

 CHINA SHANSHUI CEMENT GROUP LIMITED

 中國山水水泥集團有限公司

 (於開曼群岛註冊成立的有限公司)

 (股份代號: 691)



2020 China Shanshui Cement Group Limited Environmental, Social and Governance Report

CONTENTS

01

About the Report

02 About the Group

03

Continuous Governance to Fulfill Responsibilities

3.1 Responsibility System	03
3.2 Stakeholder Communication	04
3.3 Materiality Assessment	05

04

Green Operations To Promote Enviornmental Protection

4.1 Strict Emission Management	06
4.2 Cherishing and Saving Resources	12
4.3 Constructing Ecological Mining Area	13
4.4 Environmental Performance	16



SEHK's ESG Reporting Guide Index 33

Definitions

35

05

Uniting the Team to Facilitate Growth

5.1 Protecting Rights and	17
Interests of Employees	
5.2 Strengthening Safety	20
Management	
5.3 Boosting Career	22
Development	

06

Strict Management to Ensure Quality

6.1 Establishing Win-win Procurement	24
6.2 Guaranteeing Product Quality	26
6.3 Adhering to Fighting Against	29
Corruption	

07

Friendly Community to Create Prosperity

7.1 Practicing Social

Responsibility

30

About the Report

This Environmental, Social and Governance Report ("the Report") is the fifth Environmental, Social and Governance Report ("ESG") of China Shanshui Cement Group Limited (the "Company"), which mainly discloses the performance relating to ESG of the Company and its subsidiaries (collectively referred to as the "Group" or "China Shanshui Group") in 2020, so as to enable each stakeholder to have a better understanding of the Group's sustainability philosophy, management approach, measures, relevant performances, etc. The Report is to be read in conjunction with the "Corporate Governance Report" section¹ of *China Shanshui Cement Group Limited 2020 Annual Report* ("2020 Annual Report"), so as to have a holistic view on the Group's ESG performance.

Reporting Period

Unless otherwise stated, the Report's Reporting Period is consistent with the 2020 Annual Report of the Group, which is 1 January 2020 to 31 December 2020 (the "Reporting Period"). Where necessary, some of the content goes beyond the aforesaid period so as to enhance the comparability of the Report.

Reporting Organizational Scope

The Report covers the Company and its subsidiaries. Unless otherwise stated, all information disclosed in the Report was sourced from the Group's documents and statistical reports, and the currency mentioned was in RMB.

Reporting Guideline

The Report was prepared based on the *ESG Reporting Guide* (2016 version) under Appendix 27 to the *Rules Governing the Listing of Securities ("Listing Rules")* issued by the Stock Exchange of Hong Kong Limited ("SEHK"). Moreover, it was prepared based on the principles of materiality, quantitative, balance and consistency to determine and disclose its contents. The Report was prepared in accordance with the "comply or explain" provision set out in the *ESG Reporting Guide* issued by SEHK.

In the process of preparing the Report, the Group's application of the above reporting principles was as follows:

Materiality: Use materiality assessment to identify material issues of the Group during the Reporting Period, and then focus on the identified material issues in the preparation of the Report;

Quantitative: Disclose the standards and methods used in the relevant data calculation in the Report, and disclose the applicable assumptions; and

Consistency: The preparation method of the Report is basically the same as that in previous years. Explanations are made for the data where there are changes in scope of disclosure and calculation methodology.

Access to the Report

The Report is published in two languages - Traditional Chinese and English. If there is any inconsistency between the two versions, the Traditional Chinese version shall prevail. You are welcome to obtain the Traditional Chinese and English versions of the Report in a PDF format at the Company's website, www.sdsunnsygroup.com, and SEHK's HKEX news website, www.hkexnews.hk.

Board Statement

The Board of Directors of the Company (the "Board") is responsible for assessing and determining ESG risks, ensuring the effectiveness of ESG risk management and internal control systems, and taking full responsibility for the Group's ESG strategy and reporting. The Board reviewed and approved the Report on 28 June 2021, and believes that the content of the Report is true, accurate and complete.

Comments and Feedbacks

If there are any comments or feedbacks for the Group's ESG report, you are welcome to contact the Group by email at anitalee@sdshanshuigroup.com .

¹For Corporate Governance Report, please refer to pages 62-82 of the 2020 Annual Report.

02 About the Group



China Shanshui Group is a large-scale enterprise group with cement and clinker production as its main businesses and one of the 12 national large-scale cement enterprises with key supports received from the country.

The Group is headquartered in Jinan, Shandong, and has six operating regions including Eastern Shandong Operating Region, Western Shandong Operating Region, Southern Shandong Operating Region, Shanxi Operating Region, Northeast China Operating Region, and Xinjiang Operating Region. The Group has more than 100 subsidiaries, covering 10 provinces (municipalities, autonomous regions) including Shandong, Liaoning, Shanxi, Tianjin, Inner Mongolia, Xinjiang, etc. As of the end of the Reporting Period, the Group's total annual cement production capacity exceeds 100 million tonnes. While consolidating the development of the cement industry, the Group has also been extending its industrial chain, with the aggregates, compounding and machinery industries taking shape.

The Group has been always adhering to the concept of scientific development and strives to establish itself as a resourcesaving and environmentally friendly enterprise. The subsidiaries of the Group have been certified to be in conformity to ISO 9001 Quality Management System, ISO 14001 Environmental Management System, ISO 50001 Energy Management System and OHSAS 18001 Occupational Health and Safety Management Systems. In addition, the Company's cement brand, "Shanshui Dong Yue", is rated as Shandong Famous Trademark and acquired the National Certified Quality Credit AAA Gold Medal.

The Group's products are widely used in key national projects such as railways, highways, airports and water conservancy, as well as urban and rural real estate markets, and have been successfully exported to more than 60 countries and regions such as the United States, Russia, Europe, Australia, the Middle East and Africa.

Over the years, the Group has been awarded the honorary titles of "Advanced Group of National Building Material System", "National May 1st Labor Certificate", "National Advanced Grassroots Party Organization", "National Model Worker's Home", "Shandong Civilized Unit", "Shandong 60 Years and 60 Brands", "Shandong Top 100 Taxpaying Enterprises", "Top 100 Listed Companies in Hong Kong", "China Top 500" and so on.

03 Continuous Governance to Fulfill Responsibilities

3.1 Responsibility System

The Group is committed to maintaining a high level of corporate governance. Good corporate governance standards are one of the necessary factors for the sustainable development of enterprises. They can also provide a basic framework for enterprises to increase corporate values, formulate business strategies and policies, and enhance transparency and accountability. The Board has established four committees, namely, the Audit Committee, the Remuneration Committee, the Nomination Committee and the Executive Committee, to monitor specific aspects of the Company's affairs. The Company's Audit Committee, Remuneration Committee and Nomination Committee have specific written terms of reference, which are published on the Company's website and the SEHK website.

In order to effectively manage risks, and with the goal of establishing a comprehensive corporate governance structure and accelerating the transformation of internal management, the Group has established a relatively sound risk management and internal control system. The audit department of the Group proceeded with supervision and examination on the implementation of the risk management and internal control system. Through regular or irregular special audits of the Group's business activities, the internal control system is effectively implemented, and the level of risk management and the quality of operations are under continuous improvement. In the future, the Group will continue to improve the construction and implementation of risk management and internal control systems with reference to SEHK's risk management and internal control systems.

At the same time, the Group also understands the potential impacts of ESG-related issues, such as exhaust gas emissions and energy use, on enterprises. Therefore, the Group will further improve its internal risk management and monitoring system in response to market dynamics, actively include the identification and response work of ESG risks, and strengthen the daily ESG management. The Group attaches great importance to ESG management. In order to implement the Group's sustainable development strategy and to carry out ESG work systematically and effectively, the Group has further strengthened the construction of ESG management. A top-down environmental and social responsibility system with clear responsibilities has been formed, which is composed of the Company's senior management, relevant functional departments and subsidiaries with significant influences on ESG matters of the Group. The system ensures the effectiveness and smooth processing of decision-making, organization and implementation of the Group's ESG matters. The Group will continue to improve ESG management to make ESG management more professional and systematic, so as to promote the sustainable development of the Group.

3.2 Stakeholder Communication

The Group actively maintains communication with all stakeholders, so as to understand their opinions and expectations on the Group's sustainable development performance, and carries out related ESG work to respond to their opinions and expectations. The stakeholders of the Group include shareholders and investors, employees, government, customers, suppliers, communities and the public, etc. The Group communicates through multiple channels and formulates relevant actions to respond to the expectations of all parties.

