

本報告旨在對本集團在環境、社會責任兩個主要範疇的理念、管治、實踐和績效與股東、投資者、持份者及公眾人士進行公開溝通，以及回應關注問題。

編制基礎

本報告主要參照上市規則附錄二十七《環境、社會及管治報告指引》之原則及條文編制。

報告範圍

本報告包含截至二零一九年十二月三十一日止年度的統計及資料，以及以二零一八年十二月三十一日止年度比較數據為主，以本集團的96條水泥粉磨線、45條熟料生產線及61座混凝土攪拌站為主要匯報範圍。除另有說明外，本報告基本不包含本集團的聯營公司及合營公司。

管治架構

本公司成立「企業文化與社會責任指導委員會」，由董事局主席、總裁分別擔任主任、副主任職務，負責本公司社會責任戰略方向的領導、推進、決策，為本公司開展社會責任工作打下堅實的基礎。年內，董事局通過環境及社會責任報告和開展有關《環境、社會及管治報告指引》及相關上市規則條文的研討會之方式參與環境、社會及管治工作。

This report aims to enhance open communications with and address the issues concerned by our shareholders, investors, stakeholders and the public on the Group's philosophy, governance, implementation and performance on the two main scopes of environmental and social responsibilities.

BASIS OF PREPARATION

This report is prepared mainly with reference to the principles and provisions of the Environmental, Social and Governance Reporting Guide set out in Appendix 27 of the Listing Rules.

SCOPE OF REPORT

This report mainly includes the statistics and information for the year ended 31 December 2019, as well as comparative data of the year ended 31 December 2018. The main scope of report covers 96 cement grinding lines, 45 clinker production lines and 61 concrete batching plants of the Group. Unless otherwise stated, this report does not cover the Group's associates and joint ventures.

GOVERNANCE STRUCTURE

The Company established the "Corporate Culture and Social Responsibility Steering Committee". The Chairman of the Board and the Chief Executive Officer serve as the President and the Vice President of the committee respectively and are responsible for the leadership, promotion and decision-making of the Company's strategic directions with respect to social responsibility, which lay a solid foundation for the Company to launch its social responsibility work. During the year, the Board was engaged in environmental, social and governance work through adopting the Environmental and Social Responsibility Report and conducting a seminar on the Environmental, Social and Governance Reporting Guide and related Listing Rules.



本集團EHS組織體系執行「三級管控」原則，由總部、大區、基地的各級EHS組織機構組成。各級EHS組織機構包括EHS委員會、EHS監督管理部門和EHS保障部門：總部的EHS管理委員會主任由本公司總裁擔任，總部設有EHS部，任命首席安全環保官；大區、基地分別設有EHS部或EHS辦，由大區、基地負責人直接管理。本集團致力完善EHS責任制度，各總部部門、大區及基地簽署《EHS承諾書》及將相關制度納入全年的業績考核。

The principle of “Three-tiered Management and Control” has been implemented in the Group’s EHS organizational system at each level, which comprises the EHS organizational institutions of headquarters, major operating regions and production plants. EHS organizational institutions at each level includes the EHS Committee, the EHS Supervision and Management Department and the EHS Supporting Department: the EHS Management Committee at headquarters is chaired by the Chief Executive Officer of the Company. The headquarters set up the EHS Department and appointed the Chief Safety and Environmental Officer. EHS departments or EHS offices are set up at our major operating regions and production plants respectively under the direct management of persons in charge of corresponding major operating regions and production plants. The Group was dedicated to improving the EHS accountability policies. All departments at headquarters, major operating regions and production plants entered into the “Letter of EHS Undertaking”, and relevant policies had been incorporated in the annual performance appraisal.

A. 環境

本公司積極履行企業公民的社會責任，大力推動綠色生產，降低污染物排放，嚴格遵循相關法律法規。根據國家、行業、地方法律法規要求，開展大氣、廢水以及噪聲等污染防治工作，所有生產線的污染物排放值均優於或符合國家、地方污染物標準限值。

A. ENVIRONMENT

The Company proactively fulfils its social responsibilities as a corporate citizen, vigorously implements green production, reduces emission of pollutants and strictly complies with relevant laws and regulations. According to the requirements of national, industrial and local laws and regulations, we carry out prevention and control of air, water and noise pollutants. All pollutant emission levels of all production lines were better than or met the national and local standard limits of pollutant emissions.

1. 排放物

本集團嚴格遵守有關廢氣及溫室氣體排放、向水及土地的排污、有害及無害廢棄物產生的法律及規例，其中包括但不限於：《中華人民共和國環境保護法》、《中華人民共和國大氣污染防治法》、《中華人民共和國水污染防治法》、《中華人民共和國固體廢物污染環境防治法》、《中華人民共和國環境噪聲污染防治法》、《中華人民共和國環境保護稅法》、《中華人民共和國環境影響評價法》、《中華人民共和國土壤污染防治法》、《水泥工業大氣污染物排放標準》。

1. EMISSIONS

The Group strictly complies with the laws and regulations relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste, including but not limited to: the Environmental Protection Law of the People’s Republic of China, the Law of the People’s Republic of China on the Prevention and Control of Atmospheric Pollution, the Law of the People’s Republic of China on Prevention and Control of Water Pollution, the Law of the People’s Republic of China on Prevention and Control of Environmental Pollution by Solid Waste, the Law of the People’s Republic of China on Prevention and Control of Environmental Noise Pollution, the Environmental Protection Tax Law of the People’s Republic of China, the Environmental Impact Assessment Law of the People’s Republic of China, the Law of the People’s Republic of China on Prevention and Control of Soil Pollution, and the Emission Standard of Air Pollutants for Cement Industry.

本集團嚴格參照環境相關法律法規要求，設立《華潤水泥管理手冊》「EHS管理篇」及健全監控環境管理體系，下發有關協同處置項目污染物排放監測管理的明確要求。本集團的星級管理評價體系基於行業對標或內部對標結果設定目標值，對各水泥生產基地在環境、健康和 safety 等方面進行全面評價，從而提升管理水平，推動企業的可持續發展。

綠色生產

本集團的主要產品為水泥、熟料及混凝土，生產製造過程中主要產生的排放物為氮氧化物、二氧化硫、顆粒物等。本集團積極推動綠色生產，目前，100%的水泥生產基地取得污染物排放許可證，100%的水泥熟料生產基地配套純低溫餘熱發電設備¹、脫硝系統²及袋式除塵器³。此外，本集團根據各生產線實際運行需要選擇應用脫硫技術，截至二零一九年底，建成3套濕法脫硫系統及11套複合脫硫系統。

- ¹ 純低溫餘熱發電系統直接利用冷卻機窯尾排放的中低溫廢氣進行餘熱回收發電，無需消耗燃料，發電的過程不產生任何污染。
- ² 脫硝系統為防止水泥窯內煤燃燒後產生過多的氮氧化物污染環境，減少氮氧化物的產生和去除煙氣中氮氧化物的系統。
- ³ 袋式除塵器為以袋式纖維濾料過濾、重力沉降為主要原理，適用於捕集細小、乾燥、非纖維性粉塵的乾式濾塵裝置。

With strict reference to relevant requirements on environmental laws and regulations, the Group had established the “EHS Management Series” of the “Management Manual” of the Company and sound environmental management system, and issued definite requirements on the monitor and management of pollutant emissions relating to co-processing projects. The Group’s star-grading management appraisal system sets targets based on the results of industry benchmarking or internal benchmarking. Comprehensive appraisal on the environment, health and safety aspects of every cement production plant is conducted, which enhances the management standard and fosters corporate sustainable development.

Green Production

During the production and manufacturing process of our major products (namely, cement, clinker and concrete), the Group mainly emits pollutants including nitrogen oxides, sulphur dioxide and particulate matters. The Group proactively promotes green production. Currently, 100% of our cement production plants have obtained permits for pollutant emissions, and 100% of our cement and clinker production plants have been equipped with pure low-temperature residual heat recovery generation systems¹, denitration systems² and bag filters³. In addition, the Group selectively applied desulphurization technology according to the actual needs of operation of each production line. As of the end of 2019, the Group completed the construction of 3 sets of wet-process desulphurization systems and 11 sets of composite desulphurization systems.

- ¹ Pure low-temperature residual heat power generation system directly uses the residual heat of medium-and-low temperature waste gas discharged from the emission ends of the kilns of the cooling machine for power generation, with no fuel consumed or pollutants produced.
- ² Dinitration system is a system which prevents environmental pollution by excessive emission of nitrogen oxides from the combustion process within the cement kilns through reducing the amount of nitrogen oxides generated and eliminating nitrogen oxides in the flue gas.
- ³ Bag filter is a dry-type dust filter devise for collecting fine, dry, non-fiber dust through the application of the main principles of bag-type fiber filter and gravitational settling.



本集團建成環境污染物排放總部監控平台，實現總部對所有生產線污染物排放情況的即時監控和預報系統，通過平台及時提醒、督促生產基地對異常數據進行核查，進一步提升污染物排放的風險管理能力。為持續提升清潔化生產水平，樹立遵紀守法、和諧社區的良好企業形象，防控環保風險，本集團自二零一九年起主動向社區全面公示所有生產線污染物排放實時數據，主動接受社會各界的監督。

本集團積極尋求減排新技術，提升環保技術水平和管理水平。本集團積極研究智能高效選擇性非催化還原脫硝技術（heSNCR），並與分級燃燒技術相結合，進一步降低氮氧化物排放濃度，二零二零年將在本集團的水泥生產基地推動試點工作。截至二零一九年底，本集團於廣西合浦縣及貴港市、廣東陽春市及封開縣的水泥生產基地應用新型超低排放高溫濾袋，顆粒物排放濃度均降至10毫克／立方米以下，遠低於國家特別排放限值，未來將繼續在華南地區的水泥生產基地推廣。

The Group has established a platform at headquarters to monitor the emissions of environmental pollutants, thereby achieving the headquarters' real-time monitor and alarm system on pollutant emissions of all production lines. The risk management capability on pollutant emissions has been further enhanced by timely reminders to urge production plants to verify abnormal data through the platform. Since 2019, the Group had taken the initiative to be subject to scrutiny from all sectors of the society by spontaneously making full disclosure on real-time pollutant emissions data of all production lines in order to continuously improve the standards of clean production, build an excellent corporate image of strict legal compliance and harmonious community, prevent and control risks of environmental protection.

The Group had been proactively seeking new technology of emission reduction and enhancing technological standards and management standards of environmental protection. The Group actively researched on intelligent denitration technology of highly effective selective non-catalytic reduction (heSNCR), which had integrated multi-level combustion technology to further reduce the emission concentration of nitrogen oxides. Pilot work will be rolled out at our cement production plants in 2020. As of the end of 2019, the Group had applied a new type of bag filters in high temperature for ultra-low emissions at the cement production plants in Hepu County and Guigang City, Guangxi, Yangchun City and Fengkai County, Guangdong. The emission concentrations of particulate matters had been reduced to below 10 mg/m³, which are far lower than the national special emission limits. The technology will be continuously promoted at our cement production plants in Southern China in the future.

本集團應用推廣水泥裝車移動收塵技術，並對水泥包裝機進行技術改造，進一步減少顆粒物的排放。二零一九年，本集團全面落實水泥包裝、裝車的粉塵治理工作，水泥裝車移動收塵技術的應用全覆蓋，令包裝發運粉塵排放符合國家《工作場所有害因素職業接觸限額》(GBZ2.1-2007)要求。位於廣東江門水泥生產基地的中轉站成功應用自動插袋技術，位於廣西南寧水泥生產基地試點應用自動插袋技術和自動裝車技術項目於二零一九年底通過驗收。項目的完成進一步改善水泥包裝、裝車工作環境，提高裝備自動化水平及有效減少顆粒物排放。南寧自動包裝插袋、裝車機的試點得到中國國家衛生健康委員會等主管部門的肯定，料將在本集團內逐步推廣。本集團在高效除塵器濾袋和超低排放濾料研究取得的成果，獲中國建築材料聯合會評為「兩個二代」技術裝備創新提升研發攻關先進研發成果，並被邀請參與編制行業標準JB/T 13416-2018《水泥工業煙塵治理袋式除塵器用濾料》。

截至二零一九年底，本集團位於廣西田陽、南寧、平南、武宣、雲南鶴慶的水泥生產基地獲列入國家級綠色製造名單中的綠色工廠，位於廣西平南、武宣、上思、陸川、福建龍岩、貴州金沙的水泥生產基地獲列入省級或自治區級綠色製造名單中的綠色工廠。

The Group applies the mobile dust collection technology of cement loading, and implements technological upgrade of cement packaging machines for further reduction of emission of particulate matters. In 2019, the Group had fully completed the work on dust treatment and management of cement packaging and loading with full coverage on the application of mobile dust collection technology of cement loading, which had enabled the compliance with national requirements of “Quota of Occupational Access to Harmful Factors at Workplace” (GBZ2.1-2007) for the dust emitted during packaging and delivery. The automatic bagging technology had also been successfully applied at the cement silo of the cement production plant located in Jiangmen, Guangdong. The pilot project for the application of automatic bagging technology and automatic loading technology at the cement production plant located in Nanning, Guangxi had passed acceptance inspection in late 2019. Completion of the project had further improved the working environment of cement bagging and loading, enhanced the automation level of the equipment and effectively reduced the emission of particulate matters. The pilot application of automatic packaging, bagging and loading machines in Nanning had been recognized by the competent authorities including the National Health Commission of China, and would be expected to gradually promote in the Group. The Group’s achievements in the research of highly-effective bag filters and filter materials for ultra-low emissions were accredited as the key and advanced R&D achievements of “Two Second-Generation” Technology and Equipment Innovation and Upgrading Research and Development by the China Building Materials Federation. The Group was also invited to participate in drafting the industrial standard JB/T 13416-2018 “Bag Filter Materials for the Treatment and Management of Dust Emission in Flue Gas by Cement Industry”.

As of the end of 2019, the cement production plants located in Tianyang, Nanning, Pingnan and Wuxuan of Guangxi, and Heqing of Yunnan had been included as green factories in the register of national-level Green Manufacturing. The cement production plants located in Pingnan, Wuxuan, Shangsi and Luchuan of Guangxi, Longyan of Fujian, and Jinsha of Guizhou were included as green factories in the registers of provincial-level or AR-level Green Manufacturing.



