



# 光大环境

EVERBRIGHT ENVIRONMENT

Stock Code: 257

DEVOTED TO

**ECOLOGY & ENVIRONMENT**

for a **BEAUTIFUL CHINA**



September 2021



## 1 Business Overview

China Everbright Environment Group Limited ("Everbright Environment"), established in Hong Kong in 1993, is a backbone enterprise of China Everbright Group Ltd. Listed on the Main Board of The Stock Exchange of Hong Kong Limited (HKEX) (257.HK), the company has grown into **the largest environmental enterprise in China, a leading player in Asia's environmental protection industry, the world's largest waste-to-energy ("WTE") investor and operator, and a world-renowned environmental group.**

Everbright Environment has two listed subsidiaries, China Everbright Greentech Limited (1257.HK) and China Everbright Water Limited (U9E.SG & 1857.HK). In the first half of 2021, Everbright Environment **recorded a revenue exceeding HKD26 billion**, with **total assets surpassing HKD180 billion** as of 30 June 2021.

- Over 200 locations across 24 provinces, municipalities, autonomous regions and special administrative region in China
- Overseas business footprint in Germany, Poland and Vietnam
- Over 500 environmental protection projects
- Aggregate investment exceeding RMB146 billion



As a one-stop integrated environmental management service provider, Everbright Environment closely follows China's "14th Five-year Plan" and the country's "Two Carbons" strategic goals of "Peaking Carbon Emissions" and "Achieving Carbon Neutrality". It has set the "Three Carbons" development target and action plan in line with its characteristics and positioning. The company has also been implementing its "Three Five Eight Seven" development strategy, focusing on management advancement, and steadily carrying out transformation.

### Pursuing Strategic Transformation with Focus on the "Two Carbons" Goal

Ride on the "Two Carbons" strategic goal to foster strategic transformation

Technology as a driving force	Reduction of pollution and carbon emissions	Integration of soft and hard power	Co-development of asset-light and asset-heavy businesses
Co-development of arterial and veinous industrial parks	Co-development of municipal and consumer businesses	Expansion of domestic and overseas businesses	

### Fulfilling Accountability with Focus on "Three Carbons" Target

Set the "Three Carbons" development target to demonstrate accountability

To become a carbon-negative company

To develop zero-carbon plants

To pursue a low-carbon lifestyle

### Focusing on "5G" model to Deploy Green Markets

Propose the "5G" concept for the collaboration and development of the green industry