Stakeholders	Expectation	Communication Channels	Frequency	Actions of the Group
Shareholders and Investors	Business capability Profitability Corporate governance	Shareholders' meetings Regular reports Results announcements	Annual/quarterly/ irregular	Increasing production and operation quality and sustainable profitability Keeping optimizing corporate governance Conducting regular communication and strengthening information disclosure
Employees	Employee rights and benefits Occupational health and safety Training and development	Employment contracts Employee activities Training courses	Regular/irregular	Constantly improving the human resource management system and protecting employee rights and benefits Improving employee occupational health and safety work Proactively implementing training to foster employees' knowledge and skills
Government	Legal compliance Compliant operation Implementation of national policies	Policy formulation Work reporting Information disclosure	Regular/irregular	Strictly complying with laws and regulations and proactively cooperating with regulatory departments Strengthening corporate's compliant operation
Customers	Product quality Service guarantee Product research and development	Customer feedback mechanism Customer service The Company's website	Annual/quarterly/ irregular	Enhancing the quality assurance system to guarantee product quality Improving the customer service and feedback mechanism Promoting technological research and innovation to increase efficiency in production
suppliers	Fair and just procurement Cooperation with mutual benefits Sustainable win-win situation	Contracts and agreements Meetings Supplier assessment	Regular/irregular	Strengthening procurement management measures and ensuring fair and transparent bidding and procurement processes Fulfilling contracts and agreements Holding procurement meetings for communication
Community and the public	Community investment Harmonious development Environmental protection	Community support Community visits Philanthropic activities	Regular/irregular	Engaging in community support activities, such as targeted poverty alleviation Proactively organizing philanthropic activities such as volunteering activities Implementing environmental protection works

3.3 Materiality Assessment

In order to report the Group's main ESG performance and to response to stakeholders in the Report, the Group applied the principle of "materiality" and carried out a materiality assessment, refering to relevant ESG disclosure guidelines of SEHK, and at the same time fully considering the Group's corporate characteristics, development strategies, and stakeholders' concerns. The Group conducted a stakeholder survey on ESG issues in 2019. By identifying issues and inviting stakeholders to provide feedback, the Group got to understand the opinions of all parties on the importance of the Group's ESG issues and identified material issues. During the Reporting Period, the Group adopted the method of reviewing material issues to conduct materiality assessment. The Group examined and verified material issues based on the Group's corporate characteristics and development strategies, and finally determined the material issues of the Group during the Reporting Period. The highlights in the Report were determined based on the results of the materiality assessment. The Group understands the importance of continuous communication with stakeholders, and will continue to broaden communication channels in the future to maintain good and smooth communication, and to listen to the opinions and suggestions of stakeholders on the sustainable development of the Group.

The material issues for the Reporting Period are as follows. The Report will disclose the Group's ESG performance during the Reporting Period, based on the issues and the requirements of related reporting guidelines.

Environ-
mental

- Air Emissions
- Greenhouse Gas (GHG) Emissions
- Waste Disposal
- Use of Energy

- Water Usage
- Use of Packaging Materials
- Use of Raw Materials
- The Environment and Natural Resources

<u>Social</u>

- Employment
- Labor Standards
- Health and Safety
- Development and Training
- Supply Chain Management
- Product Responsibility
- Anti-corruption
- Community Investment

04 Green Operations to Promote Enviornmental Protection

4.1 Strict Emission Management

The Group strictly abides by relevant laws, regulations, standards and provincial, municipal and local implementation provisions of environmental protection that have significant impacts on the Group relating to air and GHG emissions, discharges into water and land, generation and disposal of waste and minimizing significant impacts on the environment and natural resources, which include but are not limited to the *Environmental Protection Law of the PRC, the Atmospheric Pollution Prevention and Control Law of the PRC, the Vater Pollution Prevention and Control Law of the PRC, the Law of the PRC on the Prevention and Control of Environmental Pollution by Solid Waste, the Law of the PRC on Prevention and Control of Pollution Law of the PRC, the Emission Standards of Air Pollutants for Cement Industry, the Technical Specification for Application and Issuance of Pollutant Permit Cement Industry (HJ 847-2017), and the Comprehensive Emission Standard for Regional Air Pollutants in Shandong Province (DB37/2376—2019).*





To implement environmental protection work, the Group formulated and implemented the *Environmental Protection and Energy Management System of Shanshui Group*, including two parts: environmental protection management and energy management. The main components of the environmental protection management system include: environmental protection management work procedures and requirements, organizational management and job responsibilities requirements, pollutant management and control, pollutant emission standards, environmental protection equipment management requirements, etc. The main components of the energy management system include: work objectives and principles, organizational structure and responsibility, energy use management, system certification and carbon emissions, etc.

In addition, the Group continues to increase investment in the transformation of environmental protection facilities to strengthen environmental management, to improve resource utilization efficiency and to reduce pollutant emissions. During the Reporting Period, the Group has created and approved 125 environmental protection technical transformation projects in total, including 8 dust removal facilities transformation projects, 10 denitrification and nitrogen reduction projects, 1 desulfurization transformation project, 16 noise control projects, 68 unorganized dust sealing transformation projects, 10 projects related to water saving and wastewater emission reduction, and 12 other environmental protection technical transformation transformation projects, with a total investment of RMB215 million.

During the Reporting Period, the Group incurred one fine due to the impact of dust, with a total amount of RMB66,300. In response to this, the Group seriously investigated the reasons, strengthened risk investigation and management, and at the same time increased the investment in environmental protection to strictly prevent the recurrence of similar incidents. Apart from this, the Group did not violate the above-mentioned relevant laws and regulations regarding the emission of exhaust gas and GHG, the discharge to water and land, the generation and disposal of waste.

4.1.1 Air Pollutants

The major air pollutants generated during the Group's operation included nitrogen oxides, sulfur dioxide and soot. The clinker production companies under the Group have all been issued with pollutant discharge permits, and regularly entrust independent environmental monitoring agencies to monitor the emissions.

The Group complies with the national integrated plan of industrial development, the overall deployment of urban air pollution control, and other national and local environmental protection requirements. Through the use of advanced pollution control technology and refined management, the Group equips complete air pollution prevention devices in each cement production line to strictly control pollution and to reduce their impacts on the environment. In order to further strengthen the basic management of environmental protection, the Group issued the *Notice on Strengthening the Group's Environmental Management Work*, requiring all operating regions and subsidiaries to perform relevant work strictly in accordance with the requirements to achieve refined environmental management.

Organizational Management Aspect	 Establish environmental protection management organizations to fully implement environmental protection responsibilities. Each operating region and subsidiary establish environmental protection departments with a dedicated environmental protection supervisor Establish and improve environmental protection management systems, improve the environmental management filing, and ensure complete environmental management ledgers Standardize the Group's environmental management process and establish a reporting system for environmental issues
Execution Aspect	 Focus on the airtight storage of raw materials and the covering of materials stacked in the open air Dust and noise control in the production process Safe operations of environmental protection equipment, etc.
Monitoring Aspect	 Require to meet pollutant discharge standards, and the discharge amount shall not exceed the aggregate indicators Formulate self-monitoring plans and strictly implement them
Personnel Capacity Building Aspect	 Require environmental protection training to raise environmental awareness of all employees

The Group pays great attention to the issuance of new national and local environmental protection standards and keeps abreast of the requirements of relevant policies in a timely manner. In response to newly issued or updated laws and regulations, the Group formulates emission reduction plans and takes countermeasures. Through sharing information, issuing notices, and monthly reports in the groups formed by the environmental protection personnel of the Group, the Group provides each subsidiary with suggestions and requirements for environmental protection management and supervises their implementation.

The Group's 2020 clinker production increased by 9.36% compared to 2019, while nitrogen oxide emissions decreased by 1,975.29 tonnes compared with 2019, with a year-on-year decrease of 13.26%; the emissions of sulfur dioxide decreased by 63.68 tonnes, with a year-on-year decrease of 5.80%; the emissions of smoke and dust decreased by 71.20 tonnes, with a year-on-year decrease of 14.78%.

During the Reporting Period nitrogen oxide emissions decreased by the emissions of sulfur the emissions of smoke 1,975.29 tonnes dioxide decreased by and dust decreased by 63.68 tonnes 71.20 tonnes compared with 2019 with a year-on-year decrease with a year-on-year decrease with a vear-on-vear decrease of 14.78% of 13.26% of **5.80%**



Dust-suppressing vehicle with mist cannon to reduce dust





During the Reporting Period, a total of 5 subsidiaries of the Group were awarded the fifth batch of national "Green Factories", including Shanshui Heju, Shuozhou New Era, Anqiu Shanshui, Qingdao Company, and Qingdao Chuangxin.

、业和信息化部认 袋 中国水泥协会颁 二〇二〇年十月

Car washing platform to reduce dust

Shanghe Company Improves Environmental Management

Shanghe Company, a subsidiary of the Group, adheres to the management philosophy of "protecting the ecological environment means protecting productivity, and improving the ecological environment means developing the productivity ", with the purpose of "ecological and civilized production". Through a systematic, scientific, institutionalized, and refined management method, Shanghe Company continually improves its own environmental management.





