



Environmental, Social & Governance Report 2018



Tianjin Capital Environmental Protection Group Company Limited
天津創業環保集團股份有限公司

2018 Environmental, Social & Governance Report

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1. ABOUT US

Overview

Our vision: “returning clean water to the world, delivering fresh air to the earth”

Our mission: “purify the ecological environment, enhance living quality”

Our core values: provide professional and effective environmental services, establish a harmonious environment for staff development, and maximise value for shareholders

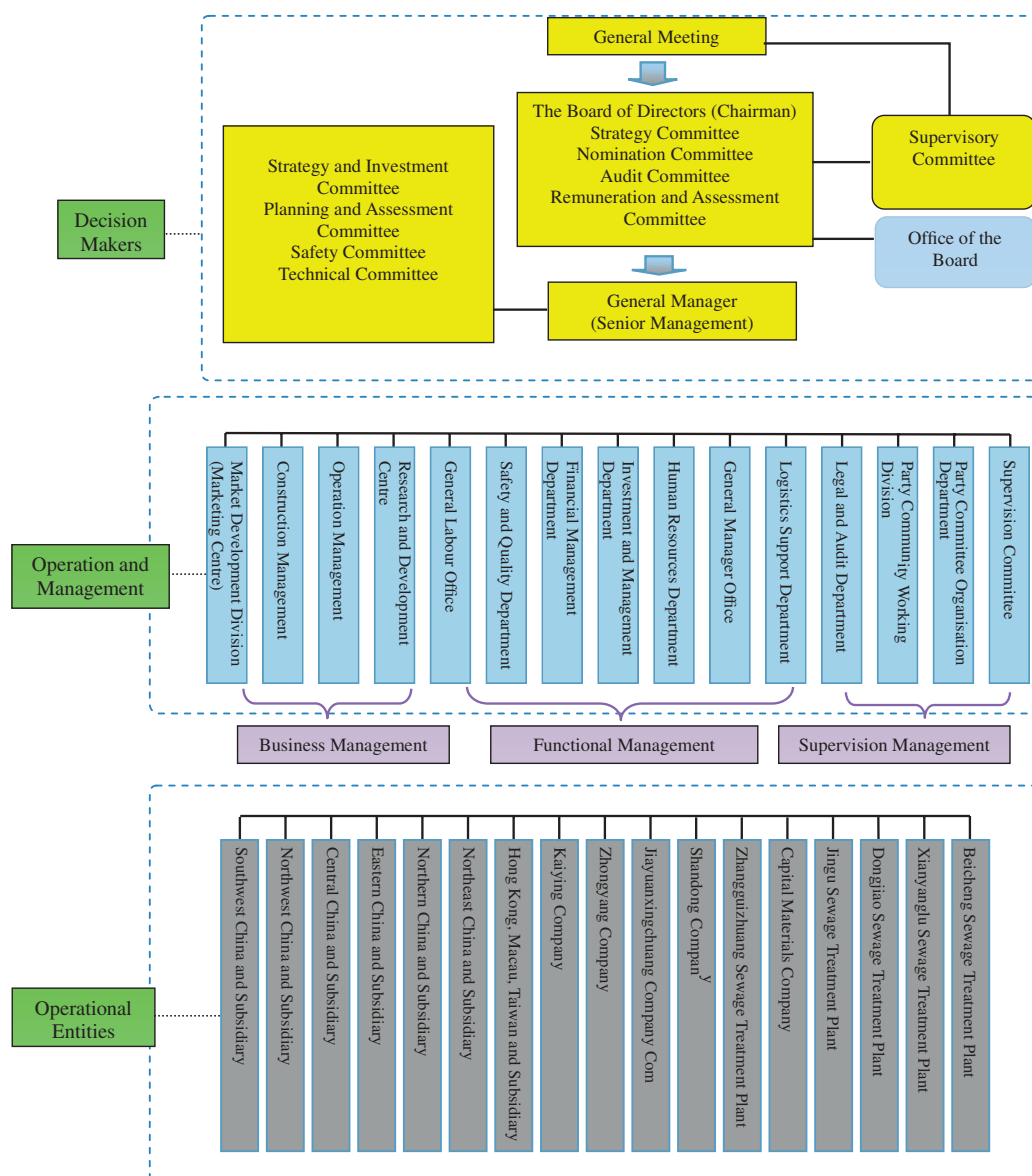
Tianjin Capital Environmental Protection Group Company Limited (the “**Company**”, together with its subsidiaries as the “**Group**”) was established in January 2001, where the Tianjin Municipal Government restructured the then Tianjin Bohai Chemical Industry (Group) Company Limited and renamed it to its current name. The Company is the first water utilities corporation in the People’s Republic of China (the “PRC”) carrying out sewage treatment business in large scale and controlled by the state that is listed in both Shanghai and Hong Kong (A-share code: 600874; H-share code: 1065). It undertakes water utilities investment and operation that integrates investment, operation, management, research and construction to form a comprehensive group with full business chain. With the competitive edge and multiple advantages over water industries in the PRC and overseas, the Company is a pioneer and leader in the domestic environmental industry. Supported by its rich industry experience, professional and talented staff, satisfactory capital market operation and effective communication skills with governments, the Company has become a domestic leading provider of integrated environmental solutions and has established its reputation overseas.

As of 31 December 2018, the Company possessed total assets of RMB15.687 billion with net assets of RMB6.615 billion. It operates 16 functional departments, 44 wholly-owned and controlling subsidiaries, and has 1,739 employees. Operating revenue was RMB2.448 billion with a net profit of RMB528.68 million. The Company’s businesses mainly include investment, construction and operation of sewage treatment plants, water recycling plants, tap water plants, and related technical and management services; investment, construction and operation of providing heating and cooling services with renewable energy; environmental technologies, research and development (R&D) on facilities and equipment, and achievement transformation; treatment of industrial wastewater, sludge and solid waste.

In future, the Company will utilise its core competitiveness in its technology system and R&D capabilities. By providing our clients with sewage treatment and other related environmental solutions, we are devoted to supplying society with sustainable sources of clean water and services in the whole chain led by technology, to establish a new image of domestic leading and internationally renowned service provider of integrated environmental solutions. We are versed in adopting flexible and innovative ways with variety to meet the needs of society, enterprises and clients by building a recycling system for water, creating a win-win situation.

Corporate Governance and Organisational Structure

The Company strictly complies with the PRC Company Law and other relevant laws, regulations and article of association to establish a proper corporate governance structure. Shareholder meetings, board meetings, and the supervisory committee of the Company operate independently and effectively in accordance with the Company's articles of association. The four professional committees established under the Board of Directors are responsible for the Company's financial and internal audit matters, the developmental strategies, planning and assessment for the Company, and the nomination of directors and senior executives, etc. respectively. On the systems regarding personnel management and financial management, the Company aligns with the Labour Law of the PRC and financial and tax regulations. A strict approval process by different grades is adopted in important matters such as personnel appointments and removals, performance appraisals, financial approvals and investment audits, thus establishing an effective internal risk control mechanism. At present, the organisational structure of the Company is as follows:



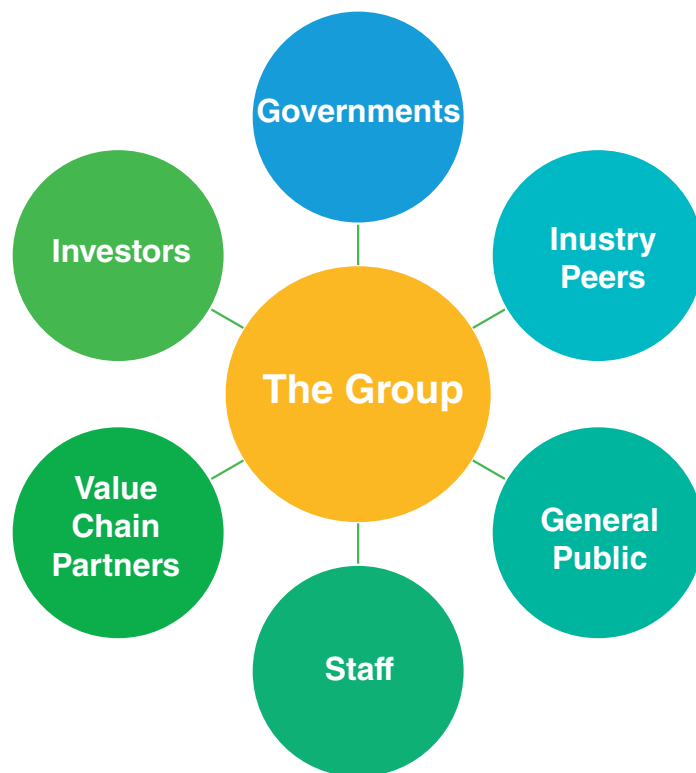
2. ESG REPORT SCOPE AND BOUNDARIES

This Environmental, Social and Governance (ESG) report has been prepared in accordance with the ESG Reporting Guide, issued in 2015 as set out in Appendix 27 of the Main Board Listing Rules of The Stock Exchange of Hong Kong Limited (HKEx), and with reference to the GRI G4 Guidelines. Its purpose is to disclose the Company's policies, performance and key performance indicators (KPIs) in the environmental, social and governance aspects from 1 January 2018 to 31 December 2018. This report covers our core businesses in Mainland China. A detailed HKEx ESG Reporting Guide and GRI G4 Guidelines content index is provided at the end of the report.

3. STAKEHOLDER ENGAGEMENT

As a publicly traded company, we place emphasis on satisfying the needs of the stakeholders and feedback about relevant information, to achieve a win-win situation for different parties during our corporate development progress.

The stakeholders of the Company mainly consist of 6 parties, namely governments, investors, industry peers, general public, value chain partners and staff.



The governments' guidance, support and supervision are the criteria and starting point for all business activities of the Company. At the same time, we have successfully secured some local governments to become our clients and service targets. The Company strictly observes various laws and regulations, accepts the governments' supervision and guidance, and also renders sewage treatment and other integrated environmental services to the governments.

The general public is the ultimate beneficiary of our services, who also oversees our work and shares the fruits thereof. With environmental protection as our principal business, our growth and development is directly linked to social responsibility maximisation. Moreover, as the Company is public-listed, the general public could also share the wealth brought by our business growth through investment in our shares.

