyscraper Brand Cement".





Business Presence of Asia Cement (China) (starting from the upstream of Yangtze River)

#### **Financial Performance**

The Company is one of the top 10 enterprises manufacturing cement and clinker in PRC and he ld leading market positions in certain regional markets such as Jiujiang, Nanchang, Huanggang, Wuha n, Chengdu, Yangzhou and so on. In 2018, sales volume of cement remained stable, and the overall p rofit level of the Company is significantly higher than that of 2017 as a result of rising prices in major sales regions since the steady progress of the supply-side reform policy in 2018.

2019 marks the 70th anniversary of the founding of the People's Republic of China and a cruci al year for building a moderately well-off society in all respects. Faced with a changing new era, the Group will work on its operation and management in respect of continuous innovation, efficiency en hancement, cost reduction, structural improvement and quality enhancement. Committed to its cor porate culture of "Sincerity, Diligence, Thrift, Prudence and Innovation", the Group has put forward t he new idea of "Accelerating Transformation – Opening Up New Economy" to promote its transform ation into an intelligent and information-based enterprise, implement ultra-low energy consumption and emission standards, and invest in urban waste and sludge treatment projects. Bo doing so, we se ek its enhance our competitiveness with excellent quality, stable and reliable service, and the spirit o f shouldering social responsibility. Asia Cement (China), as an international group with rich foundatio n, sustainable operation and continuous innovation, is bound to create greater value for the country, shareholders and employees with stellar performance.

<financial performance (based on the combined financial statements)>



In 2018, Asia Cement (China) had distributable surplus of RMB 1.545 per share and distributed cash dividend of RMB0.62 per share, with dividend payout ratio of 40%.

The dividend payout ratio of Asia Cement (China) maintains at a high level of above 20% and the dividend yield ranges from 1.3%-10.5%. We create values for investors continually by adopting steady high dividend distribution policy.





#### **Combined Financial Statements of Asia Cement (China)**

The stable below set out the combined financial statements from 2016 to 2018:

Item	Unit	2016	2017	2018
Operating revenue	RMB'000	6,338,152	7,815,527	11,330,347
Operating costs	RMB'000	5,088,000	5,905,183	6,943,932
Operating gross profit	RMB'000	1,250,152	1,910,344	4,386,415
Net operating profit	RMB'000	563,730	1,236,334	3,624,065
Non-operational balance	RMB'000	(233,408)	(251,504)	(240,915)
Profit before tax	RMB'000	330,322	984,830	3,383,150
Income tax expenses	RMB'000	179,364	348,627	882,360
Net profit for the current period	RMB'000	150,958	636,203	2,500,790
Surplus per share	RMB	0.085	0.384	1.545
Total assets	RMB'000	15,902,155	16,409,987	20,722,346
Total liabilities	RMB'000	6,267,007	6,199,603	8,280,000
Total equity	RMB'000	9,635,148	10,210,384	12,442,346

## **21.3** Climate Change Adaptation and Mitigation

#### **Risks and Opportunities of Climate Change**

Climate change is another issue that Asia Cement (China) pays great attention to, primarily incl uding the identification and management of levels and procedures, three major basics for assessmen t of climate change adaptation as well as actual actions for climate change adaptation and mitigation.



#### Description on Climate Change Management Procedures

A corresponding disaster risk management mechanism is set up in respect of blows and impac ts from natural disasters and human-made disasters on the operations, including the "Measures on Emergency Reporting and Management of Crisis Events". An emergency operations center will be es tablished as soon as practicable once there occur disaster risks, in which CEO/General Manager will act as the commander-in-chief and the team will be headed by relevant risk-based department, whi ch aims at effectively dealing with major disaster crisis by integrating the resources and grasping the situation through the "Response Approaches to Material Disaster Crisis" of the Company.

#### In the company level:

Asia Cement (China) has included the climate risk management in its strategy of operational risks. Asia Cement (China) organizes relevant personnel to form a committee by company level to manage the sustainable issues of the green development and evaluates the risk impact to the operation of the Company caused by carbon tax, energy tax, water consumption fee and energy efficiency standard, hence, prepares a corresponding strategy and develops the derived opportunities. So that in facing the impact caused by climate change, the Company already has overall evaluation, corresponding and development strategies.

#### In the asset level:

In identifying the risks to the production management caused by climate change, Asia Cement (China) performs its evaluation and management mainly through "Measures on Emergency Reporting and Management of Crisis Events". In addition to evaluating in advance the damages caused by significant climate risk, it also prepared a response and recover plan to lower the possible damage to the systems and equipment, the possible financial loss and possible loss of operation shutdown. Furthermore, in accessing the insurance coverage in respect of the machine and equipment, plant buildings, and leasing equipment, construction in progress, inventory and other assets managed by relevant property management units (including headquarter, cement factories, places of business and storage and transportation stations, etc.) of various companies within Asia Cement (China), Asia Cement (China) shall, in addition to consideration given to the risks inherent in each asset plan to take out insurances against earthquake, floods and other natural disasters in response to the possible climate change risks, in an attempt to mitigate the impacts from climate change on its finance and management for the purpose of the asset security.

#### Climate Change Adaptation and Mitigation

- Ongoing participation in the voluntary production reduction plan entered into between Ministry of Industry and Information Technology and associations.
- ② Alerting of environmental protection and energy saving by the Company and plants to enhance the awareness of energy saving.
- ③ Active participation in carbon emissions trading and continuous promotion of energy saving and carbon reduction.
- ④ Being committed to the development and the promotion of innovative and sustainable product, including the promotion of high grade cement and other products like gravel, aggregate.
- Formulation and corresponding implementation of "Measures on Emergency Reporting and Management of Crisis Events" and "Response Approaches to Material Disaster Crisis".
- ② Continuous promotion of water resources management.

#### **Disaster Risk Management**

Asia Cement (China) has established its disaster risk management mechanism for risk prevention and management, including "Measures on Emergency **Reporting and Management of Crisis** Events" and "Response Approaches to Material Disaster Crisis". to avoid or reduce the potential personal injuries, damages to system equipment and property losses and losses from operating suspension. In addition to active participation in various drills organized by agencies at all levels, Asia Cement (China) has also conducted irregular disaster prevention and response drills, regularly mobilized employees to participate in fire drills annually to enhance their emergency response abilities, with a view of controlling accidents and eliminating hazards.



Adaptation

A Confined-Space Rescue Drill for the Warehouse Affairs Team of Jiangxi Yadong on 29 May 2018

1.4 Supply Chain Management



#### **Purchasing Division, Administration Department**

Purchasing division (including southeast, central and southwest) are organizations owned by A sia Cement (China) for the integration and sharing of purchasing resource information, whose functi ons are to process concentratedly the purchasing-related businesses of Asia Cement (China). The mi ssion statement made by purchasing division is that: to become a professional procurement service team trusted by customers and suppliers to make expected contribution to the sustainable develop ment of society and environment by integrating internal and external resources of the Company and strengthening the synergy function and with a target of 5Rs (Right time, Right item, Right price, Right volume, Right source), 3Ds (Deep in, Diversify, Do it as much as you can) and 1L (Incorruption) and ta king environment friendly, low carbon, safe and energy-saving supply chain as a direction under the effective risk control.