4.1.2 GHG

2020 is the final year of the "13th Five-Year Plan". The Group is fully aware that green and high-quality development of the cement industry plays an important role in promoting green development in the country. The Group strictly implements the "13th Five-Year Plan" outline, earnestly implements the deployment of the Party Central Committee and the State Council, firmly establishes the development ideals of innovation, coordination, green, open and sharing, and continuously innovates to promote green and low-carbon development.

The Group has established and implemented an energy management system, formulated an energy management policy of "complying with laws, cherishing resources, saving energy and reducing consumption, and competing for the best in indicators". The Group actively promotes energy-saving technology transformation of subsidiaries to improve energy efficiency, to reduce energy consumption, and to achieve the overall goal of energy conservation and consumption reduction. For details of relevant energy-saving measures, please refer to the "Energy" section in Chapter 4.2.1 of the Report.

During the Reporting Period, the Group's clinker production increased by 9.36% compared to 2019. The carbon dioxide emissions of all clinker production enterprises were 39,560,037.85 tonnes.

4.1.3 Wastes

The major non-hazardous wastes generated by the Group are general production and domestic wastes, while the major hazardous wastes are used machine oil from large speed reducers.

The Group classifies and disposes wastes according to national environmental protection requirements, and recycling wastes as much as possible according to the principle of "reduce, reuse and recycle", so as to minimize the impacts on the environment. The Group purchases and uses high-quality and long-life accessories during operations, thereby reducing the frequency of replacement. The Group also conducts oil sampling analysis of large equipment, replaces the oil based on its quality, extends the oil change intervals of some equipment, so as to reduce waste oil generation and the consumption of new oil.

The Group preferentially recycles recyclable wastes and then re-uses them. For non-recyclable wastes, depending on their nature, they are either burned in kilns or treated by entrusted qualified institutions. The waste engine oil is recycled after being filtered by an oil filter, and used for lubrication of equipment parts with low lubrication accuracy requirements such as stackers and reclaimers, chain conveyors, tracks of inclined bucket chain clinker conveyers, etc.

The Group also attaches great importance to the comprehensive utilization of resources in the production process and actively consumes industrial waste. The Group effectively uses converter slag and electric furnace slag produced by iron and steel companies, fly ash and desulfurized gypsum from coal-fired power plants, and sulfuric acid slag and fluorogypsum from chemical plants through the following ways. After processing with advanced production technology, various types of high-quality cement can be produced.

Sulfuric acid slag, converter slag, steel slag, fly ash, etc.		Fly ash and coal-fired slag	 Desulfurized gypsum and fluorine gypsum	
Sulfuric acid slag, converter slag, stee slag, etc., are used as part of raw materials to replace traditional iron ray naterials, while fly ash replaces natura shale as aluminum raw material, all of which is ground into raw material and calcined into cement clinker	v	Use fly ash and coal- fired slag as volcanic ash mixture	To replace natural dihydrate gypsum with desulfurized gypsum and fluorine gypsum	

During the Reporting Period, the Group's clinker production increased by **9.36%** compared to 2019



The carbon dioxide emissions of all clinker production enterprises were **39,560,037.85** tonnes

Consuming industrial waste to produce various types of high-quality cement

By adopting the above measures, the Group has reduced environmental pollution caused by industrial solid waste while turning wastes into treasure, which increases economic benefits and ensures social and environmental benefits. During the Reporting Period, the Group treated more than a total of 11,532,100 tonnes of industrial solid waste.

the Group treated more than a total of **11,532,100** tonnes of industrial solid waste

4.2 Cherishing and Saving Resources

4.2.1 Energy

In order to improve energy efficiency and reduce energy consumption, the Group continues to invest funds in energysaving technological transformation and production optimization. During the Reporting Period, the Group created and approved projects of RMB393 million for energy-saving technology upgrades, upgrading grate coolers, air compressors and preheaters, and adding electrochemical water treatment facilities for waste heat power generation. All of them improve energy efficiency and reduce the consumption of coal, electricity and water, and contribute to the national energy conservation and consumption reduction work.



Energy-saving upgrade of the fourth-generation grate cooler



Energy-saving upgr ade of air compressor

During the Reporting Period,

the Group's equivalent consumption of standard coal

was **4,846,077**

and its energy consumption per RMB10,000 of output

value was **1.82** tonnes of standard coal

The physical coal

consumption of clinker

was **121.78**

kg/tonne

which was

2.66 kg/ tonne lower than that in 2019

At the same time, in 2020, China Shanshui Group's waste heat power generation amounted to

1.448 billion kWh

equivalent to saving **178,000** tonnes of standard coal

and reducing

443,800 tonnes of carbon dioxide emissions

4.2.2 Water Resources

The Group strives to increase the utilization rate of water resources, and actively cooperates with local environmental protection departments in strict accordance with the requirements of environmental assessment approvals.

In terms of sourcing water, the Group actively contacts the local government and strives for the way to obtain water source. By investing more than RMB2 million in the construction of sedimentation tanks, the problem of turbidity caused by melting ice and snow in summer was solved. In addition, the Group fully considers water sourcing during design stages of projects, understands local water stresses, adopts appropriate water withdrawal measures, and has no other problems of sourcing water.

The Group's water used for production is fully recycled for waste heat power generation and equipment cooling, with a recycling rate of over 97%. Domestic wastewater is recycled in the integrated water treatment facility to meet the national A level standard for urban sewage discharge. After reaching the standard, it will be used for road spraying, material dust reduction spraying, and greenery irrigation, etc. The Group stipulates that the water used for road spraying and greenery shall be given priority to use recycled water, and to avoid the use of water resources such as groundwater and tap water.

<u> </u>
By investing more than
RMB2 million in the construction of sedimentation tanks
E B
recycling rate of over
97%

4.3 Constructing Ecological Mining Area

The mining of the Group adheres to the concept of green and harmonious development, and constructs green mines according to local conditions, in order to reduce the impacts of mining activities on the mining area and the surrounding environment. In order to strengthen the management of mine resources, the Group has established a Mine Resource Management Office, with a three-level management structure consisting of the Group, operating region and enterprise. The Mine Resources Management Office drafted and improved the *Regulations on Mine Resources Management* based on the current status of the Group's mine management, clarifying the requirements for mining procedures, the management requirements for the mining teams, the management requirements for green mine construction, and the assessment methods for mine resources management etc. Through the refinement of the mine resource management system, and each operating region and clinker enterprise assigning dedicated personnel or relevant personnel to be responsible for corresponding mine resource management according to the actual situation, the level of mine resource management has gradually improved. The mining has also shifted to standardized and scientific mining.

Professional management

The Group fully utilizes its professional technical personnel in mine resource management when reviewing mine projects. The Group strictly controls project approval, implementation application, technical scheme demonstration, investment amount, etc. Especially in the aspect of green mine construction, the Group strictly abides by the evaluation requirements of green mine construction implementation plan. By doing so, it not only meets the requirements of local government and relevant departments, but also avoids excessive investment in green mine construction as far as possible.

The Group's Resource Management Office promptly supervises the processing and renewal of mining licenses and safety production licenses for clinker enterprises, so as to ensure the legitimate mining of all subsidiaries. In 2020, more than 10 subsidiaries have completed the new application and extension of the mine mining license and safety production license on schedule. At present, the certificates of some subsidiaries are being submitted for review and approval due to the adjustment of nature reserves, regulation changes of woodland and grassland, etc.

Standardized and specialized mining and mine management projects

As China pays increasing attention to the management of mine resources, relevant departments have put forward new requirements for limestone mining, that green mine construction must be carried out for the use of mines. In strict accordance with relevant regulations, the Group steadily promotes the construction of green mines to meet relevant requirements and to fulfil its corporate social responsibilities.

The Group has strategically cooperated with a professional mining team, to strengthen the professional management of mines, and the results have been significant. Through the introduction of specialized mine construction teams, the Group's mine management has been gradually improved, and the level of green mine construction is at the forefront of the industry. After 4 subsidiary mines, Zibo Shanshui, Zaozhuang Chuangxin, Linqu Shanshui Tushan mining area and Anqiu Shanshui No. 1 mining area being awarded as national green mines in 2019, 5 mining areas were also selected as national green mines in 2020, including Pingyin Shanshui Qinglongshan mining area, Shanshui Heju Sijiazhang mining area, Bohai Cement Fuergou mining area, Yushugou mining area and Yingjisha Shanshui No. 2 mining area. 6 mining area, Linqu Shanshui Yangcheng mining area, Anqiu Shanshui No. 2 mining area, Jincheng Shanshui, Chifeng Yuanhang, and Zhalaite Qi Shanshui. Anqiu Shanshui Yinjiazhuang mining area and Jining Shanshui Heishan mining area were selected as the provincial green mine list for review and acceptance.

Through standardized mining and professional management by a professional construction team, the management of the Group's mining has gradually improved, and the comprehensive utilization rate of mine resources has reached a record high. Through the comprehensive utilization of waste rock, the Group not only reduces mining costs, but also extends the service life of the mines, realizing the green mine construction concept of comprehensive utilization of existing resources in the mining area.