Investors are the driving force for our development. In line with the Company's responsible attitude towards shareholders, we disclose information in an accurate, correct, complete, timely and fair manner. Communication is made smooth through channels such as roadshows, investor forums, our investor communication platform and other activities. By the same token, we work hard to strive for bringing more returns for our shareholders.

As for industry peers, we compete in a wholesome and orderly manner, with a rational attitude. We partake in industry forums, alliance meetings and other forms of communication to boost the competitiveness of the industry and promote the growth of the environmental industry across the PRC.

Our value chain partners include manufacturers involved in the provision of products and services in the whole supply chain (both upstream and downstream processes), banks and intermediaries in the capital markets, etc. The Company cultivates a harmonious and collaborative relationship with them sincerely for the benefits of all.

Our employees are the creators of the Company's worth and at the same time, they are the beneficiaries of our development too. We have established a standardised staff congress system and offered comprehensive staff protection, training and career planning, etc. to share with our staff the fruits from our corporate development and reinforce harmonious labour relations.

Upholding the aforementioned principles, we communicate with our stakeholders through a variety of channels to truly understand their needs and demands. Aspects of greatest concern to our stakeholders are listed as follows:

Stakeholders	Means of Engagement and Communication	Concerned Aspects
Governments	Laws and Regulations Local Projects Correspondence	Corporate Governance Organisational Structure Compliance Emissions Energy Environmental Protection Occupational Health and Safety Labour Standards Supply Chain Management Procurement Behaviours Anti-Corruption Product Quality Customer Data Privacy
General Public	Annual Reports and Announcements User Seminars 24-Hour Service Hotline Factory Open Day Water Safety Visits and Investigation Voluntary and Charitable Activities	Corporate Governance Organisational Structure Emissions Environmental Protection Labour Standards Anti-Corruption Product Quality Customer Data Privacy Community Investment Charity and Relief

Stakeholders	Means of Engagement and Communication	Concerned Aspects
Investors	Annual Reports and Announcements	Corporate Governance
	Investors Road Shows	Organisational Structure
	Investors Communication Meetings	Economic Performance
	Investors Communication Platform	Compliance
	Shareholders' Meetings	Anti-Corruption
Industry Peers		Product Quality
		Customer Data Privacy
		Community Investment
		Charity and Relief
		Corporate Governance
		Organisational Structure
		Compliance
		Emissions
		Environmental Protection
		Energy
Value Chain Partners		Supply Chain Management
		Procurement Behaviours
		Anti-Corruption
		Product Quality
		Customer Data Privacy

Stakeholders	Means of Engagement and Communication	Concerned Aspects
Staff	Staff Congress	Corporate Governance
	Meetings	Organisational Structure
	Interviews	Economics Performance
		Environmental Protection
		Employment
		Remuneration and Benefits
		Development and Trainings
		Occupational Health and Safety
		Labour Standards

4. MATERIALITY ASSESSMENT

According to the HKEx ESG and GRI G4 guidance, the Company is obliged to disclose ESG aspects that are of significant impacts to investors and other stakeholders. In our materiality assessment, we have observed the HKEx ESG and GRI G4 best practices, following the steps of identification, prioritisation and validation to define our ESG material aspects.

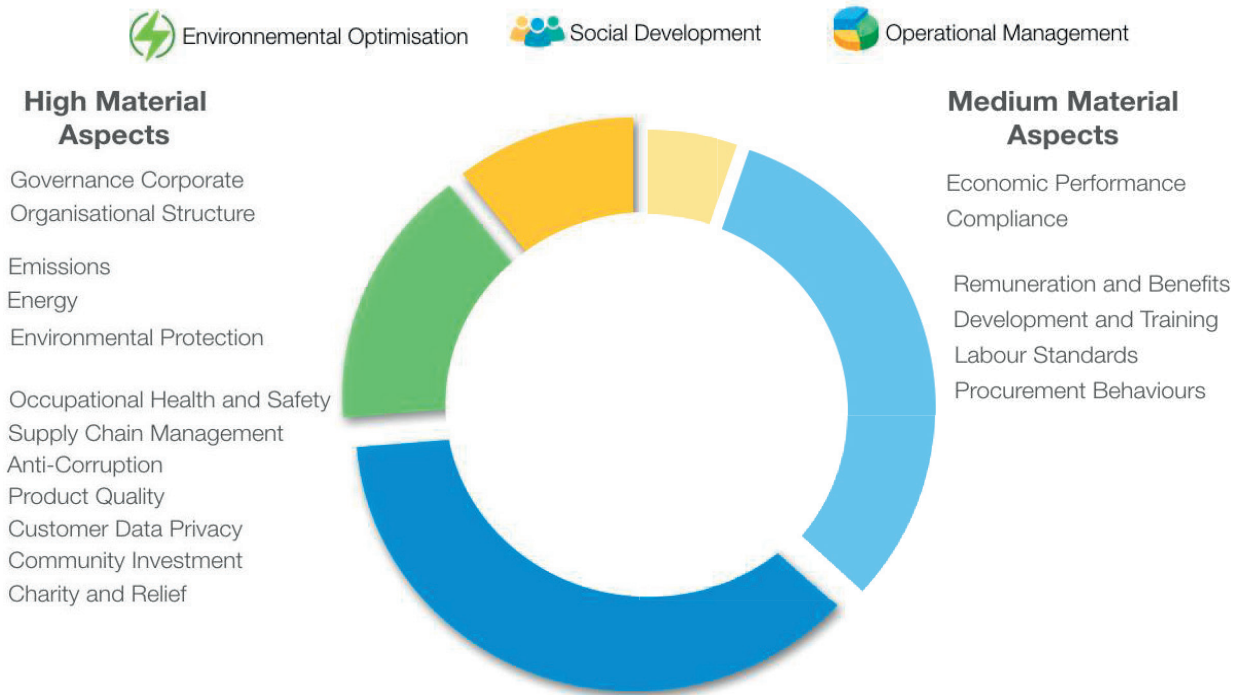
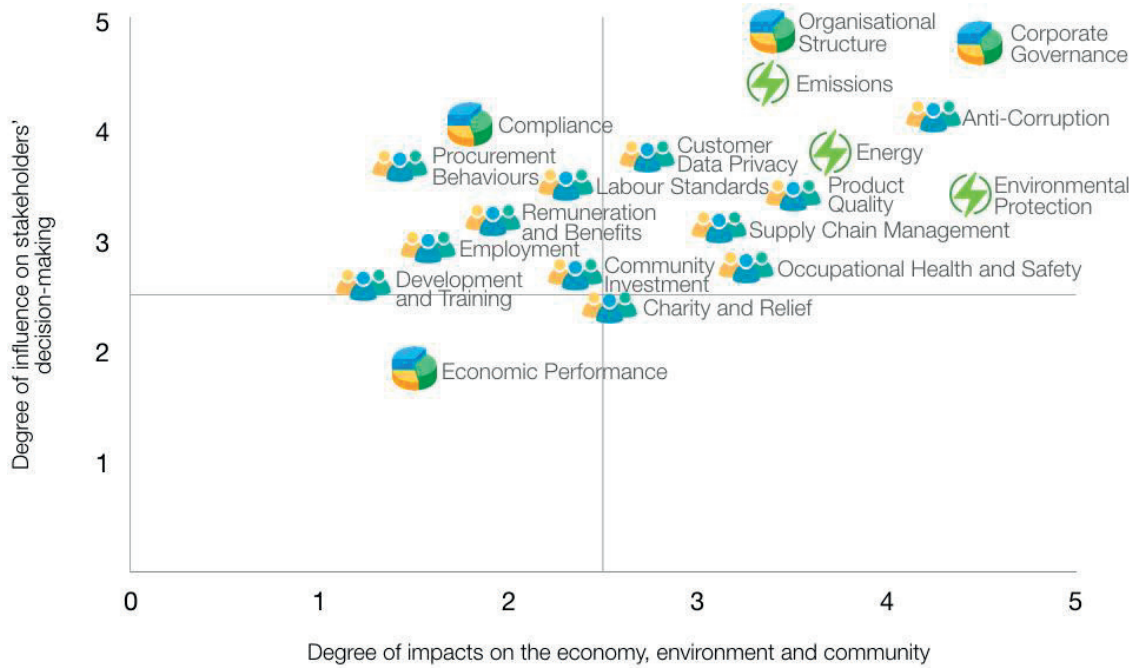
Identification

We have maintained close communication and information exchange with our stakeholders. We have identified the following 19 material aspects and determined the scope of impact of the material issues after communication with our stakeholders.

Topic	Material Aspects	Scope of Impact					
		Governments	General Public	Investors	Industry Peers	Value Chain Partners	Staff
Operational Management	Corporate Governance	★	★	★	★	★	★
	Organisational Structure	★	★	★	★	●	★
	Economic Performance	●	●	★	●	●	★
	Compliance	★	●	★	★	●	●
Environmental Optimisation	Emissions	★	★	★	●	●	●
	Energy	★	●	★	●	●	●
	Environmental Protection	★	★	★	●	●	★
Social Development	Employment	●	●	●	●	●	★
	Remuneration and Benefits	●	●	●	●	●	★
	Development and Training	●	●	●	●	●	★
	Occupational Health and Safety	★	●	●	●	●	★
	Labour Standards	★	★	●	●	●	★
	Supply Chain Management	★	●	●	★	★	●
	Procurement Behaviours	★	●	●	★	★	●
	Anti-Corruption	★	★	★	★	★	●
	Product Quality	★	●	★	★	★	●
	Customer Data Privacy	★	●	★	★	★	●
	Community Investment	●	★	★	●	●	●
	Charity and Relief	●	★	★	●	●	●
★ Greater impact of material aspects on stakeholders		● Less impact of material aspects on stakeholders					

Prioritisation

We have prioritised the material aspects from the perspectives of the “impacts on the economy, environment and community” and the “influence on stakeholders’ decision-making”. The prioritisation of each material topic is as follows:



Validation

The Company's management and relevant professionals formed an ESG taskforce to assess and approve the prioritisation results by consensus. Having validated the final selection of material topics, the management determined information relevant to the material topics to be included in this report, and prepared the corresponding information collection processes.

