

2021

Environmental, Social and Governance Report



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## About the Report

Huaxin Cement Co., Ltd. issues the first environmental, social and governance (ESG) report according to the Rules Governing the Listing of Securities on The Stock Exchange of Hong Kong Limited ("SEHK Listing Rules"). It systematically discloses the Company's strategies, measures, and results in corporate social responsibility, response to climate change, and promoting sustainability in 2021.

## Period

Unless otherwise specified, the content of this report covers the period from 1 January 2021 to 31 December 2021.

## References

For the convenience of expression, Huaxin Cement Co., Ltd. is referred to as "Huaxin Cement", "Huaxin", the "Company", "we or us", together with its subsidiaries, as the "Group", in the report.

## Entity

Unless otherwise specified, the report covers Huaxin Cement Co., Ltd. and its branches, subsidiaries, and direct affiliates.

## Preparation basis

The report is prepared in accordance with the Appendix 27 to SEHK Listing Rules, *Environmental, Social and Governance Reporting Guide*.

## Data

The information and data cited in this report come from Huaxin Cement's official documents, statistical reports, and financial statements, as well as the ESG information collected, summarized, and reviewed by the Company.

## Access

The electronic version of the report can be downloaded from the website of Hong Kong Exchanges and Clearing ([www.hkex.com.hk](http://www.hkex.com.hk)) and the official website of the Company ([www.huaxincem.com](http://www.huaxincem.com)).

## Review

The report was confirmed and approved by the Board of Directors on 30 May 2022.

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## CEO's Message



2021 marked the beginning of the 14th Five-Year Plan and the starting point of China's path to carbon dioxide peaking and carbon neutrality. In the face of challenges such as overcapacity in the cement industry, tightened regulation over environmental protection and low-carbon operations, energy shortages, and threats such as sharp fluctuations in demand and supply, we strengthened our ESG system and pursued green and low-carbon development. We intensified compliance management in terms of safety, environmental protection, amongst others; strictly controlled financial, quality, compliance, and integrity risks; and safeguarded the lifeline of corporate development. We further promoted the major strategies of integrated development, overseas development, development of new building materials business, and traditional industry + digital innovation. New breakthroughs were made in all drives, and the Company achieved quality, speedy, and efficient development.

Innovation is the inexhaustible driving force for corporate development. In 2021, we further consolidated our technological innovation capacity. We insisted on self-reliant research and development (R&D) and built the robust "Made in Huaxin" digital integrated platform, industrial intelligence platform, and business intelligence platform to empower business innovation and development for the Company, which significantly enhanced our comprehensive competitiveness. In 2021, our first smart factory, Luquan Smart Factory, was successfully delivered, which was the first achievement in the Company's drive to fully popularize and promote digital transformation. New building materials developed by Huaxin Cement, such as the Chaokelong UHPC and the environmentally-friendly non-fired bricks, were successfully applied in many projects and were widely praised by customers. We continued to deepen our cooperation with industry organizations and universities and got involved in setting a number of industry standards. As a result, we contributed to Huaxin's strength by promoting technological innovation and sustainability in the building materials industry.

Huaxin Cement has made ecological conservation and green and low-carbon development strategic goals in the Company's long-term development. We mapped the low-carbon development path for the Company based on the government's carbon dioxide peaking and carbon neutrality development strategies. By vigorously developing the co-processing technology of raw alternative fuels in cement kilns, we have promoted technological innovation, equipment upgrades, and process optimization, so as to continuously tap our potential in carbon emission reduction. In 2021, Huaxin Cement released the first white paper on low-carbon development in the construction materials industry, setting the path and goals for future carbon emission reduction, and established a technology research institute to strengthen the research on and development of low-carbon technologies and cement products. We are promoting the low-carbon development of the construction materials industry chain and strive to be a carbon neutral leader in the cement industry.

A sound operation mechanism is an important guarantee for Huaxin Cement's sustainability. We uphold customer-first values and attach importance to product quality management and protecting customer rights. We are committed to improving customer satisfaction and have established a sound product quality management system and customer service system. On the other hand, we actively promote the establishment of a responsible supply chain, urge suppliers to fulfil their

social responsibility, and work with partners to improve their sustainability capabilities. We insist on honest operations and never relent in the crackdown on corruption to maintain a trustworthy, clean, and efficient organization with century-old qualities.

People are essential to the development of the Company. Huaxin Cement regards employees as the most valuable resource and asset. As such, the Company takes on a people-centric approach. We take employees' health and safety as the basic requirement and prerequisite for all our work. We constantly improve our health and safety system, enhance our occupational health management, and protect employees in all production and operation aspects. Furthermore, employees' legitimate rights and interests are valued; they are protected; and standardized and equal employment is upheld. We have improved our salary and benefit system and established a sound promotion and incentive mechanism. We also maintain effective communication with employees, practice democratic management, and respect employees' opinions and suggestions. That way, employees' sense of belonging and happiness are continuously enhanced.

Huaxin Cement always fulfils social responsibility. We promote community development in China and other countries and regions where we operate, carrying out diversified public welfare and charity projects. In 2021, we increased investment in rural revitalization to consolidate the achievements of poverty alleviation in these areas. Our community of volunteers grew and carried out a number of charity activities. We are actively implementing the Belt and Road Initiative. By increasing charity funds in education, medical care, and infrastructure construction, we promoted sustainable development in Nepal, Kyrgyzstan, and other countries and regions, and established a positive image of Chinese-funded enterprises.

In the future, Huaxin Cement will continue its endeavour toward China's strategic goals of carbon dioxide peaking and carbon neutrality. We will persist in driving green development through innovation and strive to be the leader in energy conservation and emission reduction in the cement industry. We will strengthen the people-centric practice, put more effort into employees' well-being and work safety, and continuously improve employees' sense of belonging and happiness. In terms of social responsibility, we will continue to give back to society with practical actions and start a new chapter for the Company's sustainability.

President of Huaxin Cement Co., Ltd. Li Yeqing

# About Us

## Company Profile

Huaxin Cement, founded in 1907, is known as the cradle of China's cement industry. For more than 110 years, we have made outstanding contributions to national and local economic and social development. Our credit rating is AAA and our "Huaxin Castle" is a well-known trademark in China. Our cement products were used in the top ten buildings in Beijing in the 1950s, Beijing Asian Games Village, the Gezhouba Dam, Beijing-Zhuhai Expressway, dozens of highways and railway bridges in the middle and lower reaches of the Yangtze River, the world-renowned Three Gorges Project, and many other national key projects.

In 1994, Huaxin Cement A Share and B Share were listed on the Shanghai Stock Exchange. In 1999, Huaxin established strategic partnership with Holcim. On 28 March 2022, Huaxin successfully converted the B Share to H Share and was officially listed on the Main Board of the SEHK.

At the time when it went public, Huaxin Cement was just a company specialising in cement manufacturing and sales; cement technical services; cement equipment research, manufacturing, installation, and maintenance; and cement import and export. In the past two decades, we have implemented the integrated development strategy, the environmental protection transformation strategy, the overseas development strategy, and the strategy of business expansion in high-tech building materials. We have set foot in many new business sectors, including the production and sales of commercial concrete, aggregates, and cement-based high-tech building materials; the co-processing of wastes in cement kilns for environmental protection; the general contracting of domestic and international cement projects; and the equipment and engineering contracting of technologies for co-processing in cement kilns. That way, we have evolved into a domestically-leading building materials multinational with integrated development of the whole industry chain.

## Corporate Culture



**Brand:** centenary and trustworthy



**Spirit:** honesty, devotion, practicality, and innovation

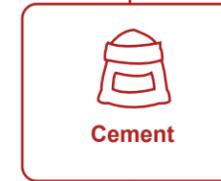
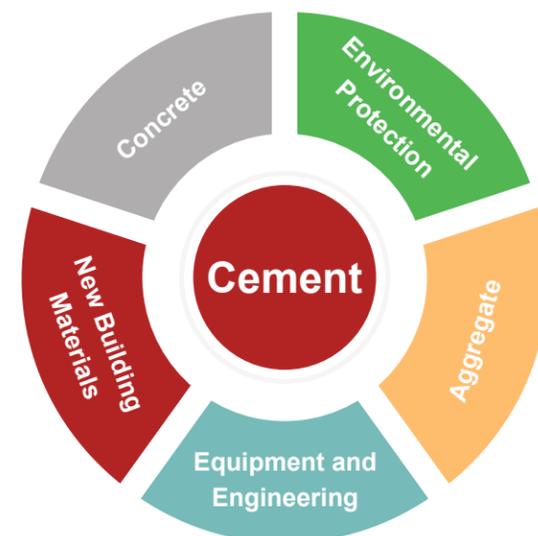


**Mission:** cleaning our living environment and providing reliable building materials

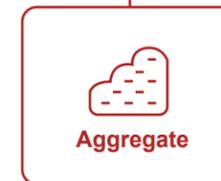


**Vision:** A beautiful world starts from here.

## Business Features



We have established a cement production network covering Southwest, Central, East, and South China, countries along the Belt and Road, and Africa. We established cement production bases in Hubei, Hunan, Yunnan, Chongqing, Sichuan, Guizhou, Tibet, Guangdong, and Henan at the end of 2021. We are a major player in Central and Southwest China. As one of the first going-global Chinese cement companies, we have built our capacity in eight countries in Central Asia, Southeast Asia, and Africa. Especially in Central Asia, and we have become the leader of the local cement market. At the end of 2021, our annual overseas cement grinding capacity reached 10.83 million tonnes.



We are the first Chinese cement enterprise to build large-scale environmentally-friendly aggregate factories. After more than ten years of exploration and development, our aggregate business has expanded significantly. The production capacity is distributed across Hubei, Yunnan, Chongqing, Hunan, Sichuan, Guizhou, and Tibet.



We have evolved from a traditional concrete product manufacturer to a service provider of ready-mix concrete and its product design, construction, and overall solutions. Domestically, our concrete production capacity is mainly distributed across Hubei, Hunan, Yunnan, Sichuan, Chongqing, Tibet, Henan, Guizhou, Jiangxi, and Jiangsu. Overseas, we have built a concrete batching plant in Cambodia with an annual production capacity of 200,000 m<sup>3</sup>.



In 1999, we cooperated with Holcim, the world's largest cement manufacturer at that time, to introduce management philosophy and skills from Europe and vigorously promote technological development and innovation. By now, we have become a High-tech Enterprise in Hubei Province and one of the China's first-class heavy cement machinery manufacturers. In terms of equipment and engineering, we have nearly 300 professional technicians and an annual equipment manufacturing capacity of 50,000 tonnes.



Relying on our strong R&D team and platform, we introduced advanced material technologies from other countries, carried out extensive technical cooperation with Wuhan University of Technology and other well-known universities, and put great efforts into the R&D, application, and promotion of the Chaokelong® series of environmentally-friendly new construction materials. Our experience has been integrated in R&D, design, and project management with our customer service expertise to provide new material solutions for engineering construction in China.



After more than ten years of R&D and practice, we have developed the technology of co-processing for decontamination and recycling in cement kilns based on the composition and disposal practices of domestic waste and other wastes in China. The technology is the first of its kind in China and the most advanced in the international community, protected by independent intellectual property rights. Moreover, we have obtained 31 hazardous waste operation permits. In the area of environmental protection, we have more than 40 branches and subsidiaries, and our business extends to Hubei, Hunan, Henan, Chongqing, Yunnan, and Guangdong. Our operating and upcoming environmentally-friendly factories have a total annual waste disposal capacity of more than 5.5 million tonnes.

## Recognitions

Huaxin Cement was ranked **80**<sup>th</sup> on the list of "China's 500 most valuable brands" list in 2021 with RMB **70.269** billion, up by RMB **10.394** billion from last year and marked its ninth consecutive year.

Huaxin Cement has been listed among Fortune China top **500** for **12** consecutive years. At it also made the list of "**40** companies with the highest return on equity (ROE)"

Huaxin Cement was ranked **22**<sup>nd</sup> among the top 100 enterprises in Hubei Province, up **5** places from the previous ranking.

Huaxin Cement was ranked **10**<sup>th</sup> among the top 100 manufacturing enterprises in Hubei Province, moving up **2** places from the previous ranking.

Huaxin Cement won the "top 100 Chinese enterprises Award in 2021"



Huaxin Cement was continuously selected as one of China's top 500 manufacturing enterprises, ranking **306**<sup>th</sup>.

Huaxin Cement's "world first concrete brick production line using CO<sub>2</sub> discharged from cement kiln was successfully operated in Huaxin Cement" was selected as "2021 Top 10 Global Building Materials Science and Technology News"



Huaxin Cement was rated as one of the "top ten leading enterprises in scientific and technological breakthroughs" in the national building materials industry in 2021.

Li Yeqing, President of Huaxin Cement, won the title of "top ten scientific and technological breakthrough leaders" in the national building materials industry in 2021.

Huaxin Cement was selected as one of the first industrial internet enterprises in Hubei Province in 2021.

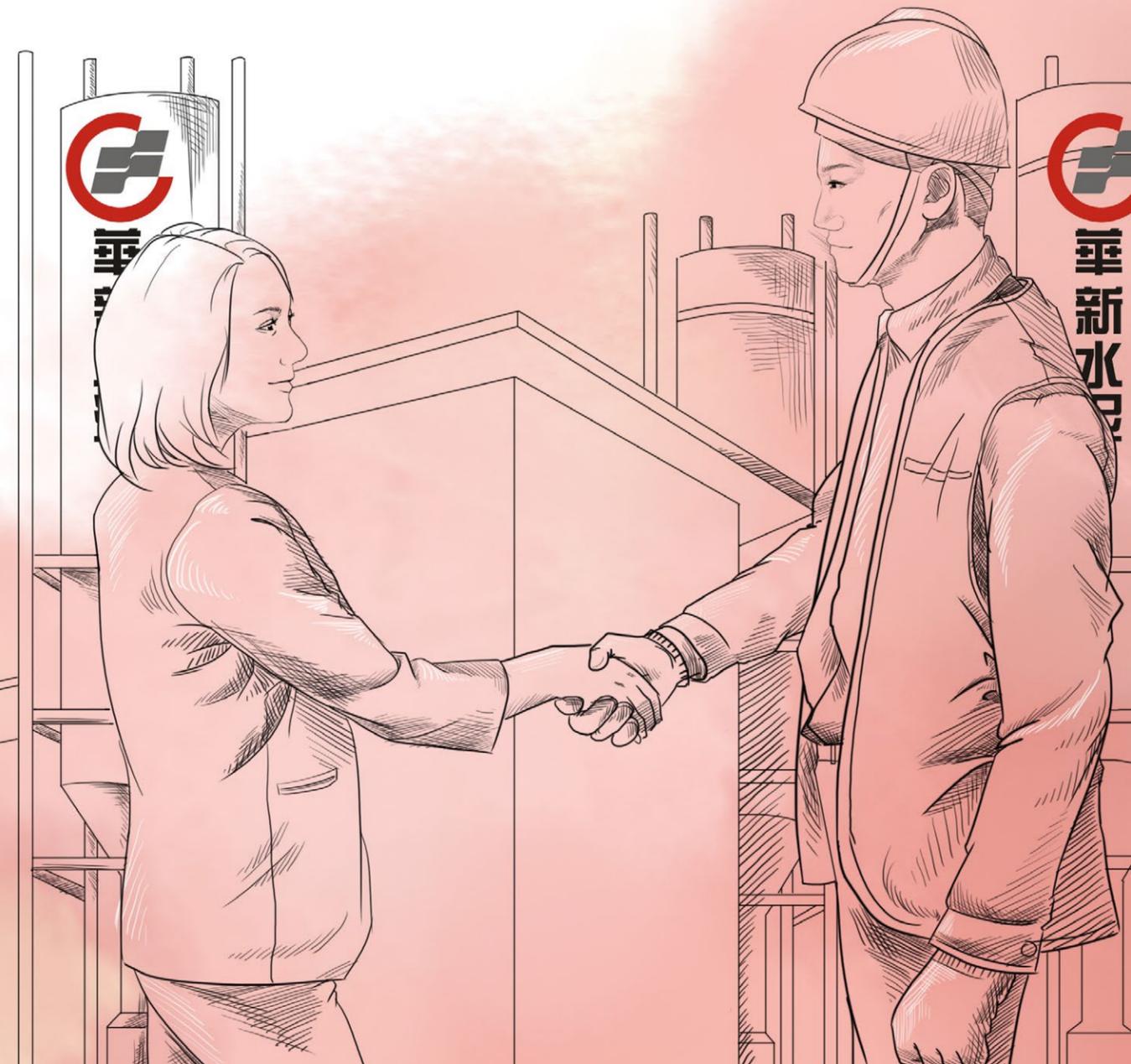
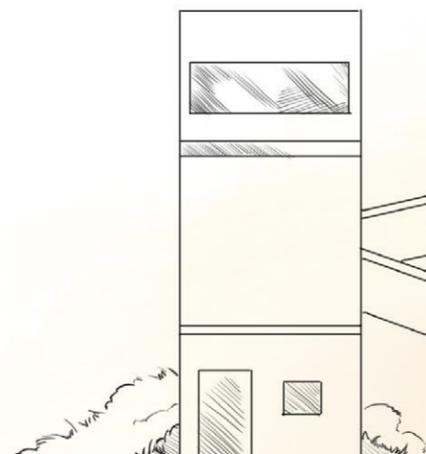
In the sixth year, Huaxin Cement was one of the top 500 Asian Brands, ranking **167**<sup>th</sup> and rising steadily.

# 01

## ESG Governance

To continuously strengthen our ESG management, we have established a governance system led by the Board of Directors, coordinated by the Public Affairs Department, and jointly progressed and implemented by functional departments. The division of labour and responsibilities for the Company's ESG management are also stipulated. We increase communication with stakeholders in our operations and promptly identify material ESG topics and assess their importance, which serves as an important reference for the Company's improvement in ESG governance.

- ESG Responsibility Management
- Communication with Stakeholders
- Determination of Material Topics



# ESG Governance

To continuously strengthen our ESG management, we have established a governance system led by the Board of Directors, coordinated by the Public Affairs Department, and jointly progressed and implemented by functional departments. The division of labour and responsibilities for the Company's ESG management are also stipulated. We increase communication with stakeholders in our operations and promptly identify material ESG topics and assess their importance, which serves as an important reference for the Company's improvement in ESG governance.