Case

2020 National Green Mine Team--Shanshui Heju Sijiazhang Mining Area

Shanshui Heju attaches great importance to the construction of green mines, adheres to the guidance of "scientific development, safe development, and green development", earnestly implements the development concept of "improving development quality and efficiency". Shanshui Heju continuously increases manpower, material resources and capital investment, increases construction and rectification efforts, and has made remarkable achievements in terms of environmental beautification, comprehensive utilization of resources, energy conservation and emission reduction in mining areas. In the whole process of green mine construction and mineral resource development, Shanshui Heju implements the scientific and orderly mining plans, which controls the impacts on the ecological environment of the mining area and its surrounding areas within a controllable range. This results in realizing the ecologicalization of mining environment, application of scientific mining methods, efficient utilization of resources, digitalization of management information and harmony of mining communities.

Shanshui Heju actively develops green mine construction from the following five aspects:

- Adhere to scientific mining, strive to realize the modernization of mining methods, and minimize damage to the ecological environment;
- Implement special rectification to effectively prevent wind and dust, and reduce pollution;
- Increase investment to achieve ecologicalization of the mining area, adhere to the principle of mining and reclamation simultaneously, and cover the mined areas with greening;
- Improve the system, further improve various management systems, improve the ledger filing, and realize the standardization of mine management;
- Repaint and brighten the buildings in the living area to effectively ensure that the living auxiliary facilities meet the safety, sanitation and environmental protection requirements.





Case

2020 National Green Mine - Pingyin Shanshui Qinglongshan Mining Area

Pingyin Shanshui adheres to the guiding ideology of "legalization of mining, standardized management of mines, efficient use of resources, ecologicalization of the mining area, and digitization of the production environment". Pingyin Shanshui cooperates with professional mining teams to conduct comprehensive rectification on mining, and meticulously builds facilities in strict accordance with green mine construction plans. Therefore, green mine construction has achieved good results. In addition, Pinyin Shanshui strictly follows the requirements of mine's safety facility design, development and utilization plan and annual mining plan. The mining recovery rate reaches 100%, which maximizes the utilization rate of mine resources.

Pingyin Shanshui Qinglongshan Mining Area, as a green mine benchmark enterprise in Shandong Province, has been highly praised and recognized by the leaders of the municipal and provincial natural resources departments. Pingyin Shanshui adheres to the development concept of "lucid water and lush mountains are invaluable assets", and will continue to increase investment in mining and refine mine management.

- Standardization of mining area management
- In accordance with the first-level standard of mine safety production standardization and the green mine construction standard, various management systems such as safety, environmental protection, and production have been revised and improved.
- The annual mining plan was compiled. The mining plan objectives were clarified. The working area of each mining area have been reasonably arranged to achieve a benign mining plan of one year mining, three years observing, and five years planning.
- The flatness of working platform in stope is required (± 30 cm), which standardizes the mining order and ensures the normal production of the mine.





- Pingyin Shanshui carried out netting-and-spraying on the west slope to restore ecological management. The original bare gravel slope was transformed into a green belt with abundant vegetation, and the original ecosystem of the mountain was restored.
- Slope greening was adopted for the small platform at lower level, and creeper was planted at the bottom.
- The asphalt roads around the mountains were refurbished, and greening on the car stalls was carried out.





 Always adhere to the concept of green development, integrate mine production and ecological governance, carry out "mining, governance, recovery, and green mine construction at the same time, development and protection simultaneously", and vigorously promote the restoration and governance of the mine's ecological environment





 In line with the concept of "mining with science and technology, science and technology boost mining", digital mines will be built to continuously improve the level of informatization. GPS truck intelligent dispatching management system, mining equipment and road and mine video monitoring systems have been installed to monitor and optimize truck dispatching in real time. All of the above measures are to realize intelligent optimization dispatching, refined distribution, and mining production management control automation.



4.4 Environmental Performance²

The Group's environmental performance of emissions and use of resources during the Reporting Period is listed in the table below.

	Indicators	Units	2020	2019	2018	
		E	Basic Information			
	Clinker production	Tonnes	43,828,833	40,078,458	35,291,000	
			Air Pollutants ³			
	Nitrogen oxides	Tonnes	12,924.97	14,900.26	15,061.57	
	Sulfur dioxide	Tonnes	1,034.05	1,097.73	804.73	
	Soot	Tonnes	410.40	481.60	547.39	
			GHG⁴			
Carbon	Scope 1	Tonnes	37,995,310	34,535,335	30,748,100	
dioxide	Scope 2	Torines	1,564,728	34,333,333	50,140,100	
	on dioxide emissions per ne of clinker production	Tonnes	0.90	0.86	0.87	
		L	lse of resources⁵			
	Electricity consumption ⁶	kWh	4,008,896,211.04	3,703,702,191.37	3,150,000,000.00	
Indirect energy	Electricity consumption per tonne of clinker production	kWh	55.85	55.73	55.15	
	Electricity consumption per tonne of cement production	kWh	75.66	74.95	76.50	
	Raw coal consumption	Tonnes	5,337,326.49	4,987,315.78	4,464,000.00	
Direct energy	Raw coal consumption per tonne of clinker production	Tonnes	0.122	0.124	0.126	
Tot	al energy consumption	kWh in '000s	39,451,102.12	36,775,677.29	31,496,884.17	
То	tal water consumption	Tonnes	12,611,395	10,762,433	13,686,773	
	r consumption per tonne of clinker production ⁷	Tonnes	0.26	0.24	0.36	
	r consumption per tonne f cement production ⁸	Tonnes	0.28	0.26	0.38	
Pac	kaging bags of cement	Pieces	211,194,410	201,545,797	194,378,793	
		R	esource recycling			
	ectricity generated from waste heat recovery	kWh	1,448,388,233.70	1,324,006,348.69	1,164,000,000.00	

²As the Group's environmental impacts mainly came from production activities, the environmental performance only includes relevant data from the Group's production area.

³As the Group's air pollutant emissions mainly came from the clinker production process, the pollutant-related performance included all the Group's clinker production enterprises except Baishan Shanshui, with a total of 34 enterprises and the data were sourced from the real-time monitoring data of projects. Baishan Shanshui is a subsidiary that newly started production. Since its online monitoring system has not yet operated normally, it has not been included in the 2020 scope of nitrogen oxides, sulfur dioxide, and soot emission data. Therefore, the 2020 data scope is consistent with that in 2019.

⁴As the Group's GHG emissions mainly came from the clinker production, the data scope only included all 35 clinker production companies. The calculation of carbon dioxide was based on the Accounting Method and Reporting Guideline for Greenhouse Gas Emissions of Cement Production Enterprises in China. During the Reporting Period, carbon dioxide emissions were disclosed in direct (scope 1) and indirect energy (scope 2) repectively. According to the requirements of Notice on Strengthening the Management of Corporate Greenhouse Gas Emissions Reporting, local authorities in China will verify the provided GHG data of the Group. The review of the audit report will be finished before 31 December 2021. The verified GHG emission data of the Group according to the review shall prevail. The 2020 GHG emission data may be properly adjusted with reference to the audit result.

⁵As some of the Group's subsidiaries were not engaged in production activities, the resource consumption data included data from 83 companies of the Group, including kiln-milling enterprises (including the kiln enterprises) and grinding enterprises.

⁶Electricity consumption included purchased electricity and waste heat power generation.

⁷Water consumption per ton of clinker referred to the calculated water consumption per ton of clinker produced based on the water consumption of clinker production.

⁸The water consumption per ton of cement production was calculated based on the water consumption of cement production.



05 Uniting the Team to Facilitate Growth

5.1 Protecting Rights and Interests of Employees

The Group adheres to the people-oriented philosophy and is committed to providing employees with a broad growth platform and an equal and harmonious working environment. The Group strictly abides by the relevant laws and regulations that have significant impacts on the Group relating to remuneration and dismissal, recruitment and promotion, working hours, holidays, equal opportunities, other benefits and welfares, and prevention of child labor and forced labor, including but not limited to the *Labor Law of the PRC, the Labor Contract Law of the PRC, the Social Insurance Law of the PRC, the Law of the PRC on the Protection of Minors*, the *Provisions on the Prohibition of Using Child Labor* and Hong Kong's *Employment Ordinance*. Moreover, the Group has established and implemented the *Regulations on Recruitment Management of Shanshui Group* and other human resource management systems and carries out recruitment work based on the principles of freedom of employment and legal employment.

During the Reporting Period, the Group has strictly complied with the above-mentioned laws and regulations concerning remuneration and dismissal, recruitment and promotion, working hours, holidays, equal opportunities, other benefits and welfares, and the prevention of forced labor. Additionally, there were no cases involving hiring of child labor, or discrimination against women in employment.

The Group formulated the *Regulations on Recruitment Management of Shanshui Group*, and recruitment is carried out based on the principles of openness, fairness, justice, equal competition and merit-based selection.