5. ENVIRONMENTAL: DRIVING THE ENVIRONMENTAL PROTECTION INDUSTRY TO FOSTER ECOLOGICAL CIVILISATION

Green development, pollution control and ecological safety were highlights in the 19th National Congress of the Communist Party of China report. As a pioneer in the environmental protection industry at home, the Company is determined to advance the national emission reduction goal. We aspire to be a role model among integrated environmental solutions providers and inspire our industry peers to consolidate, extend and upgrade environmental protection businesses to shoulder the responsibility of conserving lucid waters and lush mountains, reducing emissions and pollution, and pushing ahead with the national vision of an ecological civilisation.

During business operations, we uphold the guiding principle of sustainable development and underlie the importance of harmony between human and nature. Internally, we have established a corporate culture of conserving water and energy by managing resources effectively through resource control initiatives, and instilling our employees with a strong sense of environmental protection. Our internal green corporate culture alongside with our external sustainable development support our environmental business as well as contribute to the national ecological civilisation.

In 2018, the Company achieved great success and accomplished continuous breakthroughs. We have been recognized with various awards and titles. Tianjin Capital Environmental Protection Group Company received the title of "Tianjin May Fourth Red Flag League Branch (General Branch)", the Dongjiao Sewage Treatment Plant bid project was rated as the city's construction quality, safety and civilization demonstration site in 2018, municipal level green construction site and municipal level of wisdom construction site. Furthermore, the Jaiyuanxingchuang Company received the excellence award in the Tianjin's Ninth Session of Safety Construction and Management. Kaiying Company received the award for "The Nation's Science and Technology Small & Medium Enterprise", the honorary title of "The Nation's High-tech Enterprise", the "Science and Technology Award" from the China Instrument and Control Society, and Tianjin's specialization new product award. Qujing Company received the title of "Yunan Province Ankang Cup Competition Model Unit". Shangdong Company received the title of "Municipal Civilized Construction Site". Wendeng Company received the title of "Active Grassroots Union". Xian Company was rated as the pioneer party organization to catch up with the Xi'an Water Supplies Bureau System, in 2017 as an A-level taxpayer, environmentally friendly and loving unit, and in 2018 an advanced group.

The Company's performance on emissions, use of resources, and the environment and natural resources alongside the corresponding key performance indicators (KPIs) are now described in the following sections.

Emissions

China has shown its determination to build an ecological civilisation over recent years. In addition to its pledge in the Paris Agreement to reduce the carbon intensity of GDP by 60 to 65% by 2030 using 2005 as the base, it imposed the “13th Five-Year Plan for Energy Conservation and Emission Reduction Programme” in 2017 to control energy consumption and emissions, by capping the total consumption of standard coal at 5 billion tons and setting ambitious goals for cutting various types of emissions. The Company obtained the ISO14000 international standard and formulated an overall environmental management mechanism in accordance with the standard to ensure low-carbon business management and operation. The Operation Management Department of the Company is responsible for formulating strategies regarding discharges into water and soil, and the production of hazardous and non-hazardous waste as well as the monitoring of sewage discharge, sludge disposal, and emissions of gaseous pollutants and noise.

In 2018, the Company remained devoted to sustainable development and put consistent efforts in our environmental mission. Our domestic leading and internationally renowned integrated environmental solutions constantly improved water quality by sewage treatment, while we kept enhancing our business with technological innovation. During the reporting period, apart from reducing discharges into water, air and soil, we helped facilitate the circulation of water resources, improve air quality and recycle sludge and solid waste.

Facilitating the Circulation of Water Resources and Conserving Ecological Sustainability

Wastewater Treatment: Safely Returning Treated Sewage to Nature

Urban development inevitably entails impacts and pollution on the natural environment. Domestic and municipal pollutants including sewage and air emissions harm the ecosystem and threaten the harmonious existence between human and nature. We shoulder the mission of reducing pollution and emissions for cities, sustaining the balance between urban development and natural conservation by sewage treatment and wastewater recycling. Our sewage treatment plants collect and treat domestic and municipal sewage by removing main pollutants therein to the extent that the treated effluent meets the discharge standards of the central and local governments, and then discharge the effluents to rivers via sewage outfalls as designated after assessment.

It is one of the top priorities and responsibilities for the Company in which the discharge meets relevant standards. The Company has a highly responsible attitude towards the environment and in addition to the basis of the production of our different departments, sewage treatment plants, water recycling plants and tap water plants meeting relevant standards, the Company has further invested in science and technology, strengthened operational management, upgraded and improved various processes in order to improve the water quality standards of effluent discharge, as well as achieve energy conservation and emission reduction tasks and improve the overall environmental quality.

As at the end of the reporting period, the Company had more than 31 sewage treatment plants with a total capacity of 4.99 million m³/day, which were located across northern, central, southwest, eastern and northwest China and were key pollutant discharging entities for local environmental protection authorities. During the reporting period, the overall sewage treatment capacity of the Company (excluding entrusted operations) was 1.216 billion cubic meters, which substantially alleviated pollution in rivers and improved the urban water environment and its sustainability.

The Company guarantees the treated effluents could satisfy all legal requirements. The Company has conducted research projects targeted at different sewage types to study in depth the treatment technologies for different water sources with different water pollutants and to continuously improve our sewage treatment technologies. The Company has created a database of purifying technologies used for every type of sewage, so as to strengthen the quality of water output for all sewage treatment plants of the Company and support the nation's effort in emission mitigation. During the reporting period, all of our sewage treatment plants, water recycling plants and tap water supply plants have stringently adhered to the following standards:

- Water Quality-Determination of Sulfides (GB/T17133-1997), (HJ/T60-2000)
- Water Quality-Determination of the Chemical Oxygen Demand (HJ/T399-2007)
- Water Quality-Determination of Total Nitrogen (HJ636—2012)
- Water Quality-Determination of Suspended Solids (GB11901-89)
- Water Quality-Determination of Dissolved Oxygen (GB7489-87)
- Water Quality-Determination of Total Phosphorus (GB11893-89)
- Water Quality-Testing for Fecal Coliform from “Water and Wastewater Quality Determination Methods 3rd & 4th editions” published by China Environmental Science Press (Interim Measures)

During the reporting period, all treated effluent met First Grade A or First Grade B under the “Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant”(GB18918-2002) and was fully in line with safe emission.

Water Recycling: Converting Wastewater into Reusable Water

In addition to sewage treatment, the Company's principal business also comprises water recycling, which involves performing further advanced treatment on treated effluents for reclaimed water supply. The reclaimed water provides an alternative source of water in place of tap water for miscellaneous household use, industrial cooling and greening, not only proving beneficial in reducing pollution loads in cities, but also catering to the public's water demands, which enhances the sustainability of urban water resources and facilitates benign water ecosystems.

The Company's water recycling plants are mainly in Tianjin, Anhui Fuyang, Inner Mongolia Bayannaoer. During the reporting period, the total capacity of the reclaimed water business was 355,000 m³/day with sales of recycled water at 54.189 million cubic meters. The water quality attained required standards. Our water recycling business turned waste into treasure, taking one step further to not only reduce sewage discharge but also to convert it into reusable resources, promoting sustainable water cycles.

Upgrading Water Utilities Business with Technological Innovation

Being highly responsible to the environment, the Company has made substantial investments in innovative technologies and strengthened operation management while ensuring all sewage treatment, water recycling and tap water plants are operating up-to-standard. The continuous improvement and upgrading of treatment techniques have refined the quality of treated effluents, saved more energy and reduced emissions, thereby improving the quality of the environment.

In 2018, the Company's scientific and technological work carried out extensive research on the stable operation of sewage treatment plants, industrial wastewater treatment, integrated treatment techniques for black and odorous water, "sponge city" construction, etc. The Company also promoted CYYF-MBP biological deodorization technology research, the application of big data information technology in wastewater treatment plant management and more projects. These projects accelerated the achievement transformation process and contributed to our technical reserves for future development.

The Company invested RMB10.439 million in new technologies and launched 28 projects on science and technology projects with the objective to achieve "stable operations of sewage treatment plants", "sludge treatment and disposal", "new products and treatment technologies for sewage treatments" and "energy conservation and emission reduction". These subjects progressed well and has met expected requirements.

The Company has also participated in the "13th Five-Year" water specialized project on "Biosystem Effective Improvement and Demonstration on Construction and Operation" (2017ZX07106005-02).

The Company participated in “Intergovernmental International Science and Technology Cooperation Key Project” declared by the Ministry of Science and Technology with the project “Safe Water Supply System and Key Technologies for Reclaimed Water” (2016YFE0118800-05).

The Company participated in the Tianjian Municipal Science and Technology Bureau project “Research and Demonstration Application of High-standard Treatment and Recycling Technology for Urban Sewage” led by the China Municipal Engineering North China Design and Research Institute Co., Ltd. The contract was signed in September 2018 and the research plan that was being developed according to the contract was implemented normally. The Company has also bear the Tianjin Science and Technology Bureau’s “Innovation Platform and Talent Special Project” and “Sewage Wastewater Treatment Bio-enhanced Microbial Agent Application Technology Service Platform” (16PTGCCX00110).

In 2018, the Company obtained a total of 26 granted patents, including 4 invention patents and 22 utility model patents. By the end of 2018, the Company had a total of 86 valid patents, including 19 invention patents, 62 utility model patents and 5 design items.

Strict Discharge Monitoring Ensuring Compliance with Effluent Standards

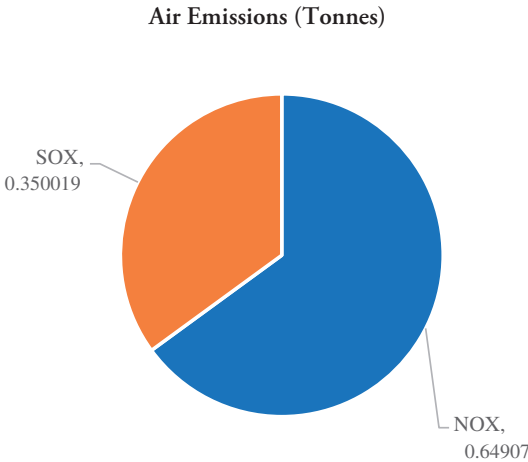
While we are devoted to constantly improving the quality of our treated effluent, we strive to minimise sewage discharge that overloads the operation. A wastewater monitoring mechanism pursuant to “Management Procedures of Non-compliance, Correction and Prevention” (CEP.QEHS.P14) and “Control and Inspection Procedures for Safety (Environment) (CEP.QEHS.P08) was established and being implemented by different departments with an aim to reduce discharge. During the reporting period, the wastewater from operation, household and experiment could always meet the set discharge standard after purification.