Green Finance

Green Investment

Green Innovation

Green Industrialisation

Green Belt & Road

## THE "THREE FIVE EIGHT SEVEN" DEVELOPMENT STRATEGY

### Three Areas



Environment

Resources

Energy

### Eight Business Sectors

Environmental Energy

Eco-recycling

Greentech

Greenenergy

Environmental Water

Envirotech

Equipment Manufacturing

Environmental Planning

### Five Capabilities

Market Expansion

Project Construction

Project Operation

Equipment Manufacturing

Technological Innovation

### Seven Safeguards

Finance

Bidding and Procurement

Budget

Safety and Environmental Management

Human Resources

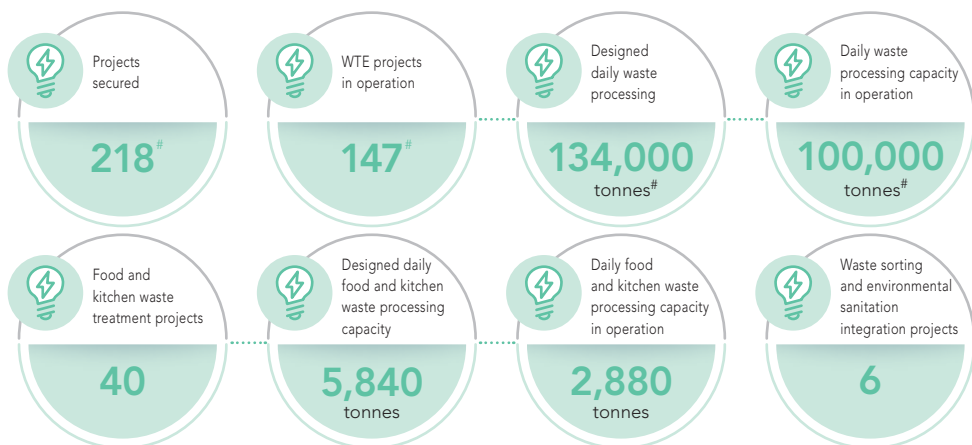
Efficiency

Corporate Culture

## ENVIRONMENTAL ENERGY

### The world's largest WTE investor and operator

As Everbright Environment's core business sector with the largest scale and highest business proportion, environmental energy maintains its leading position in the WTE industry and covers WTE, food and kitchen waste treatment, sludge treatment and disposal, leachate treatment, fly ash treatment, methane-to-energy, construction and decoration waste treatment, heating supply and the development of environmental protection industrial parks. The projects of the sector command a total investment surpassing **RMB86 billion**.



<sup>#</sup> including operation and management ("O&M") projects \* as of 30 September 2021

### Opening-up

**Jiangsu Changzhou's WTE Project** is China's first fully opened "living room of the city" equipped with public amenities, being shortlisted in the first batch of the Primary Contact Points for the Key Projects of the CCGCEP



### Global layout

**Vietnam Can Tho WTE Project** was featured in a report series of CCTV's News Network Programme



### Solution to the NIMBY effect

**Zhejiang Hangzhou's WTE Project** is considered a good example of quelling the Not-in-my-Backyard (NIMBY) effect and bringing positive impact to local communities



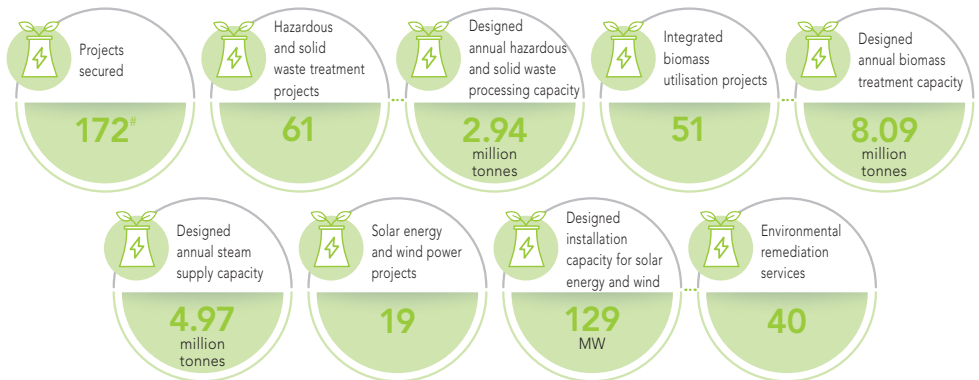
### Synergistic treatment

**Xiong'an New Area Waste Integrated Treatment Project** (under construction) is the second set in the world and the only underground waste integrated treatment facility in China that is equipped with a full set of solid waste treatment processes and techniques

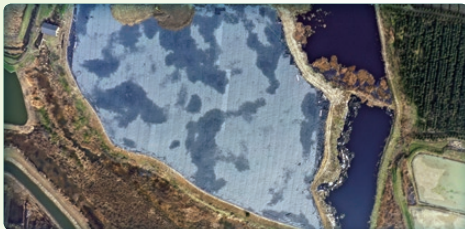
## GREENTECH

### China's leading intelligent energy supplier dedicated to "Carbon Neutrality" and industrial hazardous waste treatment investor and operator

China Everbright Greentech Limited ("Everbright Greentech") is listed on the Main Board of HKEX (1257.HK) and controlled by Everbright Environment. Everbright Greentech focuses on hazardous and solid waste treatment, environmental remediation, integrated biomass utilisation, solar energy and wind power. Its projects command a total investment **exceeding RMB32 billion**, in addition to environmental remediation services, with a total contract value **surpassing RMB1.1 billion**.