Recruitment of child labor is strictly prohibited

Specify the minimum working age in the recruitment brochure, and strictly review the applicants' information during the recruitment process, such as ID cards, household registration books, and academic certificates to ensure that they reach the minimum legal working age.

If child labor is found, the employment will be stopped immediately and the child labor will be returned to the original residence by the unit to his/her parents or other guardians. Meanwhile, the reasons shall be found in the internal unit to prevent such situation from happening again.

Employee diversity

Advocate a diversified employment policy and do not treat employees differently based on ethnicity, gender, religion, etc.

Localization of talents

Rely on the management of the operation region to conduct local recruitment of talents, so as to gradually realize the localization of talents. Cultivate management professionals and technical talents in the local industry for relatively technologically backward areas in the central and western regions (Northeast, Shanxi, Xinjiang), and promote local employment.

After commencement of employment, the Group enters into labor contracts with employees and pays various social insurances (including basic pension insurance, medical insurance, unemployment insurance, maternity insurance and work-related injury insurance) and housing provident fund in accordance with laws. For personnel in production and related positions, the Group also provides personal accident insurance to them for increased protection.

The Group has formulated and implemented the *Selection, Training and Adoption Plan for Reserve Talent of Shanshui Group,* and arranged promotions based on employees' work capabilities and performance, so that outstanding employees can stand out and grow rapidly. In order to strengthen the management level of the Northeast, Shanxi, and Xinjiang operating regions and subsidiaries, the Group selects outstanding cadres from Shandong to work in subsidiaries with weaker performance. This helps to introduce new ideas and promotes the improvement of corporate management.

The Group respects employees' rights of taking rest and leaves. The Management Measures for Employee Attendance of Shanshui Group and the Implementation Measures for Paid Annual Leaves of Shanshui Group have been formulated and implemented, stipulating that employees should not work more than 8 hours per day or more than 40 hours per week. Employees enjoy various statutory holidays, such as weekly rest days, statutory holidays, marriage and compassionate leaves, paternity leaves, paid annual leaves according to national regulations. The Group strictly controls overtime work and the absence of rest on statutory holidays to prevent forced labor. In addition, appropriate subsidies are also provided for work out of normal working hours in accordance with relevant regulations.

The Group has re-examined the Group's organizational structure and remuneration system, and formulated an optimization plan, which laid the foundation for standardized and refined management in the future. In addition, the Group regularly reviews the remuneration packages offered to its employees according to market conditions, enterprise economic benefits and employees' income level, so as to ensure that employees' efforts are recognized. Rewards or punishments are given to employees in half a year and at the end of the year according to operating conditions.

Fight the pandemic together

In the case of COVID-19 pandemic in early 2020, the Group strictly followed national and government's prevention and control requirements. Employees were given the right to leave under quarantine, inspections and other epidemic prevention. The Group implemented a flexible working system and guaranteed employee's benefits, ensuring that no employee will be dismissed due to the pandemic, which fulfilled the Group's social responsibilities and demonstrated the responsibility of a large group.

The Group actively takes the lead in complying with the regulation of staggered production halt. During the production halt, relevant compensation is paid in accordance with national regulations to protect the legal rights and interests of employees. At the same time, the Group has formulated a reasonable salary distribution system and reward and punishment measures during normal production months. The overall compensation does not decrease due to the reduction of working hours, but increases every year.

For employees leaving the Group, the Group will first communicate with employees in accordance with the *Regulations on Resignation Management of Shanshui Group*, in order to understand their reasons for leaving. The Group assists employees in completing the resignation procedures according to situations and implements compensation for resignation. In addition, necessary rectifications are carried out by the Group for improvement.

	2020	2019	2018
Total Number of Employees ⁹	17,839	17,968	18,280
	Total Emplo	yees by Gender	
Male	13,466	13,555	13,598
Female	4,373	4,413	4,682
· · · ·	Total Employees	by Operating Regions	
Headquarter	399	233	265
Eastern Shandong Operating Region	4,374	4,500	4,253
Western Shandong Operating Region	4,358	4,652	4,810
Southern Shandong Operating Region	1,454	1,476	1,535
lortheast China Operating Region	4,557	4,397	4,915
Shanxi Operating Region	2,143	2,178	2,007
Xinjiang Operating Region	554	532	495
	Total Employees	by Job Responsibility	
Production	10,381	10,767	9,967
Sales	1,281	1,176	1,177
Technician	1,689	1,620	2,191
Finance	698	690	671
Administration and Management	1,545	1,221	1,471
Others	2,245	2,494	2,803
	Total Employees	s by Education Level	
College or above	5,196	5,037	4,987
Technical secondary school, technical school and senior high school	7,272	7,449	9,525
Secondary school and below	5,371	5,482	3,768
	Total Emp	loyees by Age	
Below 20 years old	16	51	41
20-30 years old	2,415	2,972	3,372
30-40 years old	6,764	6,456	6,305
40-50 years old	5,301	5,428	5,564
Above 50 years old	3,343	3,061	2,998

⁹During the Reporting Period, all employees of the Group were full-time. There were no part-time employees.

5.2 Strengthening Safety Management

The Group strictly complies with laws and regulations at national, provincial, prefectural and local level that have significant impacts on the Group relating to the provision of a safe working environment and the protection of employees from occupational hazards, including but not limited to the *Work Safety Law of the PRC, the Law of the PRC on Safety in Mines, the Special Equipment Safety Law of the PRC,* the *Law of the PRC on the Prevention and Treatment of Occupational Diseases,* the *Emergency Response Law of the PRC.* In addition, the Group has formulated and implemented the *Regulations on the Work Safety Management of Shanshui Group, the General Rules for the Use of Safety Labels of Shanshui Group* and other internal policies.

During the Reporting Period, the Group did not violate the abovementioned national laws and regulations on providing a safe working environment and protecting employees from occupational hazards.

The Group has established a sound occupational health and safety management network, and earnestly implemented the occupational health and safety management system, so that the Group's occupational health and safety management can be standardized. The Group takes effective measures to strengthen daily occupational health and safety management, promotes the implementation of safe production rules and regulations and job safety operating procedures, standardizes health and safety work management procedures, strengthens employees' safety awareness and responsibility and minimizes the occurrence of health and safety accidents.



During the Reporting Period, the Group carried out a series of safety management work, mainly including improving the safety management system, carrying out safety standard assessment, strengthening the investigation and management of hidden hazards, providing safety education and training, and strengthening the occupational health monitoring of employees, to protect their health and safety.

Improve Safety Management System

 According to the safety management situation of each subsidiary the Group has drafted and issued the Regulations on the Safety Management of Fire Work in Danger Zones, the Safety Audit Implementation Measures, the Safety Issues/Incident Management Procedures, the Accountability for Production Safety Incident, etc., to regulate the safety behaviors of employees and implement safety production responsibilities at all levels.

Carry out Safety Standard Assessment

• In 2020, the Group focused on the safety standard assessment of its subsidiaries. All subsidiaries have formulated and implemented the safety standard assessment implementation plan and promotion plan. A one-time assessment has been conducted to all employees of the Group, which has achieved good results.

Strengthen the Investigation and Management of Hidden Hazards

The Group has conducted security audits. In the second quarter, the security audits were organized by each
operating region, while the third quarter security audits were organized by the Company. Auditors from each
operation region and the safety management officer of the Group jointly carried out the audit. Based on the audit
results, the Group continuously tracked the rectification of problems, notified the result in the monthly safety
production meeting. The rectification rate reached 100%.

Carry out Safety Education and Training

- Invite domestic health education experts and safety training experts to conduct health knowledge and safety
 management training for the Group's subsidiaries through video.
- Supervise and urge all subsidiaries to formulate and implement annual safety training plans, and regularly carry out emergency drills for work safety accidents. In 2020, subsidiaries organized 178,498 health and safety trainings and more than 605 various emergency drills.

Strengthen Employee Occupational Health Monitoring

- Every year, each subsidiary provides occupational health examinations conducted by a qualified institution to persons exposed to occupational hazards, conducts on-site occupational hazard inspections, establishes and improves employees' occupational health files. More than 90% of subsidiaries have also carried out annual physical examinations for employees in general positions, paying close attention to the health of employees.
- Especially during the COVID-19 pandemic, the Group has improved the health declaration system, established health ledger for employees, and continued to strengthen the safety and health monitoring of the employees.

Emergency drills and knowledge training for various emergencies such as production safety and fire safety



5.3 Boosting Career Development

The competition between corporates is ultimately the competition of talents. Strengthening technical training is an effective way to improve the labor performance of corporates, to enhance corporates' competitiveness, and to achieve high-quality development. The Group attaches great importance to training and cultivation of technical talents. To this end, the Group organizes high-standard and high-quality technical training activities for its employees every year. In accordance with the development requirements of the Group at this stage, employee training is divided into two categories: induction training for new employees and on-the-job training.