The central and local governments have stipulated standards for treated effluent from wastewater treatment plants, which set maximum allowable discharge concentrations (daily average) of different pollutants requiring basic control, including chemical oxygen demand (COD), biochemical oxygen demand (BOD), suspended solids (SS), total nitrogen, ammonia nitrogen and total phosphorus. As of the end of 2018, every sewage treatment project owned by the Company had 1 to 2 effluent outfalls. Our sewage treatment plants sustained a high discharge quality and the treated effluents met First Grade A or First Grade B under the “Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant” (GB18918-2002).

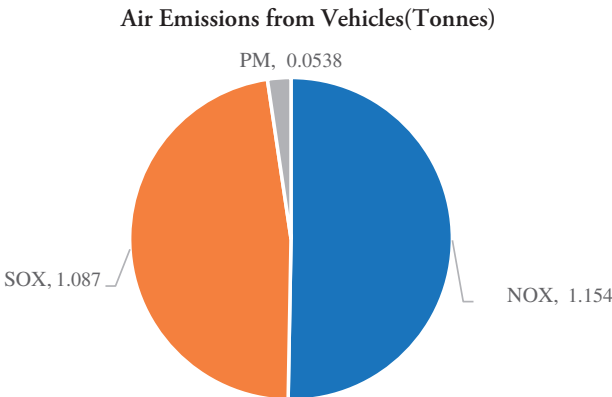
During the reporting period, the overall sewage treatment capacity of the Company (excluding entrusted operations) was 1.216469 billion cubic meters. The quality of all treated effluents has achieved the required discharge standards. For the year 2018, the Company has successfully reduced COD pollutants by 395,500 tons, of which 226,200 tons were from Tianjin and 169,300 tons from other provinces. In addition, NH₃-N pollutants were reduced by 41,300 tons, of which 22,600 tons were from Tianjin and 18,700 tons from other provinces. These accomplishments have supported the nation’s work in energy saving and emission reductions, and brought ecological benefits to cities.

Low-Carbon Operations Improving Air Quality

Fresh air is another vital component of a quality natural environment beside clean water resources. The Company accorded high priority to the control of gaseous emissions generated from our operations and traditional coal-fired boilers by limiting the emissions and concentrations of the air pollutants. The Company formulated an air pollution control plan to stringently monitor gaseous emissions such as methane, carbon monoxide and hydrogen sulphide emitted during sewage treatment to minimise their concentrations, with a regular inspection mechanism executed by the Technical Management Department once a week. During the reporting period, ammonia, hydrogen sulphide and odour emissions attained the required standards to keep the air fresh. In 2018, our water plants and energy stations (excluding entrusted operations) produced 0.649 tons of NOx and 0.350 tons of SOx from fossil fuel consumption¹ including natural gas.



Meanwhile, the air pollutants produced from vehicles in 2018 were 1.154 tons of NOx, 1.087 tons of SOx and 0.0538 tons of particulate matter.



1 Based on best data available at the time of preparation of the report.

Excess greenhouse gas (GHG) emissions cause global warming, which is why the Company is committed to reducing the use of fossil fuels in the operations of our water plants and why we have been engaged in providing heating and cooling services with renewable energy for years to minimise GHG emissions. Moreover we limited our business travel to lower our carbon footprint. In 2018, we produced 393.7 k tons² of total CO₂ equivalent GHG emissions, including direct GHG emissions (0.521 k tons), purchased electricity emissions (393 k tons), paper waste disposed at landfills (0.0827 k tons) and business air travel by employees (0.151 k tons) with an intensity of 8.95 k tons of CO₂ equivalent per facility (excluding entrusted operations).

Recycling Sludge and Solid Waste: Turning Waste to Treasure

Reduction, Hazard-Free Treatment and Re-utilisation of Sludge

Sludge is the main solid waste generated during sewage treatment, so the Company takes a proactive approach to setting a number of methods in handling sludge. In particular, effort was put in scientific research to improve sludge treatment technology so as to minimise the negative impact of sludge disposal to the environment. Research achievement includes the size reduction of sludge, decline in sludge production during sewage treatment and stabilisation and detoxication of sludge with the aim to bring sludge back to the natural environment safely, and even to recycle them. This research results have provided the Company with usable sludge treatment technologies in reality.

In 2018, the National Water Project was completed on the tasks “Research on the Technology Assessment and Management System for Water Pollution Prevention and Control in Typical Industrial Parks in Key Basins” (2014ZX07504-005). Tianjin Municipal Construction Committee Project “Study on Integrated Treatment, Disposal and Resource Utilization Technology of Sewer Sludge” (2015- 40), “Study on Key Technical Parameters of Recycling Water Resources Recycling in Sponge City Construction”, “Development and Application of Carbon Source Conversion and Conditioning Equipment in Sludge” (2015-Z4). The acceptance of the “Tianjin Municipal Sludge Treatment and Disposal Technical Regulations” was completed and the Tianjin Local Standard “Technical Regulations for Operation, Maintenance and Safety of Urban Reclaimed Water Plants” (DB/T29-194-2010) was prepared and published.

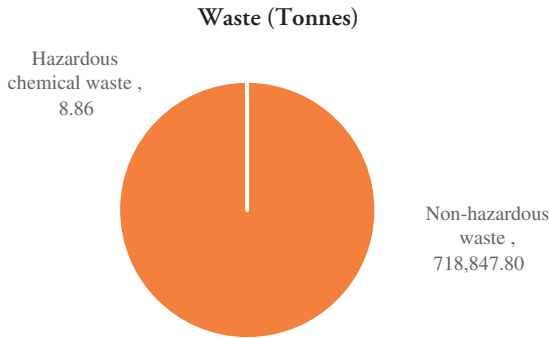
The “Tianjin Municipal Sludge Treatment and Disposal Technical Regulations” has completed the acceptance work in November and is in the stage of revision of the regulations, reporting and approval. The Group has borne the nation’s “Twelfth 5-year” Water Special Project of the Ministry of Construction for the task “Integrated Research and Comprehensive Demonstration of Urban Sewage Energy Resources Development and Nitrogen and Phosphorus Depth Control Technology” (2015ZX07306001).

2 Based on best data available at the time of preparation of the report.

During the reporting period, the sewage treatment plants produced 718,847 tons of dehydrated sludge and all complied with the requirements in the “Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant “(GB18918-2002) as always. The dehydrated sludge was transported to sludge treatment units to undergo further treatment using the technique of “high-efficiency digestion, frame filter dehydration and drying” for ensuring compliance with the standards laid down in the “Disposal of Sludge from Municipal Wastewater Treatment Plant - Quality of Sludge Used in Land Improvement” (GB/T 24600-2009) and the “Disposal of Sludge from Municipal Wastewater Treatment Plant - The Quality of Sludge Used in Gardens or Parks” (GB/T 23486-2009). The sludge underwent detoxication treatment, so that no secondary pollution would be caused when the sludge returned to the natural environment.

Recycling Solid Waste

The Company classified hazardous and non-hazardous solid waste produced during operations and took proactive measures to recycle the waste. The administration centre of the sewage treatment plants divided solid waste into recyclables and non-recyclables (including hazardous waste). The waste was further classified and passed to different departments for handling and review under supervision. Recyclable items were reused to the greatest extent where possible, and hazardous waste was properly handled, so as to minimise pollution and impacts on the environment. During the reporting period, the total hazardous chemical waste produced in our operations was 8.86 tons with an intensity of 0.201 tons of hazardous chemical waste per facility (excluding entrusted operations) in average. The total other non-hazardous waste produced was 718,847.8 tons with an intensity of 16,337 tons of non-hazardous waste per facility (excluding entrusted operations) in average.



The following are the types of emissions produced by our sewage treatment and water supply businesses with relevant emissions data.

Types of Emission	Emissions	Emissions Data	Relevant Laws	Remarks
Gaseous Pollutants	Ammonia	Below the emission limit	“Environmental Impact Assessment Law of the PRC”	Compliance with the emission standards
	Hydrogen Sulphide	Below the emission limit		Compliance with the emission standards
	Odour	Below the emission limit	“Environmental Protection Law of the PRC”	Compliance with the emission standards
Treated Effluents	COD	Reduced by 395,500 tons	“Prevention and Control of Atmospheric Pollution Law”	Compliance with First Grade A or First Grade B of the “Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant” (GB18918-2002)
	BOD	Reduced by 177,100 tons		
	Suspended Solids	Reduced by 216,100 tons	“Emission Standard for Odor Pollutants” (GB14554-93)	
	Total Nitrogen	Reduced by 42,100 tons		
	Ammoniacal Nitrogen	Reduced by 41,300 tons	“Prevention and Control of Water Pollution Law”	
	Total Phosphorus	Reduced by 6,100 tons		
Sludge	Silts, Rubbishes and Activated Sludge	Dehydrated Sludge 718,847.8 tons	“Prevention and Control of Environmental Pollution by Solid Waste Law”	The sludge is transported to sludge treatment units to undergo further treatment using the technique of “high-efficiency digestion, frame filter dehydration and drying” for ensuring compliance with the standards
			“Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant” (GB18918-2002)	
			“Disposal of Sludge from Municipal Wastewater Treatment Plant - Quality of Sludge Used in Land Improvement” (GB/T 24600-2009)	
			“Disposal of Sludge from Municipal Wastewater Treatment Plant - The Quality of Sludge Used in Gardens or Parks” (GB/T 23486-2009).	

Use of Resources

Promoting Green Culture, Injecting Sustainability into Corporate DNA

We deeply believe green corporate culture is vital support for the environmental protection industry, so we are committed to building a low-carbon and energy-saving model into our corporate DNA. Environmental protection and resources conservation have become common practices from the management level to the workplace. Resources are highly valued throughout work flows and work practices to further our mission of “to use resource only when necessary and not to waste any if it could be saved”.

Our green corporate DNA was built over time, thanks to our regulation-based energy use efficiency initiatives and the environmental education on our staff, which allowed us to properly use resources to save our operating costs and more importantly ease the demand for natural resources.

