



# *Environmental, Social & Governance Report 2019*



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

# 2019 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

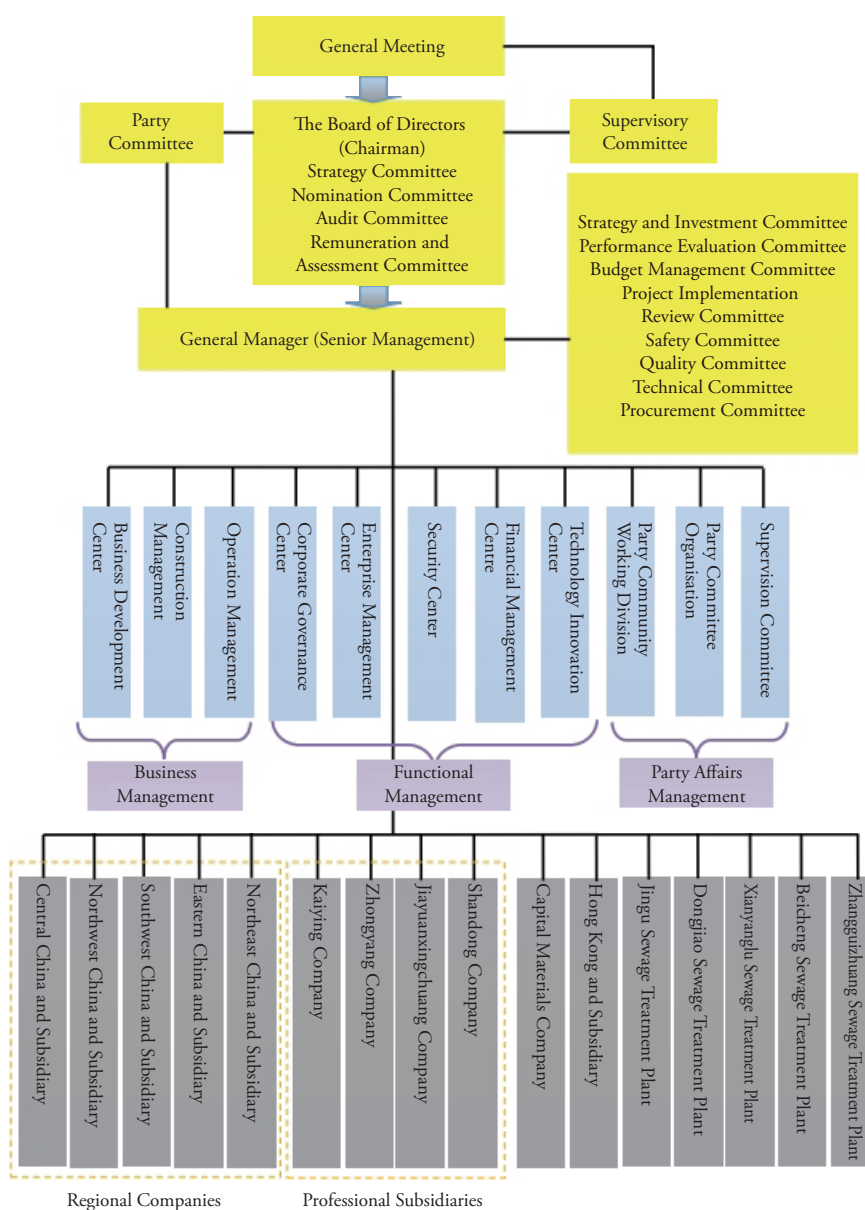
Tianjin Capital Environmental Protection Group Company Limited (the “**Company**”, together with its subsidiaries as the “**Group**”) was established in January 2001, where the Tianjin Municipal Government restructured the then Tianjin Bohai Chemical Industry (Group) Company Limited and renamed it to 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 keeps putting effort into reaching its strategic objectives – becoming a domestic pioneer and international reputed integrated environmental solutions and services provider.