The Group provides pre-job training for new recruits, aiming to enable new employees to further understand the Group through induction training, and have a comprehensive understanding of corporate development, corporate culture, business processes, management systems etc., so as to quickly integrate and adapt to the needs of the job.



The Group provides training for on-the-job employees in a planned way and based on actual conditions, to enhance their job skills and job performance, and meet the development needs of the Group. On-the-job training implements a two-level management, including the Group, and subsidiaries and departments (offices). The training is carried out based on the principle of "mainly internal training, supplemented by external training" and equal emphasis on theories and practical skills. During the Reporting Period, training activities held by the Group are outlined as follows:

• Special training on product quality

To strengthen the quality awareness of all employees, to improve the ability of standardized operations, and to consolidate the basis for quality improvement, the Group invited the head of Shandong Provincial Quality Supervision Station to conduct special training on product quality and to explain the newly implemented national standards and quality sampling methods with the theme of "Pursue Excellent Quality and Build Shanshui Quality" for the quality month activity. This event strengthened the quality awareness of all employees and helped to further improve the quality management level of the Group.



Special training on legal affairs management

In order to further enhance the legal awareness of management personnel at all levels, to enhance corporate governance and risk prevention capabilities, and to effectively safeguard the legitimate rights and interests of the Group, the Group organized a special training on legal affairs management.

"School-corporate cooperation" promotes a new enterprise apprenticeship system

Pingyin Shanshui and Jinan Technician College's "New Apprenticeship Intermediate Training Course" has commenced. The main feature of the new apprenticeship system is "recruitment means enrollment, entering the corporate means entering the school, joint training of corporate and school teachers". Under the guidance of "school teacher + enterprise mentor", enterprise apprentices can learn professional knowledge and have operational skill training, which is the integration of theory and practice, so thay they quickly grow into high-quality and skilled talents that meet the needs of corporates.



• Quality inspector skills competition

In order to fully implement the Group's talent development strategy, to promote the spirit of craftsmanship for excellence, to stimulate and to mobilize the enthusiasm of employees to learn skills, and to accelerate cultivation of a large number of high-quality and high-skilled talents, the Western Shandong Operating Region held a quality inspector skills competition. In this skill competition, the inspectors were tested on the skills of quality inspection through two categories: theoretical knowledge and practical operation.





06 Strict Management to Ensure Quality

6.1 Establishing Win-win Procurement

The Group takes "achieving continuous win-win development with partners" as the objective of supply chain management, and controls the environmental and social risks in the supply chain. The Group always upholds the basic principles of "openness, fairness and impartiality", and standardizes supply chain management with reference to the Group's five basic regulations, namely the Management Measures for Monitoring and Control of Procurement and Supply of Shandong Shanshui, the Coal Procurement and Supply Management Measures of Shandong Shanshui, the Management Measures of Shandong Shanshui, and the Supplier Management Measures of Shandong Shanshui, and the Supplier Management Measures of Shandong Shanshui.



The Group has established a material supplier management and control system with a three-level structure, consisting of headquarter, operating regions and subsidiaries. The Group strives to implement centralized procurement and to supply for general, shared, large quantity and resource-based materials, and has established a centralized procurement platform. The Group has entered into long-term strategic cooperation agreements with international, domestic and industrial first-class manufacturers to establish stable direct supply cooperation relationships and to achieve win-win cooperation between upstream and downstream enterprises in the industry chain. The Group has won the 2020 Centralized Procurement Supply Chain Innovation Award of National Cement Industry for its "three-level procurement and supply" management on supply chain.



Through the establishment of supplier entry requirements and an information database, the application of grading mechanism, quantitative assessment and survival of the fittest mechanism, the Group strengthens the unified management of suppliers and effectively improves the quality of procurement and supply. When selecting suppliers, the Group fully considers the following factors: the supplier's business qualifications, business performance, supply capacity, supplying product's quality, price, and social reputation. In order to further reduce potential environmental and social risks in the supply chain, the Group requires suppliers to comply with environmental protection policies in their production and operations, to meet environmental protection requirements, and to have quality, environmental management system certification and occupational health and safety management system. Based on the evaluation results, the Group sorts out and classifies suppliers, actively develops strategic cooperation with qualified suppliers, thoroughly eliminates unqualified suppliers, and continuously optimizes the structure of supplier database, so as to effectively prevent supply risks and achieve the goal of guaranteeing a continuous supply. During the Reporting Period, the Group had 5,134 suppliers.



Percentage of suppliers by region

When purchasing raw materials, the Group pays attention to the quality of raw materials provided by suppliers and strictly controls the risks posed by the supply of raw materials. The procurement management department of the Group will conduct market research in advance at the initial stage of procurement, and then go to the site for sampling and testing together with the quality control room, and carry out bidding and procurement according to the raw material quality standards of each subsidiary. If products are found not to meet the contractual requirements during product delivery, the Group will rectify the problems according to the measures formulated by the Group, such as the *Control Procedures for Nonconformity*, the *Control Procedures for Monitoring and Measurement of Products* and the *Technical Requirements for Procurement of Materials*. In case of any objection relating to quality, a product quality arbitration inspection will be carried out by the nationally recognized cement quality supervision and inspection agency at or above the provincial level.

Procurement of Coal

Establish long-term strategic partnerships with large domestic coal companies to realize the pointto-point supply model of "fixed coal mines, single coal type, and direct coal supply". The quality of coal has been steadily improved, and the kiln system is operating more stably.

Procurement of Raw Materials

Signed a strategic cooperation direct supply agreement with the National Energy Group Shandong Shiheng Thermal Power Co., Ltd. and other manufacturers.

Procurement of oil products, auxiliary materials and spare parts

Maintain long-term cooperative relations with large domestic enterprises and internationally renowned brands to provide a strong guarantee for material procurement.

The Group also responds to national environmental protection requirements by comprehensively utilizing wastes. Through active negotiations with the power plants surrounding the subsidiaries, the Group obtains direct supply resources such as fly ash and desulfurized gypsum. By doing so, the Group alleviates the situation of limited supply of raw materials to meet production needs, saves procurement expenses, but also creates good social benefits.

Case

The Group has signed a strategic cooperation with the National Energy Group Shandong Shiheng Thermal Power Co., Ltd. The fly ash and desulfurized gypsum produced by the power plant will be directly supplied to the subsidiaries of the Group. Not only did this cooperation produce good economic benefits, but also the Group fulfilled the environmental protection responsibility, thus achieving a win-win cooperation along the supply chain.



6.2 Guaranteeing Product Quality

The Group strictly complies with relevant laws and regulations that have significant impacts on the Group relating to health and safety, advertising, labelling and privacy matters relating to the products and services provided and methods of redress, including but not limited to the *Product Quality Law of the PRC, the Standardization Law of the PRC,* the *Metrology Law of the PRC*, the *Regulation of the PRC on the Administration of Production License for Industrial Products, the Work Safety Law of the PRC,* the *Contract Law of the PRC, the Advertising Law of the PRC, the Trademark Law of the PRC,* the *Patent Law of the PRC on the Products and the Quality Control Regulations for Cement Manufactures.* Each subsidiary of the Group has obtained three system certifications including environment, quality and occupational health and safety management and carried out production and related management activities in strict accordance with the system standards. During the Reporting Period, no product sold or shipped was subject to recalls by the Group for safety and health reasons.

The Group adheres to the business tenet of "customer first, quality first" and corporate policy of "focusing on quality, creating excellent products, satisfying customers, and continuous improvement", continuously improving product quality and service levels, and wholeheartedly providing customers with the highest quality. To ensure product quality, the Group has established a process management system and operational guidelines in accordance with relevant national laws and regulations, established a strict quality control system, and ensured production efficiency and product quality by purchasing manufacturing equipment with excellent performance, providing systematic professional training to employees and establishing strict quality management regulations.

- The Group has formulated and implemented the *Quality Management System of Shanshui Group*, standardizing the quality standards and inspection procedures from procurement, production to final products, with quality control at each process control point; regularly compared inspection with functional departments to ensure that the production process is fully under control.
- The Group has also formulated the *Inspection Project Operation Guide of Shanshui Group* according to the national inspection method standards, including inspection methods of coal quality analysis, operation guide of control and inspection, chemical analysis operation guide, physical inspection operation guide, operation instruction guide of cement concrete admixture test and inspection, so as to strictly comply with relevant national standards and regulations for product inspection.
- Strict process management

Improve the quality

> control sy<u>stem</u>

- The Group conducts quality control at various process control points in accordance with relevant systems and regulations, and regularly conducts inspections and comparisons with functional departments to ensure that the production process is fully controlled.
- Each production department regularly conducts internal or external professional training for company employees, and regularly organizes examinations to strengthen their quality awareness.



 The sales department of the enterprise actively listens to the customers' thoughts, maintains the sensitivity to the market demand, insists on introducing and innovating at the same time, continuously optimizes the product design, and introduces products with better energysaving effect and more stable performance, so as to meet the customers' demand for quality, performance and delivery time.