截至二零一七年、二零一八年、二零一九年十二月三十一日止年度，本集團水泥生產基地主要排放口的污染物排放數據載列如下：

Data of pollutants emitted from the major discharge outlets of the Group's cement production plants for the years ended 31 December 2017, 2018 and 2019 is set out as follows:

		二零一九年 2019	二零一八年 2018	二零一七年 2017
氮氧化物排放量 (噸)	Emission of nitrogen oxides (tons)	37,584	39,822	41,513
二氧化硫排放量 (噸)	Emission of sulphur dioxide (tons)	1,824	2,352	2,726
顆粒物排放量 (噸)	Emission of particulate matters (tons)	2,083	2,361	2,472

本集團的氮氧化物、二氧化硫及顆粒物平均排放濃度均低於國家污染物排放標準限值，在行業中處於領先地位。截至二零一七年、二零一八年、二零一九年十二月三十一日止年度，本集團水泥生產基地主要排放口的污染物平均排放濃度以及國家相關標準對標載列如下：

Our emission concentrations of nitrogen oxides, sulphur dioxide and particulate matters are lower than the national standard limits of pollutant emissions, placing the Group at a leading position in the industry. The average emission concentrations of pollutants emitted from the major discharge outlets of the Group's cement production plants for the years ended 31 December 2017, 2018 and 2019 as well as the benchmarks of relevant national standards are set out as follows:

		水泥工業大氣污染物 排放標準 (GB 4615-2013) Emission Standard of Air Pollutants for Cement Industry (GB 4615-2013)		本集團水泥生產基地 主要排放口的污染物平均排放濃度 Average emission concentrations of pollutants emitted from the major discharge outlets of the Group's cement production plants		
		一般 排放限值 Ordinary emission limits	特別 排放限值 Special emission limits	二零一九年 2019	二零一八年 2018	二零一七年 2017
氮氧化物 (毫克/立方米)	Nitrogen oxides (mg/m ³)	400	320	240	254	259
二氧化硫 (毫克/立方米)	Sulphur dioxide (mg/m ³)	200	100	13	18	16
顆粒物 (毫克/立方米)	Particulate matters (mg/m ³)	30	20	9	11	11

廢棄物處理

本集團的所有熟料生產線在物料處理、輸送過程中均採用全封閉式運送，各轉運點配置除塵器收集顆粒物，以減少揚塵。本集團將高效袋式除塵器收集的粉塵應用於原料、半成品、成品中，循環利用生產過程中產生的廢棄物。礦區採用無廢或少廢工藝，廢渣、夾石等無害廢棄物全部綜合利用，實現廢渣零排放。

在有害廢棄物方面，本集團遵循「無害化、減量化、資源化」原則，將生產製造過程產生的廢機油循環利用於機械潤滑，廢油桶由原生產商回收或交由有資質機構進行處理。

碳排放管控

中國政府發佈的《國家「十三五」控制溫室氣體排放工作方案》明確，到二零二零年，單位國內生產總值二氧化碳排放比二零一五年下降18%。中國水泥協會發佈的《水泥工業「十三五」發展規劃》亦明確，「十三五」期間水泥行業二氧化碳減排量達到15%。本集團將以政府及行業發佈的目標要求為導向，努力取得減排成效。

本集團高度重視應對氣候變化的工作，積極通過生產運營及產品研發來降低碳排放。生產運營方面，本集團位於廣東省封開縣的水泥生產基地礦山距離碼頭約50公里，為解決石灰石運輸問題，本集團投資建設銜接石灰石礦場、生產基地和水運碼頭的主運輸大動脈——52公里長皮帶廊。項目一期於二零零八年九月開工，建成投產40公里雙皮帶廊，項目二期長12公里，目前建設中。與汽車運輸相比，封開皮帶廊可減少二氧化碳排放量。

Handling of Waste

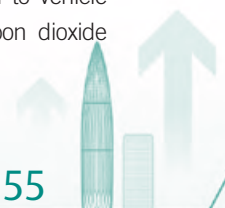
Fully enclosed delivery is adopted during materials treatment and delivery process at all the clinker production lines of the Group. Each transit point had been equipped with filters to collect particulate matters and minimize dust scattering. The Group applies the dust collected by highly-effective bag filters in our raw materials, semi-finished products and finished products in order to recycle the solid waste generated during the production process. Waste-free or less-waste technology has been adopted at mining areas. To achieve zero discharge of waste residue, harmless wastes such as waste slag and stones are all compositely utilized.

Regarding harmful wastes, the Group recycles the waste oil generated in the production process for lubrication of mechanical equipment in accordance with the “hazard-free, mass-reducing and recyclable” principle. Oil barrels are recycled by the original manufacturers or handled by qualified institutions.

Control of Carbon Emissions

The “Thirteenth Five-Year National Work Plan to Control Greenhouse Gas Emissions” published by the Chinese government had specified that, by 2020, the emission of carbon dioxide per unit of GDP would be reduced by 18% from 2015. The “Thirteenth Five-Year Development Plan of Cement Industry” published by China Cement Association had also specified that the reduction in emission of carbon dioxide from cement industry should reach 15% during the “Thirteenth Five-Year” period. The Group will strive to make achievements on emission reduction following the directions of the target requirements issued by the government and the industry.

The Group places strong emphasis on the work for tackling climate change, and actively reduces carbon emissions through production operation and R&D of products. In terms of production operation, the mines of the Group’s cement production plants located in Fengkai County, Guangdong are approximately 50 km away from the port terminal. In order to solve the issue of limestone transportation, the Group invested in the construction of a 52 km long belt corridor, the central transportation artery which connected the limestone quarry, production plant and port terminal. The project commenced the first phase of construction in September 2008, and a double-belt corridor of 40 km in length had completed construction and commenced operation. The second phase for a belt corridor of 12 km in length is under construction. Compared to vehicle transportation, the belt corridor in Fengkai can reduce carbon dioxide emissions.



節能降耗方面，本集團所有水泥熟料生產基地均配套餘熱發電系統，二零一九年，餘熱發電量約為2,083,800,000千瓦時，佔本集團生產水泥產品所需電耗約32.1%，相當於減少約704,300噸二氧化碳排放量。本集團持續推進精益管理，推動節能降耗技改項目，通過為水泥粉磨系統配套輥壓機、在生料工序採用輥壓機終粉磨技術、開展高壓變頻改造等方式降低能耗。此外，本集團積極推廣水泥窯協同處置項目，現有8個協同處置項目利用生活垃圾、市政污泥、工業危險廢物的熱值替代部份燃料，減少煤耗和碳排放。年內，本集團的溫室氣體排放密度持續下降，未來將繼續嚴格管控碳排放，以應對氣候變化。

另一方面，本集團正積極研發低碳產品及技術。技術研發中心正在研發低碳水泥，具有低資源消耗、低環境負荷等特點，燒成過程中二氧化碳排放量比傳統矽酸鹽水泥降低10%左右。技術研發中心也在研究煤炭燃燒技術，通過控制其燃燒行為，提高燃燒效率，可以降低單位產品的煤炭消耗，減少二氧化碳及其他廢氣排放，降低生產成本。截至二零一九年底，本集團位於廣東羅定、廣西田陽、南寧、貴港、雲南鶴慶生產基地的多項水泥及熟料產品已通過低碳產品認證。

此外，本集團於廣東的8家工廠、福建的5家工廠均完成二零一八年度碳排放權配額的清繳，並已按《中國水泥生產企業溫室氣體排放核算方法與報告指南（試行）》完成二零一九年度碳排放量的統計，為未來全國碳市場統一作準備。

In terms of energy saving and consumption reduction, all the cement and clinker production plants of the Group are equipped with residual heat power generation systems. In 2019, approximately 2,083.8 million kwh of electricity was generated from residual heat, representing approximately 32.1% of the Group's electricity consumption required for production of cement products, which was equivalent to reducing the emissions of approximately 704,300 tons of carbon dioxide every year. The Group continuously implements lean management and technological upgrade projects for energy saving and consumption reduction. Energy consumption had been reduced by equipping cement grinding systems with roller press, adopting final grinding technology by roller press during the processing of raw materials, and initiating upgrade on high-voltage frequency conversion. Furthermore, the Group actively promotes co-processing projects by use of cement kilns. Our existing 8 co-processing projects make use of the heat value of municipal solid waste, urban sludge and hazardous industrial waste to replace some of the fuel, thereby reducing coal consumption and carbon emissions. During the year, the Group's emission intensity of greenhouse gases had been continuously decreasing. In the future, we will continue to strictly control carbon emissions for tackling climate change.

On the other hand, the Group has been actively conducting R&D on low-carbon products and technology. Our Technology Research and Development Centre had been researching and developing low-carbon cement featuring low consumption of resources and low burden to the environment, and there would be approximately 10% reduction in carbon dioxide emission during combustion process compared to traditional Portland cement. The Technology Research and Development Centre is also researching on coal combustion technology for a higher combustion efficiency through controlling its combustion behaviour, which will decrease coal consumption of unit products, reduce emissions of carbon dioxide and other exhaust gas, and cut production costs. As of the end of 2019, various cement and clinker products of the Group's production plants located in Luoding, Guangdong, as well as Tianyang, Nanning and Guigang, Guangxi, and Heqing, Yunnan had passed the low-carbon product certification.

Besides, 8 plants in Guangdong and 5 plants in Fujian of the Group had settled the carbon credit quota for 2018, and the calculation of quantity of carbon emissions for 2019 had been done in accordance with the "Guidelines for Accounting and Reporting Greenhouse Gas Emissions for Cement Enterprises (Trial)" in preparation for the future unification of national carbon market.

2. 資源使用

本集團設有能源管理系統及《節能減排監督管理》制度，對生產過程中資源消耗量進行統計，用於評估生產基地的運營表現，提高能源及資源利用率和經濟效益。此外，本集團亦持續推動節約能源的工作，主要包括能源的運用、節約和循環利用、節能環保技術投資、減排技術改造及研發與創新等。

本集團堅持高標準應用新技術、新裝備，所有水泥熟料生產基地配置餘熱發電系統，將水泥生產過程中產生的餘熱回收轉化為電能，提高能源利用效率，減少煤炭消耗，減輕大氣污染和溫室效應，並具有良好的經濟、社會和環境效益。

本集團積極宣導節約用水、循環用水，在水泥行業率先試行工業廢水、生活污水、雨水收集回用全面綜合治理，參考國家一級排放標準制定了嚴格的生活污水處理工序和指標，所有水泥熟料生產線均配套生物化學深度水處理系統，工業廢水和生活污水經處理後全部循環利用於餘熱發電系統、生產冷卻水系統、廠內綠化、堆場降塵等，並對初期雨水進行收集後直接回用，所有廢水不外排。繼位於廣西南寧及廣東封開的水泥基地試點後，本集團計劃二零二零年在廣西平南等7個水泥生產基地推廣實施，在穩定運行前提下，突出工藝先進、運營成本優先的要求，實現廢水零排放、水資源綜合利用的目標。

2. USE OF RESOURCES

The Group has an energy management system and the policy “Supervision and Management of Energy Saving and Emission Reduction”. All resources consumed during production process are measured for the assessment of operational performance of the production plant in order to enhance the utilization rates of energy and resources as well as economic benefits. In addition, the Group persistently encourages energy saving mainly through the use, saving and recycled use of energy, investment of environmental protection technologies for energy saving, technological upgrade on emission reduction, R&D and innovation.

The Group insists on the application of new technology and new equipment of high standards. All the cement and clinker production plants are equipped with residual heat power generation system, which would recycle and convert the residual heat generated during the process of cement production into electricity. It raises the efficiency of energy use, reduces coal consumption, alleviates air pollution and greenhouse effect, and brings about good economic, social and environmental benefits.

The Group actively promotes conservation and recycling of water, and initiates the pilot comprehensive composite treatment and management on the collection and recycled use of industrial wastewater, domestic wastewater and rainwater in the cement industry. Strict procedures and standards for treatment of domestic wastewater had been formulated with reference to national first-class emission limits. All the cement and clinker production lines had been equipped with intensive biochemical water treatment system. Treated industrial wastewater and domestic wastewater is fully recycled for uses in residual heat power generation systems, cooling water production systems, gardening in the factories and dust settling at storage yards. Initial rainwater is collected for direct recycled use. All wastewater is not discharged. Following the pilot trial at the cement production plants located in Nanning, Guangxi and Fengkai, Guangdong, the Group plans to promote the implementation at 7 cement production plants including Pingnan, Guangxi in 2020, to highlight the requirements for technology advancement and preference for lower operating costs under the condition of stable operation, thereby achieving the goals of zero discharge of wastewater and composite utilization of water resources.



二零一九年，本集團的水資源消耗量為32,545,608噸，生產水泥及熟料的水資源消耗密度為360.4公斤／噸水泥產量。

本集團水泥袋裝率從二零一八年的38.9%降至二零一九年的約35.6%，減少了產品包裝需求，並通過全面使用可回收再利用包裝袋，減少資源和能源的浪費。二零一九年，包裝材料消耗量同比減少約9.3%。

此外，本集團不斷倡導綠色辦公理念，號召全體員工共同建設資源集約型、環境友好型企業。本集團推廣OA、ERP辦公系統，倡導無紙化辦公；加強辦公設備管理，減少能源浪費；推廣使用節水型器具，降低水耗；回收塑膠和紙張，減少廢棄物產生；部份大區、生產基地為員工上下班提供通勤巴士，並倡導以公共交通、自行車、步行替代私家車上下班。

3. 環境及天然資源

協同處置

本集團依靠自主創新，推動城鄉生活垃圾、市政污泥及工業危險廢物三個領域的協同處置項目，在履行社會責任的同時，助力環保轉型，實現企業的可持續發展。

本集團利用水泥窯協同處置⁴固體廢棄物，較傳統填埋方式大幅節約土地資源，而且有效利用窯內高溫去除二噁英等有毒污染物，實現「無害化、減量化、資源化」處置，為當地居民創造更健康的環境。

⁴ 利用水泥窯協同處置為在進行水泥熟料生產的同時，利用水泥窯高溫、鹼性、大容量特點，將滿足或經過預處理後滿足入窯要求的固體廢物投入水泥窯焚燒的處置過程。

In 2019, water consumption of the Group was 32,545,608 tons, and intensity of water consumption for the production of cement and clinker was 360.4 kg per ton of cement produced.

The proportion of cement sold in bags by the Group decreased from 38.9% in 2018 to approximately 35.6% in 2019, which had reduced the demand for product packaging. Recyclable packaging bags are also fully utilized to reduce waste of resources and energy. In 2019, consumption of packaging materials decreased by approximately 9.3% year-on-year.

In addition, the Group continuously advocated for the concept of green office and called for all-staff joint construction of a resources-intensive and environmentally-friendly enterprise. The Group promoted OA and ERP office systems, advocated for paperless offices, strengthened management on office equipment, reduced energy waste, promoted use of water-saving appliances to reduce water consumption, and recycled plastic and paper to reduce waste generation. Commuter buses were offered to employees at some production plants and some operating regions for work commutes. We also advocate for public transportation, bicycles and walking as alternatives to driving private cars for work commutes.

