SDIC Green Finance Report 2020

I. Summary of Green Finance in 2020

The State Development and Investment Group Corp., Ltd (SDIC), founded in 1995, is an important state-owned backbone enterprise under the direct supervision of the central government, the only investment holding company among the central enterprises, and among the first batch of pilot units for the reform of state-owned capital investment companies. The registered capital of SDIC is 33.8 billion RMB yuan, and by the end of 2020, it has total assets of 682 billion RMB yuan and about 50, 000 employees. In 2020, it achieved a gross operating revenue of 153.7 billion RMB yuan and a total profit of 22.1 billion RMB yuan. Since its Second Pioneering Campaign started in 2003, SDIC has been graded A-class in the annual performance assessment conducted by SASAC for 16 consecutive years and appraised as "Excellently-Performing Enterprise" for five consecutive rounds.

Since its establishment, SDIC has always adhered to the concept of green development, constantly optimized the layout of state-owned capital, enhanced industrial competitiveness, played a leading role of

state-owned capital in important industries and key areas, and preserved and appreciated the value of state-owned capital. In recent years, SDIC insists on green development, implements the philosophy that Lucid waters and lush mountains are invaluable assets, supports green technological innovation, improves resource utilization efficiency, develops clean energy and environmental protection industries, and establishes a green mode of production.

1. Green bond issuance and maintenance

In April 2019, SDIC issued *SDIC Green Financial Framework,* formally regarding green finance as an important part of SDIC's development of green ecological and environmental protection economy, bearing a guiding identity of sustainable investment in environmental protection and sustainable development projects and other emerging green industries, and demonstrating its will and determination to serve the national strategy and international vision.

In May 2019, SDIC obtained the certification of green bond evaluation agencies such as Sustainalytics and HKQAA (Hong Kong Quality Assurance Agency) and successfully issued 5-year green financial bonds of 500 million USD, which was mainly used for the equity acquisition project of China Water Environment Group.

In May 2020, SDIC issued *SDIC Green Finance Report 2019* for the first time, which fully demonstrated to the capital market and investors its overall layout of green economy and green finance , promised consistent investment in the green ecological and environmental protection economy, and conveyed its will of transformation, upgrading, innovation and development to the domestic and foreign markets. It also shows the practical achievements of SDIC in the field of sustainable development industries.

2. Green credit cooperation

In June 2017, SDIC and the Asian Development Bank (ADB) jointly launched and implemented the ADB loan *Insurance Investment and Financing Promotion Project for the Prevention and Control of Air Pollution in Beijing-Tianjin-Hebei Region (Phase I)*. The loan period of Phase I is 15 years, with a total loan amount of 458 million Euros and China Investment and Financing Guarantee Co., Ltd., a subsidiary of SDIC as the executive agency to establish a green financing platform for sustainable development in the form of re-lending by financial institutions. By means of credit enhancement, investment

and financing, financial services are provided for energy conservation and emission reduction, clean energy, green transportation, waste energy utilization and other projects in Beijing, Tianjin, Hebei and the surrounding eight provinces, cities and autonomous regions. By the end of 2020, 53 sub-projects for Phase I have been approved, 41 sub-projects have been implemented, covering all project target regions and fields; the committed sub-projects are expected to reduce coal consumption by 1.14 million tons and gasoline consumption by 310,000 tons per year.

In December 2020, on the basis of the cooperation of Phase I, the ADB approved the Air Pollution Prevention and Control Project for Beijing-Tianjin-Hebei Coordinated Development (Phase II), with a total investment of about 551 million Euros (of which the ADB loan is 127 million Euros). Four provinces and cities in the Yangtze River Delta have been added to the target regions, and clean air bonds have been added in the ways of investment. Next, SDIC will continue to implement the green development strategy and continue to increase investment and development of green and low-carbon projects such as utility of energy storage and refrigeration energy efficiency enhancement through the ADB project platform, so as to invite social

capital and all parties to contribute to the prevention and control of air pollution and peaking carbon dioxide emissions and carbon neutrality goals.