To achieve a better use of resources such as energy and water, the Company has integrated the resource control and protection plan in accordance with the Energy Conservation Law of the PRC and the 5R principle (i.e. replace, reduce, recycle, recover and reuse) with the aims of saving energy, reducing uses of resources, recycling water and reducing waste.

The Company knows that a good energy and resources conservation mechanism is only the first step for environmental protection, and the more important aspect remains to be the execution and cooperation from all departmental units and staff. Therefore, the Company emphasises on cultivating environmental awareness among the staff, in addition to the monitoring of the implementation of the environmental protection plan. We encourage our staff to use resources such as water, energy and paper efficiently by promoting reusing materials, water conservation, electricity saving, choosing energy-efficient appliances and minimising the use of paper. These measures for environmental protection and energy conservation are taken seriously by all staff including the management to promote a green corporate culture and to realise our mission of “to use resource only when necessary and not to waste any if it could be saved”.

Minimising Energy Consumption

The Company implements an integrated top-to-down resource control plan for energy saving in full strength, with participation of all staff members. The management formulated a plan for sewage treatment plants for energy saving and better efficiency in the use of resources. The approved plan will be implemented by the technical and administrative units of the sewage treatment plants. The relevant departments will then plan their usage in energy and other resources accordingly, binding on all the departments. All units of different levels will work closely to achieve our vision of energy conservation.

With regard to the “Management Procedures of Non-compliance, Correction and Prevention”, the Company has established a monitoring mechanism to closely supervise the execution of the resource control plan to ensure resources are put to their best use. The plan requires every department to maintain statistics on energy and resource consumption where the data could help improve the use of resources and to eliminate wastage.

The resource protection policy aims at saving energy and reducing uses of resources. Concrete measures include arranging different lighting zones, adopting LED lighting systems, turning off lighting in common areas at night, maintaining the room temperature at 25 to 26 °C, lowering the energy level of equipment under the condition of meeting the requirements of sewage treatment quality, work environment, and safety, and gradually replacing energy-consuming equipment with energy-efficient ones.

The environmental protection plan and related measures have enabled the Company to meet our annual objectives for water and energy consumption in 2018, in which our electricity consumption has notably attained the annual target set for electricity conservation. The use of energy has significantly reduced and our total energy consumption in 2018 was 422,791,289 kWh (excluding entrusted operations) with an energy consumption intensity of 10,311,982 kWh.

Maximising Water Efficiency

Our water supply business mainly comprises tap water supply and reclaimed water services, supplying the public with quality water sources. We therefore were not involved in issues in sourcing water. We nevertheless strongly promote water saving and maximising water efficiency.

Water is one of the major control targets in our resource control plan. By reducing the waste of internal water resources, we improved water use efficiency. We have formulated a resource consumption management plan for our sewage treatment plants, and proposed corrective measures for plants that failed to meet standards in their quarterly reviews on consumption data, so as to ensure that water was treasured in all units with little wastage.

During the reporting period, our total water consumption (excluding entrusted operations) was 847,914 m³ with a water consumption intensity of 20,680 m³ per facility. On the other hand, our integrated environmental services include sewage treatment, tap water supply, reclaimed water business and heating and cooling services driven by renewable energy, which did not involve packaging material.

The Environment and Natural Resources

Expanding Environmental Businesses, Maximising Operation Processes

As an integrated environmental solutions provider, we take environmental protection as our mission. On one hand, we have been innovating and strengthening the operation management of our water utilities projects to sustain our advantages. On the other hand, we have been expanding our business and delving deeper into renewable energy development, technological upgrading, sponge cities, hazardous waste treatment, etc. We aspire to inspire our industry peers and set a role model in providing integrated environmental solutions.

Renewable Energy Business Development

The Company has recognised renewable energy business as one of our development focuses with an aim to replace traditional energy with clean and renewable sources in our business operations. We have taken a proactive approach in operating on renewable energy and launch projects particularly on saving energy and exploring renewable energy technologies. The company has rich experience in providing heating and cooling services with new energy. As at the end of 2017, the 2 new energy stations owned by the Company delivered heating and cooling services using renewable energy to an area of 2 million square meters in Tianjin, which set a standard for the clean energy industry and put the low-carbon business model into practice.

Comprehensive Environmental Management of Water Utilities Projects

As sewage treatment plant is one of the crucial facilities in environmental protection projects, the construction and operation of all sewage treatment plants by the Company were made in strict compliance with the environmental assessment procedures, so that the impacts to the surroundings, such as dust, noise, odour and sludge could be under control during the construction and operation phases.

In the beginning stage of a construction project, the Company would actively embark on the environmental assessment, submit the assessment report to the Environment Protection Department for approval in accordance with the approval procedures, and then carry out the design work according to their feedback.

During the construction stage of the project, potential environmental impact such as dust, noise, discharge of wastewater and solid waste would all be controlled in accordance with the national requirements and that of Tianjin City with regards to environmental protection. Proper measures would be adopted to minimise the impact on the environment arising from various construction activities.

During the operation phase, the Company is committed to controlling the odour and noise emitted from the sewage treatment plants. The Company focuses its research resources and invests in the research of odour control, as well as using its own capital to manage the main source of odour. Moreover, all subsidiaries would actively carry out the green plan for plant areas to lower the noise level, eliminate odour and to dispose of the sludge, so as to improve the well-being of the residents in the area and promote harmonious community development.

In accordance with the Environmental Impact Assessment Law of the PRC, we have established a comprehensive environmental management mechanism, which seeks to minimise adverse environmental impacts brought by our business operations. The mechanism includes strict environmental monitoring and sound risk management of major hazards to alleviate our environmental impacts.

Strict Monitoring to Prevent Environmental Pollution

The Company has a strict environmental monitoring system to prevent pollutions or any adverse impact brought to the environment during the sewage treatment process. The content of the monitoring system is guided by those standards set in the “Prevention and Control of Water Pollution Law”, the “Prevention and Control of Atmospheric Pollution Law”, the “Prevention and Control of Environmental Pollution by Solid Waste Law” and the “Prevention and Control of Pollution from Environmental Noise Law” in the PRC, which have provided the basis for our controls against water, air, solid waste and noise pollutions. By setting up checkpoints along the sewage treatment process, the comprehensive monitoring ensures full compliance with applicable national environmental standards and minimises solid waste, water, air and noise pollutions.

Risk Management of Hazard Installations

The Company adopts a proactive approach with robust risk management measures in place to eliminate the potential environmental risks of major hazard installations during sewage treatment process. Major hazards include those production and operation activities that may lead to death or injury and situations where damage would be caused to the environment. The Company pays close attention to the safety management of oil and hazardous chemicals, where the relevant department in charge of oil and hazardous chemicals and sewage treatment plants will follow the “Management Procedures of Oil and Hazardous Chemicals” (CEP.QEHS.P22) to supervise all uses in relevant units, thus reducing the potential pollution to the environment when those hazardous chemicals are used.

6. SOCIAL: CO-CREATING VALUE WITH STAKEHOLDERS

We attach great importance to the rights and interests of our stakeholders and hold a strong belief that together we can co-create and share value to achieve solutions where everyone benefits. In 2018, we aspired to grow with our employees as always, so on top of providing our employees with safe workplaces, we provided opportunities to develop their capabilities and potentials. We continued to work together with our business partners to make progress together and inspire each other to achieve more. As with society, we committed ourselves to public welfare. We were happy to share our fruits with the community and bring positive and concrete contributions to different groups.

Sections below set out the Company's performance in terms of employment, health and safety, staff development and training, labour standards, supply chain management, product responsibility, anti-corruption activities, and community investment.

Employment

With the belief that employees are the most valuable asset to the Company and the key to success, the Company adopts "people-oriented" management and emphasises on the importance of employees' rights and benefits. The Company implements a fair recruitment mechanism and adopts an impartial attitude to attract talents. All employees are entitled to a comprehensive pay and benefit system, comprehensively safeguarding the employees' benefits. The Human Resources Department is responsible for the Company's policies of remuneration and dismissal, recruitment and promotion, working hours, annual leaves, equal opportunity, diversity, anti-discrimination, other welfare benefits to comply with relevant laws.

During the reporting period, the Company was not involved in any prosecution or conviction by the Government regarding labour regulations.

Fair and Just Talent Management Principle

We put great emphasis on our employees' rights, development and equality. To safeguard employees' legitimate rights, the Company strictly complies with the national labour laws and regulatory documents, and established fair and just recruitment and management systems. The Company completely fulfils legislation under the Labour Law of the PRC, the Labour Contract Law of the PRC, the Trade Union Law of the PRC, the Social Insurance Law of the PRC and the relevant human resources management policies, regulations and ordinances in Tianjin. We also adhere to the principle of fair employment and promotion to eliminate inequality and discrimination in any forms. In addition, the Company closely observes the Law of the PRC on the Protection of Women's Rights and Interests to safeguard the legitimate rights and interests of female employees.

Comprehensive and Sound Remuneration System

The Company has a well-established remuneration and welfare system to safeguard employees' welfare. It is composed of a position-level pay system and a year-end bonus mechanism. Salaries are paid on a monthly or annual basis, both of which take individual's performance into consideration and reward outstanding employees according to the achievement of performance targets.

The Company provides attractive remuneration packages and discretionary bonuses. The Company implements a comprehensive performance appraisal system to assess employees' performance, and the annual bonus is allocated according to the achievement of the annual profit target. At the same time, senior management staff is assessed based on their performance targets. Their assessment results are linked to annual salary. Their annual salary is reviewed and rewarded based on the performance and results of the employees accordingly.

In 2018, the Company continued to provide employees with a range of social security benefits in accordance with relevant national policies and regulations. The Company made regular and full contributions to employees' housing provident fund and social insurance, including medical, unemployment, work-related injury, maternity insurances, etc. Apart from the statutory holidays, employees also enjoy annual, marriage, family, maternity, paternity and other paid leaves. In addition, our employees also enjoy the winter heating subsidies and summer cooling allowances. The Company carefully considers employees' actual needs and provides a wide range of welfare benefits to ensure living stability of employees.

A well-established retirement benefit scheme was established to ensure employees can maintain a reasonable living standard after retirement. The Company is responsible for a basic and proportional amount of monthly retirement insurance for the employees. Employees are eligible to obtain basic retirement pensions provided by the local labour and social security departments. This comprehensively safeguards employees' livelihood after retirement.