3. ENVIRONMENT AND NATURAL RESOURCES

Co-Processing

In reliance on independent innovation, the Group promotes co-processing projects in the three scopes of municipal solid waste, urban sludge and hazardous industrial waste in order to fulfil its corporate social responsibility whilst supporting transformation of environmental protection and achieving sustainable corporate development.

Compared to traditional landfilling, co-processing of solid waste by use of cement kilns⁴ enables the Group to substantially save land resources and eliminate poisonous pollutants such as dioxin by effective use of heat inside cement kilns, thereby achieving “hazard-free, mass-reducing and recyclable” processing and creating a healthier living environment for local residents.

⁴ Co-processing by use of cement kilns is the processing of solid wastes which meet the requirements for entering kilns, whether with or without pre-treatment, by inputting the solid wastes into cement kilns for combustion, taking advantage of the features of cement kilns including high temperature, alkalinity and large capacity, during production of cement and clinker.

截至二零一九年底，本集團共擁有8個協同處置項目。具體項目如下：

As of the end of 2019, the Group had 8 co-processing projects in total. Details of the projects are set out as follows:

項目名稱 Project Name	類型 Type	年處理能力 (噸) Annual Processing Capacity (tons)	狀態 Status
廣西賓陽 Binyang, Guangxi	城鄉生活垃圾 Municipal solid waste	110,000	運營中 In operation
廣西田陽 Tianyang, Guangxi	城鄉生活垃圾 Municipal solid waste	180,000	運營中 In operation
廣西南寧 Nanning, Guangxi	市政污泥 (註2) Urban sludge (note 2)	110,000	運營中 In operation
廣州珠水 (註1) Zhushui, Guangzhou (note 1)	市政污泥 (註2) Urban sludge (note 2)	300,000	運營中 In operation
廣州越堡 (註1) Yuebao, Guangzhou (note 1)	市政污泥 (註2) Urban sludge (note 2)	300,000	運營中 In operation
海南昌江 Changjiang, Hainan	工業危險廢物 Hazardous industrial waste	30,000	運營中 In operation
雲南彌渡 Midu, Yunnan	城鄉生活垃圾 Municipal solid waste	110,000	試運營 In trial operation
雲南鳳慶 (註1) Fengqing, Yunnan (note 1)	城鄉生活垃圾 Municipal solid waste	110,000	試運營 In trial operation

註：

notes:

- 位於聯營及合營公司的水泥生產基地。
- 南寧項目處置含水率80%的濕污泥，珠水項目處置含水率40%以下的乾污泥，越堡項目應急處置廣州市含水率40%以下的乾污泥。

- Located in the cement production plants of our associates and joint ventures.
- The Nanning project co-processed wet sludge of 80% moisture content. The Zhushui project co-processed dry sludge of below 40% moisture content. The Yuebao project co-processed dry sludge of below 40% moisture content in Guangzhou City on an urgent basis.

截至二零一七年、二零一八年及二零一九年十二月三十一日止年度，本集團水泥生產基地的協同處置量數據載列如下：

Data of waste co-processed by the Group's cement production plants for the year ended 31 December 2017, 2018 and 2019 is set out as follows:

	二零一九年 2019	二零一八年 2018	二零一七年 2017
城鄉生活垃圾 (噸) Municipal solid waste co-processed (tons)	162,700	166,000	82,400
市政污泥 (80%含水率, 噸) Urban sludge co-processed (with 80% moisture content, tons)	56,500	49,300	49,700
工業危險廢物 (噸) Hazardous industrial waste co-processed (tons)	7,200	8,700	6,700

資源綜合利用

本集團致力研究和探索工業廢渣在水泥生產中的應用，通過優化生料配方，開展石灰石廢石資源綜合利用項目，實現礦山廢棄資源利用的產業化，促進資源綜合利用及社會廢棄物處置的資源化，對社區環境保護作出積極貢獻。

截至二零一七年、二零一八年及二零一九年十二月三十一日止年度，本集團水泥生產基地的工業廢渣綜合利用量數據載列如下：

Composite Utilization of Resources

The Group is dedicated to research and exploration of the application of industrial wastes in cement production. Through optimization of the prescription of raw materials, the project on composite utilization of limestone residue resources was launched to achieve industrialization of utilization of mining waste resources, foster composite utilization of resources and recyclability of social waste processing, which is a proactive contribution of environmental protection to the community.

Data of industrial waste utilized by the Group's cement production plants for the years ended 31 December 2017, 2018 and 2019 is set out as follows:

		二零一九年 2019	二零一八年 2018	二零一七年 2017
工業廢渣綜合 利用量 (千噸)	Quantity of industrial waste utilized ('000 tons)	21,080	21,840	21,470

礦山治理

本集團高度重視礦山治理工作，始終以生態、環保、安全、資源集約利用為工作主線，確立科學規劃、合理開採、節約資源、促進人與自然和諧發展，以及綠色生態型、環境友好型礦山企業的工作思路，將礦山恢復納入生產運營及長期發展規劃。

針對新項目，必須開展項目環評，並在開發建設過程中盡量避免對生態造成破壞。對於開採區域，本集團通過礦內水資源循環利用，污水零排放，廢油及時回收利用，減震、弱震爆破技術的應用等措施，減少生產運營活動對生物生存環境的影響，進而有效保證區域內物種的棲存和延續。

Treatment and Management of Mines

The Group places strong emphasis on treatment and management of mines. Ecology, environmental protection, safety and intensive utilization of resources have always been the primary focus of our work. We confirm the work approach of scientific planning, reasonable mining, resources conservation, promotion of harmonious development between human beings and the nature as well as green, ecologically and environmentally friendly mining enterprise. Restoration of mines is included in the production, operation and long-term development plans of the Company.

Environmental assessments must be conducted for new projects and damages on the ecology in the course of development and construction are avoided to the greatest possible extent. For the mining areas, through recycled use of water resources in the mines, there is zero discharge of wastewater. Measures are taken for timely recycling of waste oil and application of shock reduction and weak shock blasting technologies, in order to reduce the impact of production and operation activities on ecological environment and ensure existence and continuity of species in the region.



礦山閉坑前，根據中國自然資源部發佈的《礦山地質環境保護規定》，本集團嚴格按申請辦理採礦許可證時編制並經相關自然資源主管部門批准的《礦山地質環境保護與恢復治理方案》及《土地復墾方案》，對礦山環境進行治理與恢復。在復綠上，積極引進「生物多樣性」的概念，種植多類植物並搭配合理，使礦區綠化與周邊自然環境和景觀相協調，礦區綠化覆蓋率達到100%，逐步恢復生態平衡，經相關自然資源主管部門驗收合格。

本集團積極落實中國國土資源部發佈的《全國礦產資源規劃(2008-2015年)》和國家六部門聯合印發《關於加快建設綠色礦山的實施意見》，根據中國自然資源部發佈的《水泥灰岩綠色礦山建設規範》開展綠色礦山建設。截至二零一九年十二月三十一日止年度，本集團完成礦山復綠面積累計共約2,228,700平方米(二零一八年度：約1,861,100平方米)。截至二零一九年底，本集團27個水泥、熟料生產基地中共有13個基地的16座礦山被列入省級或自治區級綠色礦山名單，其中7個基地的8座礦山通過了國家級綠色礦山遴選。

Before closure of a mine, the Group would undergo treatment, management and restoration of the environment at the mine in strict compliance with the “Project of Mining Geo-Environmental Protection and Integrated Renovation” and the “Land Rehabilitation Plans” formulated at the time of applying for the mining permits and approved by relevant competent authorities of natural resources according to the “Provisions on the Protection of the Geologic Environment of Mines” published by the Ministry of Natural Resources of China. In terms of ecological restoration, the concept of “biodiversity” has been actively introduced by planting various vegetations with reasonable mix and match for a coordinated landscape of the regreened mining area and the surrounding natural environment. The green coverage ratio of the mining area reached 100%, with a gradual restoration of ecological balance. It would be inspected for acceptance by relevant competent authorities of natural resources.

The Group proactively implements the “National Mineral Resources Plan (2008-2015)” issued by the Ministry of Land and Resources of China and the “Implementation Opinions on Accelerating the Construction of Green Mines” jointly issued by six national departments, and initiated the construction of green mines according to the “Green Mine Construction Specification of Cement Limestone” issued by the Ministry of Natural Resources of China. As of the year ended 31 December 2019, the Group had completed ecological restoration of its mines with a cumulative area of approximately 2,228,700 m² (approximately 1,861,100 m² in 2018). As of the end of 2019, a total of 16 mines at 13 plants among 27 cement and clinker production plants of the Group had been included in the registers of provincial-level and AR-level green mines, among which, 8 mines at 7 plants had passed the selection of national-level green mines.





華潤水泥（南寧）有限公司礦山通過國家級綠色礦山遴選
The mine of China Resources Cement (Nanning) Limited had passed the selection of national-level green mine

此外，在礦山湧水治理方面，本集團實現平南二期礦山3個主涌水的成功封堵，每天減少礦坑涌水量達117,000立方米，每年節省排水電耗約1,100,000千瓦時，並節省抽排水資源費用、增加礦山資源量，有效解決周邊構建築物塌陷、倒塌的風險，徹底修復當地生態環境，維護企業良好社會聲譽。該項目技術受到社會認可，榮獲中國岩石力學與工程學會科學技術獎二等獎。同時，在總結平南礦山治水經驗和技術成果的基礎上，完成了廣東廉江、廣西合浦礦山治水規劃，推動治水準備工作有序開展。

In addition, in terms of the treatment and management of water inrush at mines, the Group had successfully blocked the 3 major water inrush points at the mine of the second phase in Pingnan. Water inrush had been reduced by 117,000 m³ per day, and 1.1 million kwh of electricity had been saved per year due to reduced water discharge. Costs of discharging water resources had also been saved, and mining resources had been increased. An excellent corporate social reputation had been maintained as the risks of sink and collapse of buildings in the vicinity had been effectively solved and the local ecological environment had been completely restored. The technology of the project has been recognized by the society and won the Second Class Award of Science and Technology Award from the China Society for Rock Mechanics and Engineering. Meanwhile, upon conclusion of the experience of water treatment at the mines in Pingnan and on the foundation of technological achievements, the plans for water treatment at the mines of Lianjiang, Guangdong and Hepu, Guangxi had been completed, which drove for the orderly commencement of preparation work for water treatment.

B. 社會

I. 僱傭及勞工常規

本集團視員工為企業生存和發展最寶貴的資源，為員工提供、創造廣闊的發展平台和施展個人才華的機會。

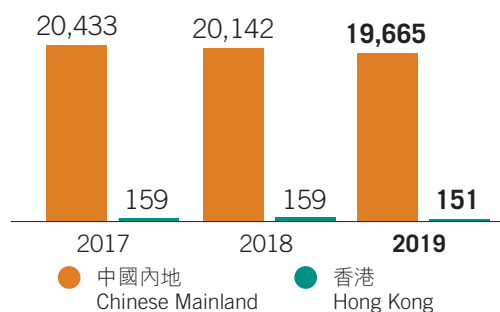
1. 僱傭

一般資料

於二零一九年十二月三十一日，本集團共聘用19,816名全職僱員（於二零一八年十二月三十一日：20,301名），員工主動流失率為5.4%（於二零一八年十二月三十一日：6.4%）。按地區及性別劃分的僱員明細載列如下：

按地區劃分的僱員

Employees by geographical region



B. SOCIAL

I. EMPLOYMENT AND LABOUR PRACTICES

The Group regards our employees as the most valuable resources for our corporate survival and development. We provide and create a broad career development platform and opportunities for the employees to display their individual talents.

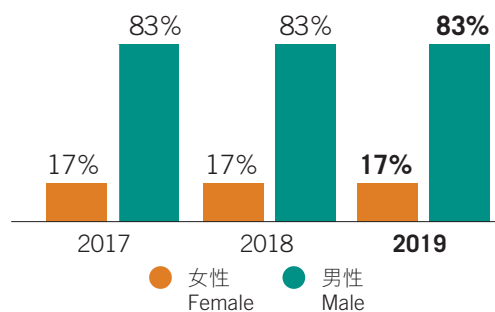
1. EMPLOYMENT

General Information

As at 31 December 2019, the Group employed a total of 19,816 full-time employees (20,301 as at 31 December 2018) and its employee attrition rate was 5.4% (6.4% as at 31 December 2018). A breakdown of our employees by geographical region and gender is set out as follows:

按性別劃分的僱員

Employees by gender



按職能劃分的僱員明細載列如下：

A breakdown of our employees by function is set out as follows:

		於十二月三十一日		
		二零一九年	二零一八年	二零一七年
		As at 31 December		
		2019	2018	2017
管理層	Management	402	393	390
財務、行政及其他	Finance, administration and others	2,485	2,648	2,672
生產人員	Production staff	11,627	11,753	11,996
技術人員	Technical staff	4,420	4,618	4,633
行銷人員	Sales and marketing staff	882	889	901
總計	Total	19,816	20,301	20,592

按年齡劃分的僱員明細載列如下：

A breakdown of our employees by age is set out as follows:

		於十二月三十一日		
		二零一九年	二零一八年	二零一七年
		As at 31 December		
		2019	2018	2017
29歲及以下	29 or below	3,023	3,648	4,501
30至39歲	30 to 39	8,450	8,635	8,612
40至49歲	40 to 49	6,697	6,524	6,294
50歲及以上	50 or above	1,646	1,494	1,185
總計	Total	19,816	20,301	20,592

在402名高中級管理人員中，89%為男性及11%為女性，76%持有大學或以上學位，21%曾接受大專教育，且其平均年齡約為46歲（於二零一八年十二月三十一日分別為393名、89%、11%、74%、22%、45歲）。

Among our 402 senior and middle-level managerial staff, 89% are male and 11% are female, 76% possess university degrees or above, 21% have received post-secondary education and the average age of managerial staff is approximately 46 (393, 89%, 11%, 74%, 22%, 45 as at 31 December 2018).