3. Clean energy project plans

On basis of green development philosophy, China Investment Power Holdings Co., Ltd. (hereinafter referred to as SDIC Electric Power) actively makes plans for clean energy projects at home and abroad, and constantly improve the installed capacity and business scope of clean energy. First, it continues to promote overseas new energy business plans. By the end of 2020, six overseas new energy projects have been invested, involving offshore wind power, onshore wind power, garbage power generation and other fields, all over Scotland, the UK, Sweden, Thailand and other countries. Second, it cultivates the domestic market, optimizes and expands domestic new energy projects. It acquired 8 domestic new energy projects in 2020, put into production 5 green space construction projects, and increased installed capacity by 48.78% over the same period of last year. At the same time, it invested in energy storage, charging piles and other projects to actively explore emerging energy industries. By the end of 2020, its installed scale of wind power and photovoltaic had reached 3.1715

million kilowatts.

II. Report on the Allocation of Green Financial Bond Funds

1. Details of green bond issuance

On May 14th, 2019, SDIC issued a five-year green financial bond priced at 500 million USD. The details are as follows:

SDIC $500 million 5-year Green Bonds	
Issuer	Rongshi International Finance Co., Ltd.
Interest Date	May 21, 2019
Currency	US Dollar
Term	5 years
Issuance Amount	500,000,000.00
Maturity date	May 21, 2024
Repayment of principal	repay all the principal at one time on the maturity date
Coupon Rate	3.25%
ISIN	XS1989704843

2. Distribution of funds raised

At the end of 2018, SDIC acquired a 43% stake in China Water Environment Group through its wholly-owned subsidiary Rongshi International Finance Co., Ltd., and became the single largest shareholder of the company. In May 2019, after completing the green

bond issuance, SDIC used the funds raised to replace water environment equity mergers and acquisitions bank loans.

As of the reporting date, SDIC 5-year green financial bonds is used as follows:

Green project category	Project name	Amount (USD	Completion time
Sustainable Water Resources and Wastewater Management	Water Environment Group M & A loan Replacement	500,000,000.00	May 2019

III. Report on Green Bond Influence

1. Introduction of China Water Environment Group

China Water Environment Group (www.cwewater.com) is a professional company engaged in investment, design, construction and operation of water environment, and is a leading operator of distributed submerged reclaimed water ecosystem with large water treatment scale and advanced technology in Asia. By the end of 2020, the projects of China Water Environment Group covered 20 provinces and cities across the country, with more than 70 subsidiary companies and more than 2800 employees. The total investment in water environment treatment projects exceeded 30 billion RMB yuan, and

the treatment scale exceeded 2.9 million tons per day. The total service population is about 33 million, and the total service area is about 22,500 square kilometers.

In 2019, the Ministry of Ecology and Environment issued the Catalogue of National Advanced Pollution Prevention and Control Technologies (Water pollution Prevention and Control Field) (Ministry of Ecological Environment Bulletin No. 2, 2020). Two technologies of China Water Environment Group were selected in the catalogue. Among them, "intensive construction and resource utilization technology of ecological sunken reclaimed waterworks" as the only selected sinking technology has been popularized to the whole country. The national 13th Five-year Plan major water special project, "Underground Sewage Treatment Plant Construction Mode Innovation and Ecological Complex Demonstration", led by China Water Environment Group, was awarded “Demonstration Base for the Transformation of 13th Five-year Heavy Flood Special Achievements” by the Ministry of Housing and Construction.

In January 2020, the *Technical Guide for Urban Underground Sewage Treatment Plants* led by the Ministry of Housing and Construction and

the Ministry of Environmental Protection was formally implemented nationwide.