Warm and Caring Corporate Culture

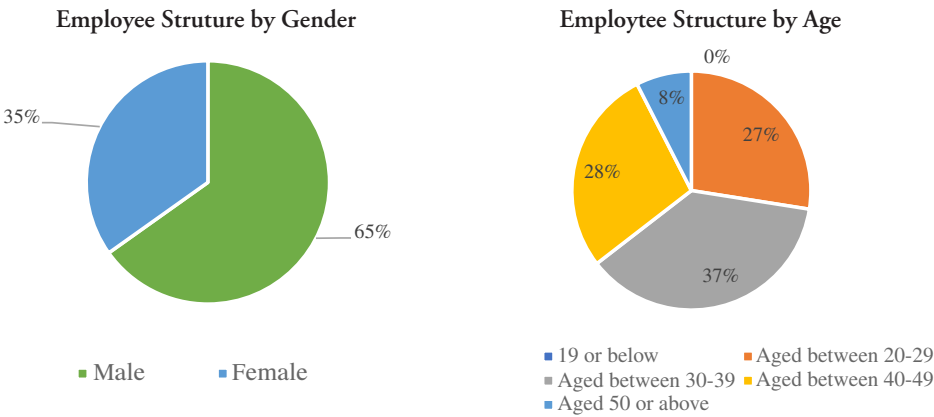
The Company recognizes the care for, connection with, and serving the employees are the starting points and valued outcomes for our organizational work. We continuously drive the staff caring mechanism of the party committee and trade union. In order to further implement the requirements of inclusive services and precise services, earnestly do a good job in the investigation and management of difficult employees and send the care of the Company to the employees through sending condolences, job skills and health checks. During the reporting period, 4 visits were made to care for the staff in need. In conjunction with the Company's sewage treatment plant to upgrade and expand the capacity, the "Deliver Warmth" project will continuously be implemented. The leading group will take the lead to go to grassroots and start the project through using occupational safety and health management system as the carrier to "Deliver Knowledge", "Deliver Cool" and "Deliver Warmth", comprehensively and multi-channel maintenance of the employees' health rights and interests, effectively motivate the team and employees to work passionately, enthusiastically innovate, work hard and to

ensure the completion of the water treatment and discharge standards. In order to highlight the leading role of advanced models and create a strong atmosphere for entrepreneurship, the Company timely grasps the hardworking workers, re-entered the production and living conditions of the returnees and the ideological dynamics and educated and guided the broad masses of employees to concentrate their efforts, strengthen transformation and development and support enterprise reform. During the reporting period, there were 4 who had a model of labor and 22 people who returned to the army. Over the years, the Company has insisted on comprehensively understanding the situation of the grassroots level, fully carrying forward the cultural concept of “people-oriented”, and building party committees and trade unions into a strong backing for the workforce, allowing employees to truly feel the warmth of the corporate family and strengthen employees’ sense of belonging, sense of acquisition, and the sense of honor, forming the merits of the “13th Five-year Plan”.

Our Workforce

As of 31 December 2018, there were 1,739 employees in the Group, among which 457 belonged to the Group. 5 employees possess a doctoral degree, 249 possess a master’s degree, and 718 possess an undergraduate education. The Group employs 867 certified technical professionals, 15 of which are top management, 217 senior, 296 intermediate rank, and 339 junior.

Our total workforce and turnover rate by gender, age group, employment type and geographical region are presented as follows.



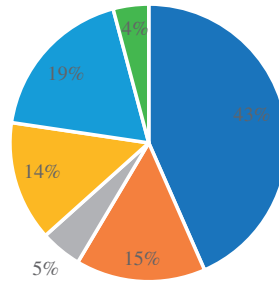
Total Workforce by Employment Type

Employment Type	Number of employees
Senior Managers	12
Managers	132
Staff	1,607

Total Workforce by Geographical Region

Total Workforce by Geographical Region

■ Northern China ■ Southwest China ■ Eastern China
■ Northwest China ■ Central China ■ Northeast China



Geographical Region	Number of Employees
Northern China	755
Southwest China	263
Eastern China	84
Northwest China	243
Central China	322
Northeast China	72

Employee Turnover by Gender

Gender	Employee Turnover Rate (%)
Male	3.01
Female	1.99

Employee Turnover by Age Group

Age Group	Employee Turnover Rate (%)
Aged 19 or below	0
Aged between 20 - 29	2.10
Aged between 30 - 39	1.40
Aged between 40 - 49	0
Aged 50 or above	1.54

Employee Turnover Rate by Geographical Region

Geographical Region	Employee Turnover Rate (%)
Northern China	0.27
Southwest China	4.18
Eastern China	0
Northwest China	0.43
Central China	9.17
Northeast China	0

Health and Safety

The Company is committed to sustaining occupational health and environmental safety as top priority. The occupational health and safety management policy adheres to standards set out in the “Occupational Health and Safety Management System Requirements” (OHSAS 18001: 2007). By checking our working equipment, monitoring hazard installations, nurturing employees’ safety awareness and other policies, we have established a safe and comfortable working environment. The Safety and Quality Department of the Company is responsible for implementing policies and upholding relevant laws and regulations in providing a safe working environment and protecting employees from occupational hazards. During the reporting period, there were no work-related fatalities or lost days due to work injury.

Monitor Workplace and Safety Equipment

During the reporting period, all departments, following national safety standards, established a maintenance plan for work facilities and safety equipment under the occupational health and safety management system so as to create a safe working environment. All departments adhere to the “Control Procedures of Security and Warning Signs” (CEP.QEHS.P32), and perform regular inspections and maintenance on fire safety facilities and equipment. All the design, production, installation and use of all facilities and equipment are in line with the national or professional standards. In addition, all units must comply with the “Control Procedures of Occupational Safety and Health” (CEP.QEHS.P28) in maintaining the cleaning and safety procedures in office buildings, laboratories and production sites. All departments must report to the relevant departments once a year according to the actual execution of the target plan. Relevant departments regularly review the maintenance plan, and adjust the plan according to execution so as to continuously improve the occupational health and safety management system.

According Priority to Hazard Installations Control

The occupational health and safety management system, in particular, imposes stringent control over the use of dangerous goods. The “Regulation on the Safety Management of Hazardous Chemicals”, the “Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used” and the “Rules on Safety Use of Chemicals in Workplace” are the guiding principles for developing the environmental and safety management plan of different departments. This plan clearly stipulates objectives, measures, timetables, responsibilities and rights of each department, prioritising the control of hazardous installations. During the reporting period, workplace procedures fully met the statutory safety standards and requirements, which minimised the potential risks of using dangerous goods to ensure employees’ occupational safety.

Nurture Employees’ Occupational Safety Awareness

The Company pays attention to cultivate the occupational safety awareness amongst employees, by establishing safety education training programs according to employee’s duties as well as conducting safety education training before employees work on new technologies, equipment or materials. During the reporting period, employees fully complied with all occupational safety procedures and measures.

Attention to Occupational Safety for Female Employees

At the same time, the Company takes the initiative to care for the occupational health and safety for female employees, stipulating that all female employees should comply with workplace regulations namely the “Special Rules on the Labor Protection of Female Employees”, the “Provisions on the Scope of Prohibited Labour for Female Employees” and the “Provisions on Female Workers’ Healthcare at Work”. Female employees have taken various appropriate safety measures in different working environments.

Development and Training

We uphold a people-oriented principle of talent management, and regard employees’ career development as our mission. In making every business- or management-related decision, we seek the common ground where the Company and our talents can grow together to benefit both employees’ growth and the Company’s development. Drawing on our experience in market development and technology research and development, we have gradually built a sound and efficient human resources management system. The Human Resources Department of the Company is responsible for the policies about enriching employees’ knowledge and skills to carry out their work duties.

Dual-Channel Training

We are committed to forging a fair, harmonious and competitive internal platform to enhance the ability, diligence and the sense of responsibility of our personnel in various fields and to inspire them to see big pictures and be innovative. At the same time, the Company's strategies in the "13th Five-Year Plan" imparted our talents with our integrated strategic measures of being "technology-based, moderately expanding, capital-driven and protected by laws", where we reached a consensus to realise the parallel developments of employees' career and job performance. The Company's "dual-channel" management of the administrative and technical models has broadened the professional development of technical talents, conducive to the long-term sustainable development of our talents.

Comprehensive Potential Development

The Company developed and implemented a comprehensive training program targeting the management, sales departments and basic level units. This program was further divided into three major modules namely mandatory training, pre-job training and self-training. The self-training program included two modules of business training and integrated training, which was tailored according to the rank, position and ability of individuals. The program aims to strengthen the employees' knowledge and skills, improving their work efficiency and career growth. In addition, internal training sharing sessions were conducted, which was held by our staff to facilitate employees' understanding of other departments' business, and to encourage learning from each other. Our comprehensive training program encourages a sense of responsibility, integrity and professionalism, which will strongly support the Company's development.

The percentage of employees trained by gender and by employee category is presented as follows with the relevant average training hours completed per employee.

The Percentage of Employees Trained and the Average Training Hours Completed Per Employee by Gender

Gender	Percentage of Employees Trained	Average Training Hours Per Employee
Male	95%	74.75
Female	80%	68

The Percentage of Employees Trained and the Average Training Hours Completed Per Employee by Employment Type

Employment Type	Percentage of Employees Trained	Average Training Hours Per Employee
Senior Manager	100.0%	139
Manager	95.0%	107
Staff	89%	73.55

Labour Standards

The Company strictly complies with all labour laws. We have in place a comprehensive recruitment mechanism, which stringently abides by the employment legislations and prohibits child and forced labour. The recruitment of all employees and trainees complies with relevant laws and regulations.

The Human Resources Department of the Company is responsible for compliance with policies preventing child and forced labour, and observing relevant laws and regulations that have great impact on the Company.

The Company continued to strictly observe all relevant labour regulations in 2018, including prohibiting child labour under the age of 16. During recruitment, the Company complies with the Labour Law of the PRC and the Provisions on the Prohibition of Using Child Labour. We prohibit the employment of workers under the age of 16 in any of our Group-related businesses.

During the year, the Company was not involved in any prosecution or penalisation under relevant labour standards.