## Communication with Stakeholders

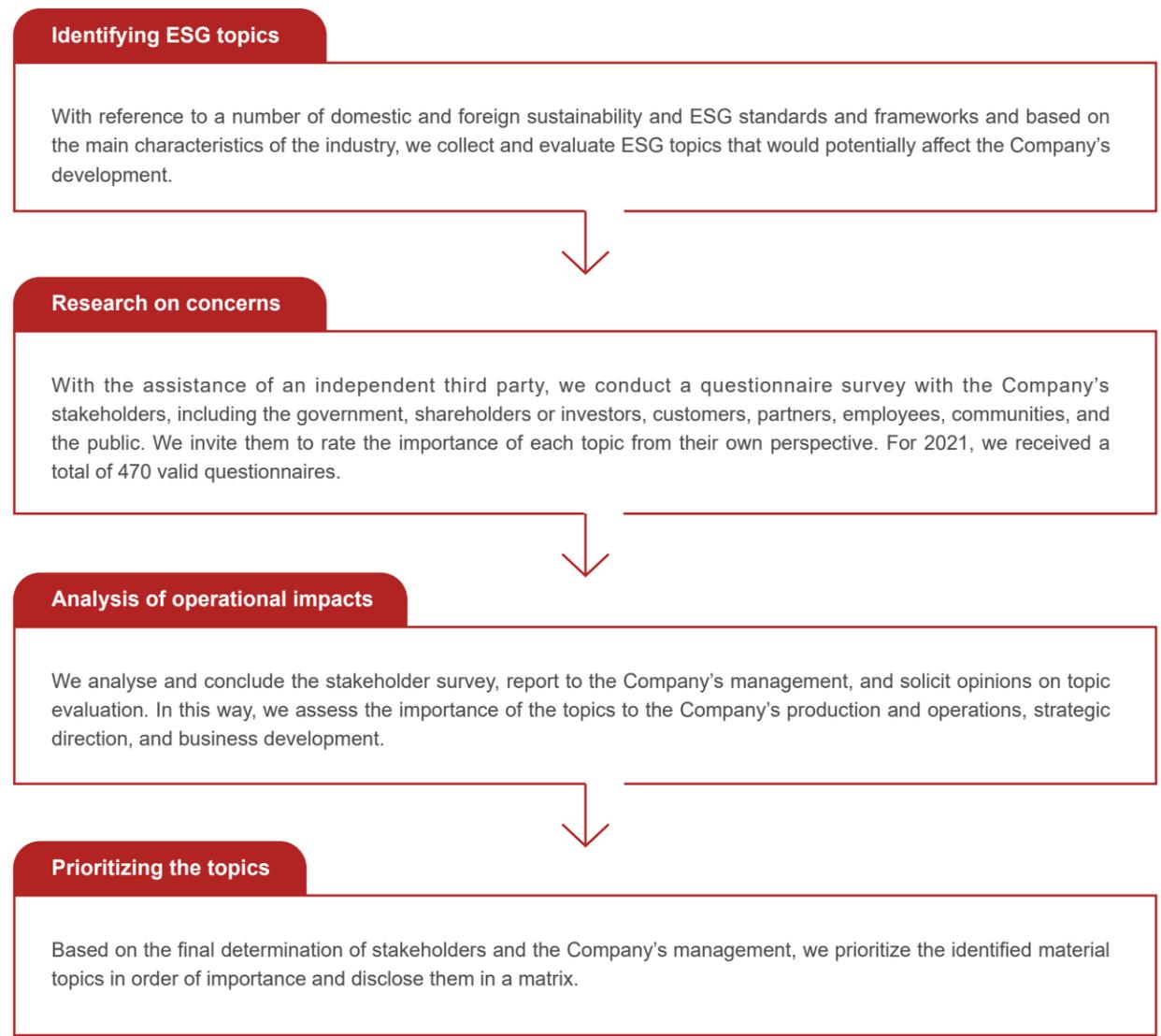
We pay close attention to the impact of our production and operations on external stakeholders. We have built a permanent mechanism for effective communication with the government, shareholders or investors, employees, customers, partners, communities, and the public, so as to timely understand the demands of all parties and give effective feedback. The communication results will serve as an important reference for the Company's improvement of ESG governance.

Stakeholders	Demands and Expectations	Communication Channels
 Government	Law abiding and compliance Paying taxes in accordance with the law Job creation Responding to national strategies	Information disclosure Suggestions for policies Visits sites Regular communications and reports
 Shareholders/Investors	Operational compliance Return on investment Risk management Corporate governance Climate change	General meeting of shareholders Periodic reports and announcements Communication and exchange activities Visit reception
 Customers	Product quality Quality services Technological innovation Risk management	Customer satisfaction surveys Online platforms Quality monitoring system Service hotlines
 Partners	Fair, equitable, and transparent procurement Fulfilling commitments Mutual benefiting and win-win	Industry exchanges Project-based cooperation Open tendering Business negotiations
 Employees	Salary and benefits Occupational health and safety Protection of rights and interests Fair promotion and development Employee care	Labour union Employee training Regular communications and exchanges Employee representatives' conferences The occupational health and safety management system
 Communities and the Public	Environmental impact Care for vulnerable groups Job creation Public welfare activities	Public welfare and charity Volunteering Job fairs Information disclosure

## Determination of Material Topics

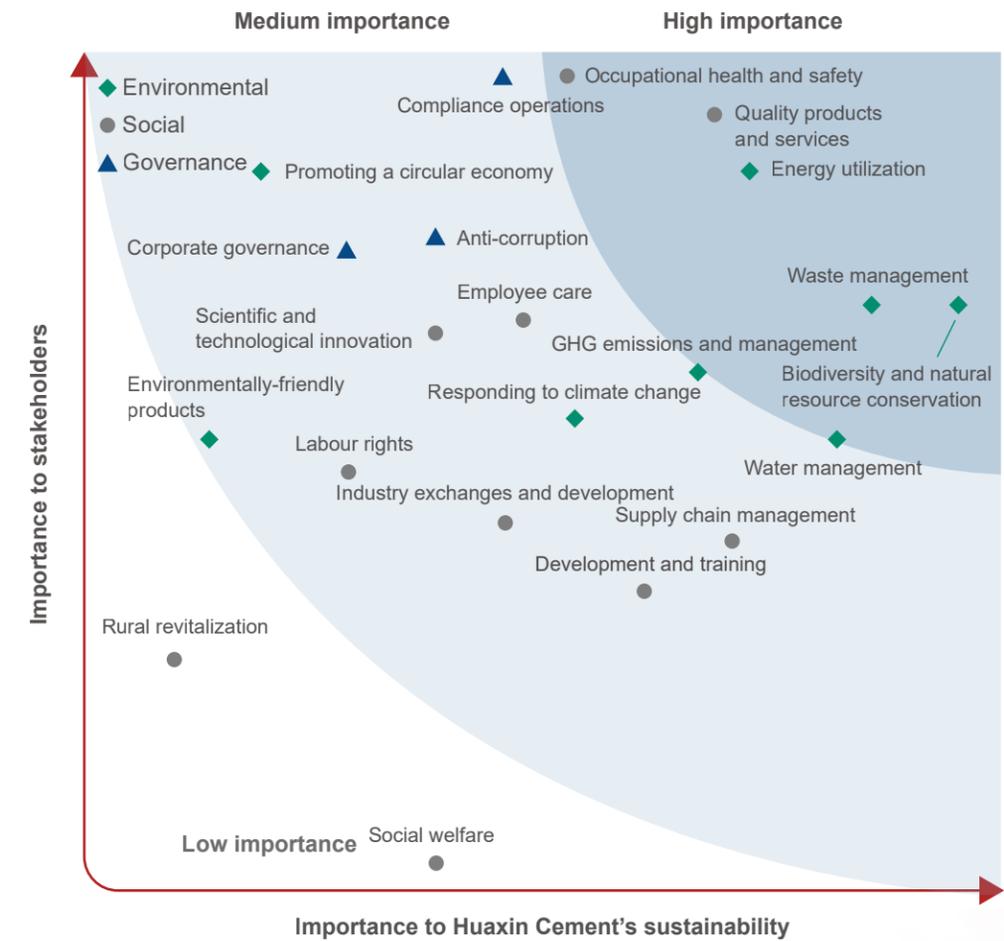
In order to ensure the implementation of the Company's sustainability strategies and improve the Company's ESG management, we have developed a process for screening material ESG topics according to Appendix 27 to the SEHK Listing Rules, *Environmental, Social and Governance Reporting Guide*, with reference to the United Nations Sustainable Development Goals (SDGs), the Global Reporting Initiative (GRI), and other applicable standards and frameworks. With the management's advice, industry benchmarking research, and expert research, we determine the material topics that affect the Company's sustainability and their importance.

### Determination Process:



For 2021, Huaxin Cement's materiality matrix for ESG topics is as follows:

**Huaxin Cement's Materiality Matrix for ESG Topics for 2021**



# 02

## Innovation R&D

Huaxin Cement insists on “driving development with innovation and leading the industry frontier” and accelerates R&D of innovative products. We continue to build up our R&D capability by continuously improving R&D management and putting together a high-quality R&D team. Moreover, we consistently enhance our protection of intellectual property rights. We also actively carry out technical exchanges and cooperation in the industry, are involved in setting industry standards, and share industry experience and expertise, and therefore, contributing to the sustainability of the entire industry.

- Innovation Achievements
- R&D Strengths
- Cooperation and Exchanges



# Innovation Achievements

In the context of a deep integration of digital technology and the real economy, Huaxin Cement accelerates product iteration and upgrading according to the needs of the industry. Digital transformation is used to empower factory production and promote industry transformation, upgrading, and sustainability.

## Innovation Achievements

We study market demands and industry development, prioritize product optimization and technological R&D, and continue with product innovation. Moreover, we accelerate the commercialization of scientific research results and promote the optimization, transformation, and upgrading of the structure of the industry.

Chaokelong UHPC

- The Chaokelong corrugated sheet features the advantages of extensive width and corrosion resistance. It overcomes the problem of poor corrosion resistance in traditional corrugated steel sheets, thus reducing the economic losses caused by frequent maintenance of steel structures and the safety hazards caused by corrosion of steel structures during the life cycle of industrial plants.



Chaokelong corrugated sheet

- The Chaokelong crane beam features the advantages of high strength, high stiffness, and corrosion resistance. It overcomes the problems of poor corrosion and fire resistance and high maintenance cost of steel crane beams, thereby reducing the overall life cost of crane beams.



Chaokelong crane beam

Environmentally-Friendly Non-Fired Bricks

- Mine solid waste (filter press soil, peeling soil, sieving materials, etc.), as the main raw material, supplemented by a small amount of cement, is prepared into a new type of wall material by pressing moulding and through the autoclaving curing process.
- Compared with the traditional red brick production line with an annual output of 120 million pieces, the new technology can process 300,000 tonnes of mine solid waste every year. The replacement of steam curing can reduce coal consumption by 7,000 tonnes and carbon emissions by more than 4,500 tonnes per year.



The Yangxin environmentally-friendly bricks

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Modified Cement Materials

- The cement grinding aid independently developed by Huaxin Cement can improve the grinding efficiency of the cement mill, and decrease the clinker utilization coefficient, and reduce carbon emission value per ton of cement while reducing power consumption of cement mill, which realizes energy saving and emission reduction.

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Preparation of Carbonized Activated Cement-Based Materials and Key Technologies and Applications of Industrial Kiln Exhaust Gas Curing Cement and Concrete Products

- Huaxin Cement has developed low-calcium, high-carbonation activated cement, which effectively reduces the consumption of limestone and carbon dioxide emissions during the cement firing process and improves the carbonization activity of the cement.
- Huaxin Cement has improved the existing cement kiln firing equipment and process, and replaced traditional fuels with high carbon dioxide emissions and low energy utilization with alternative fuels for the production of low-calcium carbonation activated cement clinker.
- Huaxin Cement has researched and proposed the curing system and on-site production process of curing cement products with cement kiln exhaust gas.

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Technology for Mass Manufacturing of Intelligent Welding Systems

- Based on the characteristics of the Company's cement building materials and heavy machinery and equipment manufacturing, Huaxin Cement has improved the original products and process technology, realized intelligent welding, surfacing and manufacturing of key product components, and stabilized the processing. Our labour costs, occupational health, environmental protection, and product quality have all been significantly improved.

Case Study

Huaxin Cement's Innovative Application of the Chaokelong Technology

We apply the ultra-high performance concrete (UHPC) technology in bridges and tunnels, building finishing, engineering anti-corrosion and anti-seepage, fire and explosion resistance, providing green and environmentally-friendly solutions for engineering construction and infrastructure in China. The technology is used in the fully prefabricated UHPC flyover of Macheng-Ankang Expressway; the reconstruction of Jiudu Bridge in Shangrao's Dexing, Jiangxi Province; the ramp of Shahu Bridge in Wuhan City, Hubei Province; and the roof tiles and anti-corrosion curtain walls of Daye Non-Ferrous Metals Group's 400,000-tonne cathode copper factory.

Huaxin's Chaokelong has made many achievements in independent innovation and application R&D, and initially formed a UHPC technology system in China. The technology has been accredited with 13 intellectual property rights, including seven utility model patents and six invention patents.



Chaokelong applied in the reconstruction of Jiudu Bridge in Shangrao's Dexing, Jiangxi Province



Chaokelong applied in the fully prefabricated UHPC flyover of Macheng-Ankang Expressway

### Building Smart Factories

Facing the new situation of industrial intelligent manufacturing development and digital transformation, we put forward the traditional industry + digital innovation strategy to empower the transformation and upgrading of traditional industries, actively build intelligent manufacturing systems, create smart factories, and promote the green, low-carbon and high-quality development of the whole industrial chain of construction materials industry.

With the integrated application of information management and control, we have established an information channel that connects the management, production execution, and production sites, streamlining the Company's business process. In terms of production and operations, we use digital technology to continuously improve equipment automation control capabilities, optimize production processes, and reduce energy consumption. The real-time upload of production data strongly supports rational scheduling and balanced production, greatly improving the Company's production efficiency and sustainability.

Case Study

Huaxin Cement Building a 10,000-tonne Line Smart Factory

Relying on cutting-edge technologies such as microwave communication, AI, cloud computing, and big data to realize the digitalization, visualization and intelligence of the whole process of cement production.

Once the project is fully implemented, all the work at the 10,000-tonne production line can be completed by 50 workers, while a traditional production line of the same scale requires more than 300 people. Furthermore, after technological upgrading and intelligent transformation, the pollutant emissions of some cement production lines have been reduced by 60%, the heat consumption per unit of clinker has been reduced by 40%, and the carbon emission intensity has been reduced by 12%.



Huaxin Cement Intelligent Manufacturing Integration Platform was Selected as "2020 Industrial Internet Pilot Demonstration Project" by the Ministry of Industry and Information Technology



the pollutant emissions of some cement production lines have been reduced by **60%**



the heat consumption per unit of clinker has been reduced by **40%**



the carbon emission intensity has been reduced by **12%**

### R&D Strengths

Huaxin Cement insists on "driving development with innovation and leading the industry frontier". We combine introduction with independent R&D based on industrial practice. We have also established a sound technological innovation system, a strong technological R&D team, and maintained an industry-leading technological innovation ability.

### Improving R&D Management

We adopt an R&D management matrix to ensure the swift and efficient progress of R&D and quality improvement activities. The results can also be industrialized and applied as soon as possible. We have established a comprehensive R&D management mechanism for scientific R&D management in product strategy and planning, business decision-making and review, R&D organization management, product process, and performance management, so as to capture market demand in time and promote strategic technological upgrading for the Company.

Based on the Company's actual conditions, we have established a number of organizations and executive agencies for the R&D system. This includes innovation centres, technology centres, research institutes and their offices, R&D studios under the technology research institutes for cement, engineering and equipment, environmental engineering, and digital, as well as demonstration factories for the application of R&D results. The technology centres and technology research institutes form the core of the R&D system. These institutions facilitate the efficient application of the R&D results. We have also established a Technical Committee and a Management Committee, which are responsible for the decision-making and review of major matters in the R&D system and ensure the quality of product development.

In 2021, we approved 85 R&D projects and made a total investment of RMB 79,744,173 in R&D. We initiated a number of R&D projects, including the Major Low-Carbon Technologies for the Construction Materials Industry Project; the Research and Know-how of Green and Low-carbon Technologies for the Building Materials Industry Project; and the Open Competition Project. We organized two appraisals of scientific and technological achievements. Among them, "Development and Application of Ultra-Large-scale Production Technology and Equipment for Low-Carbon Nitrogen Reduction Cement" was recognized as an international leading level project by the expert evaluation committee organized by the China Building Materials Federation (CBMF).

## Building a High-Calibre R&D Team

We prioritize scientific research team building and personnel training, continually introduce outstanding talents, and provide professional skills training. We have a dynamic, innovative, and high-calibre R&D team and technical service team, including five with a doctorate degree or post-doctoral research experience and 66 with a master's degree, who support the Company's rapid development.

We put effort into R&D infrastructure construction. In view of the current trending topics in construction materials R&D, we have built 11 R&D teams and central laboratories on cement, UHPC, mortar, VAP, wall materials, modified cement materials, concrete admixtures, aggregates, geopolymers, composite materials, and environmental testing. We have also carried out partial renovations of old laboratories and upgraded their equipment and facilities to provide an excellent and comfortable environment for the scientific research team.

We always view innovation as a key driving force and have created a culture of innovation for our employees. In order to stimulate the initiative and enthusiasm of employees to invent and create, and to promote innovation development, experience summary, upgrading, and spread of innovation results in the Company, we have formulated the *Incentive Management Measures of Huaxin Cement* to give cash rewards to inventors who have obtained authorized patents. Every year, we organize technological innovation contests and offer cash rewards and support to the winning teams.

### Case Study

#### Huaxin Cement Commending Winning Projects in the "Aspiring to the Youth Model Unit Award" Technological Innovation Contest

In 2021, the Technology Research Institute received the Youth Model Unit Award of Huangshi City. The Communist Youth League of China (CYLC) Huaxin Cement Committee took this opportunity to explore launching the "Aspiration to the Youth Model Unit Award" training program for young R&D personnel with the Technology Research Institute and the CYLC Committees of direct affiliates, so as to earnestly implement the essence of the Company's president forum on young R&D personnel, enhance the skills and performance of young R&D personnel, and support the Company's doubling development goal. Focusing on empowerment and innovation, the project was consisted of many activities, such as contests, training, and exchanges. The technological innovation project contest, in particular, made remarkable contributions to the Company's technological innovation.

The CYLC Committee of the Company commended the winning projects in the "Aspiring to the Youth Model Unit Award" Technological Innovation Contest 2021 to set models and further stimulate the enthusiasm of young R&D talents for technological innovation.



Mr Ye Jiaying, the Company's vice president and board secretary presented awards to winning projects in the "Aspiring to the Youth Model Unit Award" Technological Innovation Contest 2021

## Protection of Intellectual Property Rights

We strictly abide by the *Patent Law of the People's Republic of China*, the *Anti-Unfair Competition Law of the People's Republic of China*, and other applicable laws and regulations, and work on patent filing in accordance with the law. Moreover, based on the *Detailed Rules for the Implementation of the Patent Law of the People's Republic of China* and the *Interim Measures of Huaxin Cement for Technology Management*, we have developed the *Interim Measures of Huaxin Cement for Patent Management*. The policy defines the management requirements for patent filing, authorization maintenance, and proxies; provides an institutional guarantee for the Company's scientific research and protection of independent intellectual property rights; and improves the Company's intellectual property management capabilities in R&D, production, and operations.

By the end of 2021, the Company has 48 invention patents derived from production practice and 81 utility and new-type patents, which manifests our growing core competitiveness.



the company has **48** invention patents derived from production practice



**81** utility and new-type patents, which manifests our growing core competitiveness

## Cooperation and Exchanges

Huaxin Cement values industry exchanges and cooperation. We take the initiative to establish partnerships with industry organizations and universities, attend industry seminars, and get involved in setting industry standards. We integrate resources and work with our peers to promote technological innovation and sustainability in the industry.

### Promoting Technological Cooperation

We cherish partnerships. We partnered with Wuhan University of Technology (WHUT), Hunan University, Sinoma International Engineering Co., Ltd. (Sinoma), Hubei Transportation Planning and Design Institute, to conduct scientific research projects. We intensify our in-depth cooperation in green construction materials and green production, pursue theoretical and application breakthroughs in the industry, and have achieved many results through such R&D.

Case Study

Huaxin Cement, WHUT and Sinoma (Nanjing) Jointly Accomplishing Project-based Technological Innovation

In 2021, we completed the "Development and Application of Ultra-Large-scale Production Technology and Equipment for Low-Carbon Nitrogen Reduction Cement" together with Wuhan University of Technology (WHUT) and Sinoma (Nanjing). We invented a number of energy-efficient and environmentally-friendly technologies to promote the transformation and upgrading of the industry.

- We invented a low-carbon and environmentally-friendly integrated process for cement clinker production using various alternative fuels, which greatly reduces carbon emissions and provides new techniques and methods for the low-carbon development of the cement industry.
- We developed a new technology for precalcinator kilns, which has addressed the difficulty of large-scale utilization of non-fossil fuels in cement kiln calciners, and realizes low-carbon and nitrogen-reducing operation.
- We invented the technology and equipment for the integrated preparation of potassium chloride salts using cement kiln bypass ash and waste heat steam. They provide key technical support for the use of large-scale alternative fuels and realize the precise extraction and high-value production of potassium chloride and potassium sulphate salts.
- For the first time, we applied the new technology of hydrothermal diagenesis using waste heat steam. We produced high-performance wall materials using mine waste residue and soil on a large scale, realizing full utilization of mine resources and expanding new ways of low-temperature waste heat utilization and carbon emission reduction.