Mitigation

Sustainable Governance Ap

#### **Purchasing Division Requirements**

Supplier Conduct Guidelines	Description of provisions
Compliance with regulations	Compliance is the basis of cooperation, pursuant to which no illegal workers are allowed and all incoming raw materials and all outgoing products shall be safe and pollution-free.
Data authenticity	All documents concerning transactions shall be authentic and valid, and no forgery.
Fair competition	The supplier shall not infringe our rights and interests through fixing the selling price alone or in collusion with others, bid-rigging, bundling and abuse of market dominance.
Honest and trustworthy	The supplier shall not attempt to offer employees of the Company and their relatives a bribe (including pecuniary or non-pecuniary interests) to gain improper interests. The supplier also shall not offer any gifts or treats to employees of the Company or their family members and relatives for the purpose of gaining unfair advantages, which may have an adverse impact on the business decision of the Company.
Interest relevance	The supplier shall disclose any potential conflicts of interest to the Company, and if any employees of the Company or their family members and relatives have any interest in the businesses with the supplier or any kind of economic relationships with the supplier, the supplier shall disclose such information to the Company.
Confidentiality of information	The supplier shall guarantee and maintain the confidential and proprietary information of the Company, and such information shall be used only for the purposes authorized by the Company.
Subcontract responsibility	Without the written approval of Party A, the supplier shall not engage subcontractors. The approved subcontractor or transferee shall issue a written consent of accepting this code, which is also applicable to them.
Communication and implementation	The supplier shall communicate this code to its employees and subcontractors and explain related rights and interests to them. The Company encourages its supplier to establish a management system in compliance with the requirements of this guideline. The supplier shall appoint a senior management to inform the Company of matters not in conformity with the provisions of this guideline on an ongoing basis.
Treatment for breach of guidelines	If the supplier breaches any guidelines above, the Company may, at its own discretion, retain the rights to suspend or terminate the procurement from the supplier due to all losses to the Company resulted from the breach of such guideline by the supplier.

#### **Supplier Evaluation**

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4

 

 acc cor

 We conduct annual evaluation on
 qua evaluation on

 materials and
 cap engineering and semiannual evaluation on

 annual evaluation on
 invu rave materials with

 and detailed records to rate them as "Grade A
 tec (outstanding)", "Grade C

 (outstanding)", "Grade C
 cap (to be observed)" and

 "Grade D (ruled out)"
 add as a basis for supplier selection.

The potential and existing manufacturing suppliers will accept relevant evaluations in terms of: 1. basic conditions such as legal validity of enterprise qualification, fixed places of business and the necessary property and funds; 2. manufacturing capacity such as lives of production equipment and product inspection equipment, automaticity, inventory records of finished goods as well as safety and hygiene equipment; 3. technical capacity such as sources of technology, average education level of technician, level of on-the-job training, proportion of R&D personnel of the Company; 4. quality control capacity and quality of current product transacted, timeliness of delivery and supporting services. In addition to the above, suppliers of engineering services will also accept relevant evaluations in terms of business management, accidents in the last year, contribution of five social insurances and one housing fund for employees as well as bad records over the past year.

A separate in-depth investigation will be conducted on suppliers rated as "Grade C (to be observed)", and a letter will be sent requesting an improvement once any poor condition is discovered. Suppliers rated as "Grade D (ruled out)" cannot be admitted to qualified suppliers within two years, and a letter will be sent to inform the cancellation of supply qualification.

The suppliers to whom we have made prepayment for purchases are strictly controlled, and are required to, among others, provide equivalent performance bond and retention fund, to mitigate the purchasing risks.

Manufacturing-Technology-Relationship

on-the-job training

implementation of standards

· Manufacturing capability/terms and degrees of

Quality control capability/inspection of the raw

Technology capability/proportion of R&D personnel of

materials in or out the factory and finished products, records of production quality control, establishment and

the Company, technicians' average education level and

automation of manufacturing equipment

2

3

# Topics Management

#### 2018 Evaluation Practice for Raw Material Suppliers

#### **Quality Control-Price-Regulation**

- Quality confirmity rate-return rate
- On-time delivery rate
- Provision of reasonable price
- Green environment protection/social responsibility
- Labour condition and environment complying with regulations

#### Level of Cooperation-After sales-Reputation

- Level of cooperation-Speed of cooperation in
- settling when occurred problems
- After sales service
- Financial status and cash flow capability

#### **Encourage Green Procurement**

By collecting information, promotion and product procurement, we give priority to elect and use green products, promoting the corporate and supply chain partners to implement green procurement through specific green procurement actions, in order to drive the sustainable development of the green and eco-friendly industrial chain.

#### **Open Intelligent Procurement**

Adhering to the Group's guiding principles of "Integrity, Diligence, Thrift, Prudence and Innovation", the Company meticulously addresses various issues to pursue an innovative, modern and intelligent procurement system operated under a centralised platform by gathering procurement intelligence, leveraging the long-term benefits of centralised management and flexibility of local branches, as well as sharing resources. With this system, the Company maximises cost efficiency, while upholding integrity.

### 1.5 Customer Service

#### **Good Customer Service**

Asia Cement (China) has a professional service team, whose duty is to understand customers' needs and provide professional assistance and technical support in real time, as well as more diversified services and make customers more reliable.

The most complete production and sales network	The Company's sales layout covers vast areas including Sichuan, Hubei, Jiangxi, Anhui, Zhejiang and Jiangsu. The Company has also established manufacturing plants, grinding stations, storage depots and sales outlets in all areas, and provides professionals assisting sales and after-sale services to provide more efficient and diversified services.
The most convenient transportation route	Along the Yangtze River transportation route, we support the domestic transportation dispatch and provide customers with convenient and fast delivery services through the whole year. We actively exploit international frontier for overseas sales and provide good sales service to overseas customers.
Customised solutions	The Company's salespersons irregularly visit customers to understand their demand and propose customised solutions.

#### Full - service

Professional team with an attitude of excellence to provide better service and create higher economic benefits for customers.

#### Professional inspection service

Ensure the quality of products and assist customers in handling technical services such as cement, clinker, mineral powder, concrete and other materials, laboratory analysis, etc., The lab was equipped with various advanced instruments for research and development and for improving cement quality to increase the added value of "Shyscraper" (洋房牌) cement used by customers. And we arrange customers to visit the factory, so that customers can understand the production process of cement industry and environmental protection measures of the factory, and have a deeper understanding of the Company.

#### **Ordering System APP**

In order to improve customer's convenience and satisfaction of placing orders, Asia Cement (China) has developed an ordering system based on mobile APP that integrates the architectures such as customer, man-machine interface, information flow and operational improvement to provide customers with fast and satisfactory services.



#### **Customer Satisfaction**

Professional service and excellent product quality satisfying customers' demand are the keys to corporate success. Therefore, Asia Cement (China) establishes a customer-oriented quality system and operation concept. With objective supervision system, we evaluate customers' satisfaction to the products or services in order to understand the gap between customers' demand and expectations. This will be used as the reference for operation and achieve the goal of corporate sustainable operation. Each business unit of Asia Cement (China) conducts two surveys on customer satisfaction every year. It is a paper questionnaire survey with four sections (A. product quality; B. service quality; C. convenient delivery; D. performance of contract). Each question is scaled with good (35-31 points), better (30-26 points), average (25-21 points) and bad (20-0 points). The survey will be added up, integrated, and analysed when the questionnaire was completed. The business unit will review opinions proposed by customers, make responding measures and improvement. The return rate of 2018 customers' satisfaction survey conducted was 100% and the customer satisfaction score was 96 points. However, Asia Cement (China) will still keep excelling and improving products and services in order to provide better services and quality.

#### The Percentage of Recycling Products and Packaging Materials

There are two types of packaging for cement shipping, the bulk and the bag types. For Asia Cement (China), most of the package is bulk type. In 2018, the percentage of bulk cement package was 84% of the total shipment, the bag type was only 16%. The material of cement bags of Asia Cement (China) arrives at the national quality inspection standards, which can be recycled and reused to reduce the contamination to the environment. By selling to constructor by distributors and processed by contractor on the site, the bag type of cement is used to collect wastes in the construction site to effectively reduce the damage to the environment.

#### **Protection of Customer Privacy**

Asia Cement (China) attaches great importance to customer privacy and will be responsible for the confidentiality of the information provided by the customers in business dealings. In order to make customers having dealings with the Company without worries and avoid divulge of business information, the Company strictly requires all colleagues to comply with the Company's relevant confidentiality requirements. In addition, documents with confidential information due to business dealings should be destroyed on a regular or immediate basis, depending on their confidentiality.

In 2018, Asia Cement (China) had neither any cases related to violation of customer privacy, nor had any fines related to violation of product regulations.