In accordance with the requirements of national standards, the Group clearly labels product information on product packaging, including but not limited to the implementation standards, types of cement, strength grades, name of manufacturers and labels of production license. The name and strength grade of cement are printed with different colors on both sides of the package of cement according to the types of cement.

In order to standardize the recall of unqualified products, to prevent and eliminate the damages caused by unqualified products as many as possible, the Group has formulated a product recall system. If the product is found to be unqualified by sampling inspection, or customers complain about the product quality, and the analysis confirms that the complaint is reasonable and the products have quality problems, the recall procedure will be initiated. The Group will track the regional markets, terminal building material points and customers based on records where products should be recalled; arrange corresponding warehousing and transportation to ensure timely and efficient emergency recall immediately and actively take relevant response or remedial measures. The recalled products will be appraised on the spot, and sorted and stacked after isolation. Through the quality assessment of the recalled products, the Group will make specific disposal decisions and analyze the reasons, so as to take targeted corrective measures to prevent similar problems from happening again. The Group will also follow up related work on the adverse effects in the market due to unqualified products.

In order to better serve customers, concerning the market performance of sold products, the Group has established the customer service agency to advocate product performance, to introduce usage methods and to collect customer suggestions through telephone return interviews, site visits, user seminars, etc.

The Group has also formulated a management procedure for product quality complaints. Product quality complaints were communicated and handled in strict accordance with the Group's system and procedures immediately:



The Group maintains and uses trademarks in strict accordance with relevant laws and regulations, and conducts advertising activities. Regarding advertising, the Group's operating regions have issued relevant systems in a unified manner, including the establishment standards and coordination management of special funds for advertisement and promotion, the approval and implementation of advertising plans, etc., to standardize advertising management. Each subsidiary sets up special funds for advertising and publicity according to standards, and each sales department formulates advertising plans and budgets in the sales area based on the characteristics of the local market, and submits them to the sales center in the operating region for approval. The marketing center in the operating region reviews and approves the advertising plan based on the Group's overall brand operation principles and regional characteristics. The sales department of each subsidiary assigns dedicated personnel to be responsible for implementation.

In order to safeguard and protect intellectual property rights, as well as to safeguard the Group's brand image and protect consumer rights, the Group firmly opposes counterfeit and shoddy products. The Group has formulated and implemented the *Work System for Trademark Maintenance in Cement Market* and the *Implementation Procedure for Anti-counterfeiting Work in Cement Market*. The Northeast China Operating Region issued the *Notice on Strengthening the Anti-counterfeiting Work of the Cement Market in the Northeast China Operating Region* in 2018, and established an anti-counterfeiting office. A market anti-counterfeiting work system has been set up to clarify the operation process of anti-counterfeiting work. The anti-counterfeiting office regularly visits the areas and cross-regions where each subsidiary is located and the research is carried out to avoid the occurrence of imitating the packaging and products of the Group. In order to maintain the brand image of the existing eight major brands, the Northeast Operating Region has formulated the *Cement Packaging Bag Standard and Acceptance Rules* in accordance with the Group's *System for Trademark Maintenance in Cement Market*, which standardizes the packaging bag appearance, quality and acceptance audit process of each brand. Meanwhile, in accordance with the Group's *Notice on Regulating the Group's External Publicity Work*, regulations have been made on the content and form of publicity, which standardizes the external advertising and publicity work, and strengthenes the protection of intellectual property rights.

The Group attaches great importance to protecting the privacy of both itself and its customers and requires employees to sign corporate confidentiality commitments. The Group protects customer information, establishes customer files for customer information, keeps them in a timely manner, and only uses them for data and audit purposes. The Group also sets up lockers for information safekeeping and the ledger for chekcing is kept by a designated person. It is also stipulated that information cannot be circulated without permission. Confidentiality permissions and real-name authentication accounts have been set up in the sales system. In addition, sales managers are required to sign a confidentiality responsibility agreement to strictly protect customer privacy.

6.3 Adhering to Fighting Against Corruption

China Shanshui Group strictly abides by relevant laws and regulations that have significant impacts on the Group relating to prevention of bribery, extortion, fraud and money laundering, including but not limited to the *Anti-Money Laundering Law of the PRC*, the *Criminal Law of the PRC*, and the *Listing Rules*.

In order to strengthen the awareness and discipline of the party members of the Group's leading cadres, the Group has formulated and implemented the *Regulation on Integrity and Self-discipline of Party Members of Leading Cadres of Shandong Shanshui*, the *Regulations on the Work of Disciplinary Inspection and Petition of Shandong Shanshui*, the *Regulations on Petitioning and Reception of Shandong Shanshui*, and other regulations, on the basis of the *Party Constitution*, the *Party Disciplinary Measures*, the *Party Integrity and Self-discipline Guideline*. The Group has deeply implemented the responsibility system for the construction of a clean governance, established codes of conduct for integrity and self-discipline and regulations for disciplinary actions, and insisted in self-discipline as well as external-discipline.

Integrity and self-discipline

- Establish a code of conduct for integrity and self-discipline, which prohibits the selection and appointment of leading cadres in violation of regulations, the use of powers and duties to facilitate improper interests and duties, engagement in profit-making activities without permission, and practice of jobbery.
- Establish and improve punishment regulations, conduct corresponding investigations for violations of prescribed disciplines and transfer suspected crimes to judicial institutions for handling.
- Strengthen the supervision and management mechanism. Party organizations at all levels are responsible for implementing the integrity and self-discipline regulations, and conduct supervision and inspection together with the Group's discipline inspection committee, supervision and audit department.

Complaint and report

- Clarify the responsibilities of each department. The party department is responsible for report, register, and transfer the complaints and reports. The leaders of the discipline inspection committee and other departments are responsible for reviewing the materials and submitting to relevant departments for implementation and handling, and the discipline inspection committee is responsible for supervising the implementation.
- After receiving complaint and report, the Group will review and handle relevant matters, and promptly investigate and deal with violations of regulations and disciplines. If the problem is reported to be serious, it will be handed over to the Group for investigation and processing. After the processing is completed, the Group will respond to the real-name whistleblower and file the case in accordance with the regulations.

During the Reporting Period, the Group did not violate the above-mentioned laws and regulations related to the prevention of bribery, extortion, fraud and money laundering, and there were no concluded legal cases of corruption against the Group or its employees.

07 Friendly Community to Create Prosperity

7.1 Practicing Social Responsibility

The Group actively fulfills its social responsibilities and civic obligations. According to the *Welfare Donations Law of the PRC*, the *Company Law of the PRC* and other relevant laws and regulations, the Group has formulated the *Management Measures for External Donation and Sponsorship of Shanshui Group (Provisional)* to further standardize the Group's external donation process, donation scale, donation scope, etc., and strengthen the Group's management of donations and sponsorship matters, so as to comprehensively and effectively promote and advocate the Group's brand and corporate image. The Group implements unified management on the donation and sponsorship of subsidiaries. The scope of external donations and sponsorships of the Group includes donations and sponsorships to disaster-stricken areas, designated poverty alleviation areas, designated assistance areas, disadvantaged social groups, and social welfare undertakings such as science, education, culture, health, environmental protection, energy conservation and emission reduction.

▶ Ш水鎮团

m m

During the Reporting Period, the Group participated in various charitable and other donation activities, with a total amount of charitable and other donations amounting to RMB15.033 million, and carried out community charity activities to show love to people in need in society.

Poverty Alleviation and Donation



On January 17, 2020, Pingyin Shanshui presented Spring Festival gifts to elderly people over 60 and poor households in four villages namely Dongmaopu Village, Ximaopu Village, Dongfenghuang Village and Daguan Village.



On March 18, 2020, Pingyin Shanshui went to Lengfandian Village to purchase more than 4,500 kilograms of sweet potatoes from poor households to contribute to targeted poverty alleviation.



On May 28, 2020, Dalian Shanshui donated 40 tonnes of cement to the Resident Committee of Shanhe Village, Fuzhouwan Street, Jinpu New District, Dalian, for the repairment and construction of the village committee and helping rural revitalization.



On July 26, 2020, Wuxiang Shanshui sent computers, printers, televisions and other materials to Changle Village, Zhaojiazhuang, and Huyegou Villages in Dayou Township to improve the working conditions of relevant committees in the village.

Science, Education, Culture and Health Donation and Public Welfare Activities



On January 30, 2020, Weihai Shanshui purchased a batch of medical masks, protective clothing, disinfectants, alcohol, sprayers and other materials and donated them to the Weihai Charity Federation.



On June 13, 2020, Liaocheng Shanshui organized its employees to participate in a blood donation activity.



On June 8, 2020, Pingyin Shanshui launched a charity activity to help children, donating RMB5,000 to kindergartens in Dongmaopu Village and Daguan Village, respectively.