Case Study

Huaxin Cement and HNU Cooperating to Upgrade the Production Line Technology and Putting It into Operation

In 2021, the Automatic Production Line for Brick-making with Carbon Absorbed from CO<sub>2</sub> in Cement Kiln Exhaust Gas jointly developed by Huaxin Cement and Hunan University (HNU) was successfully put into operation in Huaxin Cement Wuxue Industrial Park. This is world's first production line to use cement kiln exhaust gas to produce concrete products.

With the new process, cement kiln exhaust is used to make products. The curing process using carbon absorbed from cement kiln exhaust gas replaces the traditional clay-fired brick making and concrete lime-sand brick process, solving the problems of resource consumption, energy consumption, and CO<sub>2</sub> emission, and paves a carbon neutral path for the cement industry. A steam-cured brick production line with an annual output of 100 million pieces can utilize 26,000 tonnes of CO<sub>2</sub> every year. If applied nationwide, it can reduce 52 million tonnes of carbon emissions every year.

## Involvement in Standard Setting

We attend and exert our industry experience and influence over the years. We also attend industry seminars and get involved in setting industry standards to lead the healthy and standardized development of the industry. In 2021, we were involved in setting 24 industry standards and contributed to the steady low-carbon development of the industry.

- We worked closely with experts from CBMF and, as an industry leader, attended the seminar of the research team for the revision of the National Carbon Trading Guidelines for Greenhouse Gas Emissions Accounting and Reporting for the Cement Industry. At the meeting, we offered professional revision opinions on the accounting methods, accounting boundaries, and monitoring plans in the opinion-soliciting draft of the new guideline.

- At the end of 2021, the Ministry of Industry and Information Technology issued the 2021 carbon peak carbon neutralization special industry standard formulation and revision project plan, including the formulation and revision of 28 building materials industry standards, in which we took the lead in compiling the *Technical Specification for Preparation of Combustible Material from Municipal Solid Waste Co-Processed in Clinker Kiln*, the *Combustible Material Preprocessed from CMSW For Coprocessing in Cement Kiln*, and the *Technical Specification for Project-Based CO<sub>2</sub> Emissions Assessment: Fuel Replacement Projects for the Production of Cement Clinker*. The three industry standards promote standardization in the low-carbon field and lead the development of the low-carbon industry.



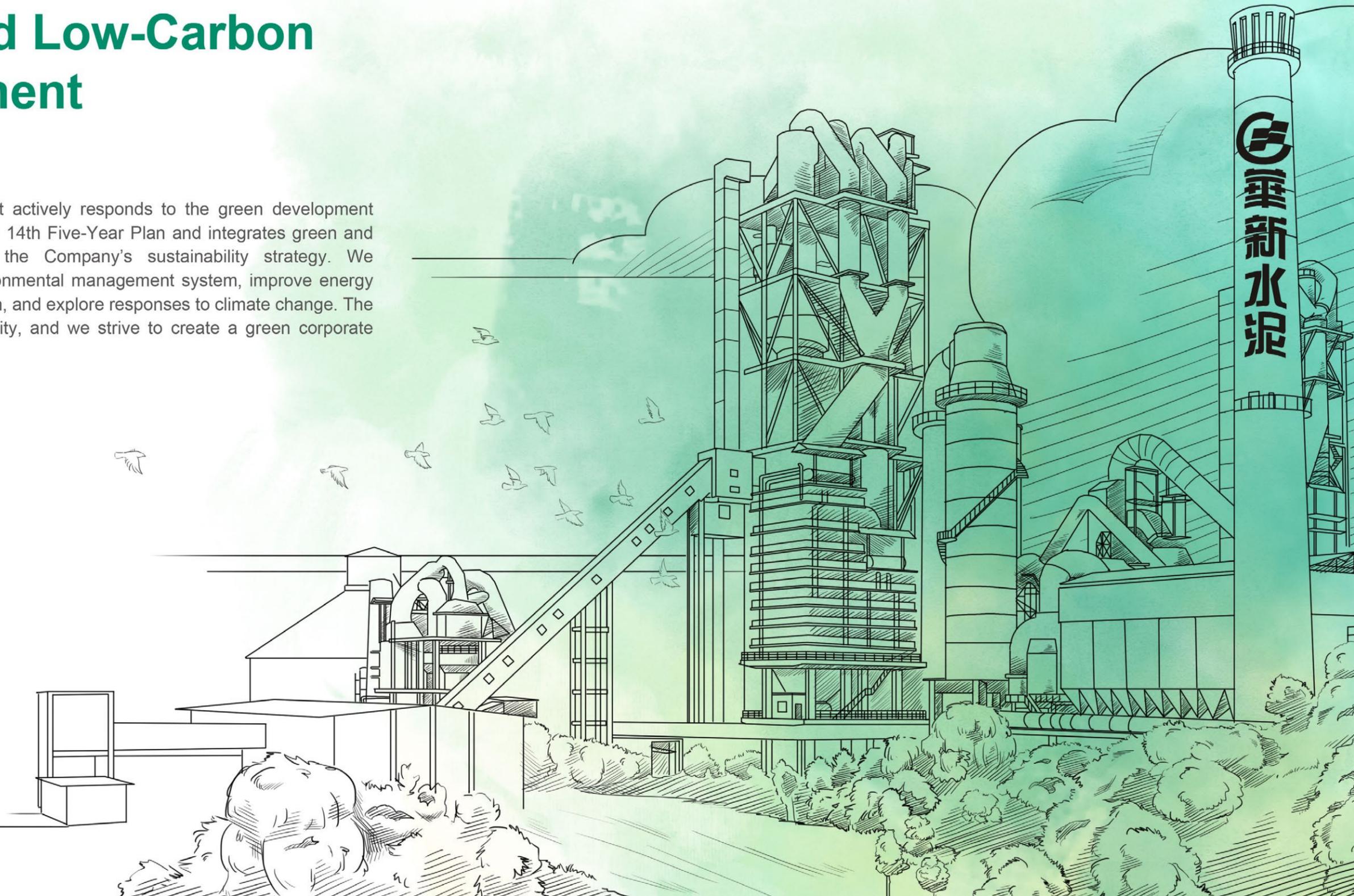
The industry standard drafting seminar

# 03

## Green and Low-Carbon Development

The century-old Huaxin Cement actively responds to the green development planning recommendation of the 14th Five-Year Plan and integrates green and low-carbon development into the Company's sustainability strategy. We continuously optimize our environmental management system, improve energy efficiency and resource utilization, and explore responses to climate change. The environment is always our priority, and we strive to create a green corporate culture.

- Environmental Management
- Response to Climate Change
- Natural Ecology
- Green Culture





## Environmental Management

Huaxin Cement has established a top-down environmental management system. The Company's headquarter leads the environmental protection audit and inspection; annual environmental protection compliance evaluation; an annual environmental protection performance competition; and professional seminars and training on environmental protection. We have introduced and maintained the *Environmental Factor Identification, Evaluation, and Control Procedures*, which are fully implemented by the environmental protection departments of all branches and subsidiaries. The environmental protection departments also provide regular feedback so that the headquarter can track their environmental protection operations, promptly identify and evaluate environmental impact factors, and effectively control major environmental impact factors.

We strictly abide by the *Environmental Protection Law of the People's Republic of China*, the *Law of the People's Republic of China on Environmental Impact Assessment*, and other applicable laws and regulations. We actively promote environmental protection certification among our subsidiaries. In 2021, 61 subsidiaries of Huaxin Cement applied for and were awarded the ISO 14001 environmental management system certification.

### Case Study

#### Huaxin Cement Strengthening Environmental Management of Riverside Factories

In order to improve the environmental protection and risk resistance capability of riverside factories (including those in environmentally sensitive areas such as protected areas of water sources) and meet the latest national or regional regulatory requirements on environmental protection, Huaxin Cement has formulated environmental management measures for riverside factories and set detailed control requirements for wastewater, waste gas, noise, and slag in riverside factory areas. With this policy, we have standardized the management of hazardous waste and achieved the "near-zero" discharge of wastewater. In our monthly environmental protection improvement tracking, which features visualized environmental risk inspection and "re-examination" environmental protection audit, we carry out rounds of visualized environmental protection risk inspections for riverside factories to urge their environmental protection improvement progress. Throughout 2021, we carried out 14 on-site inspections and promoted the rectification of environmental risks and the improvement of environmental management in riverside factories.

### Case Study

#### Huaxin Cement's "Beautiful Factory" Five-year Plan

In order to further improve environmental governance, Huaxin Cement has established a "Beautiful Factory" compliance creation steering committee and launched the "Beautiful Factory" compliance creation campaign within the Company. Based on environmental compliance, the campaign focuses on the treatment of factory appearance and leakage, the treatment of fugitive emissions in the plant, and construction of green mines. Through internal management to tap the potential and the construction of "clean, green, bright, and beautiful" garden factories, it has helped the factories to comprehensively improve in terms of on-site management, pollution discharge and control, energy consumption, and green mine construction. The factories' environmental performance indicators have reached the industry-leading level.

We developed a five-year strategic plan for the "Beautiful Factory" compliance creation campaign. The goal for 2021, to build 14 "Beautiful Factories", has been completed. By 2025, all our independent-legal-person production units will meet the "Beautiful Factory" standard, and their environmental performance indicators will reach the advanced level in the province (autonomous region, or municipality directly under the Central Government) where they operate.



The "Beautiful Factory" construction of Xiangyang Factory

### Case Study

#### Huaxin Cement's Actively Participating in the "Green Factory" Ranking

Huaxin Cement actively responded to the national call and implemented the Manufacturer of Quality and Made in China 2025 strategies. We organized four groups of our factories to participate in the "Green Factory" ranking, and finally, 11 of them won the honorary title of National Green Factory. Among them, Huaxin Cement (Chibi) Co., Ltd. and Huaxin Cement (Tibet) Co., Ltd. were included in the list of national green factories of 2021.



Huaxin Cement's Tibet factory

## Waste Management

Huaxin Cement attaches great importance to waste and discharge management. We strictly abide by the *Water Pollution Prevention and Control Law of the People's Republic of China*, the *Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes*, the *Atmospheric Pollution Prevention and Control Law of the People's Republic of China*, the *Emission Standard of Air Pollutants for the Cement Industry*, and other applicable laws and regulations and industry standards. Based on a comprehensive approach towards environmental protection management, we have detailed requirements for the management of air pollutant discharge, wastewater discharge, general solid waste, and hazardous waste to regulate all aspects of waste management.

We strictly monitor the application, handling, and renewal of pollutant discharge permits for the factories of our branches and subsidiaries to ensure that all of them have obtained valid pollutant discharge permits. We have established a digital real-time monitoring system to manage the monthly environmental emissions of the factories. To ensure that their waste management system is up to standard, all factories are required to disclose their data on pollutant discharge.

## Air Pollutants

Air pollutants discharged through Huaxin Cement's production activities mainly include sulphur dioxide, nitrogen oxides, and particulate matter. In 2021, we aimed to "reduce SO<sub>2</sub> emissions by 300 tonnes, NO<sub>x</sub> emissions by 2,400 tonnes, and particulate matter emissions by 320 tonnes". The Company introduced advanced emission reduction technology. Therefore, the emissions of the three air pollutants are far lower than the national and local standards and meet the Company's emission reduction targets.

### Huaxin Cement's Air Pollutant Discharge in 2021

Total Air Pollutant Discharge		32,171.57	tonne
SO <sub>2</sub>	Emissions	1,793.56	tonne
	Emission concentration	14.65	mg/m <sup>3</sup>
	Emission intensity per unit output	0.03	kg/tonnes of clinker output
NO <sub>x</sub>	NO <sub>x</sub> emissions	28,857.21	tonne
	NO <sub>x</sub> emission concentration	222.47	mg/m <sup>3</sup>
	Emission intensity per unit output	0.51	kg/tonnes of clinker output
PM	Emissions	1,520.81	tonne
	Emission concentration	8.86	mg/m <sup>3</sup>
	Emission intensity per unit output	0.03	kg/tonnes of clinker output

### Huaxin Cement's Reduction of Air Pollutant Emissions in 2021 (compared with 2020)



#### Desulfurization Technology for SO<sub>2</sub>

We use composite desulfurization, wet desulfurization, slaked lime desulfurization, and other facilities according to the actual situation of the factory to strengthen the control of the sulphur content of raw materials, ingredients, and fuels. Combined with precise central control process and real-time data monitoring, the SO<sub>2</sub> is effectively controlled within 50 mg/m<sup>3</sup> for continuous and stable emissions. In 2021, we added a new wet desulfurization facility in Santian Factory, which steadily reduce the SO<sub>2</sub> emissions in the kiln exhaust gas from 180 mg/m<sup>3</sup> to below 35 mg/m<sup>3</sup>, far below the local limit.

#### Denitrification Technology for NO<sub>x</sub>

We adopt staged combustion technology, use the SNCR system for optimisation and precise control, and add with comprehensive disposal measures such as co-processing in cement kilns and biomass nitrogen reduction, to greatly reduce the consumption of ammonia water while achieving continuous and stable ultra-low emission of NO<sub>x</sub>. In 2021, we implemented 31 optimization and transformation projects for ultra-low NO<sub>x</sub> emission. Xinyang, Yanjin, and other factories can meet the ultra-low emission requirement of NO<sub>x</sub> emission concentration of 100 mg/m<sup>3</sup>, which is far lower than the national emission standard.

#### Dust Removal Technology for PM

We adopt electrostatic precipitation, bag dust removal, and composite dust removal with electric bags to deal with PM emissions based on the actual situation of the factory. With measures such as stagger production, professional maintenance and renovation of equipment, and material upgrade of filter bags, along with measures such as self-monitoring of the operation of dust collection equipment, the factories control organized PM emissions within 10 mg/Nm<sup>3</sup> to ensure low-value PM emissions.

## Carbon Emissions

The production process of clinker and cement is the main source of greenhouse gas (GHG) emissions by Huaxin Cement. Huaxin Cement attaches great importance to the government's pledge towards "carbon dioxide peaking by 2030 and carbon neutrality by 2060". As such, the Company follows national carbon emission policies closely and actively engages in carbon emission reduction. We have set carbon reduction targets and action roadmaps based on our own conditions.

### Huaxin Cement's GHG Emissions in 2021<sup>1</sup>

Total direct GHG emissions (Scope 1)	46,425,065.65	tCO <sub>2</sub> e
Direct GHG Emission Intensity (Scope 1)	0.8198	tCO <sub>2</sub> e/tonnes of clinker output
Total Indirect GHG Emissions (Scope 2)	2,740,440.54	tCO <sub>2</sub> e
Indirect GHG Emission Intensity (Scope 2)	0.026	tCO <sub>2</sub> e/tonnes of clinker output
GHG reduction/year (benchmarked against 2020 Huaxin Cement national cement kilns emission data)	1,066,029.24	tCO <sub>2</sub> e

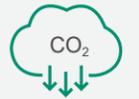
<sup>1</sup> Accounting basis: The Requirements of the Greenhouse Gas Emission Accounting and Reporting: Cement Enterprise issued by the former National Development and Reform Commission and supplementary data table rules issued by the Ministry of Ecology and Environment; statistical scope: Scope 1 and Scope 2 emissions from the clinker and cement sections and the concrete production process.

The intensity of carbon emissions by our main products is reduced by vigorously expanding our integrated cement business and green and high-tech construction materials business. We have set quantitative targets for low-carbon development: In 2030, the intensity of our direct carbon dioxide emissions (Scope-1) per tonne of cement will drop to 475 kg, and the intensity of our direct carbon dioxide emissions (Product Carbon Footprint, Scope 1) per m<sup>3</sup> of concrete will drop to 124 kg. Our carbon dioxide emissions per unit of product yield are expected to drop by more than 70% compared with 2005, and alternative fuel energy will account for more than 25% of total energy consumption.

Huaxin Cement has formulated a carbon emission reduction roadmap in order to achieve the goals of carbon dioxide peaking and carbon neutrality as soon as possible. To reduce the clinker factor in cement production, we are focused on the development of alternative fuels with greater carbon reduction potential and the application of technologies; improving energy utilization efficiency and comprehensive utilization of resources; optimizing the utilization of waste heat from cement kilns; and also working on smart manufacturing technologies. To further the carbon neutrality goal in the medium and long term, we will vigorously develop CCUS and BECCS technologies.

Our carbon dioxide emissions per unit of product yield are expected to drop by more than

**70%** compared with 2005

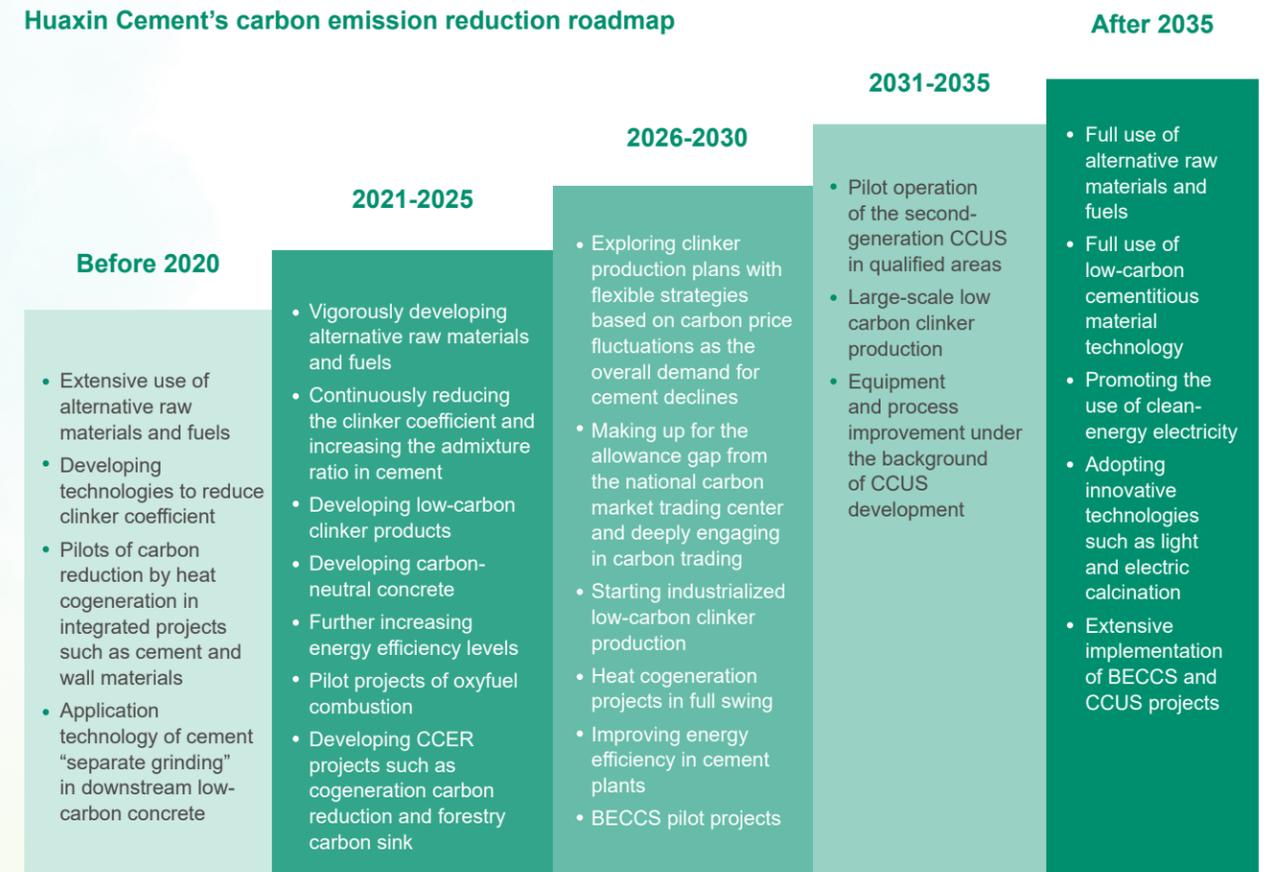


Alternative fuel energy will account for more than

**25%** of total energy consumption



### Huaxin Cement's carbon emission reduction roadmap



## Solid Waste

We comply with the *Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes* and other applicable laws and regulations. We emphasize the standardized process of pollution-free disposal of solid waste and hazardous waste and take effective measures to ensure the professional, safe, and effective pollution-free disposal of hazardous waste. At the same time, we promote the efficient recycling of non-hazardous waste to reduce its environmental impact. Huaxin Cement generated 11.98 10kt of non-hazardous waste and 450.13 tonnes of hazardous waste in 2021, achieving the emission reduction targets. More importantly, the Company recycled 100% of non-hazardous waste and legally disposed of 100% of hazardous waste.