#### Customer Satisfaction Survey



### Overview

#### Sustainable Governance Circulation2 : Happy Workplace

#### Happy Workplace--Management Policy

Asia Cement (China) always adheres to the philosophy of "boosting a company by developing talents" and regards employees as the core competitiveness and primary wealth of the Company. We establish harmonious relations with employees through mutual respect, mutual trust and common growth. We respect each employee for his/her contribution to the value of the Company, actively provide employees with a quality, healthy and safe working environment, strengthen their training of employees and enable each employee to deliver their value at their respective positions, so as to make good use of talents and put suitable talents to proper functions. In terms of employee rights and interests, the Company keeps improving employee benefits, timely understands the needs of employees' cohesiveness and sense of belonging. Asia Cement (China) has won excellent social reputation and universal acclaim in all its business locations, and has become the benchmark for local companies and a first choice for employment. Everyone is proud to be an "Asian Cement employee".

KPI appraisal for senior directors has been introduced and pegged to performance-based bonuses, with the annual CSR report keeping track of the attainment of goals and action plans.

#### Policy and Commitment:

- ① Establishing a competitive compensation system and sound employee benefits and retirement benefits.
- 2 Providing a complete education and training system for employee growth.
- 3 Establishing a complete performance management and promotion system.
- ④ Shaping a safe and healthy organizational culture.

> Goals	> Appeal Mechanism
<ol> <li>No major occupational injuries every year.</li> <li>Zero occupational diseases every year.</li> <li>Better employee satisfaction.</li> </ol>	<ol> <li>Email</li> <li>Website</li> <li>Telephone</li> </ol>

#### Specific Actions:

- A comprehensive salary adjustment took place in 2018, with revision to the current salary and benefits system according to actual needs.
- Projects such as new personnel training, QCC, TWI, and training for second-generation talents and key positions.
- Introducing KPI appraisal for senior directors.
- Promoting the factory safety scheme.

#### Highlights of Building Robust Employee Benefits and A Happy Workplace



In 2018, employee satisfaction of Asia Cement (China) reached 64.04%.



In 2018, the salary was adjusted on a comprehensive scale. The average salary of employees increased by 10.36%. In addition, good profits in 2018 enabled the Company to distribute more bonuses, with the salary level of most positions reaching the market median.



The Elite Class, a training scheme for cultivating the second-generation management talents, is well under way.





#### **Employee Structure**

Asia Cement (China) has a diverse composition of employees. The majority of them are Han people, and the rest come from ethnic minority groups such as Miao, Tujia, Hui, Tibetan, Yi and Qiang. In addition, the Company actively responded to the national call by hiring a total of 11 people with disabilities.

Sustainable Governance

Due to the labor characteristics of the cement industry, employees working at the production site have to be arranged into three shifts and undertake outdoor work, with high work intensity. As such, most of the employees are male. However, some posts (such as administration, kitchen, dormitory, greening and cleaning) are taken by a large number of female workers, which has addressed the employment issue of some women in the surrounding areas.

#### Gender trend for official employees in the past four years

Gender trends for long-term borrowed workers in the past four years



The Company strictly abides by Labour Law of the People's Republic of China, Labour Contract Law of the People's Republic of China and other relevant laws and regulations, and has entered into labour contracts with its employees according to relevant laws. The Company respects employees' working willingness, follows the principle of equal employment, respect for human rights, diversity of employees and prohibition of forced labor, and establishes a harmonious and stable relationship with employees.







Note: The competent employee is the staff of the Company with employee tenth (including tenth) position or above.

#### Number of employees

		Total			Classific	ation by se	ex and er	nploymer	nt contract	
Company		Total staf	f	Off	icial empl	oyee	Borro	owed emp	oloyee	Total
	Male	Female	Subtotal	Male	Female	Subtotal	Male	Female	Subtotal	TOLAI
Jiangxi Yadong	931	154	1085	919	109	1028	12	45	57	1085
Huanggang Yadong	267	41	308	262	24	286	5	17	22	308
Nanchang Yadong	43	13	56	43	7	50	0	6	6	56
Nanchang Yali	85	30	115	85	24	109	0	6	6	115
Jiangxi Yali	118	13	131	118	5	123	0	8	8	131
Hubei Yadong	352	84	436	346	54	400	6	30	36	436
Wuhan Yaxin	241	64	305	238	50	288	3	14	17	305
Wuhan Yadong	74	15	89	72	9	81	2	6	8	89
Wuhan Yali	48	10	58	48	10	58	0	0	0	58
Hubei Yali	97	14	111	95	4	99	2	10	12	111
Sichuan Yadong	533	88	621	514	54	568	19	34	53	621
Sichuan Lanfeng	333	84	417	333	84	417	0	0	0	417
Sichuan Yali	43	11	54	42	6	48	1	5	6	54
Chengdu Yali	34	10	44	34	5	39	0	5	5	44
Sichuan Yali	83	10	93	80	4	84	3	6	9	93
Yangzhou Yadong	143	42	185	138	26	164	5	16	21	185
Shanghai Yali	11	3	14	11	3	14	0	0	0	14
Taizhou Yadong	26	7	33	26	5	31	0	2	2	33
Total	3462	693	4155	3404	483	3887	58	210	268	4155

#### **New and Resigned Staff**

Asia Cement (China) employees staff on a permanent basis. As a result, the Company enjoys a stable workforce with a long tenure, high loyalty and a low turnover rate.

Company	Total in 2017	New	staff	Employment	Resign	Turnover rate		
Company	10tal III 2017	Male	Female	rate	Male	Female	TurnoverTate	
Jiangxi Yadong	1025	51	5	5%	47	6	5%	
Huanggang Yadong	271	41	3	16%	27	2	11%	
Nanchang Yadong	48	7	2	19%	6	1	15%	
Nanchang Yali	98	25	4	30%	16	2	18%	
Jiangxi Yali	126	8	1	7%	11	1	10%	
Hubei Yadong	384	67	4	18%	52	3	14%	
Wuhan Yaxin	300	7	2	3%	17	4	7%	
Wuhan Yadong	87	6	5	13%	13	4	20%	
Wuhan Yali	50	10	3	26%	5	0	10%	
Hubei Yali	113	10	1	10%	20	5	22%	
Sichuan Yadong	574	59	1	10%	66	0	11%	
Sichuan Lanfeng	420	29	4	8%	31	5	9%	
Sichuan Yali	47	4	1	11%	3	1	9%	
Chengdu Yali	51	1	2	6%	14	1	29%	
Sichuan Yali	87	18	0	21%	19	2	24%	
Yangzhou Yadong	169	12	3	9%	20	0	12%	
Shanghai Yali	44	0	0	0%	27	3	68%	
Taizhou Yadong	35	6	0	17%	9	1	29%	
Total	3929	361	41	10%	403	41	11%	



In view of the three shifts and employees on night shifts, we have a night shift subsidy system for employees on the second and night shifts, coupled with such systems as high-temperature allowance for special work positions, license allowance, allowance for external dispatching and regional allowance in accordance with national laws and regulations.

Asia Cement (China) conducts comprehensive salary adjustment on a regular basis, which renders its salary payment higher than local counterparts and industry peers. Starting from 1 July 2018, a collective salary adjustment has taken effect in view of the market salary level and the Company's profitability, with an average increase of 10.36% and a total investment of RMB30 million.

Company	Ratio of annual income of the highest paid individual to the average annual income of other employees	Ratio of percentage of increase in annual income of the highest paid individual to percentage of increase in the average annual income of other employees
Jiangxi Yadong	7.07	2.46
Huanggang Yadong	4.39	2.22
Nanchang Yadong	4.80	7.02
Nanchang Yali	4.72	3.77
Jiangxi Yali	3.14	1.61
Hubei Yadong	5.53	1.16
Wuhan Yaxin	3.55	-0.05
Wuhan Yadong	2.81	2.44
Wuhan Yali	3.93	1.07
Hubei Yali	3.48	1.70
Sichuan Yadong	5.70	0.92
Sichuan Lanfeng	5.76	2.61
Sichuan Yali	4.20	0.96
Chengdu Yali	2.04	0.11
Sichuan Yali	3.08	1.06
Yangzhou Yadong	3.92	2.67
Shanghai Yali	1.99	0.75
Taizhou Yadong	3.47	1.17

#### 2.2 Welfare Competitiveness

■ New ■ Resigned

41 41

Female

Male and female Numbers of new and former

employees

403

361

Male

Asia Cement (China) expects to attract outstanding talents to join the Company through competitive compensation and benefits. The Company will pay social insurance and housing provident fund for all employees who sign formal labor contracts with the Company from the first date of their employment. At the same time, the Company actively implements people-oriented management, continuously increases benefits, takes care of employees like family members, and creates a well-coordinated and cohesive team.