Show Love to Disadvantaged Groups







On August 21, 2020, Jinzhou Cement's employees went to the Nursing Home in Nuerhe Street, Taihe District, Jinzhou City to visit elderly people who live alone in the hospital, carrying out public welfare service activities.

SEHK's ESG Reporting Guide Index

General Disclosure and KPIs	Description	Relevant Chapter(in the Report or Other Explanation
	Environmental	
	Aspect A1: Emission	
	Information on:	
General Disclosure	(a) the policies; and	4.1
	(b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste	
KPI A1.1	The types of emissions and respective emissions data.	4.4
KPI A1.2	Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	4.4
KPI A1.3	Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Not Applicable ¹⁰
KPI A1.4	Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	Not Applicable ¹¹
KPI A1.5	Description of measures to mitigate emissions and results achieved.	4.1
KPI A1.6	Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved.	4.1
	Aspect A2: Use of Resources	
General Disclosure	Policies on the efficient use of resources, including energy, water and other raw materials.	4.2-4.3
KPI A2.1	Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in'000s) and intensity (e.g. per unit of production volume, per facility).	4.4
KPI A2.2	Water consumption in total and intensity (e.g. per unit of production volume, per facility).	4.4
KPI A2.3	Description of energy use efficiency initiatives and results achieved.	4.2
KPI A2.4	Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	4.2
KPI A2.5	Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	4.4
	Aspect A3: The Environment and Natural Resources	
General Disclosure	Policies on minimising the issuer's significant impact on the environment and natural resources.	4.3
KPI A3.1	Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	4.3
	Social	•
	Aspect B1: Employment	•
	Information on:	
General Disclosure	(a) the policies; and	5.1
	(b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.	
KPI B1.1	Total workforce by gender, employment type, age group and geographical region.	5.1
	Aspect B2: Health and Safety	<u>.</u>
	Information on:	
General Disclosure	(a) the policies; and	БĴ
	 (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to providing a safe working environment and protecting employees from occupational hazards. 	5.2

¹⁰The hazardous waste generated in the production process of the Group is mainly waste engine oil, which is recycled. Thus, this indicator is not applicable.

[&]quot;The non-hazardous solid waste generated in the process of production is all recycled, thus this indicator is not applicable.

General Disclosure and KPIs	Description	Relevant Chapter(s) in t Report or Oth Explanation
KPI B2.1	Number and rate of work-related fatalities.	5.2
KPI B2.2	Lost days due to work injury.	5.2
KPI B2.3	Description of occupational health and safety measures adopted, how they are implemented and monitored.	5.2
	Aspect B3: Development and Training	·······
General Disclosure	Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.	5.3
	Aspect B4: Labour Standards	
	Information on:	
General Disclosure	(a) the policies; and(b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.	5.1
KPI B4.1	Description of measures to review employment practices to avoid child and forced labour.	5.1
KPI B4.2	Description of steps taken to eliminate such practices when discovered.	5.1
	i Aspect B5: Supply Chain Management	
General Disclosure	Policies on managing environmental and social risks of the supply chain.	6.1
KPI B5.1	Number of suppliers by geographical region.	6.1
KPI B5.2	Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, and how they are implemented and monitored.	6.1
	Aspect B6: Product Responsibility	
General Disclosure	Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	6.2
KPI B6.1	Percentage of total products sold or shipped subject to recalls for safety and health reasons.	6.2
KPI B6.2	Number of products and service related complaints received and how they are dealt with.	6.2
KPI B6.3	Description of practices relating to observing and protecting intellectual property rights.	6.2
KPI B6.4	Description of quality assurance process and recall procedures.	6.2
KPI B6.5	Description of consumer data protection and privacy policies, how they are implemented and monitored.	6.2
	Aspect B7: Anti-corruption	
	Information on:	
General Disclosure	 (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering. 	6.3
KPI B7.1	Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	6.3
KPI B7.2	Description of preventive measures and whistle-blowing procedures, and how they are implemented and monitored.	6.3
	Aspect B8: Community Investment	
General Disclosure	Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests	7.1
KPI B8.1	Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	7.1
KPI B8.2	Resources contributed (e.g. money or time) to the focus area.	7.1

Definitions

In the Report, unless otherwise stated, the following words and expressions have the following meanings:

Eastern Shandong Operating Region	Business located at the Eastern Shandong Province, including Weifang, Qingdao, Yantai and Weihai, etc.	
Western Shandong	Business located at the Central and Western Shandong Province, including	
Operating Region Southern Shandong	Zibo, Jinan and Hebei Province and Tianjin, etc. Business located at the Southern Shandong Province, including Zaozhuang, Jining, Heze and Henan Province, etc.	
Operating Region Northeast China	Business located at the Southern Shandong Province, including Zaorhdang, Shing, heze and herann Province, etc.	
Operating Region Shanxi Operating	etc. Business located at Shanxi Province and Shaanxi Province, etc.	
Region	Business located at Kashi, Xinjiang	
Xinjiang Operating Region	Business located at the Central and Western Shandong Province, including Zibo, Jinan and Hebei Province and Tianjin, etc.	
Linqu Shanshui	Linqu Shanshui Cement Co., Ltd., belonging to Eastern Shandong Operating Region	
Anqiu Shanshui	Anqiu Shanshui Cement Co., Ltd., belonging to Western Shandong Operating Region	
Weihai Shanshui	Weihai Shanshui Cement Co., Ltd., belonging to Western Shandong Operating Region	
Qingdao Chuangxin	Qingdao Shanshui Chuangxin Cement Co., Ltd., belonging to Western Shandong Operating Region	
Liaocheng Shanshui	Liaocheng Shanshui Cement Co., Ltd., belonging to Western Shandong Operating Region	
Zibo Shanshui	Zibo Shanshui Cement Co., Ltd., belonging to Western Shandong Operating Region	
Pingyin Shanshui	Pingyin Shanshui Cement Co., Ltd., belonging to Western Shandong Operating Region	
Zaozhuang Chuangxin	Zaozhuang Chuangxin Shanshui Cement Co., Ltd., belonging to Southern Shandong Operating Region	
Zaozhuang Shanshui	Zaozhuang Shanshui Cement Co., Ltd., belonging to Southern Shandong Operating Region	
Jining Shanshui	Jining Shanshui Cement Co., Ltd., belonging to Southern Shandong Operating Region	
Bohai Cement	Bohai Cement (Huludao) Co., Ltd., belonging to Northeast China Operating Region	
Chifeng Yuanhang	Chifeng Shanshui Yuanhang Cement Company Limited, belonging to Northeast China Operating Region	
Zhalaite Qi Shanshui	Zhalaite Qi Shanshui Cement Co., Ltd., belonging to Northeast China Operating Region	
Baishan Shanshui	Baishan Shanshui Cement Co., Ltd., belonging to Northeast China Operating Region	
Dalian Shanshui	Dalian Shanshui Cement Co., Ltd., belonging to Northeast China Operating Region	
Shenyang Shanshui	Shenyang Shanshui Gongyuan Cement Co., Ltd., belonging to Northeast China Operating Region	
Jinzhou Cement	Bohai Cement (Jinzhou) Co., Ltd., belonging to Northeast China Operating Region	
Shanshui Heju	Jincheng Shanshui Heju Cement Co., Ltd., belonging to Shanxi Operating Region	
Jincheng Shanshui	Jincheng Shanshui Cement Co., Ltd., belonging to Shanxi Operating Region	
Wuxiang Shanshui	Wuxiang Shanshui Cement Co., Ltd., belonging to Shanxi Operating Region	
Shuozhou Shanshui New Era	Shuozhou Shanshui New Era Cement Co., Ltd., belonging to Shanxi Operating Region	
Yingjisha Shanshui	Yingjisha Shanshui Cement Co., Ltd., belonging to Xinjiang Operating Region	
Shanghe Company	Shanghe Branch of Shandong Shanshui Cement Group Co., Ltd.	
Qingdao Company	Qingdao Branch of Shandong Shanshui Cement Group Co., Ltd.	
Articles of Association	the amended and restated memorandum and articles of association of the Company adopted on 30 May 2019	
YOY	Year on year comparison	
Raw material	Raw material that needs further processing before being used for productions	
Clinker	A semi-finished product in the cement production process	
Commercial concrete	Commercial concrete, also named as ready mixed concrete	
PRC or China	The People's Republic of China	
Hong Kong	Hong Kong Special Administrative Region of the PRC	
CPC or Party	The Communist Party of China	
"13th Five-Year Plan"	"13th Five-Year Plan" with the full name of the Outline of the 13th Five-Year Plan for National Economic and Social Development of the People's Republic of China	



 CHINA SHANSHUI CEMENT GROUP LIMITED

 中國山水水泥集團有限公司

 (於開曼群島註冊成立的有限公司)

 (股份代號: 691)

Address: Shanshui Industrial Park, Gushan Town, Changqing District,

Jinan, Shandong, China

Post Code: 250307

Tel/Fax: 86-0531-88360186