### Solid Waste Disposal: Classified Collection and Zoned Storage

- According to the principle of "classified collection, zoned storage, and self-recycling", we store and clear industrial and domestic waste separately and carry out centralized treatment.
- Domestic waste: We regulate employees' behaviours and achieve classified collection of domestic waste. Factories should collect domestic waste centrally. Kiln factories must burn all domestic waste in the kiln. The mill and other factories must entrust the cleaning and disposal of domestic waste to the local sanitation department and sign disposal agreements.
- General industrial solid waste: General industrial solid waste that can be used as an alternative raw material will be reintroduced into the production cycle. Those that cannot be reused, such as scrap iron, shall be disposed of as waste material. For specific general solid waste, such as the waste residue from concrete production, it should be pre-treated with a filter press before being used for the construction of surrounding roads or sent to a nearby cement plant as an alternative raw material to be reused.

### Hazardous Waste Disposal: Engaging a Third Party for Professional Treatment

- We classify, collect, store, and dispose of hazardous waste in strict accordance with the *National Hazardous Waste Inventory* and the *Notice on the Standardized Management Indicator System for Hazardous Wastes* (HB [2015] No. 99) issued by the former Ministry of Environmental Protection. For hazardous wastes included in the *National Hazardous Waste Inventory*, such as waste oil and waste oil drums, we have developed a monitoring system for the whole process from the source to the disposal, and we measure each batch of hazardous waste entering the warehouse. We have built temporary storage rooms for hazardous waste that comply with the *Standard for Pollution Control on Hazardous Waste Storage*. We entrust qualified third parties to dispose of such waste and implement the three-part-bill system for hazardous waste transfer in strict accordance with the *Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes*. As such, the environmental impact of the entire life cycle of hazardous wastes is monitored, thus minimizing the impact of hazardous wastes.

## Case Study

### Zero Pollutant Discharge and Full Use of Resources

Huaxin Cement always strives to practice green development into production. In 2021, our concrete production line achieved "zero pollutant discharge and full use of resources" through multiple recovery, recycling, and reuse processes.

In the production and transportation of concrete, part of the concrete will inevitably adhere to the production and transportation equipment, which requires a certain amount of clean water for cleaning and maintenance. The slurry of the cleaned concrete is recovered by the sand and gravel separator for secondary use.

In addition, we implement dust recycling in Luquan and Fumin Concrete Factories. Limestone dust is recovered through a dust collection system and used as a raw material for secondary use.

Project	Performance Improvement Category	Improvement
Recycling benefits of recycled sand and gravel	Total amount of recovered sand and gravel (10kt)	13.6
	Reduced carbon footprint (tCO <sub>2</sub> e)	2,800
Recycling benefits of recycled water	Total amount of recovered water (10kt)	18.1
	Reduced carbon footprint (tCO <sub>2</sub> e)	27



Dust collector



Dust collection effect



Recycling of rainwater and sewage at concrete station (Luquan)

## Use of Resources

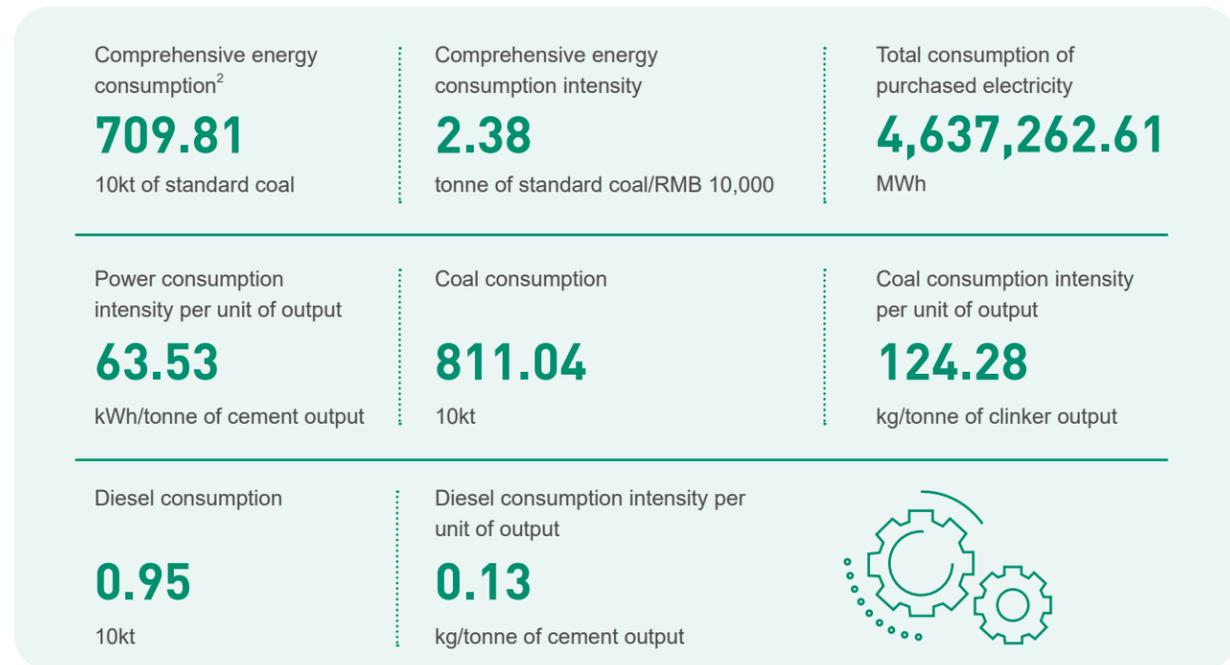
Huaxin Cement complies with the *Energy Conservation Law of the People's Republic of China*. We firmly believe that the fundamental strategies for corporate sustainability are reducing resource consumption, improving energy efficiency, and optimizing resource utilization. With the aim of reducing electricity consumption, water resources, and packaging materials, we continuously pursue the comprehensive utilization of resources and upgrade existing technologies for energy conservation, intelligence, and integration. Compared to 2020, our net waste-heat power generation per tonne of clinker in 2021 increased by 0.8 kWh/t, the comprehensive power consumption of clinker decreased by 1.4 kWh/t, and the comprehensive power consumption of cement decreased by 1.0 kWh/t, achieving the goal of reducing resource consumption.



## Energy Conservation and Consumption Reduction

In 2021, Huaxin Cement advocated for resource conservation, thus increasing efforts to reduce direct and indirect energy consumption, and carried out technological improvement for energy conservation and consumption reduction, which saw satisfactory results.

### Energy Consumption



<sup>2</sup> The comprehensive energy consumption is calculated based on the General Principles for Calculation of Total Production Energy Consumption GB-T25892008, and directly converted from the consumption of purchased electricity, coal, diesel, and other energy sources.



Huaxin Cement actively builds its factories into green and smart cement factories to maximize energy efficiency. By establishing online monitoring and energy management optimization systems (TES) for cement production, we have realized the online monitoring and centralized energy management of cement production. The IT-based energy management for cement production has greatly promoted the deep integration of automation and IT for cement production and improved the comprehensive utilization of energy, energy conservation, and consumption reduction in the process. On this basis, Huaxin Cement further promoted automatic production, and connected all on-site production equipment, including water, electricity, and gas supply systems, pre-homogenization systems, and traffic systems, to the distributed control system (DCS) for unified control. With big data analysis, we can give early warning to abnormal phenomena in production process and production equipment, and assist factories to optimize process and equipment. We comprehensively build and improve the PID control loop, replace manual operation, and build "unmanned" intelligent and efficient cement production plants.

### Case Study

Huaxin Cement Xinyang Company and Zhuzhou Company ranking top two in the List of Leading Enterprises in Key Energy Consuming Industries for 2021

Recently, the Department of Energy Conservation and Comprehensive Utilisation of the Ministry of Industry and Information Technology released the List of Leading Enterprises in Key Energy Consuming Industries, including nine entities from the cement industry. Huaxin Cement Xinyang Company and Zhuzhou Company were on the list for the second consecutive year and ranked top two in the cement industry for 2021.

Huaxin Cement persists with an independent innovation path oriented by "low energy consumption and emission, high technology and yields". We consistently advance the energy consumption reduction project and have developed the technology for co-processing of solid wastes in cement kilns that fits the situation of China. We extensively use waste-derived fuels and significantly reduce the consumption of traditional fossil energy. Moreover, we put energy-efficient cement facilities in wide application to continuously reduce electricity and fuel consumption. Furthermore, we constantly strengthen our energy management. We implement an energy management system and carry out demonstration projects for energy centre construction. With delayed dynamic monitoring and digital processing for the production, transition and distribution, and consumption of enterprise energy, we improve and optimise the Company energy balance to achieve the integrated management and control of systematic energy conservation and consumption reduction.



水泥行业		
序号	企业	可比熟料综合能耗(kgce/t)
1	华新水泥(河南信阳)有限公司	87.95
2	华新水泥(株洲)有限公司	89.66

## Water Management

In terms of water consumption, Huaxin Cement strictly follows the *Water Law of the People's Republic of China*, the *Regulation on the Administration of the License for Water Drawing and the Levy of Water Resource Fees*, and other applicable regulations and measures to obtain municipal water, and sets targets to reduce water consumption.

### Water Consumption

Total water consumption		2,667.11	10kt
Water consumption for cement production		555.62	10kt
Water consumption for clinker production		2,111.49	10kt
Water consumption intensity per unit output	Cement production	0.079	kg/tonne of cement output
	Clinker production	0.355	kg/tonne of clinker output

We carry out the rainwater recycling project in some factories to rationally utilize natural rainwater resources. Through the diversion of rain and sewage projects, rainwater from the first 15 minutes of rainfall is collected. As it contains a small quantity of pollutants, the collected rain water is treated, then sent to the reclaimed water reuse system in the plant for secondary use, thereby effectively reducing the quantity of water intake. In addition, we utilize a circulating water treatment system to treat production waste that cannot be directly recycled. This waste will be comprehensively utilized after being treated by physical and chemical methods such as oil separation, sedimentation, and flocculation. The recovered production wastewater and domestic sewage are used for greening, sprinkling, and dust reduction on roads and storage yards.

Domestic sewage from the wharf is collected, treated ashore, and reused. With many recycling measures, we have greatly improved water use efficiency, achieved "near zero discharge", and effectively reduced the demand for water resources.

## Use of Packaging Materials

Prioritizing conservation, Huaxin Cement continuously optimizes its cement packaging materials and explores more environmentally-friendly cement packaging options. On the other hand, we intensify our efforts to promote the application of bulk cement and cement tanks, which effectively reduces the consumption of cement packaging materials.

Our products mainly use square-bottom valve sacks, which are made of high-quality polypropylene and polyethylene and have a high-temperature coating. It is heat-resistant, moisture-proof, easy to stack, preventing most ash leakage, beautiful, and durable, suitable for multiple transportation. Besides cement, it can also be used for construction materials such as lime and gypsum, agricultural products such as fertilizer, grain, and feed, and chemical products such as resin and pigment. This material supports automatic insertion and neat and stable palletizing, and can be 100% recycled. It reduces dust pollution and material leakage at the cement factory operation site and contributes to the construction of a green and environmentally friendly cement factory. It meets the requirements of national environmental protection and occupational health policies and plays an important role in improving the social environment, eliminating safety risks, and reducing labor intensity.

## Packaging Material Consumption



### Case Study

#### Huaxin Cement Cambodia Company Using Environmentally-friendly Single-layer Cement Sacks

In Cambodia, all sacked cement uses paper-plastic integrated sacks. In order to reduce paper consumption in packaging materials, Huaxin Cement Cambodia Company developed a single-layer cement packaging sack with no lining paper for the new Kingdom cement, which is the region's first to save resource consumption from packaging materials. Compared with traditional paper-plastic integrated cement sacks, a single-layer cement sack can save about 1 m<sup>2</sup> of lining paper. In 2021, Huaxin Cement Cambodia Company sold a total of about 233,000 tonnes of Kingdom cement, reducing the consumption of lining paper by 4.66 million m<sup>2</sup> in total.



### Case Study

#### Huaxin Cement Vigorously Promoting Bulk Cement and Cement Tanks in Tajikistan

In Tajikistan, cement used to be sold only in sacks. After Huaxin Cement started production locally, it began to promote the more environmentally-friendly bulk cement and encouraged customers to recycle cement tanks. Since then, the bulk cement occupancy has increased year by year. In 2021, bulk cement occupied as high as 30% in Huaxin Cement Tajikistan Company's sales in the domestic market. Huaxin Cement Tajikistan Company's sales volume of bulk cement in the year was 277,000 tonnes, saving about 416,000 kg of plastic packaging products.

## Comprehensive Utilization of Resources

### Comprehensive Recycling of Solid Wastes: Environmentally-Friendly Non-Fired Bricks

Huaxin Cement put into operation a 300,000-m<sup>3</sup> autoclaved aerated concrete (AAC) block/board production line at the Group's Yunxian Factory at the end of 2021 to promote the production of environmentally-friendly products that are light-weight, warmth-retaining, and energy-efficient. AAC mainly uses high-silicon materials or industrial high-silicon by-products as siliceous materials and uses waste heat steam from cement kilns as curing heat sources, which greatly improves resources and energy efficiency. Compared with the traditional aeration production line with an annual output of 300,000 m<sup>3</sup> of sand, this technology can reduce the consumption of river sand by 120,000 tonnes and steam consumption by 40,000 tonnes per year. In addition, Yunxian Aerated Concrete Factory and Hainan Xinhongda AAC Factory used all the condensed water generated during the curing process for the production of aerated concrete ingredients, achieving zero discharge of production wastewater. The AAC production line of Yunxian Factory has also replaced coarse-grained quartz sand with finer-grained tailings sand, which effectively avoids the energy-intensive grinding process. As a result, energy is saved and emissions are reduced.

### Comprehensive Utilization of Waste Heat from Cement Kilns: AAC

In order to better promote the production of new building materials with light, warm and energy-saving properties, Huaxin Cement actively develops and promotes the business of new environmentally friendly unburned bricks. Huaxin environmental protection brick is a new type of wall material prepared by fully automatic pressing and shaping and high-temperature and high-pressure steam curing process of kiln tail waste heat with a small amount of cement as the main raw materials, such as the filter pressing waste soil (mud cake) formed from the screening waste of aggregate production, the water washing mud of wet aggregate production, and other solid wastes stripped during mining. The production process maximizes the use of discharged wastes, and disposes the dust collected in the production process of the aggregate plant. The waste heat of the cement kiln is used as the heat source for the maintenance of environment-friendly unburned bricks, saving the consumption of traditional energy and the emission of GHG.

In 2021, Huaxin Cement's four environmentally-friendly brick factories disposed of a total of 1.54 million tonnes of mine waste and saved 9.4 million tonnes of natural gas consumption. While reducing the discharge of waste, a large number of wall materials with high mechanical strength, exquisite appearance, green and low-carbon have been delivered to the society.

Huaxin Cement consistently studies by-products in production to maximize resource utilization and minimize effluent pollution. Fine aggregate is a by-product of the production process that is easily overlooked. It is made of tiny particles with a high fineness, which can replace traditional fly ash and mineral powder and be used as a mineral admixture in concrete preparation. The concrete prepared by mixing a certain proportion of fine aggregate can achieve the same performance as the concrete prepared in the traditional way. This method can effectively reduce the clinker factor, as well as carbon emissions and raw material procurement costs in production. Calculated by using 80 kg of fine aggregate per m<sup>3</sup> of concrete to replace fly ash, about 3.07 kg of CO<sub>2</sub>e can be reduced per m<sup>3</sup> of concrete.

### Utilization of Natural Mineral Materials

## Response to Climate Change

Climate change is an issue of global concern. The development of a low-carbon economy has become the consensus of the international community. The cement industry is the backbone of the national economy. Huaxin Cement takes the lead in the domestic cement industry in taking practical action to respond to the goals of the *Paris Agreement* and the government's call for "carbon dioxide peaking by 2030 and carbon neutrality by 2060".

On 28 August 2021, Huaxin Cement released the industry's first white paper on low-carbon development, *Huaxin Cement's White Paper on Low-carbon Development*, sharing the Company's carbon emission reduction targets, paths, and technologies in its sustainability strategy. We actively pursue carbon dioxide peaking and carbon emission reduction in the cement and concrete industry and strive to become a carbon neutral leader in the industry. In order to further respond to climate change, Huaxin Cement follows the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and actively identifies climate-related risks and opportunities, and formulates corresponding action plans to enhance the Company's climate resilience.

Huaxin Cement's Sustainability Department leads the Company's business units to actively identify and assess climate-related risks and opportunities. We take measures to address climate-related risks that have already had an impact on the Company, and prepare for climate-related risks that may impact the Company. Recognizing the opportunities from measures to mitigate climate change, Huaxin Cement continues to invest in improving its climate resilience through resource efficiency, energy sources, products and services, and the market.