In December 2020, China Water Environment Group's “intensive construction and resource utilization of ecological sunken reclaimed waterworks” was selected into *the Green Technology Promotion Catalogue* of the National Development and Reform Commission, the Ministry of Science and Technology, the Ministry of Industry and Information Technology and the Ministry of Natural Resources. By then, the proprietary technology of China Water Environment Group’s distributed sinking and reclaimed water ecosystem had been recognized by five ministries and commissions of the country, and had become one of the eight major technologies for green upgrading of infrastructure, and its leading position in the industry has been further confirmed. In the same year, China Water Environment Group won the Second Prize of National Technological Invention, which is the only award in the field of urban sewage.

2. Effectiveness and performance of water treatment in China Water Environment Group

In 2020, China Water Environment Group treated more than 8 trillion tons of sewage, an increase of more than 20 percent over the previous year, and launched high-quality sewage treatment projects in Beijing, Tianjin, Hebei, East China, Shaanxi and other regions. Centering on the major needs of the national battle for the prevention and control of water pollution, China Water Environment Group has long been committed to promoting the transformation and engineering application of scientific and technological achievements and striving for a combination of R & D-Design-Build-Operation and Maintenance. A scientific and technological innovation platform integrating production, learning, research and use, relevant patented technology and innovative R & D technology achievements have been widely used in municipal sewage treatment and black and smelly water treatment.

In the field of technology application, China Water Environment Group has adopted distributed subsidence and recycled water ecosystem in key cities such as Beijing, Shanghai, Chengdu, Ningbo, Dali and Guiyang. by only considering the distributed subsidence and recycled water ecosystem that has been put into operation, it has saved a total of about 1200 mu of land, completely changed the malpractice

of odor pollution and occupation of a large area of land in traditional surface sewage treatment plants, greatly improved the urban environment and the well-being of residents and highly recognized by the government. . It has It has carried out reuse of reclaimed water in key areas such as Beijing, Sichuan and Guizhou, and adopted water source heat pump to heat the waterworks, which has been giving full play to the advantages of land intensive, resource reuse and environment-friendly of the distributed sinking recycled water ecosystem.

In the field of technological innovation and scientific and technological research and development China Water Environment Group has the National Engineering Laboratory "Urban sewage Advanced treatment and Resource Utilization" (the only national laboratory in the sewage field) and the National Urban sewage treatment and Resource Engineering Technology Research Center. Sino-German Joint Research Center on Water Environment and Health and Sino-Dutch Water treatment Technology Research Center, Beijing Municipal Enterprise Technology Center, Innovative platforms and qualifications such as Beijing municipal research and development institutions and Beijing intellectual property demonstration units In

recent years, he has taken the lead in undertaking the national 13th Five-year Plan major water project Underground sewage treatment Plant Construction Mode Innovation and Ecological complex demonstration, as well as a number of major research projects hosted by the Development and Reform Commission and the Municipal Science and Technology Commission, with a financial allocation of more than 30 million RMB yuan. Core technology has won national, provincial and ministerial awards, including the National Technology Invention Award, the Environmental Protection Science and Technology Award, the Huaxia Construction Science and Technology Award, and the Guangxi Science and Technology Award.

3. Key technology patents and representative projects of China Water Environment Group

At present, China Water Environment Group has independent intellectual property rights in the field of sewage treatment and river basin water environment treatment: HBR high-efficiency and low-consumption biofilm treatment system, HERO high-efficiency biological deodorization system, Trend high-efficiency and low-consumption sludge low-temperature drying technology,

intelligent waterworks and environmental ecology IoT intelligent system, Cwater intelligent township sewage treatment integrated equipment system.