<sup>#</sup> including environmental remediation services \* as of 30 September 2021

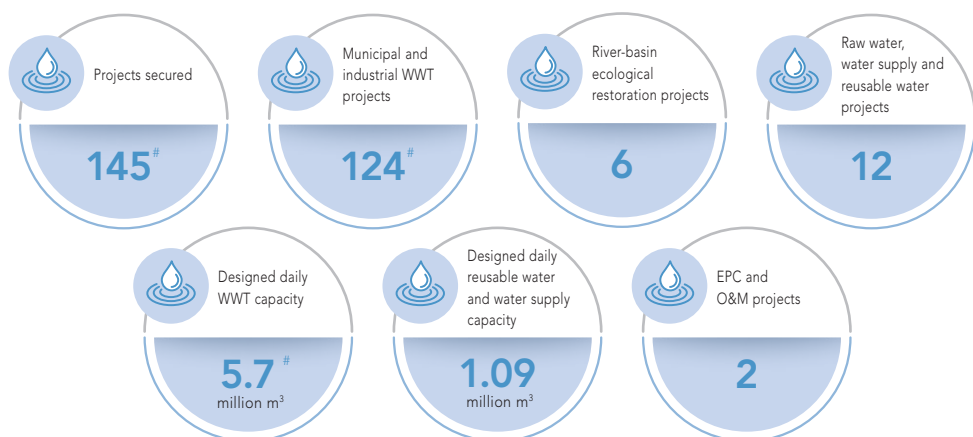




## ENVIRONMENTAL WATER

### China's leading water environment management service provider

China Everbright Water Limited ("Everbright Water"), controlled by Everbright Environment, it is listed on the Mainboard of The Singapore Exchange Securities Trading Limited and the Main Board of HKEX (stock codes: U9E.SG & 1857.HK). It has developed a full-fledged business coverage, which includes raw water protection, water supply, municipal waste-water treatment ("WWT"), industrial WWT, reusable water, river-basin ecological restoration, and sludge treatment and disposal. The company has also formed a full industry chain on the water business, including project investment, planning and design, technological research and development ("R&D"), engineering and construction and operations management, among others. The projects of Everbright Water command a total investment **surpassing RMB25 billion**.



<sup>#</sup> Including O&M projects    \* as of September 30, 2021



## EQUIPMENT MANUFACTURING

### China's backbone environmental protection equipment R&D and manufacturing provider

Located in Changzhou City, Jiangsu Province, Everbright Environmental Technical Equipment (Changzhou) Limited represents the equipment manufacturing sector of Everbright Environment, focusing on the research, development and manufacturing of environmental protection equipment and related consumer products.

The 300 tonnes/day-1,000 tonnes/day series of grate furnaces, leachate treatment and flue gas purification systems developed and produced by equipment manufacturing have entered the first tier of the industry and are exported to countries in Southeast Asia, South Asia and North Africa. In the first half of 2021, equipment manufacturing set up the Everbright Electric Appliance Division. Starting from the water purifier series, the division has been making encouraging progress in the consumer market.



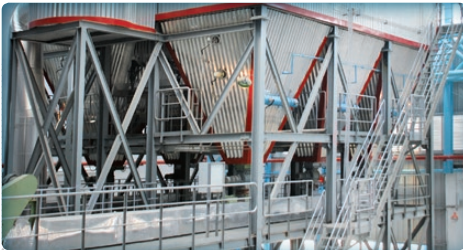
#### Everbright grate furnaces

- The self-developed grate furnaces with daily processing capacity ranging from 300 tonnes/day to 1,000 tonnes/day have received the Technological Advancement Award by the Ministry of Ecology and Environment of the PRC ("MEE")
- The 850 tonnes/day and 1,000 tonnes/day grate furnaces have filled the gap in the domestic market



#### Leachate treatment system

- Through years of effort in self-development and application, equipment manufacturing has formed its leachate treatment technology system, which is able to comply with standards for the discharge or reuse of leachate after treatment



#### Flue gas purification system

- The daily average level of online monitored gas emissions is superior to the EU 2010 Standard (the Industrial Emissions Directive (2010/75/EU))
- Gas emissions of WTE projects fully comply with relevant national standards



#### Everbright water purifier series

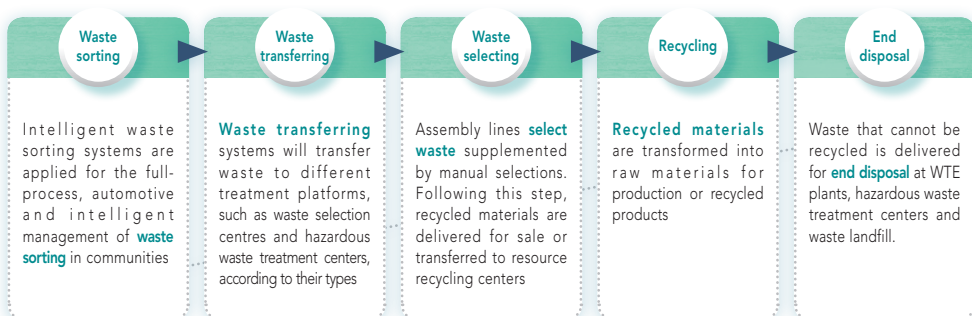
- Equipment manufacturing launched the water purifier series, with filter membrane as the core technology. The purifiers could minimise harmful substances in tap water, as verified by professional institutions