### Climate-related Risks

Type of Climate-related Risks	Description	Countermeasures
 <p>Acute/chronic Physical Risk</p>	<p>Climate change will bring extreme natural disasters such as intense and frequent floods and hurricanes, as well as extreme climates such as drought and rain, which will affect the production, transportation, and sales of the cement industry.</p> <ul style="list-style-type: none"> <li>Collection and transportation of cement raw materials will be affected by extreme weather, which will increase operating costs.</li> <li>Downstream building construction operations are highly susceptible to being suspended by extreme weather (e.g., torrential rain and blizzards).</li> <li>Extreme weather may cause safety hazards in outdoor operations (concerning site safety and employee health and safety).</li> </ul>	<ul style="list-style-type: none"> <li>We provide customers with an instruction manual. Before summer, winter, and extreme weather such as rain, snow, and high temperatures, we take the initiative to discuss with customers the construction plan, make technical disclosures, and send contact letters to reduce the possibility of products being affected by extreme weather.</li> <li>In response to extreme weather, the factory promptly adjusts the concrete mix ratio and production process to adapt to the needs of the construction site.</li> <li>We continuously expand integrated business for the integration of the whole industry chain to reduce the impact of climate change from upstream and downstream.</li> </ul>
 <p>Policy and Legal Transition Risks</p>	<p>As the Chinese government has pledged to “carbon dioxide peaking and carbon neutrality” and as climate change efforts are intensifying, the cement industry will face the impact of more policy changes and stricter regulations.</p> <ul style="list-style-type: none"> <li>The government’s increasingly stringent policies on carbon emissions have increased the difficulty of corporate carbon asset management.</li> <li>With the advancement of the national carbon market and the emission trading market, carbon taxes and carbon prices will bring additional cost pressure to enterprises.</li> </ul>	<ul style="list-style-type: none"> <li>We pay close attention to the latest changes in national environmental protection laws and regulations and industry policies, and take timely countermeasures.</li> <li>We analyse the carbon market, collect and study the carbon allowance accounting methods and carbon trading rules of the state, provinces, and municipalities directly under the Central Government, and the China Carbon Emission Reduction (CCER) offset mechanism, and analyse and predict the price fluctuations in the carbon market. Based on the findings, we develop a universal carbon trading strategy recommendation to aid the committee’s decision-making process.</li> <li>We have published the <i>Huaxin Cement Co., Ltd. White Paper on Low-Carbon Development</i>, which sets clear carbon reduction targets and detailed carbon reduction paths.</li> </ul>
 <p>Technical Transition Risk</p>	<p>Considering the carbon reduction technologies that have been or are to be implemented by well-known domestic and foreign cement companies, there are still many challenges for the cement industry to achieve carbon neutrality in 2060.</p> <ul style="list-style-type: none"> <li>Existing emission reduction technologies, such as clean energy, forests as carbon sinks, and industrial electrification, are hardly sufficient to achieve carbon neutrality in the cement industry in terms of investment and emission reduction.</li> <li>In the medium and long term, the cement industry needs the CCUS (carbon capture, utilization, and storage) and BECCS (bioenergy with carbon capture and storage) technologies to achieve industry-wide carbon neutrality to a certain extent.</li> <li>The CCUS technology is still in the exploratory R&amp;D stage and has not yet been widely applied. From the perspective of investment and emission reduction effects, it has a certain degree of uncertainty.</li> </ul>	<ul style="list-style-type: none"> <li>We have collated the technical approaches for emission reduction and determined the emission potential of each carbon emission node in the whole process, from mining, raw material entering, clinker production, waste disposal, and cement preparation to waste heat utilization.</li> <li>We plan to explore the emission reduction potential of smart industrial systems, new energy development and utilization, and the CCUS carbon capture technology.</li> </ul>
 <p>Market and Reputational Transition Risk</p>	<p>In China, the cement industry is one of the high-energy-consumption industries, which indicates high GHG emissions. As climate change and low-carbon transition are increasingly concerning, the attributes of the cement industry will create a negative impression on stakeholders, which will bring market and reputational challenges to companies.</p> <ul style="list-style-type: none"> <li>The downstream construction industry has stricter requirements on the environmental properties of products such as cement, concrete, and wall materials.</li> </ul>	<ul style="list-style-type: none"> <li>We increase the R&amp;D and mass production of new low-carbon and environmentally-friendly building materials, including Chaokelong, environmentally-friendly non-fired bricks, and low-calcium carbon-fixing cement concrete.</li> </ul>

### Climate-Related Opportunities

Type of Climate-Related Opportunities	Description	Strategies and Measures
 <p>Resource Efficiency</p>	<p>Improving efficiency in equipment management, transportation scheduling, and resource utilization can significantly reduce operating costs for the Company, lay the foundation for the Company’s sustainability strategy, and contribute to global emission reduction goals.</p>	<ul style="list-style-type: none"> <li>The integrated comprehensive solution optimizes production and logistics scheduling and effectively improves resource efficiency.</li> </ul>
 <p>Energy Sources</p>	<p>In terms of energy, transitioning to low-emission energy sources can save the Company energy and expenditure in the future.</p>	<ul style="list-style-type: none"> <li>Pure low-temperature cement-kiln waste-heat power generation</li> <li>Domestic waste recycling and disposal, as well as reusing as alternative fuel.</li> </ul>
 <p>Products/Services</p>	<p>Creating and developing new low-carbon products can place the Company in a better competitive position to benefit from customer preference shifting.</p>	<ul style="list-style-type: none"> <li>Low-carbon cement: R&amp;D of low-carbon cement clinker for the purpose of the industrial production of low-carbon cement. Based on an annual output of 1 million tonnes of low-carbon clinker, low-carbon cement is expected to reduce carbon dioxide emissions by 260,000 tonnes.</li> <li>Low-calcium carbon-fixing cement concrete is able to absorb part of CO<sub>2</sub> in the production process.</li> <li>Cement grinding aid: It can improve the efficiency of cement grinders, reduce the power consumption of cement grinders, reduce carbon dioxide emissions in the process of cement production, and realize energy conservation and emission reduction.</li> <li>High-performance and low-carbon concrete (R&amp;D of Chaokelong products).</li> <li>Preparation of carbon-activated cement-based materials and key technologies and applications of industrial kiln exhaust gas for curing cement and concrete products.</li> <li>Phasing in the CCUS by 2025.</li> </ul>
 <p>Market</p>	<p>Against the background of climate change and the government’s “carbon dioxide peaking and carbon neutrality” goals, the construction and promotion of the national carbon trading market have a profound impact on the cement industry, and the carbon market, as a new market under low-carbon development, is full of opportunities.</p>	<ul style="list-style-type: none"> <li>We get involved and assist government departments in formulating carbon emission right allocation plans, coordinate industry associations, and strive for policies that are conducive to industry development and the Company’s interests.</li> <li>The Sustainability Department coordinates and implements carbon trading, including CCER development and offsets for each business unit, and provides decision support for the Company. For the preservation and appreciation of carbon assets, the department directs each carbon business unit to carry out CCER offset carbon emission quota work within the province in which they operate.</li> <li>We regularly organize training and experience-sharing on carbon asset management.</li> <li>We develop carbon financial services such as carbon asset loans and carbon emission derivatives.</li> </ul>

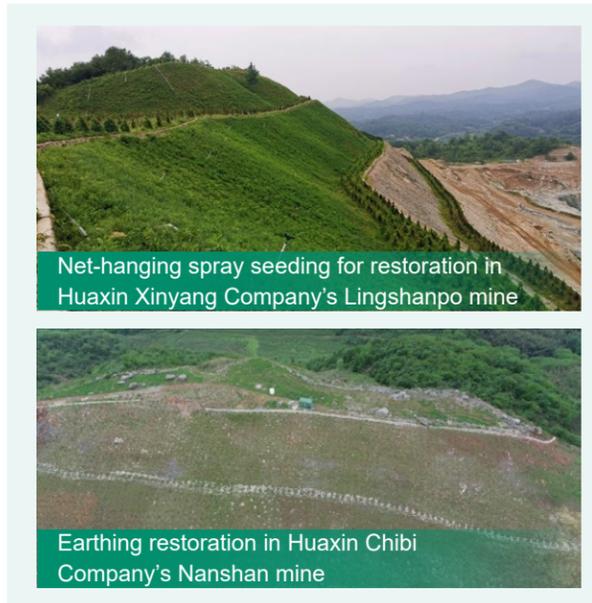
## Natural Ecology

Biodiversity is essential to life on Earth and fundamental to human survival, development, and harmonious coexistence with nature. Organisms in all forms provide human beings with food, fibre, building and furniture materials, and other living and production raw materials. They are, evidently, of great importance to the cement industry.

### Mine Restoration

Huaxin Cement sticks to the path of green development. We formulate scientific and systematic mining plans for the comprehensive utilization of mine resources. We fully implement green and digital mining to minimize the impact on the ecological environment and conserve biodiversity.

Huaxin Cement's branches and subsidiaries strictly abide by the *Mineral Resources Law of the People's Republic of China*, the *Management System for Mining Planning*, the *Management System for Green Mine Construction*, and other applicable laws, regulations, and management systems for mining. We formulate and execute monthly, annual, and mid-to long-term mining plans for mines. For the areas where the mining has been completed, the branch or subsidiary shall formulate a special plan according to the local climate and soil conditions and carry out environmental restoration and management, land reclamation, and vegetation restoration to ensure efficient and sustainable mining. At the end of 2021, a total of 15 of our mines had been included in the national list of green mines, and nine had been included in the provincial list of green mines.



#### Case Study

### Mine Restoration in Ecologically Vulnerable Areas in Tibet

The Shannan mine in Tibet has a rugged mountainous terrain under the harsh alpine climate. The soil has high sand and gravel content and poor soil water retention, which is not conducive to the survival of plants. During the rainy season, the land is easily eroded by rainwater runoff and forms gullies. Erosion is exacerbated by high and steep mountains. Faced with such extremely difficult maintenance conditions, our Tibet Shannan Company has chosen Maccaferri's innovative ecological restoration technology for mine restoration.

We use natural, harmless combination formula spray materials based on high-performance ecological substrates made by standardized production, and mix them with seeds. They are then sprayed to form a fibrous planting blanket that evenly wraps the seeds on the slope. This fibre planting blanket has the functions of improving soil environment, covering, heat preservation, water retention, accelerating plant growth, and strengthening roots, so as to achieve an excellent greening effect of rapid growth.



Before and after the restoration in the Shannan mine in Tibet

#### Case Study

### Construction of the Digital Mine in the Huangjiaya Mine

For more efficient and accurate mine resource management, production management, and mining planning, as well as lower mining costs and ecological environmental impact, Huaxin Cement actively constructs digital mines. By the end of 2021, we had purchased nearly 40 sets of mining management software and established a geological and mining model of each mine, promoting the improvement of mining technology.

In 2021, Xiangyang Company's Huangjiaya mine took the lead to construct the digital mine pilot, and established a 3D model of mine geology and mining, a production scheduling management system, and a mobile equipment management system. In addition, we have begun to build the world's most advanced smart industrial park, Xinyang New Smart Industrial Park. In March 2022, we cooperated with a Chinese leading technology company in digital construction of mines to build a digital and intelligent mine in Wuxue Industrial Park, East Hubei.



The scientifically-planned and orderly-mining Huangjiaya mine of Huaxin Xiangyang Company

## Co-Processing

Huaxin Cement attaches importance to environmental protection. We make full use of cement kiln co-processing technology to recover domestic wastes and dispose of river pollutants with the commitment to making continuous contributions to ecological and environmental protection.

Huaxin Cement leverages its advantages in cement kiln technology to carry out co-processing and thermal energy utilization improvements for municipal domestic wastes, municipal sludge, industrial hazardous wastes, polluted soil, and floating debris. In 2021, a total of 3.28 million tons of waste was received and disposed of, including 2.34 million tons of domestic waste and 600,000 tons of municipal sludge. At the same time, we have effectively transformed from passive disposal to active utilization and dispose of production and domestic waste in a pollution-free, reducing, and recycling manner. The thermal energy utilization efficiency of cement kiln alternative fuel is about 3.5 times that of traditional waste/biomass power generation. It achieves a higher fuel substitution rate and lower carbon emissions in the disposal of domestic solid waste.

Huaxin Cement's "Daily Co-processing of 3,000 Tonnes of Domestic Wastes" project of Huangshi 10,000-tonne line has achieved a fuel substitution rate of 40%, NO<sub>x</sub> emission reduction of 70%, and carbon dioxide emission reduction per tonne of clinker of 720 kg. We will make full use of the advantage of high thermal energy utilization efficiency in the co-processing of cement kilns, and further expand the disposal volume of "energy resource" wastes such as domestic wastes, agricultural and forestry wastes, waste tires, and general industrial solid wastes.

### The whole production process of RDF

#### 1 The model of a domestic waste pre-treatment plant built in a cement factory



Raw wastes



The ecological pre-treatment factory



Finished RDF products



Input into the kiln

#### 2 The model of a pre-treatment plant with reasonable distance from the cement kiln line



Raw wastes



The ecological pre-treatment factory



Finished RDF products



Sending to the cement factory

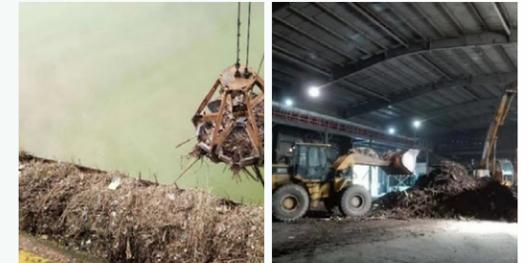


Input into the kiln

#### Case Study

#### Huaxin Cement Assisting in the Disposal of Floating Debris in the Three Gorges of the Yangtze River

For nearly ten years, Huaxin Cement has used advanced cement kiln co-processing technology to dispose of about 750,000 m<sup>3</sup> of floating debris in the Three Gorges of the Yangtze River in a pollution-free, reducing, and recycling manner. This move has completely eliminated the hidden danger of secondary pollution to the local environment by floating debris, protected the ecological environment of the Three Gorges Reservoir area, and ensured the operation of the waterway and the safety of the power station in the area. In 2021, Huaxin Cement's Zigui Factory disposed of 27,237.48 tonnes of floating debris in the Three Gorges of the Yangtze River, and Padong Factory disposed of 163.54 tonnes, which added up to 27,401.02 tonnes.



Zigui Factory disposing of floating debris in the Three Gorges of the Yangtze River

## Green Culture

Huaxin Cement is the first enterprise in the industry to implement environmental protection transformation and development. The Company has integrated green development into the Company's sustainability strategy and regularly carries out knowledge and skill training and communication on environmental protection and low-carbon development within the Company. These activities have created a favourable condition for learning green culture, enabling the whole Company to better implement low-carbon and environmental protection transformation measures from top to bottom.

#### Case Study

#### Annual Training on Environmental Protection and Carbon Asset Management

Huaxin Cement regularly hosts training on environmental protection and carbon asset management every year. In October 2021, we hosted a five-day environmental management training (24 hours in total) and carbon asset management training (12 hours in total). People attending the training were mainly the directors or persons in charge of environmental protection and carbon asset management departments of Huaxin Cement's business companies. The training covered the communication of national environmental protection policies and the dynamics of carbon market construction, experience sharing of environmental risk management in typical factories, and on-site carbon emission accounting methods. The training effectively enhanced the awareness of environmental protection management, the ability of environmental protection risk emergency prevention, and the standardization, consistency, and transparency of carbon asset management in the Company's competent departments.



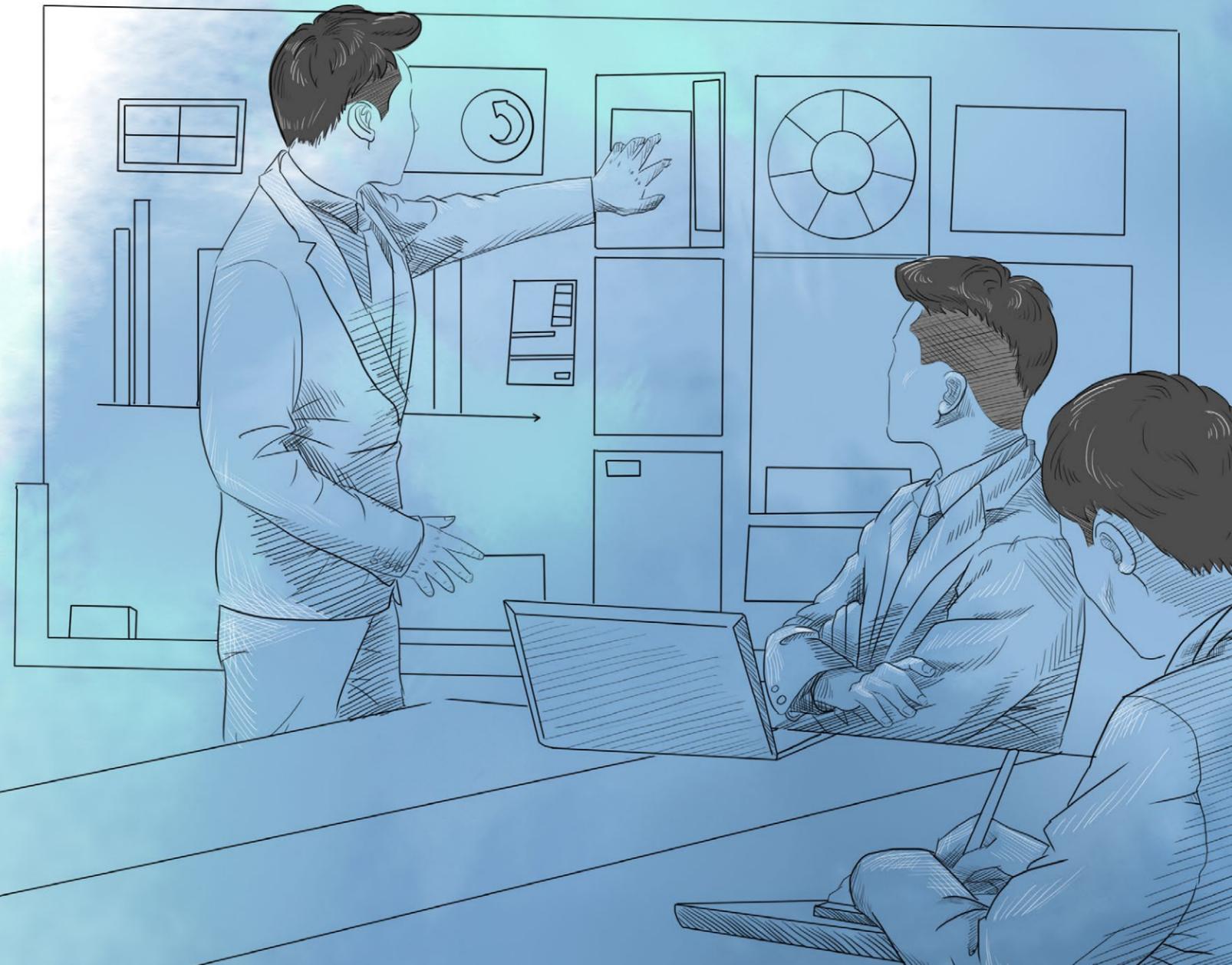
Employees in the training on environmental protection and carbon asset management in 2021

# 04

## Business Operations

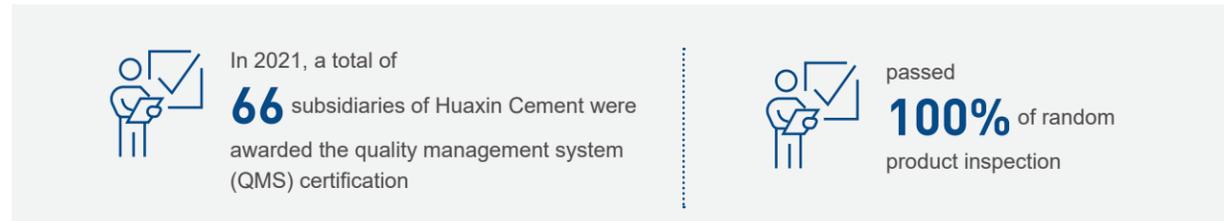
Huaxin Cement has always adhered to a sustainable development model to enhance the Company's operational capabilities. We uphold customer-first values and continuously strengthen product quality management and customer rights protection. On the other hand, we actively promote the establishment of a responsible supply chain and work with partners to improve their involvement in sustainability. We are also committed to the crackdown on corruption and upholding integrity to maintain a trustworthy, clean, and efficient organization with century-old qualities.

- Quality Assurance
- High-Quality Services
- Supply Chain Management
- Anti-Corruption

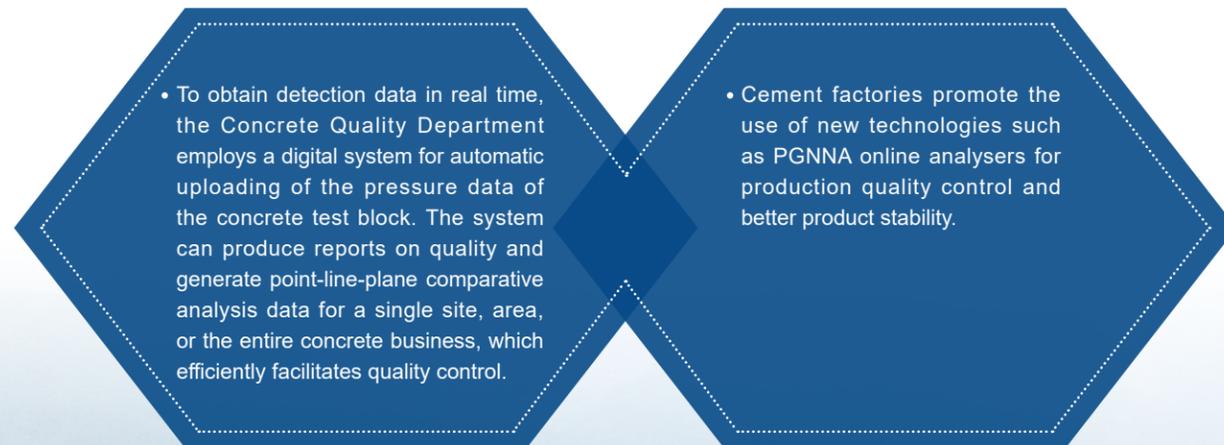


# Quality Assurance

Huaxin Cement strictly abides by the *Product Quality Law of the People's Republic of China*. We have established a standardized quality management system, which consists of the detailed rules for the implementation of quality management regulations; management regulations for raw material compliance; the management system for the sampling inspection of market products; and the management system for quality incidents, covering the whole process from raw material procurement, production, product delivery, and after-sales service. In 2021, a total of 66 subsidiaries of Huaxin Cement were awarded the quality management system (QMS) certification, and passed 100% of random product inspection.