#### **Remuneration-related Systems**

The basic remuneration of Asia Cement (China) mainly consists of salary, allowance (housing allowance plus regional allowance) and duty allowance. In addition, the Company distributes production and sales bonus, year-end bonus, employee reward (i.e., bonus) and attendance bonus on a regular basis according to its operational performance.

236 229

Under 30 years

old (including 30)

31-35 years old

■ New ■ Resigned

Above 51 years

old (including 51)

250

200

150

100

50

0

Appraisal System

Remunerati

on System

Each year, employees are appraised in all aspects, with salary increase based on the appraisal results. Outstanding performers can receive special promotion every 2 to 3 years, with a 10% to 20% salary increase.

500

400

300

200

100

#### Welfare System

Asia Cement (China) has set up the Staff Welfare Committee (SWC for short) and formulated the "Measures for Operation and Administration of the Staff Welfare Committee", appropriating 1.8% of total amount of the staff's salary as welfare fund monthly for the matters related to the staff's benefits. In order to meet various needs, the "self-help benefits" system was officially introduced in 2017, and deepened and enriched it in 2018, which was widely praised.



1164

1500



#### **Tourist Activities**

Asia Cement (China) and its subsidiaries regularly host various tourist activities to allow employees to relax and enjoy natural scenery, communicate with each other amidst breath-taking landscape, enhance friendship, mutual help and care, and ultimately attain a win-win situation for both the Company and the employees.

NO.	Company	Tourist destination	Enrolment	Amount borne by the Company (RMB)
1		Zhang Jia Jie	84	35600
2	Jiangxi Yadong	Shi Niu Zhai	80	19144
3		Self-organized Tours	77	53900
4	Huanggang Yadong	Three Gorges Dam, Yichang	65	18000
5	Nanchang Yali	Qingdao	55	540
6	Nationalig fail	Lushan	15	1500
7	Hubei Yadong	Guilin	47	37600
8	Wuhan Yaxin	Zhuhai/Xi-an	150	161008
9	Wuhan Yali	Guilin	20	17793
10	Hubei Yali	Lushan	16	3200
11	Sichuan Lanfeng	Huanglong, Jiuzhai	27	10800
12	Sichuan Lanieng	Guilin, Guangxi	37	16200
13	Chengdu Yali	Jintang Wufengxi	79	7635
14	Sichuan Yali	Hailuogou, Mugecuo	10	8000
15	Yangzhou Yadong	Rizhao Yishui	63	11130
	Т	otal	825	402050





#### **Social Club Activities**

Each company is furnished with various sports and leisure facilities, including night tennis courts, basketball courts, indoor badminton courts, football fields, table tennis rooms, billiard rooms, laundry rooms, library, medical offices, screening rooms, karaoke rooms, bridge rooms, gymnasium, etc. A variety of recreational activities take place on a regular basis, such as ball games, bridge games, fishing and mountain climbing, through which employees can enrich their life in spare time, have more communication with each other, and grow a more harmonious work atmosphere. In 2018, more than 1,800 employees of Asia Cement (China) and its subsidiaries joined in social club activities, with investment totaling RMB110,000.







#### Leave System

Asia Cement (China) strictly implements the vacation system stipulated by the state. All the employees of the Company could enjoy all kinds of paid leave such as annual leave, nursing leave, maternity leave, bereavement leave, official leave, marriage leave. All employees who worked on official holidays due to jobs demand, the Company would compensate them with overtime pay according to national regulations.

#### Person-time and Total Hours of All Kinds of Paid leave



#### Maternity leave, nursing leave retention number

	Maternity leave (Female)	Nursing leave (Male)
Number of applicants	483	3404
Actual number of applicants	52	208
Number of employees returning to work after leave	52	207
Number of employees still on the job after 12 months subsequent to leave	51	202
The percentage of the employees returning to work after leave and keeping jobs	98%	97%

#### **Gender Equality**

Asia Cement (China) respects the rights and interests of every worker, treats them equally regardless of gender differences, and always practices the equal development for employees' career development. Men and women have equal access to opportunities such as occupational training and promotion.

#### **Comparison of Starting Salary and Minimum Wage in Operation Locations**

Starting salaries of basic staff in each of business area of Asia Cement (China) were higher than the local minimum wage standard with the highest rate up to 1.72. In addition, the Company has set up a system to control minimum wage, by which the Company would make up the difference if the employees' salaries were lower than the local minimum wage standard due to frequent sick and personal leaves or decline in the performance of the Company, which was also agreed by the employers and employees in the labor contracts, and were carried out consistently in the payroll settlement system.

Company	Starting salaries of basic staff	Local minimum wage standard	Ratio
Jiangxi Yadong	2148	1470	1.46
Huanggang Yadong	2148	1250	1.72
Nanchang Yadong	2148	1680	1.28
Nanchang Yali	2148	1680	1.28
Jiangxi Yali	2148	1470	1.46
Hubei Yadong	2148	1500	1.43
Wuhan Yaxin	2148	1500	1.43
Wuhan Yadong	2148	1500	1.43
Wuhan Yali	2148	1500	1.43
Hubei Yali	2148	1500	1.43
Sichuan Yadong	2148	1650	1.30
Sichuan Lanfeng	2148	1650	1.30
Sichuan Yali	2148	1650	1.30
Chengdu Yali	2148	1650	1.30
Sichuan Yali	2148	1650	1.30
Yangzhou Yadong	2393	2020	1.18
Shanghai Yali	2498	2420	1.03
Taizhou Yadong	2393	2020	1.18

#### **Complaint Cases of Employee**

Asia Cement (China) has established a number of unimpeded employees' communication channels to ensure that employees' needs and suggestions are met. If employees are unreasonably treated in the workplace, or if they discover that the Company has irregularities or infractions, complaints and reports may be filed through the Company's website or the audit office. Asia Cement (China) will carefully and actively handle and investigate according to the relevant operating regulations and handling principles. If the verification is indeed a violation, it will be discussed according to the circumstances to regulate the practitioners to act according to regulations, maintain company discipline, and safeguard employees' rights and interests, promoting the Company image.

Employee satisfaction value



In order to understand employees' needs and suggestions, the Company has conducted an employee satisfaction survey at the end of each year since 2014. The survey involves various aspects such as employee benefits and company systems, with a view to widely listen to employees' opinions, making targeted improvement measures and improving employee satisfaction degree. This year's satisfaction survey involved a total of 2,481participants, which accounted for 63% of the total, with a satisfaction score of 64.04%.

#### **Operation of Labor Union**

All companies under Asia Cement (China) set up labor unions according to the regulations, and all employees are members of the labor unions. The total union fees in 2018 were more than RMB4 million, and each union convened meetings and held parties from time to time.

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## 2.3 Capacity Competitiveness

#### Systematic Training

In order to meet the needs of corporate operation and allow employees to grow together with the Company, continuous training has been provided for employees of different ranks and functions, which are supplemented by a wide array of experiential and external training. The development and improvement of our training system is designed to provide a support platform for talent cultivation.

#### **Management Professionals**

In order to establish a sound management system and in response to the market competition and challenge, the Company designed systematic promotion channel to management position for the employees, and developed a management echelon from basic to medium and senior with the implementation of all kinds of training and rotating.

#### Professional Technical/Advisor-oriented Professionals

The Company provided promotion channel for technical positions for these employees to build the technical, project-oriented and advisor-oriented teams with technicians, engineers, administrators and specialists and provided corresponding training and rotating for their transition to management cadres.