勞工法律和準則

本集團嚴格遵守《中華人民共和國勞動法》、《中華人民共和國勞動合同法》、《中華人民共和國社會保險法》、《職工帶薪年休假條例》、《工傷保險條例》、《中華人民共和國婦女權益保護法》、《女職工勞動保護特別規定》、《中華人民共和國未成年人保護法》、《未成年工特殊保護規定》及《禁止使用童工規定》等法律法規，堅持平等僱傭的準則，反對一切因性別、年齡、地域、學歷、宗教、國籍、種族、性取向、殘疾與否等不同而存在的歧視行為，反對強迫勞動、超時工作，反對騷擾虐待，切實維護員工權益，支持最低收入，確保員工在招聘、勞動、薪資、培訓、晉升、補償、休假等方面享受公平待遇。截至二零一九年底，少數民族員工比例為21.0%，殘疾人僱傭人數為59人。

本集團堅持合法用工，反對使用童工或強制勞工，依據《中華人民共和國刑法》、《中華人民共和國勞動法》、《中華人民共和國未成年人保護法》、《未成年工特殊保護規定》及《禁止使用童工規定》，嚴格審查應聘員工年齡，不聘用未滿16歲的未成年人，對年滿16歲但未滿18歲的未成年員工採取特殊勞動保護措施，不以暴力、威脅或者限制人身自由的方法強迫他人勞動，保護其合法權益及健康。員工入職時必須如實申報個人信息，入職後必須按照公司有關制度要求開展工作，如持假證件、謊報個人信息、工作造假等一經發現，本集團將按規章度相關要求處理，情節嚴重、影響惡劣的或按照相關法律規定處理。

Labour Law and Standards

The Group is in strict compliance with laws and regulations including the Labour Law of the People's Republic of China, the Labour Contract Law of the People's Republic of China, the Social Insurance Law of the People's Republic of China, Regulations on Paid Annual Leave of the Employees, Regulations on Work-Related Injury Insurances, the Law of the People's Republic of China on the Protection of Women's Rights and Interests, the Special Rules on the Labour Protection of Female Employees, the Law of the People's Republic of China on the Protection of Minors, the Provisions for Special Protection of Under-Aged Labour and the Provisions on Prohibition of Using Child Labour. By adhering to the principle of equal employment, we prohibit all discrimination due to differences in gender, age, territory, education, religion, nationality, races, sexual orientation and disability. We also oppose forced labour, overtime work, harassment and abuse. We effectively protect the rights and interests of employees, support the minimum wage, and ensure that employees enjoy fair entitlements in terms of recruitment, labour, salary, training, promotion, compensation and rest periods. As of the end of 2019, 21.0% of employees were of ethnic minorities and 59 employees had disabilities.

The Group insists on legal use of labour and prohibits employment of child and forced labour. We strictly check the age of applicants, never employ minors aged below 16, adopt special labour protective measures for minor workers aged above 16 but below 18, and never force others to work by means of violence, threats or restrictions on their physical freedom, in order to protect their legal rights, interests and health pursuant to the Criminal Law of the People's Republic of China, the Labour Law of the People's Republic of China, the Law of the People's Republic of China on the Protection of Minors, the Provisions for Special Protection of Under-Aged Labour and the Provisions on Prohibition of Using Child Labour. Employees must truthfully provide their personal data at commencement of employment, and must start to work in accordance with the requirements of relevant policies after commencement of employment. Cases of holding forged identification documents or providing false personal data or false work experience, once found, will be handled according to the relevant requirements of the Group's policies. Serious cases with detrimental effects might be handled according to relevant legal requirements.



我們注重員工的多元化，招聘渠道包括校園招聘、社會招聘、內部推薦。招聘過程中一視同仁，基於崗位職責進行招聘，不設置針對性條件。本集團按照勞動合同法要求，遵循公正平等、協商一致的原則，與員工簽訂勞動合同，明確勞資雙方的權利和義務。我們不斷完善及時有效的協商溝通機制和渠道，積極推進民主管理，暢通員工意見反饋渠道，員工可通過員工代表大會、信訪舉報電話、信訪舉報郵箱、OA論壇等多元化渠道實時反饋意見和訴求；在制定涉及員工切身利益相關制度和政策時，逐級徵求員工意見和建議。

人力資源政策

我們主要根據僱員個人業績表現與工作經驗，結合內部公平性及市場競爭力給予薪酬待遇，其中包括基本工資、績效獎金、津貼及其他員工福利。本集團不斷優化、完善員工薪酬管理機制，以問題為導向，建立工資總額與人效指標掛鉤的聯動模式，強化人效提升；結合內外部調研及數據對標結果，優化中基層薪酬結構，加大績效槓桿和薪酬激勵性；設計向核心崗位傾斜的年度調薪機制，提高關鍵崗位市場競爭力；強化業績導向和利潤貢獻的獎金分配機制，體現全員效益共用，調動員工積極性，吸引和保留優秀人才和核心崗位人員。

We put strong emphasis on the diversity of our employees. Our recruitment channels include campus recruitment, social recruitment and internal referral. The recruitment process is equal and impartial based on the job duties of the roles without any pertinent conditions. Abiding by the principles of fairness, equality and negotiation for unanimous consensus, the Group enters into employment contracts with employees in accordance with the requirements of labour law to specify the rights and obligations of both employers and employees. We continuously improve the timely and effective mechanism and channels for negotiation and communication to actively promote democratic management. Smooth feedback channels are opened for employees to provide real-time feedback opinions and aspirations through diversified channels such as employees' congress, whistle blowing hotlines, whistle blowing emails and OA forum. Opinions and suggestions from employees are sought at each level when formulating systems and policies involving vital interests of employees.

Human Resources Policies

We offer our employees remuneration packages mainly on the basis of individual results performance and work experience and also having regard to internal fairness and market competitiveness, including basic wages, performance related bonuses, allowance and other staff benefits. Using issues as guidance, the Group continuously optimizes and improves the staff remuneration management mechanism. An interrelated mode had been established to link the total salaries with staff performance indicators for strengthening the improvement of staff performance. In combination with the results of internal and external studies as well as data benchmarking, the structure of junior and middle-level remuneration had been optimized to intensify the performance leverage and incentives of remuneration. An annual remuneration adjustment mechanism was designed to incline towards core roles to increase the market competitiveness of key roles. The bonus allocation mechanism had become more results-oriented and contributory from profits in order to reflect the mutual use of all-staff benefits, mobilize the enthusiasm of employees, attract and retain excellent talents and employees in core roles.

本集團持續優化和落實員工的各項福利待遇，按時足額為內地員工繳納「五險一金」，為香港員工繳納強積金；持續為員工提供有針對性的體檢套餐，為員工及其兩位直系親屬購買商業保險，促進員工關懷和完善員工保障。我們反對任何形式的強制勞動，推行八小時工作制，設置加班調休制度，保障員工休息。

本集團積極優化人才素質評價指標體系與評價方法，並應用於經理人晉升和綜合評價中，組織完善了本集團經理人能力素質模型，通過全面評價經理人，發現、發展高潛力人才，促進高中級管理人員能上能下，激發隊伍活力；大力選拔培養年輕高中級管理人員，系統推進人才梯隊建設；修訂專業技術人才任職標準體系，定期開展任職評價；大力開展技能實操培訓、技術大比武、技能競賽等「卓越工匠」系列項目，結合業務戰略、崗位要求和個人發展需要，逐步完善各類人才培養體系，積極培養「知識型、技能型、創新型」人才，為推進本集團高質量發展提供人才保障。

本集團關注和保障女性職工權益，落實女性員工孕產期、哺乳期休假規定，為女性員工提供「員工關愛室」、「女性更衣室」等，提供平等的職業發展機會，確保女性員工享有無差別的薪酬福利待遇。此外，本集團提供個性化福利，如舉辦國際婦女節活動、針對女性員工的年度體檢項目等舉措，增強女性員工歸屬感和幸福感。

The Group continued to optimize and offer various benefits and entitlements to its employees. Timely and full contributions to the “Five Social Insurances and One Housing Fund” and the Mandatory Provident Fund are made for Mainland employees and Hong Kong employees respectively. Targeted body check packages were continuously provided to employees. Commercial insurances were taken out for employees and their two close family members, which promoted the care for employees and improved protection to employees. We oppose to any form of forced labour, implement the policy of an eight-hour working day, and have policies for overtime work and holiday adjustment in place to secure adequate resting period for employees.

The Group proactively optimized the mechanism for talent quality appraisal indicators and the appraisal methods, which were applied to the promotion and composite appraisal of the senior and middle-level managerial staff. The capability quality models of the Group’s senior and middle-level managerial staff had been organized and improved through comprehensive appraisal of senior and middle-level managerial staff, discovery and development of talents with high potential. The senior and middle-level managerial staff were trained with capabilities to take up any role and stimulate team vitality. We vigorously selected and cultivated young senior and middle-level managerial staff for the systematic promotion of construction of talent ladders. The job appraisal system to evaluate the performance of professional technical personnel had been amended, and job appraisal was conducted on a regular basis. We proactively organized a series of “Excellent Craftsmen” programmes such as vocational practical skill training, technology competitions and talent shows. We combined business strategy, job requirements and personal development needs to gradually improve various talent training systems and actively cultivate “knowledgeable, skillful and innovative” talents in order to ensure the secured supply of talents for the Group’s high-quality development.

The Group focuses on protecting the rights and interests of female employees. The requirements for maternity leave and lactation leave for female employees are fully implemented. “Employee nursing rooms” and “ladies’ changing rooms” are provided for female employees. Equal career development opportunities are offered to ensure that female employees are entitled to non-differentiated remunerations and benefits. Besides, the Group provided personalized benefits through measures such as organizing activities of International Women’s Day and annual body check projects targeting female employees to raise the sense of belonging and happiness of our female employees.



員工關愛

本集團致力提升員工工作環境和組織氛圍，開展員工生日會、節日慶祝活動、體育活動、書畫大賽和健身活動等有益員工身心健康的集體活動。年內，舉辦集強身健體、品牌宣傳、趣味運動會、親子活動、集體生日會、長期服務獎頒獎儀式於一體的總部員工趣味運動會，進一步提高了總部員工的凝聚力和歸屬感。

Care for Employees

The Group is dedicated to enhancing the working environment and team ambience for its employees. Various group activities were organized for better physical and mental health of our employees, such as staff birthday parties, festival celebrations, sports activities, calligraphy competitions and fitness activities. During the year, we organized an interesting athletic meet for headquarters staff combined with physical fitness, brand promotion, interesting athletic meet, family activities, group birthday party and long-term service award presentation ceremony, which had further enhanced our headquarters staff's cohesion and sense of belonging.



2019年深圳總部員工家庭日暨趣味運動會

2019 Shenzhen headquarters employees' family day cum interesting athletic meet



員工參加2019華潤深圳南山半程馬拉松

Employees participated in 2019 China Resources Shenzhen Nanshan Half Marathon

本集團一向重視員工關懷，定期走訪慰問困難員工及家屬，在節日送上問候與祝福，了解他們實際困難與需求，關心及跟進其生活改善的情況，體現公司人文關懷的精神。二零一九年，用於關愛及幫助困難員工的「華潤水泥感恩之心基金」，共籌得本集團及員工的捐款約人民幣1,157,000元，資助困難員工共約人民幣969,000元。

The Group has always paid keen attention to caring for employees. To understand their practical difficulties and needs as well as to care for and follow up with the improvement on their living conditions, we regularly visit employees in need and their families with solicitude. We send regards and blessings to these employees during festivals to reflect our corporate spirit of humanity and care. In 2019, the Group and its employees donated a total amount of approximately RMB1,157,000 to the “China Resources Cement Gratitude Fund”, which aims at caring for and helping the employees in need. Employees in need were subsidized with a total amount of approximately RMB969,000.



2. 安全生產及職業健康

本集團嚴格遵守《中華人民共和國安全生產法》、《中華人民共和國礦山安全法》及《中華人民共和國職業病防治法》，並制定《華潤水泥管理手冊》「EHS管理篇」及相關制度規範，嚴格執行、監控及持續完善員工職業健康及安全管理體系，加大相關方安全管理、積極開展監督檢查工作，根據國家相關法律制度進行項目安全風險評估。二零一九年，本集團頒佈執行《華潤水泥控股有限公司堆場安全管理辦法》、《華潤水泥控股有限公司EHS值班管理辦法》、《華潤水泥控股有限公司安全事故責任追究制度(2019版)》等制度。目前，OHSAS 18000職業健康安全管理體系覆蓋率100%，員工健康體檢率100%。截至二零一九年底，本集團共有EHS專職管理人員274人，其中專職安全管理人員192人（含註冊安全工程師59人）。

本集團致力於安全生產標準化建設，不斷加強基礎管理和創新管理模式，提升總體安全管理水平。截至二零一九年底，本集團有28個水泥生產基地（含粉磨站）通過了國家安全生產標準化一級企業現場評審，有17家水泥生產基地的石灰石礦山通過安全標準化二級企業評審，並在田陽水泥生產基地試點開展安全生產標準化一級礦山的創建，田陽礦山於八月完成預評審工作，具備安全生產標準化一級礦山評審要求。

2. PRODUCTION SAFETY AND OCCUPATIONAL HEALTH

The Group is in strict compliance with the Production Safety Law of the People's Republic of China, the Law of the People's Republic of China on Safety in Mines and the Law of the People's Republic of China on the Prevention and Treatment of Occupational Diseases, and promulgated the "EHS Management Series" in the "Management Manual" and other relevant policies and regulations of the Company for the stringent implementation, monitor and continuous improvement on the staff occupational health and safety management system, reinforcement of safety management on counterparties and proactive launch of supervisions and inspections. Safety risk assessments of projects were conducted in accordance with relevant national laws and regulations. In 2019, the Group promulgated and implemented policies including the "Safety Management Measures on the Storage Yards of China Resources Cement Holdings Limited", "Management Measures on EHS Duty of China Resources Cement Holdings Limited", and "Policy for Accountability of Safety Incidents of China Resources Cement Holdings Limited". Currently, the coverage rates of the OHSAS 18000 Occupational Health & Safety Management System and staff body checks are both 100%. As of the end of 2019, the Group had a total of 274 specialized EHS management personnel, among which, 192 were specialized safety management personnel (including 59 registered safety engineers).

The Group is committed to production safety standardization and raising the overall standards of safety management through continuous improvement on fundamental management and innovative management models. As of the end of 2019, 28 cement production plants of the Group (inclusive of grinding stations) have passed the on-site assessments as the First-Class Enterprise in National Production Safety Standardization and the limestone mines of 17 cement production plants have passed the assessments as the Second-Class Enterprise in Safety Standardization. Pilot construction of a First-Class Mine of Production Safety Standardization commenced at the cement production plant in Tianyang. The pre-assessment of the mines in Tianyang had completed in August, which possessed the qualifications required for the assessment as the First-Class Mine in Production Safety Standardization.