In order to ensure the integrity and authenticity of quality-related data, we have developed a quality management module based on a digital integrated system, relying on a powerful information management system to achieve precise quality control.



Furthermore, we developed Huaxin intelligent online quality control system and Huaxin intelligent equipment monitoring and optimization system. These systems improve the timeliness and accuracy of equipment monitoring and the efficiency of patrol inspection and production management, promote the digital transformation of quality control, and build on the core competitiveness of Huaxin Cement for high-quality development. Quality inspection production efficiency has increased by 20%, and patrol inspection efficiency has greatly improved. Labor requirements on the production line can be reduced by more than one third.



- The system contains mature process control technology and online detection equipment such as element online analysis and online particle size analyser, and applies advanced computer monitoring technology and intelligent fieldbus technology. It changes the traditional mode of manual sampling, grinding, tableting, analysis, and batching. Through the self-developed OPC interface programme, the system transmits the online inspection data to the Company's TES system, thereby making sustainable process optimization possible, realizing the automation of higher-quality control procedures, and achieving optimal production efficiency.
- Independent research and development of intelligent online quality control system, based on production quality prediction model, automatic collection of quality data of the whole production process, open production control, quality data driven production process, to achieve accurate control of cement production quality. Realize the automation and intelligence of higher quality control procedures to achieve the optimal production efficiency.

Huaxin Intelligent Online Quality Control System



- The system combines equipment monitoring technology and data acquisition and analysis technology. It conducts real-time analysis of the data during the actual operation of the equipment based on advanced control theories and models, as well as intelligent diagnosis and fault warning for the equipment operating status. It realizes the whole life cycle management of equipment operation, maintenance, repair and scrap, forming an overall closed loop of equipment management. Through online status monitoring of production and equipment, real-time warning of abnormal conditions is provided to improve system operation rate and achieve preventive maintenance.
- The system reduces the frequency and personnel of human patrol inspections for equipment, and shortens the time for unplanned downtime of factory equipment. It maximizes the equipment capacity potential and increases the cement output and yields of the factory.
- Huaxin Cement's video analysing platform and production site safety recognition model realise seamless video surveillance for production in the factory. They are capable of the identification of particle segmentation and particle size (exact identification for above 5 mm), blown sand in the kiln input, concrete viscosity, underfilling and overfilling, to ensure product quality.

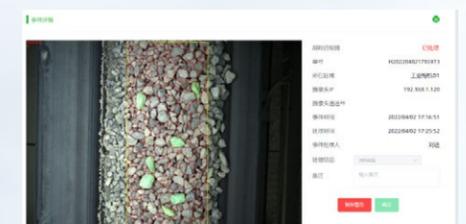
Huaxin Intelligent Monitoring and Optimisation System and Huaxin Intelligent Monitoring and Identification System

### Case Study

#### Huaxin Cement Joining Hands with Hikvision to Explore the New Path of "Cement + AI" and Upgrade the New Quality Monitoring System

Huaxin Cement and Hikvision have reached strategic cooperation to build the Huaxin Intelligent Monitoring and Identification System for Factories and jointly promote digital corporate transformation.

A camera is installed above the aggregate belt to take real-time images of the surface of the transmitted aggregate. The images are segmented by AI and the size of each particle is calculated. When it is found that the particle size exceeds the standard, it means that the screen may be damaged. In this case, the maintenance personnel will be alarmed to arrange maintenance of the screen in time to avoid serious quality problems.



AI-enabled quality inspection for aggregate size

AI video monitoring is performed at the concrete feeding point to identify concrete viscosity in real time. It can give timely early warning to the segregation to avoid concrete quality problems.



## High-Quality Services

Huaxin Cement upholds customer-first values and insists on honesty, devotion, practicality, and innovation. We focus on customer needs and experience, protect customer rights, and continuously improve customer satisfaction and brand reliability. In 2021, our customer satisfaction rate reached 93.4%.

Huaxin Cement has formulated the *Business Handling Process of the Customer Service Centre* and continuously improves it to regulate the handling process of customer service centre inquiries, further improve the efficiency of customer inquiry and complaint handling, and optimise customer experience. We actively respond to customer complaints, classify the complaints according to the *Complaint Category Screening*, and transfer them to the corresponding business director to solve the problem in a timely manner. We also launched the innovative smart customer service function to provide online customer support. We completed a number of surveys, including the authenticity check of customer master data, logistics satisfaction surveys, and concrete customer satisfaction surveys, in which we listened to customer needs and opinions and gave feedback. At the same time, we adhere to the customer-first principle and require the customer service staff to make follow-up calls according to the handling result of the relevant person in charge and close the inquiry or complaint after the customer is satisfied. In 2021, we received 43 complaints about our products and services, or a complaint rate of 1%, with 100% of the complaints resolved.

We also attach importance to protecting the Company's and customers' privacy. We require relevant employees to sign non-disclosure agreements in accordance with the *Confidentiality Management Regulations of Huaxin Cement*. Account permissions of relevant employees are strictly managed to ensure the security of customer data.

Huaxin Cement established a Sharing Service Centre in 2015, aiming to strengthen risk management, promote work efficiency, control extra employment, and add business value. In 2021, we released 233,000 data analysis reports and carried out four quarterly training sessions on OLA (Operational Level Agreement) for 1,346 trainees to help business units improve their operation and enhance their customer service capabilities.



**100%** of the complaints resolved

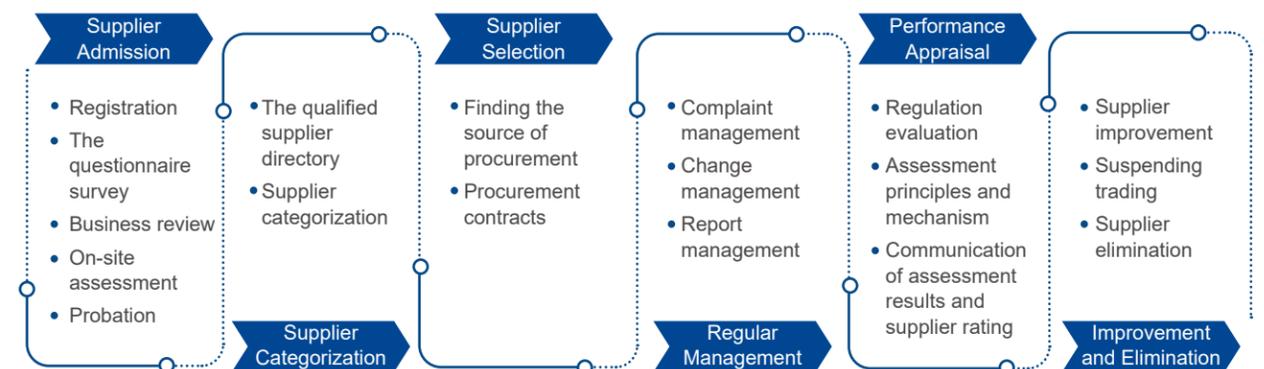


In 2021, we carried out **4** quarterly training sessions on OLA

## Supply Chain Management

Huaxin Cement has formulated and implemented the *Supplier Management Measures of Huaxin Cement*. We have developed standardized and scientific mechanisms for supplier admission, selection, evaluation, and elimination, and established a supplier management system to effectively manage procurement suppliers. In 2021, we had 808 centralized procurement suppliers, and the qualification rate of procurement business reached 89%, which was increasing year by year. In the same year, we had 4,156 suppliers in the Mainland China and 19 overseas suppliers.

### Our supplier management framework



When screening suppliers, we will consider environmental and other factors and evaluate suppliers' social responsibility and sustainability risks. For example, in coal procurement, considering the carbon emissions of logistics and transportation, we will give priority to purchasing coal by water and railway transportation and cooperate with professional ports and terminals with higher environmental protection standards. We strictly require ships to be equipped with automatic retractable sheds to reduce air and water pollution. In terms of procurement logistics, we will strictly review the qualifications and emission compliance of logistics vehicles, sign new energy vehicle framework agreements, and select models with sealing measures to minimize carbon emissions and leakage of polluting liquids in procurement logistics.

## Case Study

## AFR (Alternative Fuels and Raw materials) Procurement

The industrial wastes generated by some manufacturing and processing enterprises have brought great hidden dangers of environmental pollution and caused great waste of resources. Actively responding to the government's call on "promoting the R&D and broad application of green and low-carbon technologies and building a green manufacturing and service system", Huaxin Cement utilises the co-processing effect of cement kilns to vigorously expand the use of alternative raw fuels.

In September 2021, we comprehensively carried out AFR material sourcing and disposal, to find AFR suppliers from the source of the industry chain. Wastes such as waste cloth strips, branches, rice husks, and waste plastics are used as raw materials or fuels to replace natural mineral resources and fossil fuels to reduce carbon emissions and the Company's energy consumption.

We also require suppliers to sign agreements on business ethics, human rights protection, and anti-discrimination as a way to effectively control social risks in the supply chain. We seek long-term strategic cooperation with suppliers committed to sustainability. We organize suppliers to sign the Supplier Code of Ethics and Conduct, the Security Agreement, and the Integrity Agreement to prevent the occurrence of supply chain corruption. We pay close attention to our suppliers' performance in protecting employees' health and safety. We incorporate occupational health and safety clauses into business cooperation agreements and require suppliers to obtain safety management and production certificates and special post certificates. We actively conduct joint safety inspections with suppliers. In addition, we require suppliers to not interfere with employees' freedom of association, to prohibit child labour, and to abide by the principles of non-discrimination. When a supplier violates applicable guidelines repeatedly, we will terminate the cooperative relationship.

## Anti-Corruption

We strictly abide by the *Criminal Law of the People's Republic of China*, the *Criminal Procedure Law of the People's Republic of China*, and other applicable laws and regulations. We have formulated the *Anti-Bribery and Anti-Corruption Regulations of Huaxin Cement*, the *Implementation Opinions of Huaxin Cement on Project Integrity*, the *Implementation Measures of Huaxin Cement for the "Dual Investigation" in Improving the Party's Style of Work and Upholding Integrity*, and the *Self-Discipline Rules for Middle and Above Management Concerning Related Transactions*. These internal rules and regulations provide basis for the Company's integrity management.

We adjusted the Discipline Inspection Commission's organizational structure and established the General Office, the Discipline Inspection Commission Supervision Office, and the Case Trial Office to further strengthen its organization. We have also introduced a CPC Committee Inspection Work Office, established and improved several discipline inspection and supervision work systems for secondary and tertiary CPC organs, and augmented the corresponding staffing. We have built a discipline inspection and supervision operation mechanism for the Company and improved it, strengthening the effect of discipline inspection and supervision.

We have implemented the *Work System for Discipline Inspection, Supervision, Petition, and Reporting*. We encourage employees to report any disciplinary violations and take any leads we receive seriously. We standardize the handling of petitions and reports in discipline inspection and supervision, ensure that CPC members and the general public can exercise their right to democratic supervision, and improve the efficiency of corporate governance. We have established an internal and external reporting platform and set up a dedicated reporting telephone line, email, website, and integrity mailbox. We require the whistleblower's personal information and reporting content to be kept strictly confidential to protect them and ensure the reporting channels are safe and unblocked.

In 2021, we had no corruption lawsuits. We received 42 internal reports in total. 100% of the business-ethics-related cases have been closed. In the year, we handled serious violations of discipline strictly and strengthened education for delinquents. In the handling of violations of laws and disciplines, we vigorously investigated and dealt with some serious cases and those responsible. This change has increased accountability for disciplinary violations, increased employee awareness of integrity and honesty, and strengthened the Company's compliance management culture. Due to the timely discovery and proper handling, the disciplinary incidents did not have a significant impact on the Company's finances or operations.



A discipline inspection and anti-corruption seminar

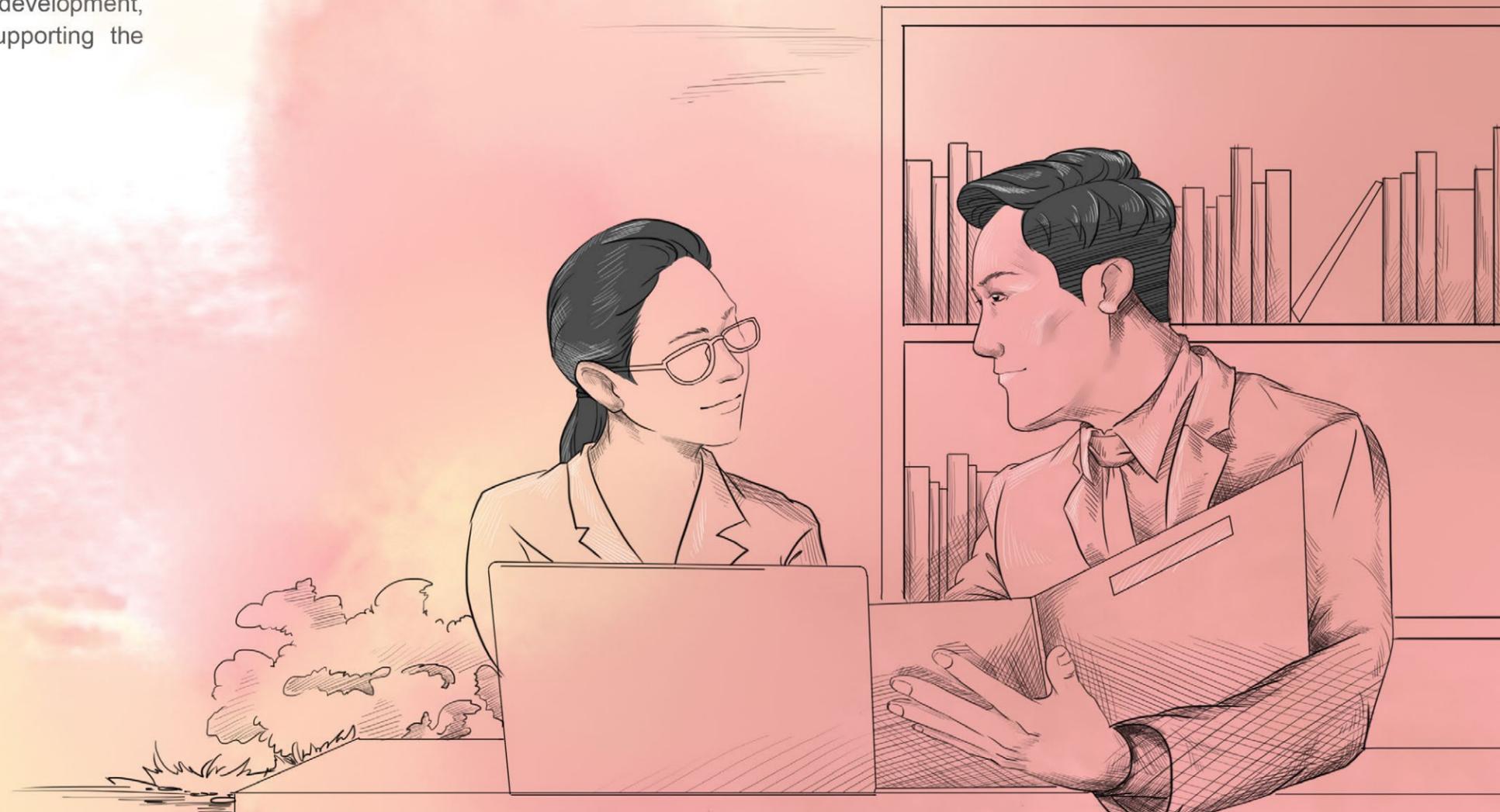
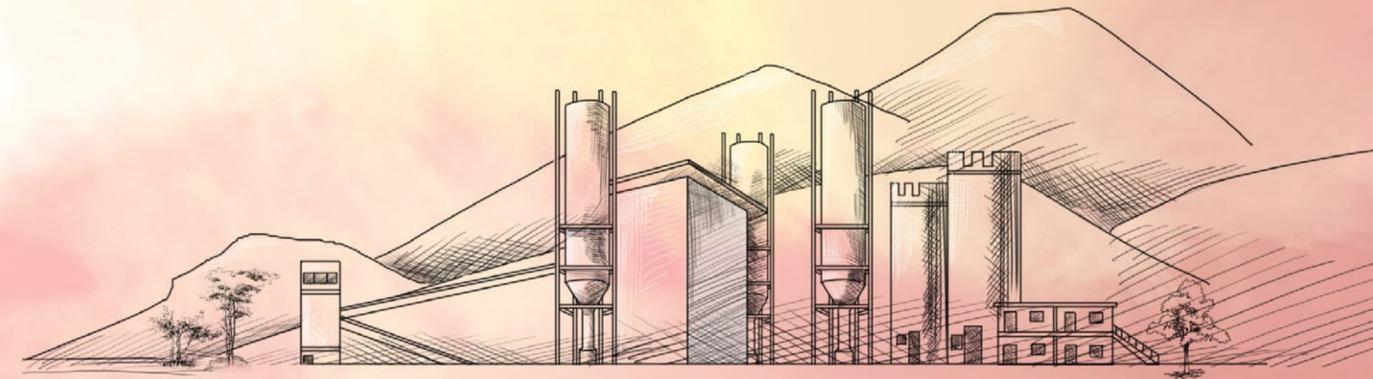
We attach great importance to and regularly carry out integrity education for managers and employees at all levels to create a clean and honest workplace culture. The Discipline Inspection Commission plans training on internal integrity education, integrity culture creation, and anti-corruption according to the *Training Management System of Huaxin Cement*. In 2021, we carried out training sessions on six topics, with a total attendance of 1,861. The average duration of anti-corruption training for the Board of Directors and employees was 87.5 hours.

# 05

## Responsibility towards Employees

Huaxin Cement always regards employees as the Company's most valuable resource. We fully protect the rights and interests of every employee and are committed to creating a fair, stable, and safe workplace for all employees. The Company cares about the lives of our employees, hence implementing a diverse employee development strategy, paying attention to employees' development, and stimulating employees' vitality and creativity, therefore supporting the Company's sustainable and stable development.