As of 31 December 2019, the Company possessed total assets of RMB17.991 billion with net assets of RMB6.17 billion. It operates 5 functional management centers, 3 business management centers, 3 party departments, 47 controlling subsidiaries, and has 2,005 employees. Operating revenue was RMB2.851 billion with a net profit of RMB507 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; industrial wastewater treatment; treatment of solid waste such as sludge and hazardous 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 respectively 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:



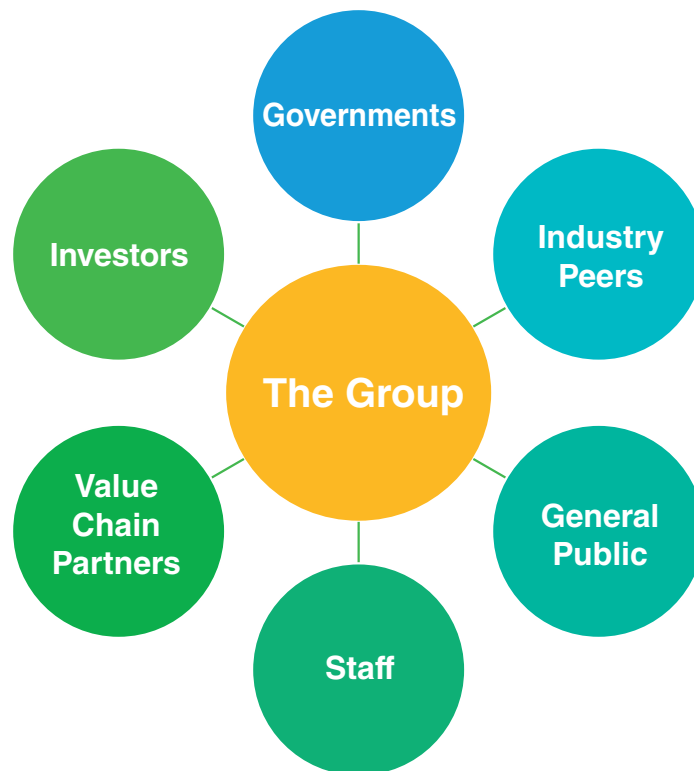
## 2. ESG REPORT SCOPE AND BOUNDARIES

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 Sustainability Reporting Standards (GRI Standards) of the Global Reporting Initiative (GRI). 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 2019 to 31 December 2019. This report covers our core businesses in Mainland China. A detailed HKEx ESG Reporting Guide and GRI Standards 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
Investors	Annual Reports and Announcements Investors Road Shows Investors Communication Meetings Investors Communication Platform Shareholders' Meetings	Corporate Governance Organisational Structure Economic Performance Compliance Anti-Corruption Product Quality Customer Data Privacy Community Investment Charity and Relief

Stakeholders	Means of Engagement and Communication	Concerned Aspects
Industry Peers	Industry Forums Alliance Meetings	Corporate Governance Organisational Structure Compliance Emissions Environmental Protection Energy Supply Chain Management Procurement Behaviours Anti-Corruption Product Quality Customer Data Privacy
Value Chain Partners	Meetings Emails Phone Calls	Corporate Governance Supply Chain Management Procurement Behaviours Anti-Corruption Product Quality Customer Data Privacy
Staff	Staff Congress Meetings Interviews	Corporate Governance Organisational Structure 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 Standards, 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 Standards 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.