## ECO-RECYCLING

### First-class investor and operator in waste sorting and resource recycling across China

The eco-recycling sector rides on the "Five Points in One Line" process model for waste sorting, with a focus on three main business areas, namely waste sorting and zero-waste cities, environmental sanitation integration and resource recycling.

#### "Five Points in One Line" process model for waste sorting



### Waste Sorting

The sector signed a pilot service project on waste sorting for Changzhou Economic Development Zone in Jiangsu province, in the first half of 2021, with a three-year service period and currently in operation.

- The intelligent bins independently developed by Everbright Environment for waste sorting have several advantages, including tracking waste sources, working round-the-clock, and unsupervised operating.



### Enivironmental Sanitation Integration

In 2019, the sector secured Yunnan Yuxi Sanitation Integration Project, which covers needs for waste collection and transferring in the Hongta District of Yuxi City. The project has a designed daily waste collection and transfer capability of approximately 800 tonnes.

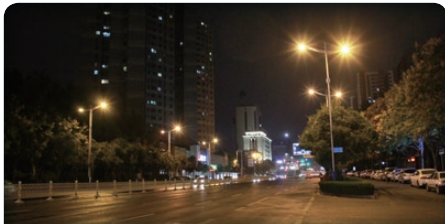


## GREENERGY



### Everbright New Sodium Lamp, Lighting the Way Home

The greenergy sector focuses on the R&D, manufacturing and sales of energy-saving healthy lighting products, as well as software and hardware products relating to the development of smart cities that are based on greenergy's intelligent light poles. Greenergy aims to provide lighting services for different scenarios and purposes, in addition to solutions for the development of smart cities. The sector targets to become **a leading integrated service provider specialising in energy-saving lighting and development of smart cities in China.**

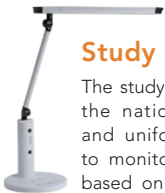


Shandong Ji'nan Streetlight Retrofitting EMC Project is greenergy's first project in a provincial capital city and is regarded as a new benchmark in the energy-saving lighting industry.

As compared with high-pressure sodium lamps that are currently widely used for street lighting in China, the **Everbright New Sodium Lamp** (the "Lamp") is **60%** smaller in size and up to **50%** lower in energy consumption.

The Lamps can be used in a wide range of applications with excellent light efficiency, good light quality, low maintenance cost, strong fog permeability, healthy lighting characteristics, convenient replacement and low maintenance cost.

Greenergy has so far secured multiple streetlight retrofitting projects based on the energy management contract ("EMC") and engineering, procurement and construction ("EPC") models. In addition, it established the Greenergy Intelligent Industrial Park in Ji'nan to produce the Lamps, LED lamps, intelligent light poles and other products, aiming to develop the industrial park into a key national innovation hub in the green lighting industry.



### Study lamp series

The study lamp products comply with the national AA-level illuminance and uniformity standards; are able to monitor sitting postures of users based on the binocular AI algorithm to help users prevent myopia; and adopt LED installed with solar like spectroscopic high color rendering index unisplendour which help to reduce damages brought by Bluray, strobe, dazzling of the light. The product series has a wide range of choices, with study, working and living scenarios.

### Customised intelligent light poles

The light pole product series has comprehensive functions, including intelligent lighting, environment sensing, security monitoring, public safety rescue alarm and municipal facility monitoring for urban areas. The products are considered to be good platforms for the digitalisation of intelligent cities with the "new infrastructure" and a good demonstration of the development of big data, green and low-carbon cities.



## ENVIROTECH

### Innovation and development driven by science and technology

Being the technology R&D innovation engine of Everbright Environment, the envirotech sector has substantially established the "Four-in-One" technological innovation and R&D layout with platforms in Hong Kong, Shenzhen, Nanjing and Qingdao cities, with the goal of becoming a global platform dedicated to green technological innovation and technology commercialisation.