#### **Training System**

To accelerate the training of personnel and meet the Company's operation requirement, the Company promoted the establishment of a sound training system. Currently, the training system built mainly includes on job mentoring training(teach, help and lead), intensive training for new comers, various professional skills training for corresponding positions, environmental protection and working safety training, TWI leaders training, medium supervisors' MTP training, industry exchange and participation in the Group's joint meeting in Taiwan and further study in colleges and universities. Total training hours of the Company in 2018 were 66,990 hours, training hours for each employee was approximately 17 hours and total investment in training was over RMB4.23 million.





#### Major Project-oriented Trainings in 2018 are as follows:

	Echelon Completed	Number of employees	Total length of time (day)	Expenditure (RMB0'000)
New comers training	2	173	10	12
Team execution and QCC training	5	287	15	19
TWI	3	139	9	11
Elite class training	1	40	20	88
Industry 4.0 & Al intelligence course	8	325	16	43
TTO & TTT	3	95	13	20
Participation in the Group's joint meeting in Taiwan	3	39	13	65
Total	25	1098	96	258

#### Training hours and fees of each Companies of Asia Cement (China)

Company	Training hours (Unit: hours)	Man-hour costs (Unit: 0,000RMB)	Training fees (Unit: 0,000RMB)	Total training fees (Unit: 0,000RMB)
Jiangxi Yadong	9222	20	262	283
Huanggang Yadong	7656	17	7	24
Nanchang Yadong	1392	3	1	4
Nanchang Yali	5046	11	0	12
Jiangxi Yali	1566	3	0	3
Hubei Yadong	12006	27	0	27
Wuhan Yaxin	1392	3	0	3
Wuhan Yadong	1392	3	0	3
Wuhan Yali	2262	5	0	5
Hubei Yali	1740	4	0	4
Sichuan Yadong	10440	23	1	24
Sichuan Lanfeng	5046	11	0	11
Sichuan Yali	522	1	0	1
Chengdu Yali	174	0	0	0
Yangzhou Yadong	2958	7	2	9
Taizhou Yadong	1044	2	0	2
Total	66990	148	275	423

#### Management of Employee's Occupational Skills and Lifelong Learning

In addition to systematic education and training, Asia Cement (China) encourages subscription to professional publications and frequent exchanges with governments, universities and fellow industry players, to broaden horizons, learn the latest industry information, support innovation in daily work, and adapt to new norms, requirements and normality of the new era.

#### A Sound Performance Management Cycle

To evaluate employees' performance and contribution objectively, encourage and find out their potential and strengthen their sense of competition and responsibility, Asia Cement (China) will assess the performance of each employee regularly every year to reflect the principle of rewarding the good and publishing the bad so that the overall efficiency of the Company can be improved. Moreover, each department also formulated Management Measures for Routine Assessment, pursuant to which the employees' daily behaviors would be assessed and accumulatively recorded and excellent employees would be rewarded by giving award or recording the merits which would be announced to the public. In 2018, the company's total number of awards and punishments is 543.



#### **Management Policy on Hygiene and Safety**

In terms of management policy on safety and hygiene, the Company has adopted the founding spirit of the Far Eastern Group of "Sincerity, Diligence, Thrift, Prudence and Innovation" to sincerely fulfill its corporate social responsibility and to abide by regulations to establish and improve management organizations and systems. It made risk assessment carefully to each operation, set up standard operating procedures and adopted appropriate safe construction approach. All employees are required to be involved in the system and to receive the training in order to attain the habit of safety as the first priority. Through the way of walking management, the Company is able to predict and to take appropriate measures in order to prevent the disaster from happening. It endlessly drives innovative R&D and improves safety measures to create a working environment of zero disaster in order to protect the safety and health of the laborers. A part of Asia Cement (China) organizational culture is to create a safe and healthy work place, thus, each employee feels safe working here.



Number of employee



#### A Complete Occupational Safety and Hygiene Management Organization and System

#### **Organization of Occupational Safety and Hygiene**

Asia Cement (China) have assigned unit and the staff to be responsible for occupational safety and hygiene management by law. Depending on the nature and number of employees of the business unit, an appropriate management system is introduced and implemented; each business unit has established a work safety committee by law, the general manager of each business unit acted as the chairperson, the members included the department head, professionals and staff representatives. The committee holds a meeting at least once each month to propose reviews to policies on safety and health, operational behavior, safety hazard, to form a perfect opinion. And according to the resolution to arrange the rectification work . Shanghai Yali is no disclosure as it has not set up a special work safety committee.

Compos	ition Table of "Safety F	Production Committe	e" in the Places of	Business
Category Location	Chairperson	Number of manager and professionals	Number of staff representatives	Staff representatives ratio
Jiangxi Yadong	General Manager	71	18	20%
Huanggang Yadong	General Manager	14	5	26%
Nanchang Yadong	General Manager	7	2	22%
Nanchang Yali	General Manager	10	12	55%
Jiangxi Yali	Vice General Manager	12	7	37%
Hubei Yadong	General Manager	94	50	35%
Wuhan Yaxin	General Manager	15	0	0
Wuhan Yadong	General Manager	7	13	65%
Wuhan Yali	General Manager	6	7	54%
Hubei Yali	Vice General Manager	11	37	77%
Sichuan Yadong	General Manager	25	7	22%
Sichuan Lanfeng	General Manager	25	6	19%
Sichuan Yali	General Manager	15	10	40%
Chengdu Yali	General Manager	7	2	22%
Sichuan Yali	Manager	7	2	22%
Yangzhou Yadong	Vice General Manager	12	8	40%
Taizhou Yadong	Vice Manager	8	2	20%

#### **Occupational Safety and Hygiene Management System**

Asia Cement (China) have established a sound occupational safety and hygiene management system. And passed the certification of HOSAS18001: 2007 occupational health and safety management system of Beijing Guojian Lianxin Certification Center once each year. Or obtained a certificate of standard enterprise for work safety standardization issued by work safety supervision and management department every 3 years. Shanghai Yali and Taizhou Yadong are no disclosure, as it has not certified occupational health and safety management system and has not carried out the work of standard enterprise for work safety standardization.

Table of Occ	upational Safety and Hygiene Management System of Asia Cement (China)
Location	Occupational safety and hygiene management system
Jiangxi Yadong	Work safety standardization secondary enterprise (building materials) Work safety standardization secondary enterprise (Non-coal mine) Occupational health & safety management system GB/T28001-2011/OHSAS18001 : 2007 (Certificated by GJC)
Huanggang Yadong	Work safety standardization secondary enterprise (building materials) Work safety standardization secondary enterprise (Non-coal mine) Occupational health & safety management system GB/T28001-2011/OHSAS18001 : 2007 (Certificated by GJC)
Nanchang Yadong	Work safety standardization secondary enterprise (building materials)
Nanchang Yali	Work safety standardization secondary enterprise (building materials) Work safety standardization secondary transportation enterprise (Road ordinary cargo transport)
Jiangxi Yali	Work safety standardization secondary enterprise (Road ordinary cargo transport)
Hubei Yadong	Occupational health & safety management system GB/T28001-2011/OHSAS18001 : 2007 (Certificated by GJC)
Wuhan Yaxin	Work safety standardization secondary enterprise (building materials) Work safety standardization secondary enterprise (Non-coal mine) Occupational health & safety management system GB/T28001-2011/OHSAS18001 : 2007 (Certificated by GJC)
Wuhan Yadong	Work safety standardization secondary enterprise (building materials) Work safety standardization secondary enterprise (Non-coal mine) Occupational health & safety management system GB/T28001-2011/OHSAS18001 : 2007 (Certificated by GJC)
Wuhan Yali	Work safety standardization level 3 enterprises (Industrial and mining trade industry)
Hubei Yali	Work safety standardization construction level 3 standard enterprises in Transportation Enterprises
Sichuan Yadong	Work safety standardization secondary enterprise (building materials) Work safety standardization secondary enterprise (Non-coal mine) Occupational health & safety management system GB/T28001-2011/OHSAS18001 : 2007 (Certificated by GJC)
Sichuan Lanfeng	Work safety standardization secondary enterprise (building materials) Occupational health & safety management system GB/T28001-2011/OHSAS18001 : 2007 (Certificated by GJC)
Sichuan Yali	Work safety standardization level 3 enterprises (Industry and Trade)
Chengdu Yali	Work safety standardization level 3 enterprises
Sichuan Yali	Work safety standardization level 3 enterprises (Road ordinary cargo transport)
Yangzhou Yadong	Work safety standardization level 3 enterprises

#### Collective Agreement Incorporated in the Norm of Safety and Hygiene

Jiangxi Yadong entered into Construction Safety and Hygiene Regulations of Contractors with contractors, in which the norm of safety and hygiene accounted for 56.5% of a total of 69 regulations, and the training for contractors will be conducted annually. It is a safety and hygiene norm for the group to obey.