China Water Environment Group has more than 140 authorized patents. Its Intensive Construction and Resource Utilization Technology of Ecological Sunken Reclamation Waterworks has been selected into the green technology promotion catalogue of the four ministries (National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Information Technology, Ministry of Natural Resources) in 2020. The research and development of *Efficient and Land-saving HBR Biofilm Sewage Treatment Technology* successfully passed the appraisal of the achievements of China Environmental Protection Industry Association, and was successfully selected into the list of key technologies for environmental protection in 2018 and the recognition of *Beijing New Technology and New Products (Services)*. The self-developed urban sewage super-clean treatment process system and sinking urban sewage treatment space comprehensive utilization system have respectively won the 7th and 9th batches of new technology and new products (services) in Beijing. Its Underground Sewage Treatment and

Recycling Project of Qingshan, Guiyang, Sewage Treatment Plant Phase I Project of Nanxiang, Jiading, carbon packing biological deodorization technology, efficient and land-saving HBR biofilm sewage treatment technology won the key environmental protection practical technology and demonstration project from 2017 to 2020.

China Water Environment Group has led the compilation of a number of technical standards, leading the scientific and technological development direction of water environment treatment engineering in China and even in the world. At present, there are a total of 15 national-level demonstration projects with great influence, including the Lake Management Project of Erhai Plateau in Dali (General Secretary Xi Jinping paid close attention to it， and Vice Premier Han Zheng inspected and highly affirmed the project), Guiyang Nanming River Basin Water Environment Control Project (Mother River Regulation Demonstration Project of three ministries and commissions), the first sunken Reclamation Waterworks and Luxi River Environmental treatment Project in Tianfu New area of Chengdu， Sichuan Province (Li Zhanshu inspected and praised), Bishui Submerged Reclamation Waterworks of Tongzhou Area, Beijing (the model of in-site sinking non-stop production

reconstruction and expansion, using Chinese technology to replace American technology), Nanxiang sunken reclaimed waterworks project in Jiading area, Shanghai (known as the most beautiful waterworks in China) and so on. (see Appendix for details)

Appendix: typical cases of China Water Environment Group1. Comprehensive environment governance project of intercepting sewage environment around Erhai Lake in Dali

The project belongs to the second batch of national PPP demonstration projects, featuring mechanism innovation, technological innovation and income sharing under the Ministry of Finance. Under this project, there will be a new 231km sewage interception main pipe around the lake, 6 high-quality sunken reclaimed water plants, 12 lifting pumping stations, sponge farmland and ecological ponds, with a long-term total size of nearly 120,000 tons per day and a service area of 66.41 square kilometers. The main indicators of its reclaimed water reach Surface Water Standard IV, which can be further purified by fishponds and reused for farmland irrigation to thoroughly solve the problem of effluent purification in Erhai Lake. The six sinking plants save about 160 mu of ground space and reduce the impact on the surrounding environment by about 1400 mu. On the ground of the waterworks, rechargeable parking spaces, traffic transfer stations, ecological observation stations, comprehensive tourism service centers will be built, and in the remaining space, an international standard zero

emission Eco Hotel will be built, which organically integrates water environment governance with green development.

(General Secretary Xi Jinping visited Erhai Lake in 2015 and asked that Erhai Lake should be protected like eyes. He wishes that when he comes back in a few years, the water will be cleaner and clearer.)

On February 25th, 2019, Vice Premier Han Zheng inspected the Shuanglang Reclaimed Water Plant of the Group and fully affirmed the contribution made by China Water Environment Group to conservation of Erhai Lake.)

2. Comprehensive Governance Project of Water Environment in Nanming River Basin of Guiyang

Comprehensive governance of the water environment in the basin of more than 120km of the main stream of the Nanming River and its five tributaries, serving a population of 3.5 million people, serving an area of 6600 square kilometers, rebuilding and expanding 5 waterworks and building 16 new waterworks with a total scale of 1.1 million tons. The project passes through densely

populated areas with complex geological conditions. China Water Environment Group has successfully solved this problem by adopting the innovative planning concept of moderate concentration, local treatment and local reuse, saving about 1.1 billion RMB yuan in pipe network investment, 1053 mu of land, six months of construction period and achieve 160 million square meters of ecological water supply per year for the Guiyang municipal government.