Supply Chain Management

The Company provides quality products and services for the general public. In addition to the strict service requirements, we set high standards for our supply chain in provision of products and services. The Safety and Quality Department of the Company is responsible for overseeing the relevant environmental and social risk policies in our supply chain. With the Quality Management Systems (ISO9000) standards as our guidelines, we have established a rigorous quality control system to improve our procurement mechanism and carefully select our suppliers to provide the best quality products and services to the general public. As at the end of 2018, we had 4,817 suppliers. Our suppliers distribution by geographical region is presented as follows:

Geographical Region*	Number
Northern China	1710
Northeast China	54
Eastern China	886
Central China	172
Northwest China	8
Southern China	53
Others	1934

*Notes:

Northern China: Beijing Municipality, Tianjin Municipality, Hebei Province, Shanxi Province, Shandong Province, Inner Mongolia Autonomous Region

Northeast China: Liaoning Province, Jilin Province, Heilongjiang Province

Eastern China: Shanghai Municipality, Jiangsu Province, Zhejiang Province, Anhui Province, Fujian Province

Central China: Henan Province, Hubei Province, Hunan Province, Jiangxi Province, Sichuan Province, Chongqing Municipality

Northwest China: Shaanxi Province, Gansu Province, Qinghai Province, Ningxia Hui Autonomous Region, Xinjiang Uyghur Autonomous Region

Southern China: Guangdong Province, Guangxi Zhuang Autonomous Region, Yunnan Province, Guizhou Province, Hainan Province

The Company established an internal tender panel for the quality control system. The panel consists of departmental leaders of the Company, the operation and management department, finance department, construction management department, safety and quality department, general office, supervision office and other related personnel. The panel controls and supervises the procurement of raw materials and services. With the principle of being open, fair, just and honest, the panel stipulates the requirements for public tenders, including bidder qualifications, proposals, service commitments, company reputation and track records, which state clearly the social responsibility, business ethics, quality standards and other requirements.

According to the values of the contract, the Company employs different procurement methods including internal procurement, multi-party selection, competitive negotiation and open tendering. We evaluate our suppliers against stringent internal standards. A special tender evaluation committee was also established to adopt a “comprehensive, meticulous, and systematic” selection approach for screening suppliers. This ensures each part of the supply chain achieves an ideal quality standard.

Product Responsibility

In 2018, the Company remained committed to providing quality reclaimed water, efficient sewage treatment services and reliable tap water supply to our clients. All our sewage treatment plants strictly complied with the relevant laws and regulations, and were awarded the “Level A Qualification Certificate for Environmental Protection Facilities Operation (Sewage)” and the “Level A Qualification Certificate for Environmental Protection Facilities Operation (Industrial Wastewater)” by the State Environmental Protection Administration in recognition of our quality water services and operation.

The Safety and Quality Department of the Company is responsible for overseeing policies on health and safety related to products and services, and observing relevant laws and regulations that have great impact on the Company.

With a wide range of services, significant number of clients and therefore profound impact, the Company executes high standards on its products and services. With the Quality Management System Requirements (ISO 9001: 2015) as our principal guideline, we established a comprehensive quality management system, which was implemented by the Safety and Quality Department. The system features a robust inspection mechanism and various types of emergency measures to ensure water and sewage treatment quality, and to monitor all aspects of our services quality.

The business of the Company was not involved in product complaints or product recalls due to safety and health reasons.

Thorough Inspection Management

The Safety and Quality Department takes the approach of hierarchical management and divisional responsibility to perform quality inspections across our operation. The quality management departments at all levels conduct training and assessment for management staff, while basic level units inspect and monitor the use of facilities, operation processes, plant construction, working environments and business data management. With cooperation of all levels of employees, inspection frequency is adjusted according to the rank and inspection needs at the workplace. To ensure quality services, comprehensive monitoring and control of operation processes are adopted.

Comprehensive Emergency Measures

The Safety and Quality Department has developed contingency plans and precautionary measures against all types of potential crises to minimise the risk of operation crises, and to ensure smooth business operations while protecting the interests of our customers. A contingency planning committee was established by the Company to formulate contingency plans for different crises according to the data collection of abnormal situation, risk assessment and contingency assessment, including safety production on-site handling plans, special contingency plans and comprehensive contingency plans, which are submitted for internal and external approvals. The approved contingency plans are enacted and rehearsed regularly across departments and basic level units to ensure that all our employees are well prepared to deal with potential emergencies.

Because of the well-established and comprehensive quality inspections and contingency plans, during the reporting period, our tap water supply process has fully met the “Standards for Drinking Water Quality of the PRC” (GB5749-2006) and the dehydration rate of sludge from our sewage treatment plants has reached 100%. All subsidiaries of the Company have strictly complied with the applicable national standards on treated effluent, and our treatment procedures have now been regarded as the industry standard. The Company even helped to set the industry standards by contributing to the compilation of the “Urban Sewage Treatment Plant Operation, Maintenance and Safety Technical Regulations”(CJJ60-94) and the “Water Quality Standard for Industrial Water Reuse of Municipal Reclaimed Water”.

Regarding intellectual property, the Company formulated system documents concerning patent registration and protection with reference to the “Patent Law of the PRC”, “the Rules for the Implementation of the Patent Law of the PRC” and the Company’s real needs to standardise the proposal, assessment, application and protection of patents so as to safeguard the intellectual property of the Company.

Besides, our business does not involve consumer data and privacy issues.

Anti-Corruption

The Company endorses the highest standard of business ethics and upholds the vision of “The Party supervises its own conduct and enforces strict discipline”. The Company has a rigorous anti-corruption mechanism for compliance in place based on the party’s regulations and guidance such as “Party Constitution of the Chinese Communist Party”, the “Regulations of the Chinese Communist Party on Integrity and Self-discipline”, the “Regulation on the Chinese Communist Party on Disciplinary Actions”, the “Chinese Communist Party Internal Supervisory Regulations (Interim)” and the “Regulations on Integrity of State-owned Enterprise Leaders”. We implement a series of policies including integrity dialogues, commitment to implementation and supervision mechanism, internal reporting mechanism and proper information disclosure to combat illegal practices, maintain a strongly intolerant attitude toward corruption and create our group-wide reputation of integrity. The supervision office of the Company is responsible for work related to our employees’ conduct and integrity and for combating corruption.

In 2018, the Company and its staff were not involved in any prosecution for corruption or other commercial crimes.

The Company adopts the above regulations and laws as the guiding principles for supervision to closely monitor the discipline of all staff. The management of the Company, all departments, all the subsidiaries, their senior officers and all staff members are subject to discipline monitoring and administration supervision from the supervision office. Departments and officers in charge of finance, assets and engineering construction are the main focus for supervision. The supervision office is entrusted with the rights of supervision, inspection, investigation, recommendation, participation and punishment so as to combat all misconducts.

Internal Reporting System

Employees at all levels have the right to report any misconducts or illegal practices of the Company, departments and individuals, including offenses from financial accounting and internal supervision, to the disciplinary committee of the Company. The reports would be thoroughly investigated by the supervision office of the Company, which is empowered by the Company’s party committee and disciplinary committee. Once the investigation reveals violations of laws and regulations, the Company will pass the case to prosecution for further handling without hesitation.

Integrity Commitment and Implementation

The Company has formulated the “Measures for the Implementation of Integrity Commitment” under the Chinese Communist Party Committee of the Tianjin Capital Environmental Protection Group Company Limited. All leading officers, party members and key personnel are subject to the surveillance by the crowd and the Company. Each of them is required to commit to integrity in his own name, and disciplinary actions will be taken against those with misconducts such as bribery and corruption.

Integrity Dialogues

In 2018, the Company continued to uphold the integrity atmosphere in our operation and cultivate self-discipline amongst employees. We established the integrity dialogue system for the party members and leading officers of the party committee of Tianjin Capital Environmental Protection Group Company Limited according to the “Integrity Dialogue System for the Party Members and Leading Officers of the Tianjin Infrastructure Investment Group”, where the party organisations and individuals would be reminded or alerted, and on the issue of integrity, be warned or criticised through formal conversation, warning and admonishment. This practice contributes to our corporate culture shared by all staff members that we are at all times self-disciplined in upholding integrity and abiding the laws.

Open and Fair Governance

The Company has complied with the listing rules in both Hong Kong and the PRC. Independent auditor is appointed to prepare the Company’s financial statements and to conduct external audit on our internal control. The management of the Company seeks to eliminate all fraud or unethical behaviour. At the same time, the Company has taken a proactive approach in observing its obligation to disclose information, by holding regular shareholder meetings to share our development plans with investors to achieve openness and fairness.

Community Investment

The Company is strongly devoted to shouldering corporate social responsibility. As our tap water supply business is closely related to community livelihoods, we take initiative to deliver reliable sewage treatment work and a quality water source for the public. We are also very proactive in initiating social development and fundraising projects, creating value for different communities and advocating the traditional virtues of helping people in need, caring the poor and alleviating poverty. The Party-masses Department of the Company is responsible for the policies on community engagement and ensuring its activities have taken local community interests into consideration.

Socially Responsible: Ensuring Water Safety

The business of the Tianjin Water Recycling Company Limited (“**Water Recycling Company**”) is closely connected with the public. We take the responsibility of supplying a sustainable quality water source seriously, and seek to refine our service culture with a wide range of measures.

We proactively promote a vision of “zero-distance” in our services, insisting on “zero-distance” services with our users, “zero-delay” in business handling, “zero-mistake” in the charging standards, “zero-damage” to the service image, “zero-complaint” for hotline services, and “zero-accident” for our safe water supply.

Moreover, we kept standardising the facilities and refining the environment of our services. We implemented the “One Window and One Station Service” by adopting a smart fee management system as well as an electronic display screen to increase work efficiency, and providing umbrellas and glasses to benefit users.

We stress the importance of broadening the scope of our services and optimising customer relationship management. We established a joint regulation model with large industrial users, and paid regular visits to the users to listen to advice and suggestions so as to improve our services. We also set up a 24-hour service hotline to enforce our customer-centric service management system.