安全檢查

本集團建立安全生產事故隱患排查治理長效機制，持續加強控股、大區、基地等多層次安全隱患排查、監督與治理，防止和減少人身傷害事故，保障員工生命和財產安全。二零一九年，本集團先後對32個水泥生產基地、54個混凝土攪拌站進行年度安全評價檢查，對9個水泥生產基地和1個混凝土攪拌站開展了年度安全大檢查，對14個水泥生產基地礦山開展安全專項檢查，對13個水泥生產基地檢維修作業現場和相關方管理進行督查，對17個混凝土攪拌站進行檢查幫扶。同時，本集團開展安全審計工作，對5個水泥生產基地和2個混凝土攪拌站進行了安全現場審查，深挖管理問題原因，促進完善管理制度，規範管理流程，加強安全風險管理，推動安全管理提升；全年大區、基地共開展綜合大檢查244次，專項檢查200次。年內，本集團開展應急演練，約18,545人次參與。

安全培訓

本集團積極落實安全培訓工作，結合線上及線下培訓方式，將安全應急演練視頻置入本集團在線學習平台華潤大學學習系統中，鼓勵員工自主學習。二零一九年，本集團員工安全培訓累計約328,000學時，相關方培訓累計約73,000學時；同時創建在線考試平台，於十二月組織開展了高中級管理人員健康安全知識閉卷考試，共207名員工參加，有效落實安全領導力，提升健康安全管理水平。

安全活動

本集團開展豐富多樣的安全活動，以推動全員參與安全管理，提升企業安全文化，將安全管理理念深入員工、家庭及社會。年內，本集團所屬大區、基地組織開展EHS知識競賽活動88場，共5,875人參加，華潤集團組織EHS知識競賽決賽，本集團共11個隊伍參加。本集團圍繞「健康中國，職業健康同行」主題開展主題報告會、員工座談會、知識講座等宣傳周系列活動，約13,049人次參加。

Safety Inspections

The Group had established long-term effective mechanism for the inspection, treatment and management of latent hazards of production safety incidents. Multi-level inspections, supervision, treatment and management of latent safety hazards were continuously reinforced at headquarters, major operating regions and production plants to prevent and minimize incidents of personal injuries and secure the safety of our employees' lives and properties. In 2019, the Group successively conducted annual safety assessment inspection on 32 cement production plants and 54 concrete batching plants, annual large-scale safety inspections at 9 cement production plants and 1 concrete batching plant, specific safety inspections at the mines of 14 cement production plants, on-site supervision on the repairs and maintenance as well as management of counterparties at 13 cement production plants. 17 concrete batching plants were inspected and assisted. Meanwhile, the Group conducted safety audit. The on-site safety audit of 5 cement production plants and 2 concrete batching plants drilled comprehensively on the reasons for management issues, which had enhanced improvement on management systems, standardized management process, strengthened safety risk management and promoted better safety management. Throughout the year, 244 large-scale composite inspections and 200 specific inspections were done at major operating regions and production plants. During the year, approximately 18,545 participants attended the emergency drills organized by the Group.

Safety Training

The Group actively implemented safety training and combined online and offline training methods. Videos of safety emergency drills were uploaded on the Group's online learning platform at the learning system of China Resources University to encourage our staff to self-study. In 2019, the aggregate duration of safety training for the Group's staff amounted to approximately 328,000 hours, whereas that for counterparties amounted to approximately 73,000 hours. At the same time, an online examination platform had been created to effectively implement safety leadership and enhance the management standards of health and safety. A closed book examination on health and safety knowledge was organized for senior and middle-level managerial staff in December, with 207 participants in attendance.

Safety Activities

The Group organized a wide variety of safety activities to promote all-staff participation in safety management, arouse corporate safety culture and implant the concept of safety management in staff, families and society. During the year, the major operating regions and production plants under the Group organized 88 sessions of EHS knowledge competition with a total of 5,875 participants in attendance. A total of 11 teams of the Group participated in the final EHS knowledge competition organized by China Resources Group. A series of activities during the promotion week, including keynote presentations, staff forums and lectures were launched around the theme of "Healthy China in company with Occupational Health", with approximately 13,049 participants in attendance.

安全創新

本集團推動EHS管理要素全面運用，促進EHS管理系統化，初步形成具有水泥行業特色的實踐方法；推進堆場智能化管理工作，以位於廣西平南、南寧和廣東羅定的水泥生產基地作為堆場車輛智能化試點項目進行試點，預計於二零二零年底實現水泥生產基地堆場智能化管理全覆蓋；在位於廣東惠州的水泥生產基地掛牌上鎖示範項目經驗的基礎上，全面推廣上鎖掛牌管理工作；推廣混裝炸藥爆破作業，已有13個水泥生產基地礦山使用現場混裝炸藥開展爆破作業，有10個礦山持續保持混裝炸藥量使用率達90%以上，提升礦山爆破本質安全水平。

相關方管理

本集團根據《華潤水泥控股有限公司相關方安全管理制（試行）》加強相關方的安全管理，工程建設項目承包商、設備維護檢修方、交通運輸商、勞務承攬方、供應商、廢棄物處置方、承租方、技術服務方等均納入相關方的範疇。本集團堅持「誰使用、誰管理、誰負責」的相關方安全管理原則，對相關方實行分類分級管理，風險較高的相關方作業實行告知、備案及定期監管機制。合同簽署前，本集團會審查、驗證相關方的安全資質，把安全要求寫入合同，在簽署合同的同時，須簽署安全協議。相關方進廠前，本集團將確定防護用品、安全施工方案、應急救援方案等，進場時所有人員均須參加入廠前安全培訓及場地安全培訓，以保障相關方的安全與健康。

Safety Innovation

The Group has preliminarily formed a practice method with the features of cement industry to advocate the full application of EHS management elements and encourage systemization of EHS management. We actively promoted the intelligent management of storage yards. Pilot projects of intelligent vehicles were launched in storage yards of the cement production plants located in Pingnan and Nanning, Guangxi and Luoding, Guangdong. It is expected to achieve a full coverage of intelligent management of storage yards at cement production plants by the end of 2020. Lockout tagout management will be fully rolled out on the basis of the experience from the lockout tagout pilot project at the cement production plant located in Huizhou, Guangdong. Blasting of mixed explosives was promoted. The mines of 13 cement production plants had been using on-site mixed explosives to initiate blasting. 10 mines had maintained a consistent utilization rate of mixed explosives at above 90%, which had increased the intrinsic safety standards of mine blasting.

Management of Counterparties

The Group reinforced safety management on counterparties in accordance with the “Policy for Safety Management on Counterparties of China Resources Cement Holdings Limited (Trial)”. Contractor of construction projects, service providers for maintenance and repairs of equipment, transportation providers, headhunters, suppliers, waste handlers, tenants, technical service providers are all included in the scope of counterparties. The Group abides by the principle of “whoever uses a counterparty has to manage them and is responsible for them” in counterparty safety management. Counterparties are managed on the basis of classification and levels. Counterparties working at higher risk are subject to the mechanism of advanced notice, filing of cases and regular monitoring. The Group would review and verify the safety qualifications of each counterparty prior to signing a contract with it. Safety requirements would be incorporated in the contract, and the counterparty would have to enter into a safety agreement simultaneously. Before a counterparty may enter our factories, the Group would confirm the protective gears, safety method statement and contingency rescue plans. Upon entering the site, all personnel are required to attend pre-entrance safety training and site safety training to secure the safety and health of the counterparties.



廣西平南水泥基地礦山聯合專業礦山救護隊開展突發溶洞事故應急救援演練
Emergency drill for urgent karst cave incidents jointly launched with professional mine rescue team at the mine of the cement production plant at Pingnan, Guangxi



3. 發展及培訓

人才是企業之本，是企業發展的重要核心資源之一。本集團高度重視人才隊伍建設，持續完善人才發展機制及各類人才培養體系，除了安全培訓外，將企業發展需求和員工個人發展需求相結合，逐步健全課程體系、講師體系、管理體系。根據《華潤水泥培訓管理制度（暫行版）》，本集團每年基於公司戰略規劃、業務主題、管理主題等組織培訓，對培訓需求進行調研及分析，從而制定培訓計劃。

在線下培訓方面，為滿足公司業務發展及人才培養需要，二零一九年，本集團順利開展管理類、專業類、技能類培訓，通過評分、晉級等方式持續優化內部講師管理，促進內部課程開發，同時引進外部講師及課程，有效拓展培訓視野，提升培訓質量。二零一九年，線下培訓時間約89,600小時，線下培訓員工約2,400人。

在線上培訓方面，隨著互聯網+的運用及普及，本集團在二零一九年著重打造線上學習平台華潤大學學習系統，融入過往使用的i-Learning系統內容，豐富員工培訓形式，提升培訓參與便捷性，為本集團業務發展提供人才保障。二零一九年，外部引進專題系列課程30門，內部自主開發微課30餘門，專業課程55門，累計新上線120餘門在線課程，並開展20餘次專題配課學習。二零一九年，在線培訓時間約165,300小時，在線培訓員工約19,300人。

二零一九年，本集團與員工發展相關的線上及線下總培訓時間約254,900小時，按二零一九年十二月三十一日的僱員總數計算，人均受訓時間約13小時。

3. DEVELOPMENT AND TRAINING

Talent is the basis of a corporation and one of the important core resources for corporate development. The Group puts very strong emphasis on building teams of talents and continuously improves the mechanism for talent development and various talent development systems. The curriculum system, lecturer system and management system had been steadily perfected by integration of the corporate development needs and personal development needs of staff other than safety training. Pursuant to the "Training Management Policy (Interim Version)" of the Company, the Group organized trainings each year based on the Company's strategic planning, business themes and management themes. Research and analysis on training needs would be conducted to formulate training plans.

Regarding offline training, the Group smoothly conducted training on management, profession and skills in 2019 to meet the needs for the Company's business development and talent cultivation. Management of internal lecturer was continuously optimized by means of grading and upgrade to encourage internal course development. External lecturers and programmes were introduced at the same time, which had effectively broadened training horizons and enhanced quality on training. In 2019, approximately 2,400 participants attended offline training for a total duration of approximately 89,600 hours.

Regarding online training, following the application and spread of Internet Plus, the Group focused on rebuilding the online learning platform, namely, the learning system of China Resources University, which had integrated the contents of the i-Learning system used previously for enriching the mode of staff training and enhancing the convenience for participating in training so as to provide a secure supply of talents for the Group's business development. In 2019, 30 programmes of special-themed series were introduced from external sources, and over 30 mini-courses were self-developed internally. There were 55 professional courses, a total of over 120 online courses were newly uploaded, and over 20 sessions of special-themed elective learning were launched. In 2019, approximately 19,300 participants attended online training for a total duration of approximately 165,300 hours.

In 2019, the total duration of online and offline training relating to the Group's staff development was approximately 254,900 hours and the average training duration per employee was approximately 13 hours, calculated from the total number of employees as at 31 December 2019.

根據本集團內部人力資源系統統計，截至二零一九年十二月三十一日止年度，總體受訓人員百分比為97.3%（二零一八年：99.3%），按性別及職能劃分的受訓百分比明細載列如下：

According to the statistics of the Group's internal human resources system, 97.3% of our employees were trained for the year ended 31 December 2019 (99.3% in 2018). Percentage breakdown of employees trained by gender and function are set out as follows:

		於十二月三十一日	
		二零一九年	二零一八年
		As at 31 December	
		2019	2018
男性	Male	98.1%	99.3%
女性	Female	93.7%	99.2%
管理層	Management	97.5%	99.7%
財務、行政及其他	Finance, administration and others	97.9%	99.5%
生產人員	Production staff	96.8%	99.1%
技術人員	Technical staff	99.6%	99.6%
行銷人員	Sales and marketing staff	90.5%	99.3%



華潤水泥學院開展「潤小豐深藍計劃」合格中層培養項目

China Resources Cement College launched the "Run Xiaofeng Deep Blue Scheme" qualified middle management talent cultivation project

II · 營運慣例

1. 供應鏈管理

本集團注重採購合規性管控，並致力於打造高效的採購管理體系，對供應商或合作夥伴提出的責任要求，包括遵守法規、保護環境、誠信經營和質量保證等，採購合同均增加附則《供應商誠信條款》，要求所有供應商簽署並遵守相關規定。通過對採購管理制度修訂、全體採購人員培訓宣貫、審計合規性抽查及整改、採購信息化管理系統業務流程優化、編撰發佈《採購管理月報》、管理職能下沉等舉措，全面加強總部、大區、基地採購三級管控。此外，本集團嚴格踐行陽光採購，積極開展警示教育，設立舉報信箱，所有採購人員及供應商均須簽署《陽光宣言》和《廉潔從業準則》並執行《華潤水泥採購人員與供應商接觸的注意事項》，以提高全體採購人員廉潔意識。同時，本集團貫徹綠色、安全、發展的採購理念，深化市場調研，選擇資質齊全、環保達標等符合國家政策要求的合作方，加大工業廢棄物的使用，推進原材料進廠汽車標重運輸，開展駕駛員安全培訓，要求供應商簽署《安全環保協議》，開發和使用節能環保的新材料、新技術，推動產業升級，助力高質量發展。

II · OPERATING PRACTICES

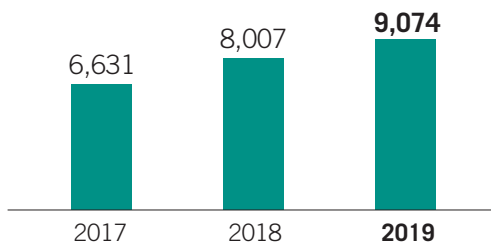
1. SUPPLY CHAIN MANAGEMENT

The Group is concerned with the management and control of procurement compliance, and dedicated to creating an effective procurement system. Our suppliers or business partners are required to fulfil certain responsibilities, including compliance with laws and regulations, environmental protection, integrity operations and quality assurance. “Integrity Terms of Suppliers” are incorporated as annex in all our procurement contracts, which all suppliers are required to enter into and comply with. Three-tiered management and control of procurement covering headquarters, operating regions and production plants is fully reinforced through measures such as amendments to procurement management policies, training of all procurement staff, spot checks on compliance by internal audit and rectifications, optimization of business workflow with informationized procurement management system, writing and publication of “Monthly Report on Procurement Management”, and delegation of management functions. In addition, the Group puts Sunshine Procurement into strict practice. We actively launch alert education and set up whistle-blowing letterboxes. All procurement staff and suppliers are required to sign the “Sunshine Declaration” and the “Integrity Practice Guideline” and implement “Things to Note when Procurement Staff are in Contact with Suppliers” of the Company for arousing integrity awareness of all the procurement staff. At the same time, the Group abides by the procurement principles of green, safety and development by deepening market research, selecting business partners in compliance with national policy requirements such as possession of complete qualification and meeting standards of environmental protection, strengthening the use of industrial waste, encouraging transportation of vehicles which delivered raw materials to our factories to comply with the standard weights, and offering safety training to drivers. Suppliers were required to sign the “Safety and Environmental Protection Agreement”. We develop and use new materials and new technology for reduced consumption and environmental protection, which promoted industrial upgrade and ensured high-quality development.