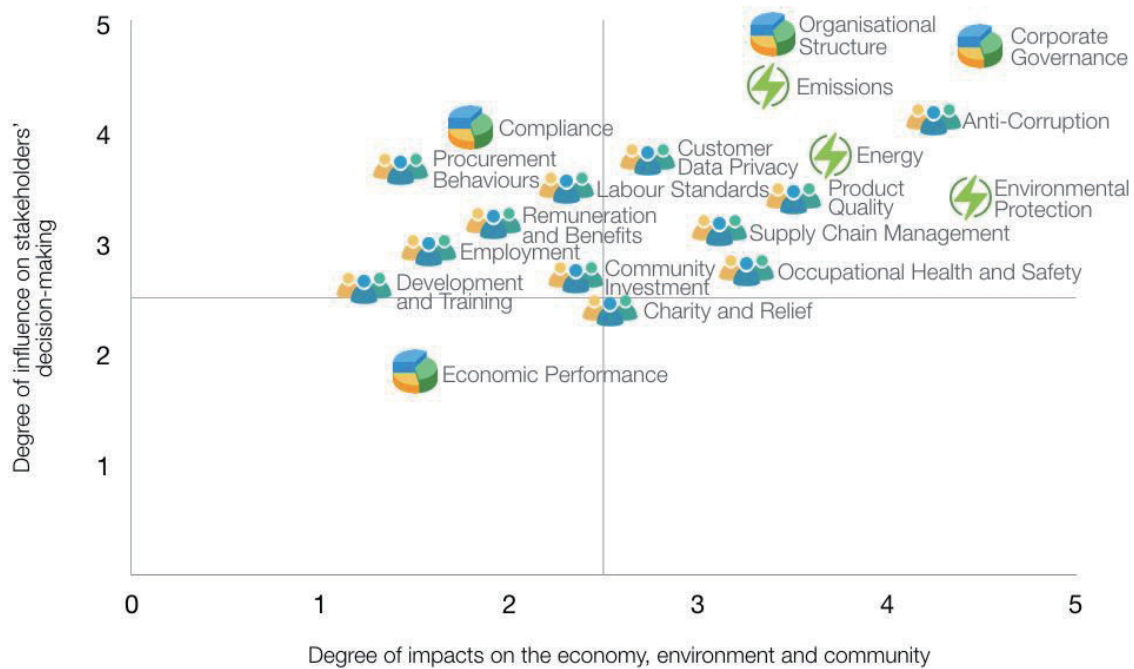
Topic	Material Aspects	Scope of Impact					
		Governments	General Public	Investors	Industry Peers	Value Chain Partners	Staff
Operational Management	Corporate Governance	★	★	★	★	★	★
	Organisational Structure	★	★	★	★	●	★
	Economic Performance	●	●	★	●	●	★
	Compliance	★	●	★	★	●	●
Environmental Optimisation	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:



### High Material Aspects

Governance Corporate  
Organisational Structure

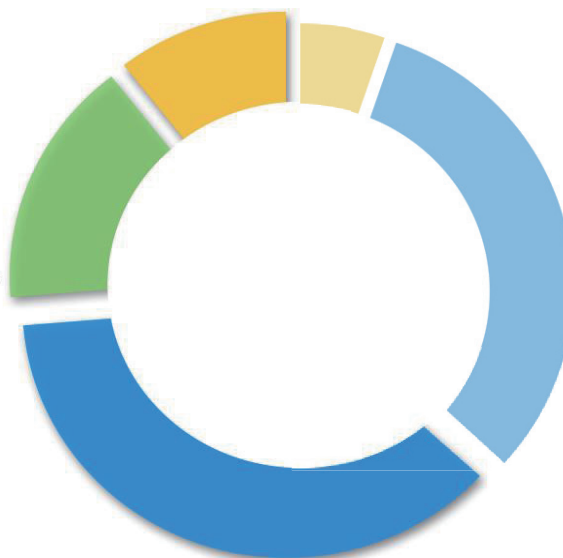
Emissions  
Energy  
Environmental Protection

Occupational Health and Safety  
Supply Chain Management  
Anti-Corruption  
Product Quality  
Customer Data Privacy  
Community Investment  
Charity and Relief

### Medium Material Aspects

Economic Performance  
Compliance

Remuneration and Benefits  
Development and Training  
Labour Standards  
Procurement Behaviours



### 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 report of the 19th National Congress of the Communist Party of China. 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 2019, the Company achieved great success and accomplished continuous breakthroughs. As of 2019, the Company has been awarded the title of "Top Ten Influential Enterprises of Chinese Water Industry" by China Water Network for 15 consecutive years. Jingu Sewage Treatment Plant won the second prize of the Tenth Season of the Tianjin Safety Construction Management Team Achievement Show and Excellent Team Selection Activity. Kaiying Company won the title of Tianjin Strategic Emerging Industry Leading Enterprise, acquired approval of the subsidized project after the R&D investment of Tianjin enterprise, and was selected as the first batch of Gazelle Enterprises in Tianjin in 2019. The project of Upgrading and Expansion of Chunliu River Sewage Treatment Plant Phase I of Dalian Company won the honor of "Dalian Municipal Golden Cup Demonstration Project". Qujing Company acquired the honor of "Demonstration Unit of Yunnan Ankang Cup Competition". Tancheng Industrial Waste Treatment Center project of Shandong Company was awarded "Advanced Enterprise for Safe and Civilized Construction". Xi'an Company was awarded the title of Worker Pioneer and was approved for the research project of industrial wastewater treatment technology, Intelligent sewage treatment platform technology project. Karamay City Second Sewage Treatment Plant Phase II Project won the "Autonomous Region Standardised Site of Engineering Construction Safety Production".