In addition, we strengthened scientific management and undertook water supply service commitments. The company has a team of professionals for repair and maintenance on standby 24 hours a day. By integrating the “3G” (GIS, GPS, GPRS) technology concept into the basis of rapid linkage of the factory network, and the “Five Senses” and “Eight Elements” work methods, we shaped a high-quality water supply regulation system and provided solutions to quickly locate and tackle leakages. These all ensured a safe, standardised and well-managed water supply service.

It is our top priority to provide a safe water supply and create a harmonious water environment. In order to ensure a safe water supply during the National Games of China, the Water Recycling Company formed a maintenance taskforce to increase inspection frequency, conducting thorough examinations on 18.8 kilometers of pipe network and 511 facilities in and around the National Games Village. We could therefore deliver a safe water supply for 2,300 households in the village with a building area of 530,000 square meters.

Socially-Committed: Caring for Different Communities

As a state-controlled listed company, the Group, while undertaking the main responsibility and economic indicators, fulfills its environmental responsibility to the society with a high sense of responsibility.

The Group attaches great importance to public welfare undertakings and focuses on the common development of internal and external development. While highlighting the development of the enterprise itself, it firmly grasps the important requirements of the new era of university construction and development, strengthens community governance, and promotes volunteer service, and strives to give back to the society, which is the social responsibility that a state-owned enterprise should have. In 2018, with the aim of optimizing the economic industry and upgrading and establishing a channel for talent growth, a long term mechanism of “Integration of production and education, school-enterprise cooperation” was established, so that people nowadays can better match social needs. This allows college students to have a good growth environment, create more social practice opportunities, complete the strategic cooperation with the Tianjin Normal University, and negotiate with the Tianjin Modern Vocational and Technical College; cooperate with Nankai University MBA Center and Sannong Society to carry out “Warm Winter Warmth” “Love donation, Qingming love planting trees, “Dreaming for the book” volunteers to fundraise books and other activities, mobilizing workers in Tianjin. This lasted for one month, collecting more than 1600 books for rural grassroot children in Guizhou, Jilin, Hubei and other educational areas. This allows the service work done by the Company to have energy, warmth, connotation and further allowing charity to integrate into corporate culture, transforming the “Soft Power” of the enterprise to become the “Hard Support” of transformation and development.

The Group has also actively implemented the spirit of the General Secretary Xi Jinping’s speech “Speaking at the Symposium on Poverty Alleviation”, in accordance with the requirements of the Tianjin Municipal Committee’s “Implementation Opinions on Launching a New Round of Pairs to help difficult villages” and the arrangement of the party committee of the City Investment Group was arranged to help the work of Xixiaoliang Village in Nancai Village. On the basis of comprehensive and meticulous preliminary investigation and close integration with the actual situation of difficult villages, the City Investment Group completed the three-year plan for the pairing assistance work from 2018 to 2020, and formulated a practical infrastructure assistance project plan, and with Wuqing Nancai. The village and town governments and the village committees have repeatedly communicated and coordinated to form a project implementation plan. The Company will always promote the assistance and relief in the primary position, to improve the village infrastructure, enhance the appearance of villages and villages as an entry point, and strive to stimulate the endogenous development momentum of the village. The main projects included: new construction and maintenance of roads in the village, installation of street lamps, renovation of ditches and pits, smooth irrigation channels, cleanup of environmental sanitation, construction of public activities, facilities, etc. The donation amount of the 2018-2020 plan is 4,167,100 yuan. As of March 2019, 2.27 million yuan has been disbursed.

Carrying out assistance work is a major political task of the Group. In addition to financial assistance, it will give full support to the resident assistance group, strengthen the resource allocation of related business areas such as engineering construction and environmental governance, promote the implementation of the assistance plan and ensure the funding in paid timely and fully on the basis of the legal compliance and in accordance with the needs of the use of fund. At the same time, the Group strives for connecting with the supporting work group and actively taking responsibility and initiative to strengthen the supervision and inspection of the rational use and effective management of donated funds, ensuring the earmarking of special funds, eliminating the occurrence of various types of encroaching fund problems, putting in practice the important account of the General Secretary on poverty alleviation and promoting the practice of poverty alleviation in China.

In 2018, Fuyang Company further expanded the poverty alleviation policy propaganda, and actively connected with Fenglou Village, Gaotang Township, Linquan County to help poor households to obtain subsidies for the renovation of dangerous houses, free compulsory education and subsidies, medical security policies, subsistence allowances, and small loans with capital investment, village collective assets income dividends and other precision poverty alleviation projects; monthly poverty-stricken households to visit the work, timely understanding of the poor households' family situation and ideological dynamics, has added more than 3,700 yuan for daily necessities such as meals, cabinets, televisions, stools, etc. In traditional holidays such as the Dragon Boat Festival, Mid-Autumn Festival, and Spring Festival, the responsible team of poverty alleviation sent holiday condolences to every poor household. The festival distributed a total of 8100 yuan of holiday condolences to ensure their warmth and love. At the end of 2018, all the 9 poor households passed the poverty alleviation and acceptance inspection in Anhui Province, and completed the poverty alleviation task one year ahead of schedule.

As the concept of nurturing children is important, Kaiying Company Jinnan Sludge Plant and the Balitai Primary School in Jinnan District has completed a contract stating that the school will be used as a location for future activities. This included the provision technical support for the environmental protection section of the school science and technology exhibition hall, and regularly carried out environmental protection classes to leading primary school students to start from a small age, start from the small things around the world and promote the concept environmental protection to the society, and practicing corporate environmental responsibility; Qujing Liangjiangkou Sewage Treatment Plant and Sunshine Kindergarten carried out the "Mother Earth is sick" social practice activities, inviting kindergarten teachers and students and parents to visit the sewage treatment process, further increasing the publicity and education of sewage treatment, promoting the improvement of the ecological environment, and strengthening the utilization of energy resources. Xi'an company organizes party members to carry out poverty alleviation and condolence activities in the community of Xi'an Hancheng North Road with the theme of "Care for the poor, Send warmth during Mid-Autumn Festival", and send condolences with mooncakes, rice, noodles and oil for the needy families and widows. Fulfilling corporate social responsibility and demonstrating the role of the new era of business. Bayannaoer Branch organized all party members to carry out the "Special Love for Special You" condolences at Bayannaoer Special Education School, sending school bags and stationery to children, and carrying out various forms of interactive activities with special need children. The branch of Karamay Company carried out the ceremonial activities of the Bayi Army with the theme of "Promote double support and Ensuring stability", sending the cooling drinks and sincere blessings to the officers and men of the army, singing to the military the melody "Same Breath, Mutual fate, Heart to Heart", to work together to achieve the goal of social stability and long-term stability in Xinjiang.

HKEX ESG REPORT MAPPING WITH GRI G4 STANDARDS

HKEx KPIs	GRI G4	Page
A. Environmental		
<i>Aspect A1: Emissions</i>		
A1.1 The types of emissions and respective emissions data.	G4-EN15 G4-EN16 G4-EN17 G4-EN20 G4-EN21	15,16,19
A1.2 Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	G4-EN15 G4-EN16 G4-EN17 G4-EN18	15,16
A1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	G4-EN23	18
A1.4 Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	G4-EN23	18
A1.5 Description of measures to mitigate emissions and results achieved.	G4-EN19	15-16
A1.6 Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved.	G4-EN23 G4-EN25	17-18
<i>Aspect A2: Use of Resources</i>		
A2.1 Direct and/or indirect energy consumption by type (e.g. electricity, gas or oil) in total (kWh in '000s) and intensity (e.g. per unit of production volume, per facility).	G4-EN3 G4-EN5	21
A2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility).	N/A	21
A2.3 Description of energy use efficiency initiatives and results achieved.	G4-EN6 G4-EN7	20-21
A2.4 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	G4-EN10	21
A2.5 Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	G4-EN1	21

HKEx KPIs	GRI G4	Page
<i>Aspect A3: The Environment and Natural Resources</i>		
A3.1 Description of the significant impacts of activities on the environment and natural resources and the actions taken to manage them.	G4-EN9 G4-EN12 G4-EN24 G4-EN26 G4-EN27 G4-EN30	21-23
B. Social		
Employment and Labour Practices		
<i>Aspect B1: Employment</i>		
B1.1 Total workforce by gender, employment type, age group and geographical region.	G4-LA12	26-27
B1.2 Employee turnover rate by gender, age group and geographical region.	G4-LA1	27-28
<i>Aspect B2: Health and Safety</i>		
B2.1 Number and rate of work-related fatalities.	G4-LA6	28
B2.2 Lost days due to work injury.	G4-LA6	28
B2.3 Description of occupational health and safety measures adopted, how they are implemented and monitored.	N/A	28
<i>Aspect B3: Development and Training</i>		
B3.1 The percentage of employees trained by gender and employee category (e.g. senior management, middle management).	N/A	30
B3.2 The average training hours completed per employee by gender and employee category	G4-LA9	30
<i>Aspect B4: Labour Standards</i>		
B4.1 Description of measures to review employment practices to avoid child and forced labour.	G4-HR5-c G4-HR6-b	31
B4.2 Description of steps taken to eliminate such practices when discovered.	G4-HR5-c G4-HR6-b	31

HKEx KPIs	GRI G4	Page
Operating Practices		
<i>Aspect B5: Supply Chain Management</i>		
B5.1 Number of suppliers by geographical region.	G4-EC9 G4-12-a	31
B5.2 Description of practices relating to engaging suppliers, number of suppliers where the practices are being implemented, how they are implemented and monitored.	G4-EN32 G4-EN33 G4-LA14 G4-LA15 G4-HR10 G4-HR11 G4-SO9 G4-SO10	31,32
<i>Aspect B6: Product Responsibility</i>		
B6.1 Percentage of total products sold or shipped subject to recalls for safety and health reasons.	N/A	32
B6.2 Number of products and service related complaints received and how they are dealt with.	G4-PR5 G4-PR8	32
B6.3 Description of practices relating to observing and protecting intellectual property rights.	N/A	33
B6.4 Description of quality assurance process and recall procedures.	N/A	32
B6.5 Description of consumer data protection and privacy policies, how they are implemented and monitored.	N/A	33
<i>Aspect B7: Anti-corruption</i>		
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.	G4-SO5	34
B7.2 Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	G4-58-a	34-35
<i>Aspect B8: Community Investment</i>		
B8.1 Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	G4-EC7	36-38
B8.2 Resources contributed (e.g. money or time) to the focus area.	G4-EC1	36-38