本集團嚴格遵從公開、公平、公正原則，通過供應商關係管理系統實施採購，實現從准入、合作、評價、退出的全生命週期供應商管理，不斷優化供應商結構。本集團以市場和需求為導向，深入開展市場調研、分析採購需求，指導採購決策；發揮技術與業務的融合作用，推進性價比採購，降低物資消耗成本；加大尋源範圍，挖掘和培育潛在供應商；踐行公開、競爭性採購理念，持續提高招標佔比，通過關聯關係核查杜絕圍標串標行為，努力打造公平公正的競爭環境，促進供應商良性競爭。

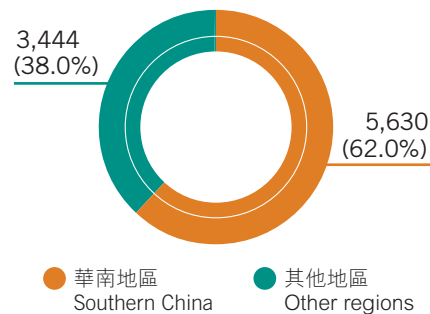
In strict compliance with the principles of openness, fairness and impartiality, the Group implements procurement through the supplier relationship management system and achieves full-lifecycle supplier management on admission, cooperation, evaluation and exit for continuous optimization of supplier structure. Driven by market forces and demand, the Group conducted in-depth market research and analysis on procurement needs for guidance in the decision making on procurement. We unleash the combined effect of technology and business for promoting procurement of good value for money to reduce the costs of materials consumption. Scope of sourcing is expanded for discovering and cultivating potential suppliers. In striving to build a fair and impartial competitive environment and foster healthy competition among suppliers, the Group puts the concept of open and competitive procurement into practice, continuously increases the proportion of tenders, and prevents behaviours of bid rigging and collusive bidding by checking associated relationships.

供應商數目 Number of suppliers



本集團建立透明、動態和可追溯的供應鏈，通過供應商評價體系進行即時管理。優秀供應商在符合目標成本的前提下優先採購；對待整改供應商，及時反饋待整改問題，給予相應協助，限期核查整改結果；對不合格的供應商，及時移除合格供應商庫；若發現供應商不誠信行為等情形，將列入供應商黑名單庫。

二零一九年按地區劃分的供應商數目 Number of suppliers by geographical region in 2019



The Group had established a transparent, dynamic and traceable supply chain, which is managed in real time by the supplier appraisal system. We would procure from the outstanding suppliers on a priority basis provided that their prices are consistent with our target costs. Suppliers which require rectifications would be provided with our timely feedback on their weaknesses, offered relevant assistance and examined on their rectification results upon the deadline. Substandard suppliers would be removed from our eligible supplier database in a timely manner. Suppliers with any dishonest behaviors, once found, will be added to our blacklisted supplier database.

2. 產品責任

本集團以客戶至上為原則，秉承誠實守信的核心價值觀，嚴守商業道德，竭誠為客戶提供優質服務。通過加強客戶溝通，悉心維護客戶和消費者權益，滿足並超越客戶期望，提升客戶滿意度。

本集團嚴格遵守《中華人民共和國產品質量法》，此外，《華潤水泥管理手冊》「質量管制篇」對生產流程各細節管理均有清晰及嚴格要求，包括原料管理、煤炭管理、生料、熟料管理等質量標準，《華潤水泥助磨劑管理辦法（2017版）》、《華潤水泥煤炭採樣制樣管理標準》規範進廠原燃材料的質量驗收和使用，化驗室設備、維修保養、檢定要求、操作指引、環境配置、檔案紀錄亦一概標準化列入管理手冊，為產品質量鑒定賦予保證，助力產品質量達到標準。

本集團旗下生產基地全部通過ISO 9001：2015質量管制體系認證、ISO 14001：2015環境管理體系認證、OHSAS 18001：2007職業健康安全管理体系認證，覆蓋率100%。

2. PRODUCT RESPONSIBILITY

We wholeheartedly provide quality service to our customers based on the customer-oriented principle, whilst upholding the core values of honesty and trustworthiness and strictly abiding by business ethics. By improving communications with customers and taking the utmost care of the rights and interests of our customers and consumers, we have met or even exceeded our customers' expectations for enhancing our customer satisfaction.

The Group is in strict compliance with the Product Quality Law of the People's Republic of China. In addition, pursuant to the "Quality Management Series" in the "Management Manual" of the Company, there are clear and stringent requirements on managing every detail of production process, including the management quality standards of materials, coal, raw materials and clinker. The "Management Measures for Grinding Agents (2017 Version)" and the "Management Standards of Coal Sampling and Preparation" of the Company standardize the quality acceptance inspection and use of incoming raw fuel materials. Laboratory equipment, repairs and maintenance, inspection requirements, operating guidance, environmental configuration and filing records are all standardized and covered in the management manuals, which offer guarantee on the product quality assurance and ensure up-to-standard product quality.

All production plants of the Group had passed the ISO 9001:2015 Quality Management System Certification, ISO 14001:2015 Environmental Management System Certification and OHSAS 18001:2007 Occupational Health & Safety Management System Certification. Coverage rate was 100%.

二零一八年十一月，中國國家市場監督管理總局、國家標準化管理委員會發佈GB175-2007《矽酸鹽通用水泥》3號修改單，從二零一九年十月一日起取消32.5強度等級（PC32.5R）複合矽酸鹽水泥，保留42.5、42.5R、52.5、52.5R四個強度等級。本集團貫徹執行國家政策，積極推動產品創新轉型升級，二零一九年內，積極開展關於PC32.5R水泥取消的主題研討會和市場調研，充分了解客戶訴求及制定應對方案，九月底全部完成PC32.5R水泥取消及PC42.5水泥、砌築水泥M32.5等替代產品順利上市。其中，新產品砌築水泥M32.5與PC32.5R水泥相比較具有質量穩定、色澤穩定、後期强度高、施工性能良好、不易開裂的特點，更加適合廣大用戶的需求。

質量管制

年內，本集團建立覆蓋原材料、過程控制、產品出廠、售後的全生產流程質量控制體系，嚴格按原材料輔助材料標準、工藝標準、半成品標準、產成品標準、包裝標準、檢驗標準等標準組織生產，環環控制投入各工序物料的質量，24小時對熟料、水泥的生產過程進行監督檢測，實行全面質量管理。本集團依托完整有效的質量管制體系對產品質量進行管理和評價，將生產過程及產品的關鍵質量指標納入大區、基地業績考核範疇，以績效管理不斷推動各單位的質量建設，為消費者提供優質產品。本集團還通過開展多項精益改善專案，持續提升質量、工藝等方面的管理水平。

The State Administration for Market Regulation of China and the Standardization Administration issued Amendment No.3 to the GB175-2007 “General Portland Cement” in November 2018 for the full abolition of PC32.5R grade cement with effect from 1 October 2019, whilst the four strength grades of 42.5, 42.5R, 52.5 and 52.5R were maintained. To thoroughly implement national policies, the Group actively promotes innovation, transformation and upgrade of products. During 2019, seminars and market research on abolition of PC32.5R grade cement were proactively initiated to fully understand customers’ demands and formulate response measures. All PC32.5R grade cement had been abolished and replacement products including PC42.5 grade cement and masonry cement M32.5 had been successfully launched by late September, among which, the new masonry cement M32.5 product had the features of quality stability, colour stability, high later-strength, good construction performance and high fracture resistance, which is more suitable for the demand of a majority of users as compared with PC32.5R grade cement.

Quality Management

During the year, the Group established a system for quality control throughout the whole production process covering raw materials, process control, product delivery and after-sales service, which organized production in strict compliance with standards including those for auxiliary materials of raw materials, workmanship, semi-finished products, finished products, packaging and inspection. Quality of input materials was controlled in every connected step of production. The production process of clinker and cement was supervised and tested on a 24-hour basis for implementing comprehensive quality management. The Group relies on a comprehensive and effective quality management system to manage and evaluate the quality of our products. Key quality indicators of production process and products had been incorporated into the scope of performance appraisal of the operating regions and production plants as a continuous drive for better quality across all departments through performance management, so as to provide consumers with products of excellent quality. The Group also continuously enhances its management standards in terms of quality and workmanship technology through the implementation of various lean improvement projects.



本集團堅持與國家水泥質量監督檢驗中心合作，並修訂完善了《華潤水泥檢驗方法標準》，推動質量檢測水平不斷提高，在年內組織參加中國技能大賽—水泥化學分析工技能大賽中，共15人次獲獎，其中獲得全國技術能手1人，獲優秀裁判員稱號1人（水泥企業僅1人獲此殊榮）。

本集團持續開展質量提升行動，二零一九年，持續推進質量改進進程，做實做細質量改進工作，華潤水泥（平南）有限公司研發港珠澳大橋特製水泥質量控制項目榮獲2019年第二屆中央企業QC小組成果發表賽三等獎和中國質量協會第四屆全國質量創新大賽「QIC-III級技術成果」證書。

本集團的質量檢定過程如下：

質量計劃

- 根據市場需求生產水泥產品，合理安排混合材資源。
- 每批進廠原材料檢測。
- 對生產基地原材料資源質量情況進行普查，建立完善的資源檔案。

The Group maintained persistent cooperation with the National Quality Supervision and Testing Center for Cement, and amended and improved the “Standards for Inspection Methods” of the Company to drive for continuous improvement on standards of quality supervision and testing. During the year, we organized participation in the China Skills Competition – Cement Chemical Analyst Skills Competition. A total of 15 participants received awards, among which, 1 participant was awarded the National Technical Master Hand and 1 participant was awarded the designation of Excellent Arbitrator (only 1 participant among all cement enterprises won this award).

The Group continues to take action for quality upgrade. In 2019, solid and fine quality improvement was implemented in progress. The R&D project of China Resources Cement (Pingnan) Limited on quality control of specific cement for the Hong Kong-Zhuhai-Macao Bridge won the Third Class Award in the 2019 Second Achievements Presentation Competition organized by the QC Circle of State-owned Enterprises and the certificate of “Technical Achievement of level QIC-III” in the Fourth National Quality Innovation Competition organized by the China Association for Quality.

The Group's process of quality check is as follows:

Quality Planning

- To produce cement products according to market demand, and reasonably arrange resources of mineral admixture.
- To test each batch of incoming raw materials.
- To carry out general surveys on the quality of raw material resources at the production plants, and build a comprehensive record of resources.

質量控制

- 質管部24小時對熟料、水泥的生產過程進行監督檢測。
- 生產過程層層把關，實行質量考核。

質量保證

- 與國家水泥質量監督檢驗中心合作，對比驗證。
- 每年組織兩次從原料到產品全覆蓋的質量專項抽查，重點排查和治理氯離子、六價鉻、放射性等毒害物質。

質量改進

- 市場調研，為生產提供前端服務。
- 根據客戶使用反饋，不斷改善產品。
- 技術研發中心開展創新研究。

截至二零一七年、二零一八年及二零一九年十二月三十一日止年度，本集團並無已售或已運送產品因安全與健康理由而須回收。

此外，本集團設有質量事故管理標準，對事故作出判定，提供不合格產品處理方案、賠償標準、召回機制及處理流程等。當發現並經確認不合格產品出廠或產品在使用過程中出現嚴重質量問題，須立即通知相關客戶停用或隔離該批次產品，組織對該批次未使用產品進行召回，同時對客戶損失進行確認和賠償；並組織對質量事故進行調查分析，制定整改措施及責任認定，並對整改效果進行確認。

Quality Control

- To supervise and test the production process of clinker and cement on a 24-hour basis by quality management department.
- To monitor each step throughout the production process, and implement quality assessments.

Quality Assurance

- To conduct comparative tests in cooperation with the National Quality Supervision and Testing Center for Cement.
- To conduct special sample checks on quality with full coverage from raw materials to products twice every year, and focus on investigation, control and management of toxic substances including chloride ions, hexavalent chromium and radioactive substances.

Quality Improvement

- To conduct market research for providing front-end services for production.
- To continuously improve the products based on customers' feedback after use.
- To roll out innovative research at the Technology Research and Development Centre.

No products sold or shipped were subject to recalls for safety and health reasons for the years ended 31 December 2017, 2018 and 2019.

Besides, the Group had set up standards for managing quality incidents, which identify and diagnose the incidents, provide solutions to handle substandard products and offer compensation standards, recall mechanism and process flow. Once discovered and confirmed that substandard products have left our factories or there are serious quality issues in the process of using the products, we would immediately inform the relevant customers to stop using or isolate that batch of products, organize recall on that batch of products if unused, confirm and compensate damages to customers. We will also conduct investigation and analysis on the quality incidents, formulate rectification measures and account for responsibilities, and verify the rectification results.



客戶服務

本集團致力提升客戶服務滿意度，每月統計匯總客戶回訪、客戶投訴處理明細、公司產品及競品抽樣等資訊，分析客戶投訴原因、涉及產品、客戶的訴求等方面，持續推動產品及服務改善。同時，本集團收到客戶投訴後均在24小時內響應，並由大區客服、水泥生產基地質管部、銷售人員等專人負責處理，投訴處理率達100%。

二零一九年，本公司市場部組織各大區開展關鍵用戶培訓活動，推動客戶服務前置化，進一步規範民用客戶水泥使用規範，減少客戶投訴。廣東大區將客戶培訓常態化，各銷售區域每月至少開展1次，大區客服人員每月每人至少3次，逐漸形成了公司服務特色。廣西大區以基地為單位組織客戶培訓約23次，培訓內容包括產品知識、施工方法、產品性能、注意事項等方面，持續改善產品性能。福建大區在漳州、漳平、梅州區域組織開展了關鍵用戶培訓及品牌推廣活動，邀請基地儲運、質管等人員現場與客戶及下游關鍵用戶交流。海南大區金江水泥生產基地組織客戶開展了水泥淨漿泡漿實操培訓，加強客戶交流，指導客戶規範施工。雲南、貴州、山西大區均按要求組織了關鍵用戶培訓。

經採取上述舉措後，二零一九年，本集團接獲關於產品及服務的投訴數目顯著減少。

Customer Services

The Group is dedicated to enhancing satisfaction on customer services. We collect and compile information from customer visits, details of customers' complaint handling, sampling of the Company's and competitors' products on a monthly basis for continuous improvement on products and services through analysis on reason for customers' complaints, demands regarding products and customers. Meanwhile, the Group designated staff from the customer service department at our operating regions, the quality management department of our cement production plants and sales personnel to handle our customers' complaints within 24 hours, and had achieved a handling rate of 100%.