Envirotech focuses on the three directions of "traditional business, new business and future development" to accelerate the development of Everbright Environment's businesses.

**123** invention patents  
**845** utility patents  
**103** software copyright licenses  
**13** appearance patents

\* As of 30 June 2021

**1,084**

**Patents granted**



In 2021, Everbright Environment partnered with Hong Kong Science and Technology Park to jointly build a green technology incubation and commercialisation platform in Hong Kong to foster the development of green technological innovation in the city.



Everbright-Qingdao University of Technology Institute of Technology and Environmental Technology was awarded a certificate of "Laboratory of Excellence" by the Environmental Resources Association's international proficiency testing, for its excellent water dioxin testing capability.



The self-developed plasma melting technology for fly ash treatment has been recognised as having complied with relevant international standards upon technical assessments

## ENVIRONMENTAL PLANNING

### Positioned to become China's premier planning and design institute

The environmental planning sector leverages on **Everbright Ecological and Environmental Planning and Design Institute** ("Environmental Planning and Design Institute") as the main platform, with a focus on the fields of environmental protection and energy. It strives to build core technological capabilities, expand the business scope and spread its industry chain.

The Environmental Planning and Design Institute has obtained a series of important qualifications in the fields of electricity, municipal administration and the environment, relating to design and consultation, ecological construction and environmental engineering. Such qualifications include National Qualification For Pressure Pipelines Design, Class A Qualification For Environmental Engineering Solid Waste, and a First-Class Qualification For Professional Contracting Works of Environmental Engineering, and has further advanced to the ranks of Class A design institutes.

The institute provides integrated solutions relating to WTE, biomass power generation and food waste treatment. It has developed the design capacity for a full range of waste incineration treatment lines, with capacity ranging from 300 tonnes/day to 1,000 tonnes/day. It has also expanded the design and consulting services to food and kitchen waste treatment, sludge treatment and disposal, integrated slag utilisation, and medical waste treatment.

The institute will leverage on its advantages and engineering experience to expand various consulting services, as it aims to gradually develop a service system that provides full-process engineering consultancy and full-cycle integrated services. The institute is also carrying out future oriented value-added businesses, such as 3D design, digital delivery, a digital factory and an engineering data centre.



Rendering of the opening-up and upgrading project of Everbright Environment Changzhou WTE Project



Rendering of Everbright Environment Tianjin Beichen WTE Project

## Business Performance

- Since 2019, ranked **top in the list of Top 50 Environmental Protection Enterprises in China** for three consecutive years
- Since 2020, ranked **top** among listed Chinese environmental protection companies, **in terms of revenue and net profit**, by the E20 Environment Platform
- Since 2011, ranked **top in Influential Solid Waste Treatment Enterprises in China** for 10 consecutive years
- In 2021, **shortlisted in Fortune China 500 for the first time**, ranking 283th
- Since 2018, **Mr. Wang Tianyi, Chairman of the Board of Everbright Environment**, named **Asia's Best CEO** for four years running
- In 2020, **Mr. Wang Tianyi** named **the 2018-2019 Green China Person of the Year**
- Since 2014, included as a constituent stock of **Hang Seng China (Hong Kong-listed) 100 Index**
- Since 2013, included as a constituent stock of **MSCI China Index**



## Corporate Governance

- In 2020, shortlisted in the **Top 10 Firms with Highest Corporate Governance Index Scores** by the Hong Kong Institute of Directors
- Since 2017, named **the Most Honored Company in Asia** for many years consecutively
- Since 2018, received multiple awards including **Best Corporate Governance, Best ESG Metrics and Best Investor Relations Company**
- In 2017, received **Hong Kong Corporate Governance Excellence Awards**

## Social Responsibility and Sustainability

- In 2019, awarded the **2nd Advanced Group on Ecological Civilization in China** and was among the **Top Ten Case Studies on Public Participation** by MEE
- In 2016, shortlisted among **Top 10 Green Companies in China** by the United Nations Environmental Programme
- Since 2017, included several times in the **Sustainability Yearbooks** launched by Robeco SAM/S&P Global
- In 2020, received an award for **the Enterprise's Actions on Climate Change**
- Since 2014, included multiple times as a constituent member of **Hang Seng Corporate Sustainability Index**
- Since 2013, included as a constituent member of **Hang Seng Corporate Sustainability Benchmark Index**
- In 2016, included as a constituent member of the **Dow Jones Sustainability World Index**
- Since 2016, included as a constituent member of **Dow Jones Sustainability Emerging Markets Index**
- Since 2017, included as a constituent member of **FTSE4Good Index**