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 “13<sup>th</sup> 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 2019, 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 40 sewage treatment plants with a total capacity of 5.3491 million m<sup>3</sup>/day, which were located across northern, central, southwest, eastern and northwest China and were key pollutant discharging entities for local environmental protection authorities. As at the end of the reporting period, the overall sewage treatment capacity of the Company was 1.367419 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/T 399-2007)
- 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 4th edition” 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. “Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant” (DB12\_599-2015) (Tianjin) Landmark A.

#### **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 420,000 m<sup>3</sup>/day with sales of recycled water at 60.981 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 2019, the Group invested RMB3.7852 million in new technologies and launched 51 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”, 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 focused on promoting CYF-MBP biological deodorization technology research, research projects on smart water architecture system and core module pre-research, and carbon source dosing and optimization study under the Landmark A effluent standard of Jingu Plant. These projects accelerated the achievement transformation process and contributed to our technical reserves for future development.

The Group has also undertaken 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), the “13<sup>th</sup> Five-Year” water specialized project on “Biosystem Effective Improvement and Demonstration on Construction and Operation” (2017ZX07106005-02), the “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 city level “Research and Demonstration Application of High-standard Treatment and Recycling Technology for Urban Sewage”, “Sewage Wastewater Treatment Bio-enhanced Microbial Agent Application Technology Service Platform” (16PTGCCX0011), and the “Research on typical PPCP emerging pollutant treatment technology for urban sewage treatment plants” (19YFZCSF00840), all of which are currently being implemented as planned.

In 2019, the Group obtained a total of 9 granted patents, including 5 invention patents and 4 utility model patents. As at the end of 2019, the Company had a total of 91 valid patents, including 25 invention patents, 61 utility model patents and 5 design items.

### **Strict Discharge Monitoring Ensuring Compliance with Effluent Standards**

While the Company is devoted to constantly improving the quality of our treated effluent, the Company 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).

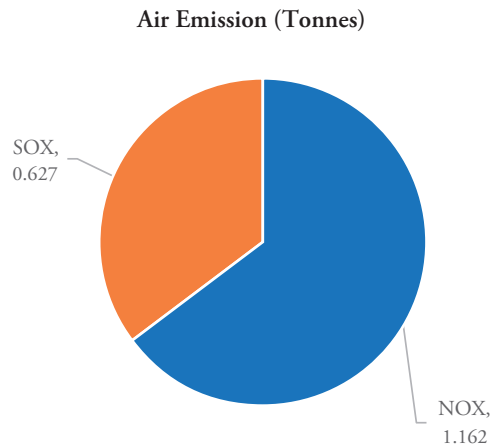
During the reporting period, the overall sewage treatment capacity of the Company was 1.367419 billion cubic meters. The quality of all treated effluents has achieved the required discharge standards. For the year 2019, the Company has successfully reduced COD pollutants by 469,500 tons, of which 250,800 tons were from Tianjin and 218,700 tons from other provinces. In addition,  $\text{NH}_3\text{-N}$  pollutants were reduced by 45,300 tons, of which 24,800 tons were from Tianjin and 20,500 tons from other provinces. These accomplishments practice General Secretary Xi Jinping’s “Lucid waters and lush mountains are invaluable asset” thought of ecological civilization construction, and have supported the nation’s work in energy saving and emission reductions, and brought ecological benefits to Tianjin and the other cities where the Company’s projects are located.

#### Low-Carbon Operations Improving Air Quality

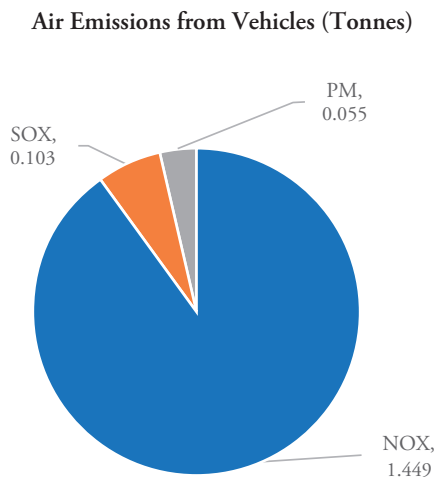
Fresh air is another vital component of a quality natural environment beside clean water resources. The Company accorded high priority to the control of gaseous emissions generated from our operations and traditional coal-fired boilers by limiting the emissions and concentrations of the air pollutants. 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 2019, our water plants and energy stations (excluding entrusted operations) produced 1.162 tons of  $\text{NO}_x$  and 0.627 tons of  $\text{SO}_x$  from fossil fuel consumption<sup>1</sup> including natural gas.