In 2019, the Company's marketing department organized key user training activities in each operating region for promoting pre-emptive customer services and further standardizing the user guide of cement for domestic customers to minimize customers' complaints. Customer training in the Guangdong Region had become a regular activity, for at least once a month in each sales region and at least 3 times per month for each customer service personnel in the operating region, and had gradually become a characteristic of the company's services. For continuous improvement on product performance, approximately 23 sessions of customer training were organized in the unit of production plant in the Guangxi Region, which covered aspects of product knowledge, instructions of use during construction, product functions and precautions. Key user training and brand promotion activities were organized in Zhangzhou, Zhangping and Meizhou districts of the Fujian Region, during which storage, transportation and quality control personnel of production plants were invited to have on-site sharing with customers and downstream key users. The cement production plants at Jinjiang of the Hainan Region organized customers to attend practical training on cement paste and slurry to strengthen communications with customers and provide guidance to customers on standard instructions of use during construction. Key user training sessions were organized in the Yunnan, Guizhou and Shanxi Regions according to requirements.

Upon taking the above measures, the number of product and service related complaints received by the Group had been significantly reduced in 2019.

知識產權

本集團高度重視知識產權保護，積極開展知識產權保護工作，完善《華潤水泥控股有限公司知識產權管理制度》、《華潤水泥控股有限公司商標管理制度》，並執行《華潤水泥專利管理辦法》及《華潤水泥控股有限公司品牌建設操作指引》，持續依法推進商標註冊、確權與著作權登記，大力打假維權。

本集團建立產品質量可追溯監管體系，將地磅、包裝系統整合進ERP系統，確保每一包出廠袋裝水泥均有身份標識列印代碼，可為後續企業產品質量監管和打擊假冒偽劣水泥提供技術保障；持續收集有關「潤豐」商標在水泥行業、銷售區域內的使用情況，為後續商標維權工作提供支持。二零一九年九月，本公司報案並查處深圳市寶安區假冒「潤豐水泥」編織袋共計4,600條。

Intellectual Property Rights

The Group pays keen attention to the protection of intellectual property rights by proactively initiating protection on intellectual property. The “Policy on Management of Intellectual Property Rights of China Resources Cement Holdings Limited” and “Policy on Management of Trademarks of China Resources Cement Holdings Limited” had been improved, “Methods of Managing Patents” and “Brand Building Operating Guidelines” of the Company are implemented for the continuous promotion of trademark registration, right confirmation and copyright registration in accordance with law and for the vigorous defense of our rights and crackdown on counterfeit goods.

The Group established a traceable supervision system for product quality, integrated the weighbridge and packaging systems into the ERP system and ensured that each issued bag of cement was printed with a unique identification code, which provided technical support for follow-up on quality supervision of the Company’s products and combatting counterfeit. We continuously collected information on the use of “Runfeng” trademarks in the cement industry and sales regions, and provided support for follow-up on protection of trademark rights. In September 2019, the Company reported and investigated a total of 4,600 counterfeit “Runfeng Cement” woven bags in Baoan District of Shenzhen Municipality.



客戶權益

本集團將客戶信息納入公司核心商業秘密範圍，並依據《華潤水泥控股有限公司保密工作管理規定》及《華潤水泥控股有限公司商業秘密管理辦法》等相關管理要求對客戶信息進行嚴密保護及獨立建檔，由專人負責信息的收集、歸檔、更新，並設定相應的信息查詢權限管理。同時，信息系統中客戶交易數據的查詢、導出及應用均有嚴密的系統權限分配管理，確保客戶信息安全。

本集團執行《華潤水泥控股有限公司信息安全管理制度》、《華潤水泥信息安全技術規範》等信息安全工作管理和技術細則，持續增加網信安全投資，安全管理和防護加固並重。年內，本集團加強系統數據維護和系統權限管理，開展信息安全風險評估，及時發現信息系統薄弱環節並進行加固，以提升信息系統安全性；對核心應用數據建立異地災難備份同步機制，對業務及客戶數據進行保護。二零一九年無發生網信安全事件或侵犯客戶隱私權利之案例。

Customers' Rights

The Group treats customer data as core trade secrets. Customer data is under strict protection pursuant to the relevant management requirements including "Regulations on Managing Confidentiality Work of China Resources Cement Holdings Limited" and "Management Measures on Trade Secrets of China Resources Cement Holdings Limited". Independent files are created for all customer data with designated staff in charge of data collection, filing and update. We also set up management of access rights to make inquiry on the relevant data. Meanwhile, in order to ensure security of customer data, we strictly manage the granting of access rights to our systems to make inquiries, export and application of information of our customers' transactions in our information systems.

The Group implemented cyber-security management and technical details including "Measures on Cyber-Security Management of China Resources Cement Holdings Limited" and "Regulations on Cyber-Security Technology" of the Company to continuously increase investments of cyber-security with balanced emphasis on security management and reinforced protection. During the year, the Group strengthened protection of data in systems and management of access rights to systems, initiated risk assessment on cyber-security, identified weaknesses in the information systems and reinforced protection in a timely manner for enhancing security of information systems. A mechanism for off-site disaster back-up synchronization of core application data was established to protect the data of our business and customers. In 2019, there was no incident of breach of cyber-security or customers' privacy rights.

3. 反貪污

根據《中華人民共和國刑法》、《中華人民共和國反不正當競爭法》、《中華人民共和國反洗錢法》、本集團的員工管理辦法及規章制度，任何人不得利用職權索賄、受賄，以不正當手段謀取私利，不得進行勒索、欺詐及洗黑錢活動。一經發現，將其除名永不錄用，案情重大者，將送公安局或司法機關處理。

本集團一貫重視並持續強化員工誠信建設和廉潔教育工作。二零一九年，深入開展「廉潔教育送門」活動300餘場次，受眾共計15,742人次；開展日常談心談話1,044人次；組織全體高中級管理人員簽訂《廉潔自律承諾書》並建立400餘份廉潔檔案；出具廉潔意見回覆359人次。二零一九年五月，本公司召開警示教育大會，895名高中級管理人員及敏感崗位人員參加，會後及時組織學習，警示教育已覆蓋到全體員工。

本集團致力於維護良好的企業管治，強調問責精神及高度透明度，制定了《舉報政策》並通過本公司網站對外發佈，鼓勵員工及與本集團有往來者（如客戶、承辦商、供應商、債權人、債務人等）對本集團內的不當行為作出舉報。同時，持續暢通來電、來訪、網路等舉報渠道，對違紀違規問題嚴肅查處。

截至二零一七年、二零一八年及二零一九年十二月三十一日止年度，本集團或其僱員並無涉及任何貪污訴訟案件。

3. ANTI-CORRUPTION

According to the Criminal Law of the People's Republic of China, the Anti-Unfair Competition Law of the People's Republic of China, the Anti-Money Laundering Law of the People's Republic of China, and the Group's staff management measures and policies, no person is allowed to take advantage of their position to demand and receive bribery or obtain benefits by improper means. It is also forbidden to blackmail, conduct fraud or launder money. Once identified, the employee will be dismissed and blacklisted. Significant cases will be reported to the police or judicial authority.

The Group always places strong emphasis on and continuously strengthens the work for integrity cultivation and probity education. In 2019, over 300 sessions of "integrity education delivered to the door" were intensively conducted, reaching 15,742 participants in total. Daily confiding conversations were initiated with 1,044 staff. All the senior and middle-level managerial staff were organized to sign the "Commitment Letter on Integrity and Self-Discipline", and over 400 probity files had been set up. 359 responses to opinions on integrity cultivation were issued. In May 2019, the Company held an alert education meeting, with 895 senior and middle-level managerial staff and staff involved in sensitive roles in participation. After the meeting, learning was organized in a timely manner with full coverage of alert education to all staff.

The Group is committed to maintaining good corporate governance with an emphasis on the spirit of accountability and a high level of transparency. We formulated the "Whistle-Blowing Policy", which has been published on the Company's website to encourage our employees and parties who deal with us (for example, customers, contractors, suppliers, creditors and debtors) to report any misconducts within the Group. At the same time, we maintain smooth whistle-blowing channels including telephone hotlines, in-person visits and online reporting, visits and the internet. All investigations on non-compliance issues are handled seriously.

None of the Group or its employees were involved in any corruption litigation cases for the years ended 31 December 2017, 2018 and 2019.



III · 社區投資

為進一步推動慈善公益事業的開展，本集團加強慈善公益活動及中央企業扶貧領域監督執紀的問責管理，更好地體現本集團慈善公益事業的社會效益，提升企業品牌形象。根據《中華人民共和國慈善法》、國務院國有資產監督管理委員會關於中央企業履行社會責任、實施對外捐贈相關規定等法律法規和政策文件，二零一九年，本集團修訂完善了《華潤水泥控股有限公司慈善公益活動實施細則》，進一步規範了慈善公益活動的審批及操作管理。

招聘錄用過程中，在遵守國家法律法規的基礎上，普通崗位優先招錄本集團生產基地所在地附近的本地居民，切實履行央企社會責任。

此外，本集團積極參與生產基地所在地附近的社區公益服務工作，通過捐贈水泥產品，幫助周邊村鎮修橋築路，改造老舊房屋，開展衛生整治活動等方式完善當地基礎設施，並為貧困地區、困難戶捐贈現金或實物解決其實際困難。本集團重視對特殊群體的關愛，定期組織各大區及生產基地（含香港部室及中港混凝土有限公司）慰問走訪周邊村鎮的敬老院、康復中心、孤寡老人、有困難群眾、嚴重智障及殘疾人士，並非常關注貧困山區兒童的教育與發展，通過捐贈衣物、文具、書本、教學設備、獎助學金、開展助學公益活動，協助創造良好學習環境及氛圍。二零一九年對外捐贈數據詳載於董事局報告內慈善捐助一節。

III · COMMUNITY INVESTMENT

To further promote the launch of charitable community business and improve the corporate brand image, the Group strengthened the accountability management of charitable community activities as well as the supervision and discipline of state-owned enterprise in the aspects of poverty alleviation to more effectively reflect the social benefits of the Group's charitable community business. In 2019, the Group amended and improved the "Enforcement Regulations for Charitable Community Activities of China Resources Cement Holdings Limited" according to the Charity Law of the People's Republic of China, relevant laws, regulations and policy documents issued by the State-owned Assets Supervision and the Administration Commission of the State Council regarding fulfillment of social responsibilities of state-owned enterprises and implementation of external donations, which had further regulated the management on review and implementation of our charitable community activities.

During the recruitment and hiring process, local residents in the vicinity of the Group's production plants will be given preference in recruitment for ordinary posts, subject to compliance with national laws and regulations, in order to fulfil the corporate social responsibility of a state-owned enterprise.

Besides, the Group proactively participates in community service work in the vicinity of the locations of our production plants. Through donations of cement products, we help neighbouring towns and villages in the construction of roads, repairs of bridges and improvement of local infrastructure through renovation and upgrade of old houses and launch of hygiene remediation activities. We also make donations in cash or in kind to underprivileged regions and families in need to solve their practical difficulties. The Group pays keen attention to caring for special groups and regularly organizes each regional headquarters and production plants (including departments in Hong Kong and Redland Concrete Limited) to visit and express solicitude to elderly care institutions, rehabilitation centres, the elderly without family, the general public in need, people with serious intellectual disabilities or the disabled in the neighbouring villages. We are very concerned regarding education and development for children in the underprivileged mountainous regions and help to create a better learning environment and ambience through donations of clothes, stationery, books, teaching equipment, scholarships, study grants and rolling out charitable subsidized schooling. Data of external donations in 2019 is set out in the charitable donations section of the Report of the Directors.



華潤水泥（龍岩曹溪）有限公司開展送溫暖慰問老人活動
China Resources Cement (Longyan Caoxi) Limited organized a visit to bring warmth and solicitude to the elderly



華潤水泥（南寧）有限公司開展第三屆「潤苗」愛心基金捐資助學活動
China Resources Cement (Nanning) Limited launched the third fund-raising activity of subsidized schooling for the "Runmiao" caring fund



附錄一：關鍵績效指標

APPENDIX 1: KEY PERFORMANCE INDICATORS (“KPI”)

		二零一九年 2019	二零一八年 2018	二零一七年 2017
氮氧化物排放量(噸)(註1)	Emission of nitrogen oxides (tons) (note 1)	37,584	39,822	41,513
氮氧化物排放密度 (公斤/噸熟料產量)(註1)	Emission intensity of nitrogen oxides (kg per ton of clinker produced) (note 1)	0.5439	0.5715	0.6230
氮氧化物平均排放濃度 (毫克/立方米)(註1)	Average emission concentration of nitrogen oxides (mg/m ³) (note 1)	240	254	259
二氧化硫排放量(噸)(註1)	Emission of sulphur dioxide (tons) (note 1)	1,824	2,352	2,726
二氧化硫排放密度 (公斤/噸熟料產量)(註1)	Emission intensity of sulphur dioxide (kg per ton of clinker produced) (note 1)	0.0264	0.0338	0.0409
二氧化硫平均排放濃度 (毫克/立方米)(註1)	Average emission concentration of sulphur dioxide (mg/m ³) (note 1)	13	18	16
顆粒物排放量(噸)(註1)	Emission of particulate matters (tons) (note 1)	2,083	2,361	2,472
顆粒物排放密度 (公斤/噸熟料產量)(註1)	Emission intensity of particulate matters (kg per ton of clinker produced) (note 1)	0.0301	0.0339	0.0371
顆粒物平均排放濃度 (毫克/立方米)(註1)	Average emission concentration of particulate matters (mg/m ³) (note 1)	9	11	11
溫室氣體排放量 (千噸二氧化碳當量)(註1)	Emission of greenhouse gases (‘000 tons of carbon dioxide equivalent) (note 1)	58,710	59,710	57,130
溫室氣體排放密度 (噸二氧化碳當量/ 噸熟料產量)(註1)	Emission intensity of greenhouse gases (tons of carbon dioxide equivalent per ton of clinker produced) (note 1)	0.8497	0.8569	0.8574
耗電量(百萬千瓦時)(註2)	Electricity consumption (million kwh) (note 2)	6,426	6,500	6,220
水泥及熟料耗電量 (百萬千瓦時)(註2)	Electricity consumption of cement and clinker (million kwh) (note 2)	6,398	6,473	6,194
混凝土耗電量 (百萬千瓦時)(註2)	Electricity consumption of concrete (million kwh) (note 2)	28	27	26
噸水泥電耗(千瓦時)	Electricity consumption per ton of cement (kwh)	72.9	73.0	73.1
每立方米混凝土電耗(千瓦時)	Electricity consumption per m ³ of concrete (kwh)	2.1	2.0	1.8
耗煤量(千噸)	Coal consumption (‘000 tons)	10,033	10,254	9,834
噸熟料單位煤耗(公斤)	Unit coal consumption per ton of clinker (kg)	145.2	147.2	147.3
噸熟料標準煤耗(公斤)	Standard coal consumption per ton of clinker (kg)	105.5	106.5	106.9
綜合能源消費量(千噸標準煤)	Consolidated energy consumption (‘000 tons of standard coal)	7,915	8,035	7,732