(Chen Miner, then Secretary of the Guizhou Provincial CPC Committee, and Chen Gang, then Secretary of the Guiyang Municipal CPC Committee, inspected the project on August 24, 2016. Chen Miner said that it is necessary to seize the "bull's nose" of the Nanming River project and comprehensively promote the construction of ecological civilization in the province with exemplary forces.)

3. Sunken Reclaimed Waterworks and Environmental Governance of Luxi River in Tianfu New area of Chengdu

It is Chengdu's first PPP model water environment improvement project and the first submerged sewage treatment plant. Ministry of Finance and government Sichuan Province listed this project as a double demonstration project for cooperation between the government and social capital, with an investment of 850 million RMB yuan (including the construction of the main sewage interception pipe for nearly 10 kilometers). Planned scale is 260,000 tons / day, and the design scale is 100,000 tons / day. It willcover a total area of 85.5 mu, serving 260,000 people and covering an area of 55 square kilometers. The main indicators of reclaimed water reach Surface Water Standard IV, and the reclaimed water is used for ecological replenishment of Luxi River and municipal water in Chengdu Science City.

To achieve one place, three floors and multi-uses, water environment science pavilions, urban ecological parks, leisure and sports venues for citizens and children's entertainment facilities will be built. With comprehensive utilization of underground space, including comprehensive pipe corridors and underground parking lots, 496

social public parking spaces for major industries such as Tianfu Huaxi Hospital are provided, saving 330 mu of land.

(On April 9th, 2019, Li Zhanshu, Chairman of the National People's Congress, inspected the implementation of the Water pollution Prevention and Control Law and visited the first sunken reclaimed water plant in Tianfu New District, where he spoke highly of the advanced technology and innovative

model of the Group's sunken reclaimed water plant.)

4. Bishui Submerged Reclamation Waterworks of Tongzhou, Beijing

Bishui Submerged Reclamation Waterworks of Tongzhou is only 2.2 kilometers away from the city's sub-central core area, and undertakes 84% of the sewage treatment tasks in the built-up area of Tongzhou. The treatment scale is 180000 tons / day, covering an area of 110mu and saving 213mu of land. The effluent standard Beijing Standard B is mainly used for ecological replenishment of Xiaotaihou River, water consumption of Tongzhou Universal Studios, landscape water of above-ground ecological forest park of sewage treatment plant, municipal greening and industrial cooling water, etc.

Bishui Landscape Park covers a total area of about 104,000 square meters, including 68,000 square meters green space and 2500 square meters water area. In the underground space, a social service platform for water science and technology innovation and a popular science education exhibition hall is built, which organically integrates sewage treatment facilities with ecological landscape and public services, and realizes a virtuous circle between municipal infrastructure and urban development.

5. Sunken Reclamation Waterworks of Nanxiang, Shanghai

The project is the only PPP demonstration project in Shanghai in 2015, the first sunken reclaimed water plant in East China and the first "fair-faced concrete" sunken reclaimed water plant in China; the scale is 150,000 tons / day, the first phase is 100000 tons / day; it serves 397,000 people and covers an area of 36.1 square kilometers, including 8 communities such as Nanxiang Old Town and New Town; the main indicators of reclaimed water reaches Surface Water Standard IV, and the highest standard in Shanghai. The reclaimed water is used to replenish the ecological water of the seaweed Bang river.

The project is mainly divided into three parts, the ground landscape park, the popular science museum of water environment (the first in East China), and the underground sewage treatment layer. The project covers a total area of 11.32 hectares, about 170 mu of land, of which the first phase covers an area of 30,000 square meters, about 45 mu, which saves more than half of the land area compared with conventional aboveground waterworks, and achieves "environment-friendly, land-intensive, resource utilization". On the

ground of the project, there are public service facilities such as water environment popular science education hall and ecological park, which form a water ecological complex with the characteristics of Jiading water village. The project is also an industry-university-research cooperation platform for the joint venture between China Water Environment Group and Shanghai Jiao Tong University.