<sup>1</sup> Based on best data available at the time of preparation of the report.





Meanwhile, the air pollutants produced from vehicles in 2019 were 1.449 tons of NOx, 0.103 tons of SOx and 0.0549 tons of particulate matter.



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 2019, we produced 453.9 k tons<sup>2</sup> of total CO<sub>2</sub> equivalent GHG emissions, including direct GHG emissions (1.655 k tons), purchased electricity emissions (452 k tons), paper waste disposed at landfills (0.0971 k tons) and business air travel by employees (0.158 k tons) with an intensity of 7.96 k tons of CO<sub>2</sub> equivalent per facility (excluding entrusted operations).

<sup>2</sup> Based on best data available at the time of preparation of the report.

*Recycling Sludge and Solid Waste: Turning Waste to Treasure***Reduction, Hazard-Free Treatment and Re-utilisation of Sludge**

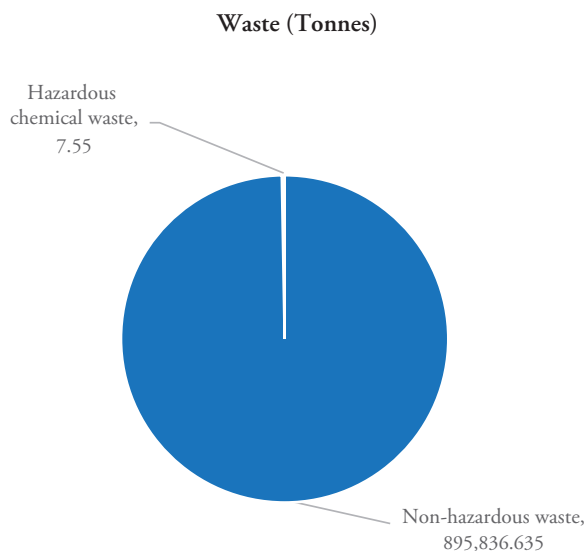
Sludge is the main solid waste generated during sewage treatment, so the Company takes a proactive approach to setting a number of methods in handling sludge. In particular, effort was put in scientific research to improve sludge treatment technology so as to minimise the negative impact of sludge disposal 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 2019, the Tianjin Local Standard “Tianjin Municipal Sludge Treatment and Disposal Technical Regulations” (DB/T29-269-2019) was completed and published. The Company completed the draft of the industry standard “Technical Regulations for Operation, Maintenance and Safety of Urban Sewage Treatment Plants” (CJJ60) and passed the expert review in November 2019. The revision work is currently being proceeded as planned.

During the reporting period, the sewage treatment plants produced 895,837 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 7.55 tons with an intensity of 0.132 tons of hazardous chemical waste per facility (excluding entrusted operations) in average. The total other non-hazardous waste produced was 895,836.6 tons with an intensity of 15,716 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 499,500 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 220,200 tons		
	Suspended Solids	Reduced by 293,600 tons		
	Total Nitrogen	Reduced by 52,200 tons	“Emission Standard for Odor Pollutants” (GB14554-93)	
	Ammoniacal Nitrogen	Reduced by 45,300 tons		
	Total Phosphorus	Reduced by 8,000 tons		

Types of Emission	Emissions	Emissions Data	Relevant Laws	Remarks
Sludge	Silts, Rubbishes and Activated Sludge	Dehydrated Sludge 895,837 tons	<p>“Prevention and Control of Environmental Pollution by Solid Waste Law”</p> <p>“Discharge Standard of Pollutants for Municipal Wastewater Treatment Plant” (GB18918-2002)</p> <p>“Disposal of Sludge from Municipal Wastewater Treatment Plant – Quality of Sludge Used in Land Improvement” (GB/T 24600-2009)</p> <p>“Disposal of Sludge from Municipal Wastewater Treatment Plant – The Quality of Sludge Used in Gardens or Parks” (GB/T 23486-2009).</p>	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

## 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 2019, 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 2019 was 498,217,325 kWh (excluding entrusted operations) with an energy consumption intensity of 8,760,655 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 1,709,166 m<sup>3</sup> with a water consumption intensity of 29,985 m<sup>3</sup> 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, the 4 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 2019, 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 performance-related pay 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 2019, 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. It is effective to show our concern to employees, in order to promote the sense of belonging and stabilize the workforce.