		二零一九年 2019	二零一八年 2018	二零一七年 2017
萬元產值可比價綜合能耗 (噸標煤/萬元人民幣)	Consolidated energy consumption per RMB10,000 output (ton standard coal per RMB10,000)	2.65	2.73	3.03
萬元增加值可比價綜合能耗 (噸標煤/萬元人民幣)	Consolidated energy consumption per RMB10,000 value addition (ton standard coal per RMB10,000)	5.85	6.14	8.61
包裝材料消耗量(噸)(註3)	Consumption of packaging materials (tons) (note 3)	63,765	70,330	74,533
包裝材料消耗密度 (公斤/噸袋裝水泥產量) (註3)	Consumption intensity of packaging materials (kg per ton of cement packed in bag) (note 3)	2.17	2.19	2.18
工業廢渣綜合利用量(千噸) (註4)	Industrial waste utilized ('000 tons) (note 4)	21,080	21,840	21,470
城鄉生活垃圾協同處置量(噸)	Municipal solid waste co-processed (tons)	162,700	166,000	82,400
市政污泥協同處置量(噸)(註5)	Urban sludge co-processed (tons) (note 5)	56,500	49,300	49,700
工業危險廢物協同處置量(噸)	Hazardous industrial waste co-processed (tons)	7,200	8,700	6,700
供應商總數(個)	Total number of suppliers	9,074	8,007	6,631
員工工傷事故發生數(人)	Number of staff injured at work	13	9	10
一般及以上事故發生數(宗)	Number of incidents of general or above level	2	3	1
事故死亡數(人)	Fatalities	2	1	1
事故員工千人死亡率(‰)	Fatality rate (‰)	0.099	0.049	0.047
安全培訓人次	Number of participants in safety training	245,398	218,716	182,207
安全培訓覆蓋率(%)	Safety training coverage rate (%)	100	100	100
安全應急演練次數	Number of safety emergency drills	1,135	991	625
專職安全管理人員數量(人)	Number of specialized safety management personnel	192	212	205
安全管理人員持證人數(人)	Number of licensed safety management personnel	1,277	1,064	1,068
安全生產投入(百萬元人民幣)	Investment in production safety (RMB million)	156	146	130
節能減排技術改造投入 (百萬元人民幣)	Investment in technological upgrade for energy saving and emission reduction (RMB million)	120	94	432
環保總投入(百萬元人民幣)	Total investment in environmental protection (RMB million)	443	393	675

註:

notes:

- 統計範圍為本集團的水泥生產基地的主要排放口。
- 統計範圍為本集團用於生產的外購電力。
- 包裝材料指用於袋裝水泥的包裝。自二零一八年起，統計範圍從二零一七年的包裝材料採購量改為消耗量。
- 工業廢渣統計範圍包括煤矸石、廢石、脫硫石膏、粉煤灰、高爐礦渣等。
- 折算為80%含水率濕污泥。
- Scope of statistics includes the major discharge outlets of the Group's cement production plants.
- Scope of statistics includes the power purchased externally for production.
- Packaging materials refer to the packaging for cement sold in bags. Since 2018, the scope of report had been adjusted from procurement quantity to consumption of packaging materials.
- Scope of statistics of industrial waste includes coal gangue, stone residue, de-sulphur gypsum, fly ash and blast furnace slag.
- 80% moisture content for wet sludge.

附錄二：環境、社會及管治指標
索引

APPENDIX 2: REFERENCE TABLE OF
ENVIRONMENTAL, SOCIAL AND GOVERNANCE
INDICATORS

層面 Aspect	內容 Details	章節 Chapter	頁碼 Page
A 環境			
A Environmental			
A1. 排放物 A1. Emissions	<p>一般披露 General Disclosure</p> <p>有關廢氣及溫室氣體排放、向水及土地的排污、有害及無害廢棄物的產生等的：</p> <p>(a) 政策；及</p> <p>(b) 遵守對發行人有重大影響的相關法律及規例的資料。</p> <p>Information on:</p> <p>(a) the policies; and</p> <p>(b) compliance with relevant laws and regulations that have a significant impact on the issuer</p> <p>relating to air and greenhouse gas emissions, discharges into water and land, and generation of hazardous and non-hazardous waste.</p>	A1	50-56
	<p>關鍵績效指標A1.1 KPI A1.1</p> <p>排放物種類及相關排放數據。 The types of emissions and respective emissions data.</p>	附錄一 Appendix 1	88
	<p>關鍵績效指標A1.2 KPI A1.2</p> <p>溫室氣體總排放量及密度。 Greenhouse gas emissions in total and intensity.</p>	附錄一 Appendix 1	88
	<p>關鍵績效指標A1.3 KPI A1.3</p> <p>所產生有害廢棄物總量及密度。 Total hazardous waste produced and intensity.</p>	A1	55
	<p>關鍵績效指標A1.4 KPI A1.4</p> <p>所產生無害廢棄物總量及密度。 Total non-hazardous waste produced and intensity.</p>	A1	55
	<p>關鍵績效指標A1.5 KPI A1.5</p> <p>描述減低排放量的措施及所得成果。 Description of measures to mitigate emissions and results achieved.</p>	A1	51-56
	<p>關鍵績效指標A1.6 KPI A1.6</p> <p>描述處理有害及無害廢棄物的方法、減低產生量的措施及所得成果。 Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved.</p>	A1	55

層面 Aspect	內容 Details	章節 Chapter	頁碼 Page
A 環境			
A Environmental			
A2.資源使用 A2. Use of Resources	一般披露 General Disclosure 有效使用資源（包括能源、水及其他原材料）的政策。 Policies on the efficient use of resources, including energy, water and other raw materials.	A2	57-58
	關鍵績效指標A2.1 KPI A2.1	按類型劃分的直接及／或間接能源總耗量及密度。 Direct and/or indirect energy consumption by type in total and intensity.	附錄一 Appendix 1
	關鍵績效指標A2.2 KPI A2.2	總耗水量及密度。 Water consumption in total and intensity.	A2
	關鍵績效指標A2.3 KPI A2.3	描述能源使用效益計劃及所得成果。 Description of energy use efficiency initiatives and results achieved.	A2
	關鍵績效指標A2.4 KPI A2.4	描述求取適用水源上可有任何問題，以及提升用水效益計劃及所得成果。 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	A2
	關鍵績效指標A2.5 KPI A2.5	製成品所用包裝材料的總量及每生產單位估量。 Total packaging material used for finished products and with reference to per unit produced.	附錄一 Appendix 1
A3.環境及天然資源 A3. The Environment and Natural Resources	一般披露 General Disclosure 減低發行人對環境及天然資源造成重大影響的政策。 Policies on minimising the issuer's significant impact on the environment and natural resources.	A3	58-62
	關鍵績效指標A3.1 KPI A3.1	描述業務活動對環境及天然資源的重大影響及已採取管理有關影響的行動。 Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	A3



層面 Aspect	內容 Details	章節 Chapter	頁碼 Page
B 社會			
B Social			
<i>I. 僱傭及勞工常規</i>			
<i>I. Employment and Labour Practices</i>			
B1. 僱傭 B1. Employment	<p>一般披露 General Disclosure</p> <p>有關薪酬及解僱、招聘及晉升、工作時數、假期、平等機會、多元化、反歧視以及其他待遇及福利的：</p> <p>(a) 政策；及</p> <p>(b) 遵守對發行人有重大影響的相關法律及規例的資料。</p> <p>Information on:</p> <p>(a) the policies; and</p> <p>(b) compliance with relevant laws and regulations that have a significant impact on the issuer</p> <p>relating to compensation and dismissal, recruitment and promotion, working hours, rest periods, equal opportunity, diversity, anti-discrimination, and other benefits and welfare.</p>	B(I)1	63-69
	<p>關鍵績效指標B1.1 KPI B1.1</p> <p>按性別、僱傭類型、年齡組別及地區劃分的僱員總數。</p> <p>Total workforce by gender, employment type, age group and geographical region.</p>	B(I)1	63-64
	<p>關鍵績效指標B1.2 KPI B1.2</p> <p>按性別、年齡組別及地區劃分的僱員流失比率。</p> <p>Employee turnover rate by gender, age group and geographical region.</p>	–	–
B2. 健康及安全 B2. Health and Safety	<p>一般披露 General Disclosure</p> <p>有關提供安全工作環境及保障僱員避免職業性危害的：</p> <p>(a) 政策；及</p> <p>(b) 遵守對發行人有重大影響的相關法律及規例的資料。</p> <p>Information on:</p> <p>(a) the policies; and</p> <p>(b) compliance with relevant laws and regulations that have a significant impact on the issuer</p> <p>relating to providing a safe working environment and protecting employees from occupational hazards.</p>	B(I)2	70-73
	<p>關鍵績效指標B2.1 KPI B2.1</p> <p>因工作關係而死亡的人數及比率。</p> <p>Number of work-related fatalities and rate.</p>	附錄一 Appendix 1	89
	<p>關鍵績效指標B2.2 KPI B2.2</p> <p>因工傷損失工作日數。</p> <p>Lost days due to work injury.</p>	–	–
	<p>關鍵績效指標B2.3 KPI B2.3</p> <p>描述所採納的職業健康與安全措施，以及相關執行及監察方法。</p> <p>Description of occupational health and safety measures adopted, how they are implemented and monitored.</p>	B(I)2	70-73

層面 Aspect	內容 Details	章節 Chapter	頁碼 Page
B 社會			
B Social			
<i>I. 僱傭及勞工常規</i>			
<i>I. Employment and Labour Practices</i>			
B3. 發展及培訓	一般披露	B(I)3	74-75
B3. Development and Training	General Disclosure 有關提升僱員履行工作職責的知識及技能的政策。描述培訓活動。 Policies on improving employees' knowledge and skills for discharging duties at work. Description of training activities.		
	關鍵績效指標B3.1 KPI B3.1	按性別及僱員類別劃分的受訓僱員百分比。 The percentage of employees trained by gender and employee category.	B(I)3 75
	關鍵績效指標B3.2 KPI B3.2	按性別及僱員類別劃分，每名僱員完成受訓的平均時數。 The average training hours completed per employee by gender and employee category.	— —
B4. 勞工準則	一般披露	B(I)1	65, 67
B4. Labour Standards	General Disclosure 有關防止童工或強制勞工的： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料。 Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to preventing child and forced labour.		
	關鍵績效指標B4.1 KPI B4.1	描述檢討招聘慣例的措施以避免童工及強制勞工。 Description of measures to review employment practices to avoid child and forced labour.	B(I)1 65, 67
	關鍵績效指標B4.2 KPI B4.2	描述在發現違規情況時消除有關情況所採取的步驟。 Description of steps taken to eliminate such practices when discovered.	B(I)1 65



層面 Aspect	內容 Details	章節 Chapter	頁碼 Page
B 社會			
B Social			
II · 營運慣例 II. Operating Practices			
B5. 供應鏈管理 B5. Supply Chain Management	一般披露 General Disclosure 管理供應鏈的環境及社會風險政策。 Policies on managing environmental and social risks of the supply chain.	B(II)1	76-77
	關鍵績效指標B5.1 KPI B5.1 按地區劃分的供應商數目。 Number of suppliers by geographical region.	B(II)1	77
	關鍵績效指標B5.2 KPI B5.2 描述有關聘用供應商的慣例，向其執行有關慣例的供應商數目、以及有關慣例的執行及監察方法。 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	B(II)1	76-77
B6. 產品責任 B6. Product Responsibility	一般披露 General Disclosure 有關所提供產品和服務的健康與安全、廣告、標籤及私隱事宜以及補救方法的： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料。 Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to health and safety, advertising, labelling and privacy matters relating to products and services provided and methods of redress.	B(II)2	78-84
	關鍵績效指標B6.1 KPI B6.1 已售或已運送產品總數中因安全與健康理由而須回收的百分比。 Percentage of total products sold or shipped subject to recalls for safety and health reasons.	B(II)2	81
	關鍵績效指標B6.2 KPI B6.2 接獲關於產品及服務的投訴數目以及應對方法。 Number of products and service related complaints received and how they are dealt with.	B(II)2	82
	關鍵績效指標B6.3 KPI B6.3 描述與維護及保障知識產權有關的慣例。 Description of practices relating to observing and protecting intellectual property rights.	B(II)2	83
	關鍵績效指標B6.4 KPI B6.4 描述質量檢定過程及產品回收程序。 Description of quality assurance process and recall procedures.	B(II)2	79-81
	關鍵績效指標B6.5 KPI B6.5 描述消費者資料保障及私隱政策，以及相關執行及監察方法。 Description of consumer data protection and privacy policies, how they are implemented and monitored.	B(II)2	84

層面 Aspect	內容 Details	章節 Chapter	頁碼 Page
B 社會 B Social			
<i>II. 營運慣例</i> <i>II. Operating Practices</i>			
B7.反貪污 B7. Anti-corruption	<p>一般披露 General Disclosure</p> <p>有關防止賄賂、勒索、欺詐及洗黑錢的： (a) 政策；及 (b) 遵守對發行人有重大影響的相關法律及規例的資料。 Information on: (a) the policies; and (b) compliance with relevant laws and regulations that have a significant impact on the issuer relating to bribery, extortion, fraud and money laundering.</p>	B(II)3	85
	<p>關鍵績效指標B7.1 於匯報期內對發行人或其僱員提出並已審結的貪污訴訟案件的數目及訴訟結果。 KPI B7.1 Number of concluded legal cases regarding corrupt practices brought against the issuer or its employees during the reporting period and the outcomes of the cases.</p>	B(II)3	85
	<p>關鍵績效指標B7.2 描述防範措施及舉報程序，以及相關執行及監察方法。 KPI B7.2 Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.</p>	B(II)3	85
<i>III. 社區</i> <i>III. Community</i>			
B8.社區投資 B8. Community Investment	<p>一般披露 General Disclosure</p> <p>有關以社區參與來了解營運所在社區需要和確保其業務活動會考慮社區利益的政策。 Policies on community engagement to understand the needs of the communities where the issuer operates and to ensure its activities take into consideration the communities' interests.</p>	B(III)	86
	<p>關鍵績效指標B8.1 專注貢獻範疇。 KPI B8.1 Focus areas of contribution.</p>	B(III)	86-87
	<p>關鍵績效指標B8.2 在專注範疇所動用資源。 KPI B8.2 Resources contributed to the focus area.</p>	B(III)	86