- Protecting Employee Rights and Interests
- Occupational Health and Safety
- Employee Training and Development
- Employee Care



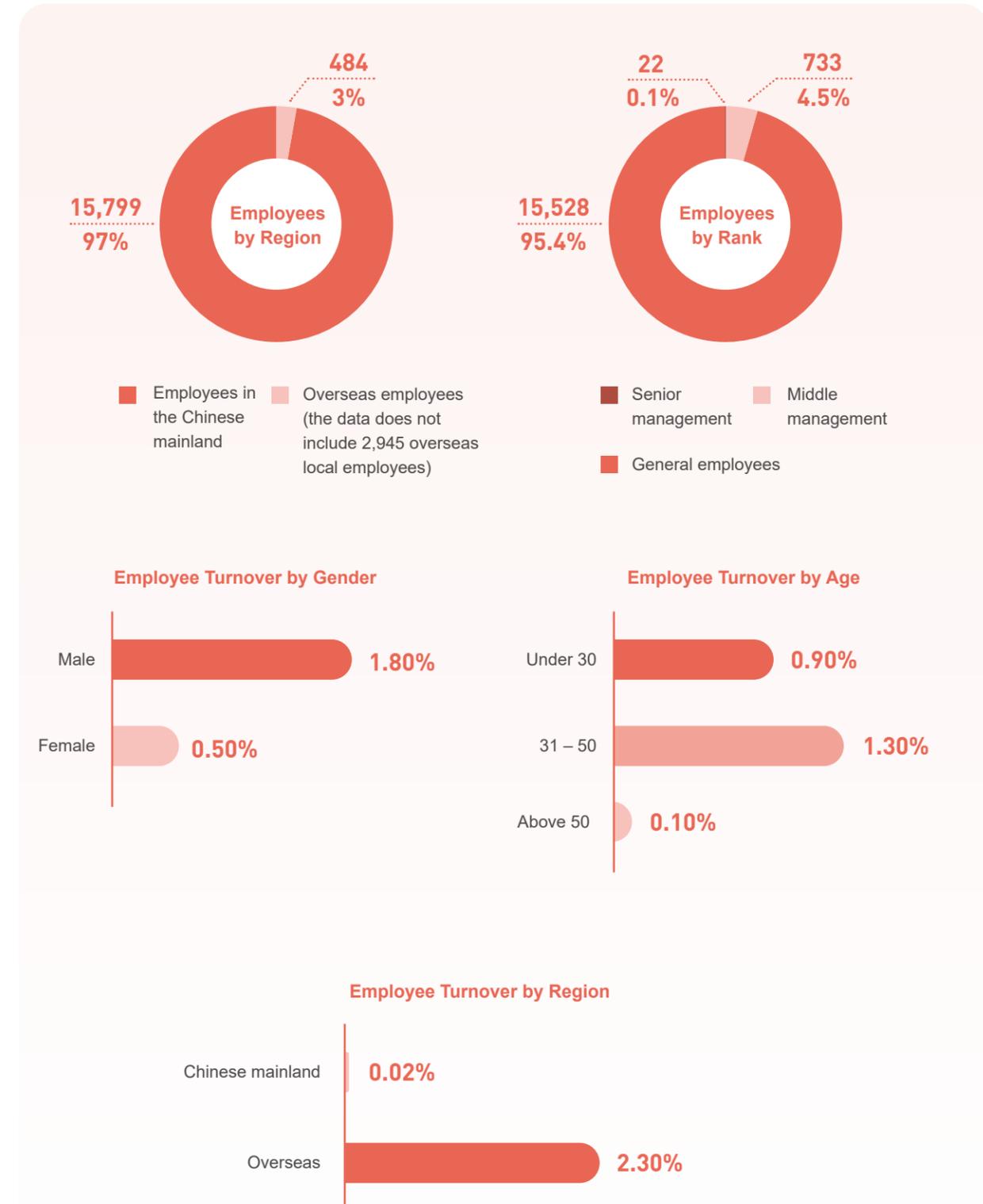
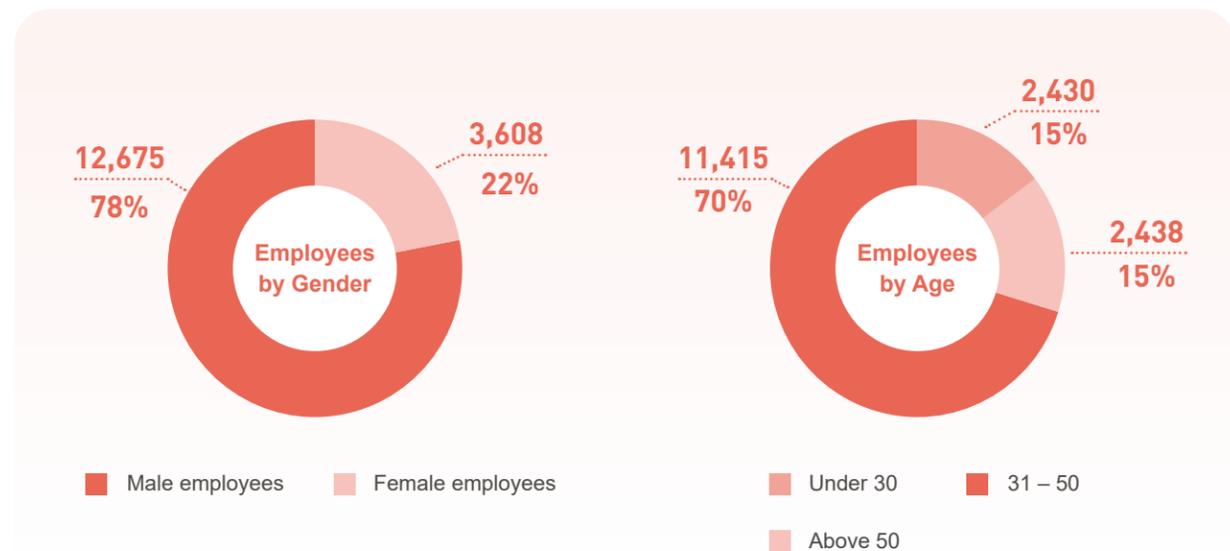
## Protecting Employee Rights and Interests

Huaxin Cement protects all legitimate rights and interests of employees. The Company insists on standardized and equal employment; improving staff's salary and welfare system; strengthening employee communication and democratic management; and respecting employees' opinions and suggestions.

### Standardized Employment

Huaxin Cement strictly abides by the *Labour Law of the People's Republic of China*, the *Labour Contract Law of the People's Republic of China*, the *Employment Promotion Law of the People's Republic of China*, the *Law of the People's Republic of China on the Protection of Minors*, and other applicable laws. We adhere to the principle of equal employment and oppose all forms of discrimination based on gender, age, nationality, region, ethnicity, race, religious belief, education, or physical condition, and strive to create a diverse and inclusive workplace.

Huaxin Cement has developed the *Management Measures for Employee Labour Contracts* and the *Management Measures for Overseas Dispatched Employees* based on the Company's current conditions to ensure transparent, uniform, and fair recruitment, dismissal, and dispatch. During the recruitment process, we insist on fair competition and open admissions. The identity and age information of all applicants are strictly reviewed, and child or forced labour is prohibited. Candidates who are found to have provided false information will not be accepted. In addition, we oppose harassment and abuse and effectively protect the legitimate rights and interests of employees. As of the end of 2021, our total number of full-time employees was 16,283, with an employee turnover rate of 2.3%, and the workforce remained basically stable.



## Compensation and Benefits

Huaxin Cement continuously improves its remuneration system and provides a sound welfare system for employees, including social insurance, the housing provident fund, high temperature subsidies, statutory holidays, and one-child subsidies, among other statutory benefits stipulated by the Central and local governments. All employees also receive core benefits that include supplementary pension and medical insurance, accident insurance, housing assistance, family visit assistance, physical exams, holiday gifts, work meals, travel and communication allowances.

## Democratic Management

Huaxin Cement respects the voice of employees and actively promotes democratic management. We continue to expand the channels for employees to communicate and express themselves, which includes employee representatives' conferences, primary-level visits, factory research, and face-to-face communication with front-line employees. Prominent problems that are uncovered are actively resolved. Furthermore, before the major policies and systems are introduced, employee feedback and suggestions will be solicited. After collecting and reasonably adopting employees' opinions, we will communicate the new system or policy at different levels and answer their questions. This protects the employees' right to know, participate, and make decisions, thus improving employee satisfaction. If they have any complaints, employees have a variety of channels such as the petition reporting hotline and email. All complainants' information is kept confidential, and we continue to track and supervise the handling of the complaints.



Main venue of the first plenary session of the Ninth Employee Representatives' Conference of Huaxin Cement

## Occupational Health and Safety

The health and safety of employees form the cornerstone of Huaxin Cement's sustainable development. We continuously improve our health and safety system, enhance employees' safety skills and awareness, and strengthen the prevention, control, and elimination of occupational diseases. The Company's safety management has been improved with these measures.

### Safety Management System

Huaxin Cement strictly abides by the *Work Safety Law of the People's Republic of China*, *Law of the People's Republic of China on the Prevention and Control of Occupational Diseases*, *the Measures for the Administration of Occupational Health Examination*, *the Measures for the Administration of Contingency Plans for Work Safety Accidents*, and other applicable national and local laws and regulations and industry specifications. Within the Company, we have formulated the *Work Safety Rewards and Punishments Regulations of Huaxin Cement*, *the Safety Function Management Measures for Huaxin Cement's Business Units and Subsidiaries*, and the *Safety Operation Manual for Equipment Maintenance*.

The Company promotes the establishment of a primary safety management system according to the latest management measures of the Ministry of Emergency Management for safety standard review and grading. We have established an Occupational Health and Safety Management Committee with subordinate organs staffed by senior executives of the Company, and formulated an occupational health and safety target management process, an occupational health and safety audit and

scoring system, and a hidden danger screening system. Hidden danger reporting targets are assigned to both senior executives and primary-level personnel, and the authority to report hidden dangers is assigned to each employee in the OA system. In 2021, we arranged professionals to complete health and safety audits on 31 cement, aggregate, equipment, environmental protection, new materials, and concrete factories. By the end of year, 91,522 potential safety hazards had been uncovered and rectified, therefore effectively reducing the safety risks in the production process.

We set occupational health and safety goals every year based on the actual situation and communicate them to regional and primary-level employees after approval by senior management. These goals are managed in real time through monthly headquarters reports and factory on-site monitoring. Safety issues are discussed at monthly executive meetings, quarterly office meetings, and one-on-one meetings between regions/businesses/functions with the president. At the end of each year, all employees are assessed for their health and safety performance according to the completion of the goals. The assessment results are linked to their overall performance.

### Case Study

#### Huaxin Cement Launches a Pilot Project of AI Safety Management

In 2021, Huaxin Cement piloted the "Artificial Intelligence (AI) Safety Monitoring and Video Surveillance" project, which was jointly developed by the Company's occupational health and safety system and digital innovation centre. In this project, cameras set up on the production site monitor designated areas 24 hours a day and identify and capture specific violations. The photos are sent to dedicated personnel for follow-up investigation of the violations.

We have deployed an AI safety monitoring system in the Yangxin Factory. Violations related to helmet wearing, area trespassing, seat belt wearing, high-temperature thermal insulation clothing wearing, life jacket wearing, and firework identification are captured and uploaded. In the future, we will take a customized approach for such promotion and implementation in qualified factories in order to continue to promote the intelligent advancement of the Company's safety management.



The data page of Huaxin Cement's AI safety monitoring system

## Occupational Disease and Work-related Injury

Huaxin Cement fully recognizes the hazards of noise, dust-induced pneumoconiosis, occupational noise-induced deafness, and other occupational diseases, and strives to replace, eliminate, and control such hazards. We have put in place measures to control pneumoconiosis by replacing manual packaging with new packaging technologies such as automatic sack insertion and automatic loading systems. In addition, high-concentration dust areas are sealed and installed with dust collector systems and other facilities to control dust spillage and diffusion. We also equip our employees with professional dustproof suits of N95 or higher standard. In terms of noise control, we use magnetic levitation or air levitation blowers to replace Roots-type blowers, and we install sound insulation and sound-absorbing walls and mufflers. We equip employees with personal protective equipment and install earplug dispensers in noisy areas.

Huaxin Cement invested about RMB 200 million in occupational health facilities and completed 247 dust control projects and 66 noise control projects in the past three years. In 2021, we invested more than RMB 60 million to complete 118 occupational disease hazard control projects, benefiting about 3,000 employees. At the end of 2021, 19 of Huaxin Cement's subsidiaries had installed the automatic sack insertion and loading system.

For employees and contractors exposed to high-dust and high-noise areas, regular occupational health inspections and host training are implemented in accordance with national regulations. We also take measures to raise employees' awareness of other health and safety issues. In 2021, we released 14 education videos on the prevention of infectious diseases, including COVID-19, chronic diseases, and occupational diseases, and provided 730 people with occupational hygiene and health knowledge training.

The mental health of our employees is also an area of concern. In the past year, we invited mental health experts to deliver special lectures on mental health. In addition, mental health questionnaires are issued to all key employees to monitor their mental state and provide psychological consultation and support channels for those with abnormal results.



An autoloader in Huaxin Cement



An automatic sack inserting machine (manipulator) in Huaxin Cement



Employee respirator fitting



An earplug dispenser in Huaxin Cement

### Safety Education and Training

Huaxin Cement constantly expands occupational health and safety education, communication, and training. We carry out various online and offline safety capability training and development programs for new employees, regional managers, and project construction contractors, and encourage work safety managers to apply to be Certified Safety Engineers. In 2021, our employee occupational health and safety training totalled 1,126,130 hours, with a duration of 69.1 hours per employee and a plan completion rate of 191%.

In 2021, we compiled the *Employee Health and Safety Handbook* in accordance with applicable national laws, regulations, and policies and printed and distributed it to all employees of the Company. It provides guidelines for employees to comply with the health and safety system and lays the foundation for employee health and safety education and training. In addition, in order to strengthen employees' understanding of the ten iSave Gold/Silver/Bronze regulations, we designed and produced 285 cartoon pictures in 2021, which were released on the Company's online OA platform. We plan to compile them into a pictorial brochure for visual safety education and training for primary-level employees.

### Work-related Injury and Death Incidents and Their Percentage in Huaxin Cement for the Past Three Years



our employee occupational health and safety training totalled **1,126,130** hours



a plan completion rate of **191%**

### Case Study

#### Huaxin Cement Hosting On-site Health and Safety TtT Training Delivered by Experts

In 2021, Huaxin Cement launched the on-site health and safety TtT (Training to Trainer) training programme delivered by experts. The programme covered six topics: terminal safety, project safety, AI safety monitoring projects, interpretation and countermeasures of the new Work Safety Law, CCM key control management projects, and safety learning (job rotation) measures for those to be promoted. 20 on-site TtT training sessions were held for regional divisions and business units, with a total attendance of 484 people, including all on-site safety managers and relevant management personnel of the Company. Two live-streaming training sessions were held for overseas and Tibet, covering a total of 97 people. These training sessions have comprehensively improved the professional quality and management ability of work safety managers at all levels of the Company.



TtT training for the third quarter for Huaxin Cement Central China (simultaneous live-streaming training)



The *Employee Health and Safety Handbook* of Huaxin Cement



The *iSave Safety Regulations Brochure* of Huaxin Cement

## Employee Training and Development

Huaxin Cement continuously improves the employee training and development system and adopts multiple measures to attract outstanding talents. We provide employees with abundant learning resources and have established sound promotion and incentive mechanisms to allow employees to fully advance their potential and result in the stable and efficient development of the Company.

### Talent Pool

Huaxin Cement puts effort into introducing highly educated and professional talents to form a talent pool. We have formulated the *Talent Pool Plan* and regularly carry out talent inventory and conduct evaluations on various aspects, such as talent development potential and performance. In addition, we cooperate with local universities to cultivate talents and arrange internship positions for students. The Company's regional branches, business units, and production bases also carry out similar activities to enhance their own talent pool.

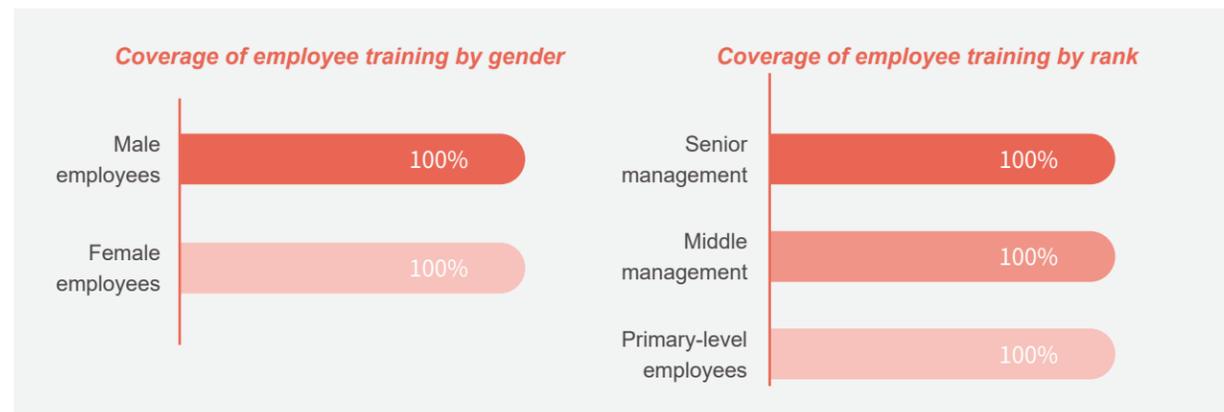
In 2021, we introduced 32 high-calibre talents with a postgraduate degree, including two with a doctoral degree and 30 with a master's degree. In the same year, we attracted 24 high-skilled professionals in positions such as strategy, environmental technology R&D, environmental marketing, and mechanical engineering.

### Training and Development

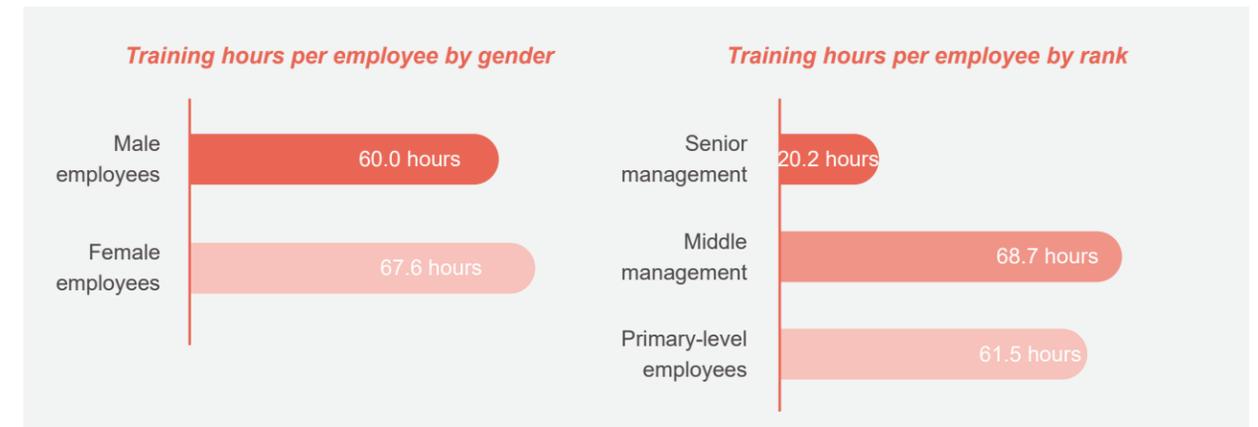
Huaxin Cement attaches great importance to employee training and development. We have formulated and implemented four main systems: the *Company Training Management System*, the *Management Measures for Company Training Expenses*, the *Management Regulations for the Company's Internal Trainers*, and the *Management Measures for Company Employee Training*.

We make full use of internal and external resources to promote employee development. The Internal Trainer Programme makes full use of internal professional talent resources to provide training courses. The Supervisor, Apprentice, and Mentorship Programme promotes the mentoring of new employees by senior employees. The offline expert courses provide diverse and differentiated training for employees at different levels and of different types, as well as training support that meets the needs of newly recruited employees, three-year employees, and transferred employees. In 2021, the average training duration per employee was 61.7 hours. In addition, we hold a number of professional skill competitions and knowledge sharing activities, such as the Top Ten Experts ranking and the Lewen knowledge sharing activity. Skill competition and knowledge sharing are even combined to create a strong knowledge sharing atmosphere.

### Coverage of Employee Training



### Training Hours per Employee



#### Case Study

#### Huaxin Cements' Employee Skill Training and Competitions

In 2021, Huaxin Cement continued to carry out skills training and competitions for front-line technicians. The East China and West China Divisions carried out skills training and competitions for positions such as kiln operation, grinding operation, physical inspection, chemical analysis, electrician, fitter, and welder. Based on the labour competitions, we intensified efforts to recommend employees to apply for awards. In 2021, the Company won 16 national, provincial and municipal May 1st Labour Medals and other recognitions.



Huaxin Cement West China's Position Skill Competition 2021

#### Case Study

#### Huaxin Cement's Lewen Knowledge Sharing Activity

In order to effectively improve the professional skills of employees, we encourage them to carry out "five small's" innovation activities (small inventions, creations, innovations, designs, and suggestions) to solve problems in actual production and operation. In 2021, we continued with the Lewen knowledge sharing activity.

With the support of the Company and the active participation of employees, the Lewen platform had 1.83 million visits throughout the year, and 427 outstanding achievements were selected and promoted.



Participation in Huaxin Cement's Lewen knowledge sharing activity in 2021

## Promotion and Incentives

Huaxin Cement guarantees fairness and equity in career promotion and develops various incentives and plans, including *Management Measures for Rank Promotion*, the *Management Measures for the Core Employee Stock Ownership Plan for 2020–2022*, the *Implementation Measures for Equity Incentive 2020–2022*, and the *Employee Salary Adjustment*. These incentives and programs motivate employees to fully utilize their talents.