#### **Management Performance of Safety and Hygiene**

#### Management of Plans and Appraisal of Performance

Asia Cement (China) manages its operational procedure under the direction of annual safety production guidelines, objectives and indicators and establishes safety production goals and appraisal standards of performance. The environmental protection and working safety department of the Company conducts regular inspection on each unit and evaluation monthly (including proactive and passive performance) and reports the effective implementation of each unit to the Production Safety Committee.

The Statisti	cs of 2018 O	-	afety and Hy Asia Cement	giene Manage t (China)	ment Perfo	rmance Ap	praisal
Company	Safety level	Material occupational disasters	Ordinary occupational disasters	Total working hours	FR	SR	FSI
Jiangxi Yadong	safe	0	7	2616240	2.68	89	0.49
Huanggang Yadong	safe	0	2	760320	2.63	21	0.24
Nanchang Yadong	safe	0	0	129360	0	0	0
Nanchang Yali	safe	0	0	287760	0	0	0
Jiangxi Yali	safe	0	1	322080	3.10	16	0.22
Hubei Yadong	safe	0	3	1124640	2.67	221	0.77
Wuhan Yaxin	safe	0	4	778800	5.14	256	1.15
Wuhan Yadong	safe	0	2	20328	98.39	0	0
Wuhan Yali	safe	0	0	129360	0	0	0
Hubei Yali	safe	0	0	256080	0	0	0
Sichuan Yadong	safe	0	5	1525920	3.27	9	0.17
Sichuan Lanfeng	safe	0	4	1103520	3.62	271	0.99
Sichuan Yali	safe	0	1	126720	7.89	237	1.37
Chengdu Yali	safe	0	0	105600	0	0	0
Yangzhou Yadong	safe	0	0	435600	0	0	0
Taizhou Yadong	safe	0	0	89760	0	0	0
Total	safe	0	31	10033848	3.09	105	0.57

Note: The relevant formulas of assessing occupational disaster are as following:

SR (Severity Rate)=lasting days of disability injury × 1000000/total working hours

FSI (Frequency-Severity Indicator)= $\sqrt{(FR \times SR/1000)}$ 

#### Training of Occupational Safety and Hygiene Management

Asia Cement (China) has a highly-skilled occupational safety and hygiene management team. Every year, high-quality talents are introduced from colleges and universities, and a sound personnel training and incentive system has been established. Regular or irregular implementation

of on-the-job education and training, selecting excellent supervisors and colleagues as the teachers, effectively improved the awareness of safety prevention and production skills. In view of the low quality of the contractor's staff, it has formulated a safety "three-level education and training" tailored to it, organizing a review meeting on corporate security accidents (events), which was chaired by the general manager and special assistant general manager, and attended by supervisors and safety management



personnel of each unit. It publicized the concept of "safety first" and required all employees to strictly implement various safety management systems and accountability system.

#### **Demonstration of Occupational Safety and Hygiene Management**

On 29th May, 2018, Ruichang plant 2 of Jiangxi Yadong united exercise "清库坍塌演练" comprehensive emergency response program and shared the rescue experience by stack unit, secretariat, guard, environmental protection and workers safety department.





Regarding to contractors: we treat workers from the contractors as our own staff. Besides of on-site inspecting and offering necessary guidance, we also provide relevant education and training to improve their safety and hygiene performance so as to reduce working accidents and health hazards.

FR (Frequency Rate)=times of disability injury × 1000000/total working hours

Asia Cement (China) health check number of employees in significant health-harming

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#### Monitor and Improve the Environment of High-risk Workplaces and Significant Health-harming Workplace

Each plant of Asia Cement (China) had set up relevant safety and hygiene operation standards based on the risk assessment conducted in respect of the health-harming environment caused by noise, dust, drinking water and others, and monitors the environment internally and regularly engages external party to carry out environment monitoring and personnel health examination as required. There was no occupational disease as determined according to the regulations and the occupational disease rate (ODR) was 0% in 2017. In addition, we not only improve the environment safety but also provide essential harness in high-risk operational sites such as overhead, electric shock, scaffolding and flying objects. Educational training and danger prediction training were carried out to arouse employees' safety awareness so as to reduce unsafe behavior. We conduct examination inside the plant and daily on-site inspection and supervision to prevent the occurrence of harm effectively.





Asia Cement (Ci		ace in 2018	
Location	Dust	Noise	High temperature
Jiangxi Yadong	672	82	56
Huanggang Yadong	150	120	0
Nanchang Yadong	29	29	0
Nanchang Yali	42	13	0
Jiangxi Yali	124	124	0
Hubei Yadong	295	295	295
Wuhan Yaxin	234	234	61
Wuhan Yadong	76	30	0
Wuhan Yali	49	49	0
Hubei Yali	103	0	0
Sichuan Yadong	317	317	0
Sichuan Lanfeng	278	278	35
Sichuan Yali	13	13	0
Chengdu Yali	12	12	0
Sichuan Yali	50	50	0
Yangzhou Yadong	24	69	0
Taizhou Yadong	20	9	0

#### **Statistics of Occupational Disasters**

Based on the important occupational disaster disabling statistics index announced by labor department, in the analysis of occupational hazard statistics, Asia Cement (China) selected Disabling Frequency Rate (FR), Disabling Severity Rate (SR), Frequency-Severity Indicator (FSI) and Attendance Rate (AR) as the basis (the data does not include traffic accidents outside of the plant). In 2018, there were 30 cases of employee injury and disability, without any occupational disasters cases.

Sustainable Governance	A
Circulation	Appen

2	018 Asia Cen	nent (China	) Occupat	tional Disaster	and Attenda	ance Statist	ICS	
1 +	F	R		SR	F:	SI		AR
Location	Male	Female	Male	Female	Male	Female	Male	Female
Jiangxi Yadong	3	0	99	0	0.54	0	0.08%	0.00%
Huanggang Yadong	2.87	0	23	0	0.26	0	0.02%	0.00%
Nanchang Yadong	0	0	0	0	0	0	0.00%	0.00%
Nanchang Yali	0	0	0	0	0	0	0.00%	0.00%
Jiangxi Yali	3.27	0	16	0	0.23	0	0.01%	0.00%
Hubei Yadong	3.09	0	256	0	0.89	0	0.21%	0.00%
Wuhan Yaxin	6.26	0	311	0	1.4	0	0.25%	0.00%
Wuhan Yadong	10.38	0	0	0	0	0	0.00%	0.00%
Wuhan Yali	0	0	0	0	0	0	0.00%	0.00%
Hubei Yali	0	0	0	0	0	0	0.00%	0.00%
Sichuan Yadong	3.62	0	9	0	0.18	0	0.01%	0.00%
Sichuan Lanfeng	4.54	0	340	0	1.24	0	0.27%	0.00%
Sichuan Yali	9.02	0	271	0	1.56	0	0.22%	0.00%
Chengdu Yali	0	0	0	0	0	0	0.00%	0.00%
Sichuan Yali	4.73	0	24	0	0.33	0	0.02%	0.00%
Yangzhou Yadong	0	0	0	0	0	0	0.00%	0.00%
Shanghai Yali	0	0	0	0	0	0	0.00%	0.00%
Taizhou Yadong	0	0	0	0	0	0	0.00%	0.00%
·····	2.44	0	110	•		-	· · · · · · · · · · · · · · · · · · ·	
Total	3.44	0	116	0	0.63	0	-	
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Note: The relevant formulas of assessing occupational disaster are as following:

FR (Frequency Rate)=times of disability injury×1000000/total working hours

SR (Severity Rate)=lasting days of disability injury ×1000000/total working hours

FSI (Frequency-Severity Indicator) )=V((FR×SR/1000))

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AR (Absence Rate)=(total sick leave hours+total injury leave hours+total personal leave hours)/total working hours×100%

#### **Employees' Health Promotion and Management**

#### Health Check and Management for Labor

According to the rules of "Measures for the Administration of Occupational Health Examination" and "Law on Prevention and Control of Occupational Disease", and for the purpose of enhancing the work of occupational health check to prevent and eliminate the occupational hazards and protect the health rights of workers, the health checks (to be accepted by employees on a voluntary basis) were offered to all employees for free by the Company before the post, during the post and upon leaving the post. A medical treatment or rehabilitation program will be proposed by the Company depending on employees' examination reports and clinical situations, and the Company will arrange an appropriate work adjustment according to the actual situation.