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 and enterprise annuity 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. 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 living conditions and the ideological dynamics of the hardworking workers, 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 6 who had a model of labor. Over the years, the Company has insisted on comprehensively understanding the situation of the grassroot 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 "13<sup>th</sup> Five-year Plan".

*Our Workforce*

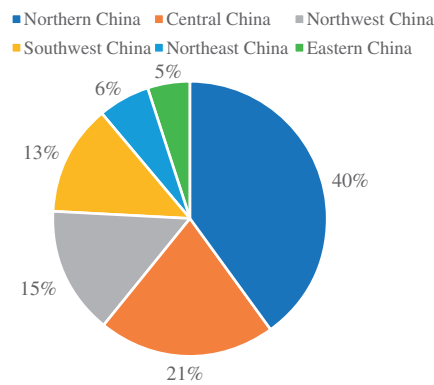
As of 31 December 2019, there were 2,005 employees in the Group, among which 466 belonged to the Company. 5 employees possess a doctoral degree, 112 possess a master's degree, and 1,027 possess an undergraduate education. The Group employs 966 certified technical professionals, 17 of which are top management, 226 senior, 317 intermediate rank, and 406 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	146
Others	1,847

#### Total Workforce by Geographical Region



Geographical Region	Number of Employees
Northern China	795
Southwest China	266
Eastern China	98
Central China	419
Northwest China	309
Northeast China	118

#### Employee Turnover by Gender

Gender	Employee Turnover Rate (%)
Male	3.95
Female	2.71

### Employee Turnover by Age Group

Age Group	Employee Turnover Rate (%)
Aged 19 or below	0
Aged between 20 – 29	3.00
Aged between 30 – 39	3.84
Aged between 40 – 49	1.56
Aged 50 or above	14.29

### Employee Turnover Rate by Geographical Region

Geographical Region	Employee Turnover Rate (%)
Northern China	0.27
Southwest China	0
Northeast China	4.24
Eastern China	2.60
Central China	9.17
Northwest China	4.92

### 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 “13<sup>th</sup> 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	95.37%	88
Female	79.97%	73.34

#### 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%	47.33
Manager	100%	105
Staff	90.27%	93.94

#### 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 2019, 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 2019, we had 8,655 suppliers. Our suppliers distribution by geographical region is presented as follows:

Geographical Region*	Number
Northern China	5916
Northeast China	75
Eastern China	1242
Central China	550
Northwest China	558
Southern China	314

\*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 2019, 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”(CJJ60-2011) 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 2019, 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 2019, 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 Shanghai. 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 hold tightly around the core values of “dedicating to ecological civilization and contributing to a better world”, and take the responsibility of supplying a sustainable quality water source seriously, so as to fulfill the social responsibility of the Water Recycling Company.

The Water Recycling Company has a refined, streamlined, systematic and unified water service system to ensure “Safe Supply, Worry Free”.

First, the Company is building a multi-channel payment platform in order to provide a simple and convenient water services. We are actively promoting WeChat, Alipay, Cloud QuickPass, mobile APP, WeChat public account, POS machine, self-service water sales equipment and other online payment, so that users can simply pay on the internet or through mobile phones.

Second, the Company has set up a 24-hour service hotline and pipe network maintenance center to enforce our customer-centric service management system. We actively improve the hotline handling, network dispatch, receive, and return orders, so as to improve the efficiency and effectiveness of the hotline handling, shorten the handling process, and establish spot check the return visit mechanism to enhance the convenience of service efficiency.

Third, 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.

Fourth, the Company has optimized customer relationship management. We broaden the room of service space for large-scale users, establish a joint scheduling model, subsidence management, real-time monitoring, automatic control of water volume and pressure; regularly visit to the users to listen to their opinions and suggestions to continuously improve service quality.