We organize employees to conduct monthly, semi-annual, and annual one-on-one performance reviews. We hold different communication activities for employees of different types and at different levels. Based on the Company's strategic development, we carry out special communication for talents in key positions to support talent retention and training.

### The employee promotion mechanism

#### Regular Promotion

- We have two channels: promotion of management positions and promotion of technical/professional positions. We encourage employees to become leaders in management positions and take on more important management responsibilities, or continuously improve their professional skills to become technical and business experts.

#### Exceptional Promotion

- Employees who have made outstanding contributions or performance, who have the courage to undertake and complete challenging tasks, and who have worked in harsh areas for a long time, will be promoted in accordance with the Company's promotion and approval process.

#### Honorary Promotion

- Employees who have worked in their current positions for more than five years and are less than five years away from the retirement age, are diligent and dedicated, and have made outstanding performance contributions, will have honorary promotion to a certain degree.

## Employee Care

We insist on a people-centric approach and promote work-life balance among our employees. Employees in need will receive help. We also attach importance to women's rights and care for the lives of female employees.

### Employees' Life

Huaxin Cement cares about the lives of employees. We take heatstroke prevention measures for employees every summer, and carry out rich leisure activities for employees, such as fun sports games. We have established two employee resorts in Zhuhai and Kunming for employees to better relax. The Company's labour union organizes 3% to 5% of employees to participate in the recreation at the resorts every year, which is funded by the Company's annual benefit funds. In 2021, the Company's labour union reduced the impact of COVID-19 by reasonably adjusting the time and location of the recreation and continued to carry out recreation activities on the premise of ensuring the safety and health of employees. Every year, 560 people participate in the recreation, including 300 in Zhuhai and 260 in Kunming.



## Poverty Alleviation and Difficulty Relief

Huaxin Cement cares for employees in need and their families. In 2021, we carried out poverty relief activities at two major festivals. Labour union officials at all levels visited the families of employees who were in financial difficulty or affected by serious illnesses and donated money and supplies to them, as a way to respond to the government's call for targeted poverty alleviation and assistance for people suffering from serious illness and difficulties. The employees were relieved from their urgent situation. In 2021, we spent more than RMB 600,000 to help and support 376 employees in need.

### Care for Women

Huaxin Cement values and protects the rights and interests of female employees. For female employees, we have set up nursing rooms and established a charitable fund dedicated to them. In 2021, 14 female employees received more than RMB 30,000 from an allocated fund. The fund is an important measure to safeguard the vital interests of female employees and improve the medical security of female employees. Since the fund was put into operation, it has played an active role in alleviating the economic burden caused by major diseases for female employees of the Company.

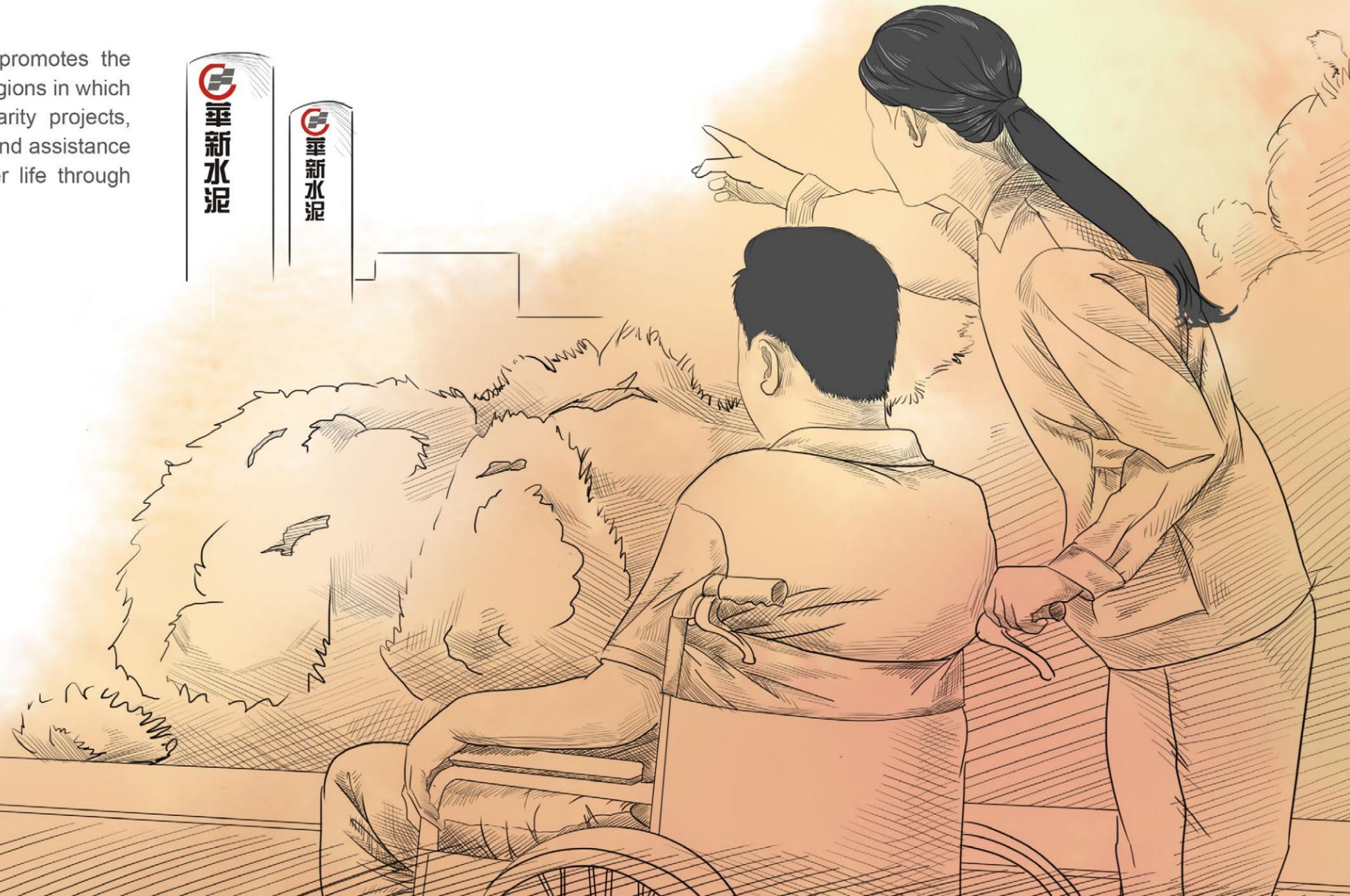


# 06

## Responsibility for Communities

Huaxin Cement actively undertakes social responsibility and promotes the development of communities in China and other countries and regions in which it operates. We have launched many public welfare and charity projects, including rural revitalization, visits to the elderly who live alone, and assistance for poverty-stricken students, to empower society with a better life through practical actions.

- Contributing to Rural Revitalization
- Local Community Development
- Overseas Public Welfare Practice





## Contributing to Rural Revitalization

Huaxin Cement is actively engaged in rural revitalization to consolidate its achievements in poverty alleviation. In 2021, we launched agricultural product sales assistance, rural volunteering, and cement donation. These activities contributed to the development of agriculture and industries in rural areas and the governance of villagers' living environments, boosted the rural economy, and stimulated the confidence of farmers.

### Case Study

#### Huaxin Group's Rural Revitalization Activities in Pengwan Village, Mingshan Township, Daye City

On 30 July 2021, Huaxin Group established a joint village-based task force and settled in Pengwan Village, Mingshan Township, Daye City, to make overall planning for village-level industry development and effectively guarantee and consolidate the achievements of poverty alleviation. They organized and implemented the improvement for the villagers' drinking water safety and achieved remarkable results.

The Group raised RMB 300,000 to support Mingshan Township to start building a "Beautiful Village" in the Pengwan Village area and achieve high-quality integration of agriculture and tourism. A village-level economic revitalization plan was drawn up, and the goal of Pengwan Village's featured tourism village construction plan, which integrates aquatic products, aquaculture, planting, fruit-picking gardens, and entertainment and leisure, was rolled out. In order to consolidate the achievements of poverty alleviation, the team members in the village visited the farmers in the village in stages and in batches. They focused on 23 poverty-stricken households to understand their life, production, and housing security to prevent the reoccurrence of poverty. In addition, in order to completely solve the drinking water safety problem that had plagued generations of people in Pengwan Village, the Group organized and implemented drinking water safety improvement for villagers. The Group invested RMB 9,200 for water access for 212 of the 518 households in seven natural villages.



Visits to villagers in Pengwan Village



Supporting the procurement and sales of agricultural products in Pengwan Village

## Local Community Development

Huaxin Cement attaches great importance to active communication and good relationships with local communities and is committed to engaging in public welfare and charitable activities to promote harmonious community development. In 2021, a total of 23,044 people participated in volunteering activities in the Company's business units. 1,986 activities were carried out, with a total duration of 120,212 hours. The expenditure on charitable services (including donations from business units and individuals) totalled RMB 18,026,700.

### Case Study

#### Huaxin Cement Subsidising Students to Go to College

In 2021, Huaxin Cement actively engaged in the Poverty-stricken College Student Assistance campaign of Project Hope Hubei, donating RMB 100,000 to help impoverished students in Huangshi City for their higher education. The campaign was jointly carried out by the CYLC Hubei Provincial Committee, the Hubei Project Hope Office, and the Hubei Youth Development Foundation. It was designed mainly for students from families with financial difficulties in Hubei Province who were admitted to full-time colleges and universities in 2021. CYLC Huangshi Municipal Committee, thanked Huaxin Cement for its donation. The Company won a tablet of thanks jointly issued by the Hubei Project Hope Office and the Hubei Youth Development Foundation.

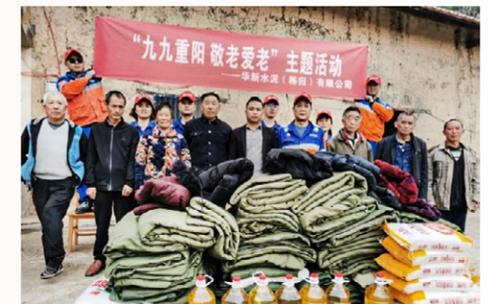


Huaxin Cement received a tablet of thanks.

### Case Study

#### Huaxin Cement Zigui Company Visiting Elder People Living Alone

On 12 October 2021, Huaxin Zigui Company carried out the theme activity, Care for the Elderly on the Chongyang Festival. A group of more than 10 volunteers from the company travelled into the mountainous area to convey care to the elderly. Volunteers brought gifts and drove two hours to the nursing home in the mountain village. They delivered cotton-padded clothes and quilts to the elderly, and chatted with them, so that they can feel the warmth brought by the company.



The elderly care activity on the Chongyang Festival

Case Study

Huaxin Cement Packaging Company Donating 200,000 Woven Bags for the Fight Against Flood in Zhengzhou

In mid-July 2021, rare continuous heavy rainfall hit many places in Henan. Heavy rainstorms and extraordinarily heavy rains hit the whole city of Zhengzhou, causing danger to many project sites in Zhengzhou and serious waterlogging in the urban area. The shortage of flood control supplies, especially the shortage of woven bags, became a pressing problem. The disaster in Henan touched people's hearts. In the middle of the night on 21 July 2021, Huaxin packaging company urgently allocated 200,000 cement packaging sacks to support flood control in Zhengzhou.



The packaging sacks were shipped to the designated location and unloaded

## Overseas Public Welfare Practice

Huaxin Cement's overseas operating units attach great importance to communication and cooperation with local governments and communities, and are committed to establishing good relations with the local community. They invest in public welfare and charitable projects in education, medical care, and infrastructure construction, assist the vulnerable and disadvantaged groups, and promote the sustainable and healthy development of local communities, which is recognized by local people.

Case Study

Huaxin Cement Nepal Company Supporting the Local Fight Against COVID-19

In May 2021, the COVID-19 pandemic in the Dhading region of Nepal became serious. Huaxin Cement Nepal Company, in cooperation with project contractors, donated 50 empty oxygen cylinders to local hospitals. On 3 June 2021, the management of the Huaxin Cement Nepal Company donated eight oxygen generators, more than 50 boxes of masks, and other anti-pandemic supplies to the No. 3 Provincial Health Bureau of Hetauda City to help Nepal fight the pandemic.



Huaxin Cement Nepal donated anti-pandemic supplies to local organizations

Case Study

Huaxin Cement Kyrgyzstan Company Supporting the Construction of a Kindergarten in Kuratov Village

On 15 September 2021, the No. 9 Kindergarten jointly built by Huaxin Cement Kyrgyzstan Company and Kuratov Village officially opened. The Village Committee invited company representatives to participate in the ribbon-cutting ceremony. The kindergarten construction project, starting in 2018, costed KGS 22 million, including KGS 10 million donated by the Kyrgyz Company. After completion, the kindergarten can accommodate a total of 75 children, with lounges, classrooms, changing rooms, washrooms, and canteens.



The ribbon-cutting ceremony of the kindergarten

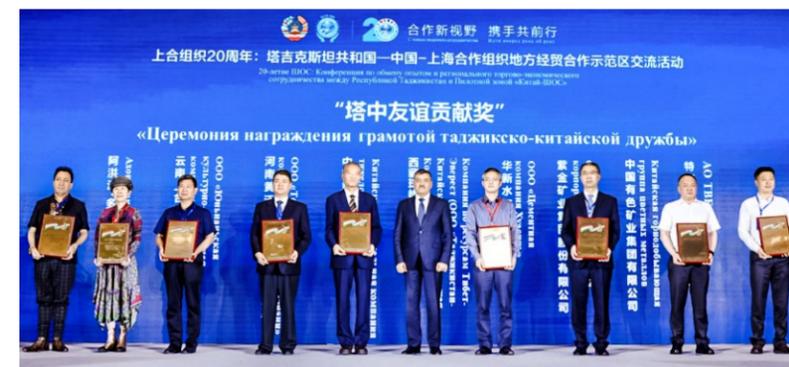
On 5 July 2021

Huaxin Cement (fourth from the right) was awarded the Tajikistan-China Friendship Contribution Award by Saidzoda Zohir, Ambassador Extraordinary and Plenipotentiary of the Republic of Tajikistan to China.



On 8 September 2021

Huaxin Cement was awarded the Outstanding Contribution Award for Overseas Investment by the Investment Board Nepal.



## Key Performance Indicators

Indicator	2021	Unit
Operating income	32,464	million rmb
EBITDA	9,816	million rmb
Total profit	7,373	million rmb
Net profit attributable to shareholders of the listed company	5,364	million rmb
Tax payment	3,874	million rmb
Net assets attributable to shareholders of the listed company	26,730	million rmb
Total assets	52,551	million rmb
<b>Environmental</b>		
SO <sub>2</sub> emissions	1,793.56	tonne
SO <sub>2</sub> emission concentration	14.65	mg/m <sup>3</sup>
SO <sub>2</sub> emission intensity per unit output	0.03	kg/tonnes of clinker output
NO <sub>x</sub> emissions	28,857.21	tonne
NO <sub>x</sub> emission concentration	222.47	mg/m <sup>3</sup>
NO <sub>x</sub> emission intensity per unit output	0.51	kg/tonnes of clinker output
PM emissions	1,520.81	tonne
PM emission concentration	8.86	mg/m <sup>3</sup>
PM emission intensity per unit output	0.03	kg/tonnes of clinker output
Total direct GHG emissions (Scope 1)	46,425,065.65	tCO <sub>2</sub> e
Direct GHG Emission Intensity (Scope 1)	0.8198	tCO <sub>2</sub> e/tonnes of clinker output
Total Indirect GHG Emissions (Scope 2)	2,740,440.54	tCO <sub>2</sub> e
Indirect GHG Emission Intensity (Scope 2)	0.026	tCO <sub>2</sub> e/tonnes of clinker output

Indicator	2021	Unit
Hazardous wastes generated	450.13	tonne
Non-hazardous wastes generated	11.98	10kt
SO <sub>2</sub> emission reduction/year	342.24	tonne
NO <sub>x</sub> emission reduction/year	2,504.00	tonne
PM emission reduction/year	359.99	tonne
GHG emission reduction/year (benchmarked against 2020 Huaxin Cement national cement cement kilns emission data)	1,066,029.24	tCO <sub>2</sub> e
Comprehensive energy consumption	709.81	10kt of standard coal
Comprehensive energy consumption intensity	2.38	tonne of standard coal/RMB 10,000
Total consumption of purchased electricity	4,637,262.61	MWh
Power consumption intensity per unit of output	63.53	kWh/tonne of cement output
Coal consumption	811.04	10kt
Coal consumption intensity per unit of output	124.28	kg/tonne of clinker output
Diesel consumption	0.95	10kt
Diesel consumption intensity per unit of output	0.13	kg/tonne of cement output
Total water consumption	2,667.11	10kt
Water consumption for cement production	555.62	10kt
Water consumption intensity per unit cement output	0.079	kg/tonne of cement output
Water consumption for clinker production	2,111.49	10kt
Water consumption intensity per unit clinker output	0.355	kg/tonne of clinker output
Packaging material consumption	3.51	10kt

Indicator	2021	Unit
Packaging material consumption intensity	1.50	kg/tonne of sacked cement output
Percentage of sacked cement	33.23	%
<b>Social</b>		
Total number of employees	16,283	person
Total number of male employees	12,675	person
Total number of female employees	3,608	person
Total number of senior managers	22	person
Total number of middle managers	733	person
Total number of general employees	15,528	person
Total number of employees in the Chinese mainland	15,799	person
Total number of overseas employees	484*	person
Employee turnover	2.3	%
Male employee turnover	1.8	%
Female employee turnover	0.5	%
Turnover of employees in the Chinese mainland	0.02	%
Turnover of overseas employees	2.3	%
Turnover of employees under 30	0.9	%
Turnover of employees of 31 – 50	1.3	%
Turnover of employees above 50	0.1	%
Number of work-related injuries and deaths	0	person
Percentage of work-related injuries and deaths	0	%
Percentage of male employee trainees	100	%

\* The data does not include 2,945 overseas local employees

Indicator	2021	Unit
Percentage of female employee trainees	100	%
Percentage of senior management trainees	100	%
Percentage of middle management trainees	100	%
Percentage of primary-level employee trainees	100	%
Average training duration per male employee	60.0	hour
Average training duration per female employee	67.6	hour
Average training duration per senior manager	20.2	hour
Average training duration per middle manager	68.7	hour
Average training duration per primary-level employee	61.5	hour
Number of suppliers in the Chinese mainland	4,156	entity
Number of overseas suppliers	19	entity
Number of complaints about products and services	43	complaint
Number of corruption lawsuits	0	case
Attendance of anti-corruption training	1,861	person
Per capita anti-corruption training duration	87.5	hour
Number of participants in volunteering activities	23,044	person
Number of volunteering activities	1,986	event
Total duration of volunteering activities	120,212	hour
Total public welfare investment	1,802.67	RMB 10,000

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## Reader's Comments

Dear reader,

Thank you very much for your time to read Huaxin Cement 2021 Environmental, Social and Governance (ESG) Report. We look forward to your comments and suggestions on the report and our work. You can send the completed questionnaire back to us by mail or email us the scanned document. Your comments are valuable to us. Thanks!

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1. Which category of Huaxin Cement's stakeholders does the organization you work for belong to?

Shareholder  Investor  Employee  Supplier  Customer  Government  Community

Academic institution  NGO  Other (please specify) \_\_\_\_\_

2. Is the information you care about all reflected in the report?

Yes  No

3. Your overall view on Huaxin Cement 2021 ESG Report:

Readability

(The presentation easy to understand; it is beautifully designed, engaging, and easy to find the information you need.)

3 (Good)  2 (Average)  1 (Poor)

Credibility (The information in report is authentic and credible.)

3 (Good)  2 (Average)  1 (Poor)

Information integrity (It takes into account both positive and negative information, and meet your information needs.)

3 (Good)  2 (Average)  1 (Poor)

4. Can you easily find the information you care about in the report?

Yes  Average  No

5. In addition to what has been disclosed in the report, what else information would you like to see in the future?

\_\_\_\_\_



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