#### **Employee Health Promotion Activities**

For enhancing healthy diet of employees, the Company operates its own cafeteria and restaurants to focus on hygiene and nutrition of food. In response to the food safety crisis, the Company will conduct examination or sample tests on each kind of food materials and send the same to quality control department for chemical examination every day, and the substandard food materials (such as excessive agricultural residues, etc.) will be returned to the suppliers. Furthermore, the Company will check the tap water of the living quarters every day to ensure the healthy water source.

#### Prohibition on Using Child Labor and Forced Labor

According to the "Provisions on the Prohibition on Using Child Labor" the Company engage no minors under the age of 16. The employees employed by the Company are all voluntary to be employed. The force and fraud in labor employment shall not be allowed.



purpose of sustainable topics management and the sustainable operations of Asia Cement (China).

Sustainable Governance Circulation3 : Sustainable Topics Management

#### **Structure Chart of CSR Committee**





Sustainable Governance

3.1 Sustainable Topics Identification

Asia Cement (China)'s procedure for the identification of material aspects was based on the framework of GRI sustainability report and under the guidance of its reporting principles and defined content. As the sustainability topics covered extensively, we collected and organized the relevant topics by the following sources.



Based on the discussion by the CSR committee covering issues concerned by all sectors, and with reference to past implementation experience, A total of 22 topics in connection with Asia Cement (China) have been identified in the economic, social, environmental and special topics in 2018.

Economic topics	Environmental topics	Social topics
Economy Performance	Raw Material	Employment Relationship
Market Image	> Energy	Employee/Employer
Indirect Economic Impact	> Water	Relationship
> Anti-corruption	Emission	<ul> <li>Occupational Health and Safety</li> </ul>
Anticompetitive Behavior	Environmental Compliance	Training and Education
		Diversity in Staff and Equality of Opportunity
		Freedom of Association and Collective Bargaining

3.2 Stakeholders Assessment and Engagement

We identified five categories of stakeholders, namely, employees, investors/shareholders, customers, communities and suppliers with reference to the five major aspects of AA 1000 Stakeholder Engagement Standard-2015 for stakeholder negotiation (namely, dependency, responsibility, tension, influence and diverse perspectives) as well as stakeholder

**Stakeholder Identification and Assessment** 

discussion and assessment by the CSR Committee.

Forced and Compulsory Labor

Special topics

Low-carbon Green

Recycling Economy

Education

4.0)

Sustainable Re-vegetation in Mines

Manufacturing (Cement

Sustainable Environmental

Local Communities

#### General public 2.6 Academic institutions 2.9 Industrial circles 3 3.1 NGO、 Environmental groups Government authorities 3.3 Partners 3.4 Suppliers 3.7 Community/local groups 3.8 Investors/shareholders 3.9 Customers 4.1 Staffs 0 1 2 3 4

#### **Stakeholders Engagement and Response**

Saved for the various interactions with the stakeholders through the normal business, Asia Cement (China) also carried out Stakeholders Engagement through all kinds of ways including telephone communication, holding a meeting, satisfaction survey, visiting on site and participating in unions. The concerned topics proposed by the stakeholders would be responded as the identified topic items for material aspects through the report.

"Mailbox for corporate sustainability (achc@achc.com.cn)" was set up corresponding to the commencement of the sustainability management of the organization, and will be managed by the relevant competent department of the Company to address all topics concerned by stakeholders

Stakeholders	Issues concerned	Frequency and platform of communication	Implementation in 2018	Responding chapter
Staffs	Occupational health and safety Talent attraction and retention Training and education	Trade union meetings and fellowship activities New recruits interview and online announcements from time to time Updating staff codes of practice from time to time Staff interviews and performance interviews conducted by supervisor each year Planning and occasional educational training for staff Electronic bulletin board Al kinko of meetings	The trade unions held meetings and fellowship activities irregularly, and paid more than 4 million yuan in membership fees in 2018. Annual training for all types of staff lasts 16 hours on average Provide staff with complete benefits and bonuses Implement the 8-hour working system	Sustainable Governance Circulation2
Customers / partners	Customer Service Product liability Product quality and technology research and development	Annual customer satisfaction survey Quality certification Website feedback and inspection report download Visiting customer on a regular/ irregular basis Communication and feedback by phone or e-mail	ISO product certificate Comprehensive utilization of resources promotes recycling economy	Sustainable Governance Circulation1 Green Sustainable Circulation3

4.2

Stakeholders	Issues concerned	Frequency and platform of communication	Implementation in 2018	Responding chapter
Investors / shareholders	Economic performance Company's operating strategies Risks and opportunities Resources Water Emissions Compliance with environmental laws	Holding of Annual General Meeting Investor zone on the Company's website Public information observatory Communication and feedback by phone or e-mail Regular declaration of energy efficiency	Achieve dividend payout ratio of 40% More than 85% of the water is recycled Carbon reduction of 205,000 tons Meet energy efficiency indicators	Sustainable Governance Circulation1 Green Sustainable Circulation2
Community/local groups/the general public	Community participation Social public welfare Sustainable environment education Air pollution prevention	Participation in residents' activities in neighborhood from time to time Public welfare activities Visiting local groups Company's website Communication by phone or e-mail	In 2018, there were 30 meetings and communications among local residents, totaling 190 participants. Continuous social participation Continuous care for community Transform mine agriculture park About 138 million yuan has been spent on polution prevention in 2018.	Green Sustainable Circulation4 Green Sustainable Circulation5 Green Sustainable Circulation2
Suppliers	Company's operating strategies Supply chain management Procurement behavior Cement 4.0	Company's website Supplier Evaluation Supplier on-site audits or visits Supplier management platform ( Ecome ) Questionnaire on suppliers' opinion	Supplier's social responsibility commitment	Sustainable Governance Circulation1 Green Sustainable Circulation2
Government authorities	Compliance with regulations Transparent and timely information disclosure Recycling economy	Explanation sessions, seminars or forums of regulations Public information observatory and the Company's website Official document	Publish the significant information in accordance with the provisions in time. Comprehensive utilization of resources promotes recycling economy	Green Sustainable Circulation3
Non-profit organizations	Environmental protection investment Commitment to greenness Climate change Mine vegetation and greening	Company's website Participating in NGO activities Seminars/forums	Green mines invested 48.16 million RMB in 2018	Green Sustainable Circulation1
Industrial circles /academic institutions	Industry-academy cooperation Technology research and development Cement 4.0	Industry-academy cooperation projects Seminar Regular exchanges Scholarships and grants	Construction and education cooperation - Yuan Ze University, Yadong institute of technology Mine internship - Wuhan University of Technology, Southwest University of Science and Technology, Wuhan Institute of Technology	Green Sustainable Circulation4

#### Identification of the Impact

For the 22 relevant issues above, the CSR committee of Asia Cement (China) accessed the influence level of each consideration of Asia Cement (China) on the impact of economy, environment and society based on the opinion of the operation management personnel within the organization, and identified the impact on the material aspects of sustainable development of Asia Cement (China) after summarizing all the points.

#### Level of Concern of the Stakeholders

For the 22 topics identified, Asia Cement (China) collected the level of concern of the stakeholders through questionnaires, judged the relationship between the stakeholders and Asia Cement (China) and arrived at the weighted average of the concerning points of each topic and the level of the relationship to understand the level of concern of the stakeholders.