China Water Corporation has established demonstration sites for greening and water addition, innovating water intake models, and promoting the use of recycled water in municipal gardens and greening. In 2019, China Water Company completed the sales of 35.58 million tons of water throughout the year, ensuring the safe water supply of 147,391 residents (building area of 18.04 million square meters), 4 thermal power plants and 96 public construction projects, and establishing the good social image of China Water Company with its high-quality services.

### *Socially-Committed: Caring for Different Communities*

As a state-controlled listed company, the Group while undertaking the main responsibility and economic indicators, the Company fulfills its environmental responsibility to the society with a high sense of responsibility. We strive to maximize the comprehensive value of the economy, society and environment with the least resource input and the smallest social environmental cost, so that we are trusted by the government and the public. 2020 will be a critical period for the market-oriented reform of entrepreneurship and environmental protection. The Group will continue using Xi Jinping's Socialist Thought with Chinese Characteristic in the New Era as guidance, firmly establish new development concept, ensure the effectiveness of deepen reform, stimulate the development vitality of the Company, strive to improve the economic benefits of the Company, and take the social responsibility actively.

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 and creates more social practice opportunities.

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 includes 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; Dalian Company has held activities such as open day and environmental protection education, to promote the public environmental awareness and knowledge about environmental protection, sewage treatment, and clean water recycling. Qujing Company has sent resident employees to Panzhiga Village Committee, Pulixiang, Xuanwei to cooperate with the village committees on poverty alleviation work. Xi'an Company has taken external communication as the starting point of corporate culture construction, through holding activities such as World Water Day, World Environment Day, Poverty Alleviation, and Chongyang Festival condolences, to promote the employee dedication and company image. Karamay Company has placed promotion posters and has cleaned flooded water grasses growing in the waterfall of ancient sea wetland, and has carried out condolences to officers and soldiers on World Environment Day and the “1st of August” Army Day, to contribute to the ecological environment. In order to focus on love, gather strength, and convey warmth, Wendeng Company has organised and has carried out the charity activities of poverty alleviation and donation of clothing., 50 pieces of clothing have been donated to the need in Tibet. In order to ensure the safety of the residents around Xi Zhai Qiao, party members, cadres and employees of the company have been organized to repair the guardrail of Xi Zhai Qiao after communication with relevant departments.

### *Implement targeted poverty alleviation and enhance social awareness*

The Company 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. The village and town governments and the village committees have repeatedly communicated and coordinated to form a project implementation plan. The donation amount of the 2018-2020 plan is RMB4,167,100. As of January 2020, the total amount has been disbursed. 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 overall appearance of the village and the living standards of the villagers have improved significantly.

Meanwhile, 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 "low-income families, planting of pecan nuts, renovation of dangerous houses, foster care for ewe able to breed, small loans with capital investment, employment of public welfare posts and other precision poverty alleviation projects. At the end of 2018, all the 9 poor households passed the poverty alleviation and acceptance inspection in Anhui Province achieved in advance the poverty alleviation standard "rural poor people are free from worries over food and clothing and have access to compulsory education, basic medical services and safe housing". In 2019, the Company actively responded to General Secretary Xi's marching order "no rest until a sweeping victory" using "Four Mastery" as working standard, continuously track the implementation of the poverty alleviation funds and industry income, frequently promote the poverty alleviation policy, timely update the status of the poor. In response to the problem of unsalable pumpkins of poor farmer, we actively advocated employees to carry out consumer poverty alleviation activities, and using solid actions such as purchasing instead of donating, buying instead of helping to solve the actual difficulties of poor households so as to consolidate the effectiveness of assistance and earnestly get rid of poverty, no return to poverty.

The Group will put the well-developed poverty alleviation works as a major political task. On the basis of financial and technical assistance, we will continue to improve the quality by improving the resources allocation in various business areas such as engineering construction and environmental governance. We will actively communicate with the working group, to help ensuring the appropriateness of the uses of funds and effectiveness of the monitoring, so as to prevent misappropriation of funds. We shall use practical actions to implement the General Secretary's important exposition on poverty alleviation, and promote China's great practice of poverty alleviation.

*Active coordination, prevention and control of the disease*

To face with Coronavirus disease (COVID-2019) situation in 2020, as a state-owned listed company with production and operation in 15 provinces, cities and autonomous regions in the country, the Group focus on key tasks such as sewage treatment, recycled water and potable water supply, new energy for heating and public concerned construction projects at the first moment, seriously implement the various deployment requirements of the Ministry of Ecology and Environment, Tianjin and the government of the project's territories regarding epidemic prevention, fulfill the political and social responsibilities, and ensure 24-hour non-stop stable operation. Meanwhile, at the critical stage of resuming production, the Company will consolidate strength to jointly fight the epidemic and promote economic and social development, unite and lead all party members and cadres and employees to carry out joint prevention and control, mass prevention and mass governance. The Company will also constantly weave tight lines of production and operation, construction projects, and internal control lines. We shall coordinate all tasks of enterprise reform and development, and stable operation of economy of the Group while resolutely winning the epidemic prevention battle.

In 2020, Tianjin Capital Environmental Protection Group Company Limited will continue to adhering to the corporate mission, constantly forging ahead and striving towards the strategic goal of an integrated environmental service provider. While consolidating the basic business of water treatment, we will continue to develop new strategic businesses such as new energy, scientific research and development, sponge city, hazardous waste treatment, to contribute greater strength to the construction of ecological civilization, achieve a win-win situation for enterprises, society and various stakeholders, and promote economic development, social harmony and stability.



## HKEX ESG REPORT MAPPING WITH GRI STANDARDS

HKEx KPIs	GRI Standards	Page
<b>A. Environmental</b>		
<i>Aspect A1: Emissions</i>		
A1.1 The types of emissions and respective emissions data.	305-1, 305-2, 305-3, 305-6, 305-7	14-19
A1.2 Greenhouse gas emissions in total (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	305-1, 305-2, 305-3, 305-4	14-16
A1.3 Total hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	306-4	17-18
A1.4 Total non-hazardous waste produced (in tonnes) and, where appropriate, intensity (e.g. per unit of production volume, per facility).	306-2	17-18
A1.5 Description of measures to mitigate emissions and results achieved.	305-5	13-14
A1.6 Description of how hazardous and non-hazardous wastes are handled, reduction initiatives and results achieved.	306-2 306-4	17
<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).	302-1, 302-3	20
A2.2 Water consumption in total and intensity (e.g. per unit of production volume, per facility).	303-1	21
A2.3 Description of energy use efficiency initiatives and results achieved.	302-4, 302-5	19,20
A2.4 Description of whether there is any issue in sourcing water that is fit for purpose, water efficiency initiatives and results achieved.	303-2, 303-3	21
A2.5 Total packaging material used for finished products (in tonnes) and, if applicable, with reference to per unit produced.	301-1	21
<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.	304-2, 306-3	20-23
<b>B. Social</b>		
<b>Employment and Labour Practices</b>		
<i>Aspect B1: Employment</i>		
B1.1 Total workforce by gender, employment type, age group and geographical region.	102-8-a, 102-8-b, 102-8-d, 405-1	25-27
B1.2 Employee turnover rate by gender, age group and geographical region.	401-1	26-27

HKEx KPIs	GRI Standards	Page
<i>Aspect B2: Health and Safety</i>		
B2.1 Number and rate of work-related fatalities.	403-2	27
B2.2 Lost days due to work injury.	403-2	27
B2.3 Description of occupational health and safety measures adopted, how they are implemented and monitored.	N/A	28-29
<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	404-1	30
<i>Aspect B4: Labour Standards</i>		
B4.1 Description of measures to review employment practices to avoid child and forced labour.	408-1-c, 409-1-b	30
B4.2 Description of steps taken to eliminate such practices when discovered.	408-1-c, 409-1-b	30
<b>Operating Practices</b>		
<i>Aspect B5: Supply Chain Management</i>		
B5.1 Number of suppliers by geographical region.	102-9-a, 204-1	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.	308-1 308-2, 414-1, 414-2	31
<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.	102-43, 418-1	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	32-33
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.	205-3	34
B7.2 Description of preventive measures and whistle-blowing procedures, how they are implemented and monitored.	102-17-a	33-35
<i>Aspect B8: Community Investment</i>		
B8.1 Focus areas of contribution (e.g. education, environmental concerns, labour needs, health, culture, sport).	203-1	35-39
B8.2 Resources contributed (e.g. money or time) to the focus area.	201-1	35-39