## **3.3** Management and Disclosure of Significant Topics

A matrix of material issues was identified based on the level of concern of the stakeholders and the impact on various sustainable issues. In consideration of covering all material topics, both Quadrants I and II were directly defined as material topics of Asia Cement (China), while Quadrant III as general issues would not be disclosed. In addition, although issues like indirect economic impact, anti-corruption, anti-competitive behavior and freedom of association were within the scope of Quadrant III, they were also defined as material issues directly. We have 22 material issues in total under the matrix.



#### **Confirmation and Review of the Completeness of the Material Aspects**

CSR committee would submit the identified material topics of Asia Cement (China) to the chairman for review and confirmation after summarizing the relevant information to ensure all topics and considerations were covered.

#### **Description on Non-material Issues**

Issues concerning anti-corruption and freedom of association were defined as non-material issues due to their low level in respect of the concern of the stakeholders and the impact on the organization, which was the result of a well-established trade association operating system of Asia Cement (China) and the recognition by all parties of years of efforts on the part of Asia Cement (China) in implementation of the principal of integrity management.

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## **3.4** Links to Significant Topics

Types of topics	Significant topics	GRI standards	Impact boundary	Chapter	Management policy	Execution status
	Economy Performance	201	ALL	Sustainable Governance Circulation1.2	33	38-40
Economic topics	Market Image	202	ALL	Sustainable Governance Circulation2.2	45	47-50
	Indirect Economic Impact	203	ALL	Green Sustainable Circulation1.5 Green Sustainable Circulation 4	7,26	11-12 , 27-29
	Raw Material	301	ALL	Green Sustainable Circulation3.1	24	24-25
	Energy	302	ALL	Green Sustainable Circulation2.3 Green Sustainable Circulation3.1	24	15-16
Environmental topics	Water	303	ALL	Green Sustainable Circulation2.4	24	18-21
	Emission	305	ALL	Green Sustainable Circulation2.3	24	15-16
	Environmental Compliance	307	ALL	Green Sustainable Circulation2.4	24	23
	Employment Relationship	401	ALL	Sustainable Governance Circulation2.1	45	46-50
	Employee/Employer Relationship	402	ALL	Sustainable Governance Circulation 2	45	45
Social topics	Occupational Health and Safety	403	ALL	Sustainable Governance Circulation2.4	45	52-56
	Training and Education	404	ALL	Sustainable Governance Circulation2.3	45	51-52
	Local Communities	413	ALL	Green Sustainable Circulation1.5 Sustainable Governance Circulation 4	7,26	11-12 , 27-29
	Sustainable Mines		Jiangxi Yadong Huanggang Yadong Sichuan Yadong	Green Sustainable Circulation 1	7	7-11
	Cement 4.0		ALL	Green Sustainable Circulation 2	24	13-15
Special topics	Recycling Economy	Custom	ALL	Green Sustainable Circulation 3	13	24-25
	Sustainable Environmental Education		Jiangxi Yadong Huanggang Yadong Nanchang Yadong Hubei Yadong Sichuan Yadong Sichuan Lanfeng	Green Sustainable Circulation 5	30	31
Note: ALL for "ALL c	operating sites".					

ISO 26000 Subjects	Content	Responding Report Chapter
6.2 Organizational governance	Establishing governance mechanisms and functions to implement social responsibility principles	Sustainable Governance Circulation 1.1
6.3 Human rights	Maintaining basic and advanced human rights considerations and principles	Sustainable Governance Circulation 2.1
6.4 Labour practices	Creating jobs, contributing to society, and maintaining labor rights and fair responsibility	Sustainable Governance Circulation 2.2 Sustainable Governance Circulation 2.3
6.5 The environment	Fulfilling environmental responsibility and paying attention to environmental issues	Green Sustainable Circulation 1 Sustainable Mines Green Sustainable Circulation 2- Low-carbon Green Intelligent Manufacturing
6.6 Fair operating practices	Fairly operating the ethical conduct standard for work practice	Sustainable Governance Circulation 1- Corporate Governance
6.8 Community involvement and development	Contributing to community development and forging community partnerships	Green Sustainable Circulation 4 - Social Care Green Sustainable Circulation 5 - Environmental Education

## 4.2 Environment, Society and Governance (ESG) Report Index

Category	Aspects	Key performance indicators	ESG indicators	Page/Notes
Environment	A1: Emissions	A1.1	Types of emissions and relevant data	15-16.21
		A1.2	Total volume of greenhouse gas emissions (calculated by ton) and (if applicable) its density (if calculated by capacity per unit, each infrastructure)	15-16
		A1.3	Total volume of hazardous wastes (calculated by ton) generated and (if applicable) its density (if calculated by capacity per unit, each infrastructure)	24-25
	A1.4	A1.4	Total volume of harmless wastes (calculated by ton) generated and (if applicable) its density (if calculated by capacity per unit, each infrastructure)	24-25
		A1.5	Stating measures and achievements of reducing the volume of emission	16
		A1.6	Stating the methods of dressing hazardous and harmless wastes, measures of reducing the volume and achievements obtained	24-25
	A2: Resources usage	A2.1	Total consumption (calculated by 1000 kwh) of direct and / or indirect energy (e.g. electricity, gas or oil) and its density (if calculated by capacity per unit, each infrastructure) by category	17-18
		A2.2	Total volume of water consumption and its density (if calculated by capacity per unit, each infrastructure)	19
		A2.3	Stating the efficiency plan of energy usage and achievements obtained	16-17
		A2.4	Stating if any problems exists when seeking for available water source, and the plan of improving water using efficiency and achievements obtained	19

Sustainable Governance App Circulation

Green Sustainable

Category	Aspects	Key performance indicators	ESG indicators				
Environment	A2: Resources usage	A2.5	Total amount of packaging materials used by finished goods (calculated by ton) and (if applicable) amount attributable to per production unit	No statistics			
	A3: Environment and natural resources	A3.1	ating the significant impacts on environment and natural resources of business activities and actions taken to manage such impacts				
Social	B1: Employment	B1.1	Total number of employees categorized by gender, employment type, age groups and regions	46-47			
		B1.2	Turnover rate of employees categorized by gender, age groups and regions	46			
	B2: Health and safety	B2.1	Mortality rate of work due to work injuries	54-55			
		B2.2	Number of lost work days as to work injuries	56			
		B2.3	Stating the measures taken for occupational health and safety and relevant implementation and monitoring methods	53			
	B3: Development and training	B3.1	Percentage of trained employees categorized by gender and employee type (e.g. senior management, medium management and so on)	51			
		B3.2	Average hours of each employee to finish the trainings categorized by gender and employee type	51			
	B4: Labor standards	B4.1	Stating the measures of reviewing recruiting practices to avoid child labor and compulsory labor	56			
		B4.2	Stating measures adopted for identifying the non-compliance conditions when such non-compliance occurs	50			
	B5: Supply Chain Management	B5.1	Number of suppliers by region	No statistics			
Wanagement		B5.2	Stating the management related to engaging suppliers, number of suppliers conducting relevant management as well as implementation and monitoring plan of such management	41-42			
	B6: Product responsibility	B6.1	Percentage of products in the total sold or delivered which need to be called back for health and safety problems	_			
		B6.2	Investments obtained for products and services and the corresponding response programs	-			
		B6.3	Stating the management only related to the maintaining and protection of intellectual property rights	-			
		B6.4	Stating the processes of quality examination and procedure of calling back products	-			
		B6.5	Stating the consumers' information protection and privacy policy as well as the implementation and monitoring approach	44			
	B7: Anti-corruption	B7.1	The number of corruption proceedings cases claimed against issuers or its employees and adjudicated and the proceedings results during reporting period	36			
		B7.2	Stating the precautionary measures and reporting procedures and relevant implementation and monitoring approach	36			
	B8: Community investment	B8.1	Focusing on the fields invested (e.g. education, pleasurable environment, labor needs, health, culture, sports)	9.11-12.27-29			
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Sustainable Topics Management



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