FTSE4Good

Member of  
**Dow Jones Sustainability Indices**  
Powered by the S&P Global CSA

# “ Create Better Investment Value and Undertake More Social Responsibility ”

With a strong sense of social responsibility and mission, Everbright Environment actively takes part in social charitable activities relating to energy conservation, environmental protection education, charitable donations and environmental greening on a global scale



-  To promote and adopt the Euro 2000 Standard (Directive 2000/76/EC) for WTE projects in China
-  To connect with local government authorities and share real-time project emission data
-  To disclose hourly average level of gas emissions of all its operating WTE projects
-  To open up its operating WTE projects for public visits, welcoming supervisions from the public and society
-  To open up its facilities across all business sectors for public visits



**2020**

provided quality environmental services to safeguard people's lives and environmental safety at home and abroad, and supported local anti-pandemic arrangements, during the Covid-19 pandemic

**November 2017**

supported the planning and construction of sports facilities for children in the community of Schönewalde, Germany

**2014-2020**

acted as lead sponsor of Earth Hour Hong Kong for many years

**Since 2014**

became a Double Diamond Member of WWF-HK

**June 2013**

established Everbright Environmental Protection Charitable Foundation

**Since 2010**

engaged in poverty relief activities for Xinhua County, Hunan Province

**2021**

supported WWF-HK to build the Solar Dome, which commenced operation in 2021 to promote ecological conservation and sustainable development in Hong Kong

**October 2019**

acted as lead sponsor of UNICEFHK's Adventure in the Wood activity, with the donation being used to help children and women in remote areas

**Since 2018**

supported and joined environmental protection initiatives in celebration of the World Environment Day on the 5th June, through multiple projects

**2016-2019**

sponsored Heifer International Hong Kong's "Read to feed" charity program

**2015**

supported Yan Oi Tong's Green City Exploration Tour

**August 2013**

set up Everbright Environment Charitable Foundation in Hong Kong

**September 2011**

established true love school in Longshan County, Anhui Province





## FEATURED PROJECTS



Jiangsu Changzhou WTE Project (800 tonnes/day) has been recognised as a national AAA-rated WTE project. Located closest to residential communities in China, it is the country's first fenceless WTE project that is open for public visits. The project was included in the compilation of most challenging projects since the 18th CPC National Congress and also shortlisted in **the first batch of the Primary Contact Points for the Key Projects of CCGCEP**.

#### Jiangsu Suzhou WTE Project

(3,550 tonnes/day)  
among first batch of projects awarded as a **national AAA-rated** WTE project

#### Jiangsu Wujiang WTE Project

(1,500 tonnes/day)  
a **national AAA-rated** WTE project

#### Jiangsu Changzhou Xinbei WTE Project

(1,500 tonnes/day)  
a **national AAA-rated** WTE project

#### Guangdong Boluo WTE Project

(1,050 tonnes/day)  
a **national AAA-rated** WTE project

#### Shandong Weifang WTE Project

(2,500 tonnes/day)  
a **national AAA-rated** WTE project

#### Shandong Rizhao WTE Project

(1,000 tonnes/day)  
a **national AAA-rated** WTE project

#### Hunan Yiyang WTE Project

(1,400 tonnes/day)  
a **national AAA-rated** WTE project

#### Anhui Ma'anshan WTE Project

(1,200 tonnes/day)  
a **national AAA-rated** WTE project



#### • Zhejiang Ningbo WTE Project (1,500 tonnes/day)

- It has been awarded as a **national AAA-rated** WTE project. It is also a benchmark green development project in China



#### • Jiangsu Nanjing WTE Project (4,000 tonnes/day)

- It has been awarded as a **national AAA-rated** WTE project. It is the largest WTE project in operation at Everbright Environment



#### • Zhejiang Hangzhou WTE Project (3,000 tonnes/day)

- is a demonstration project that has successfully solved the NIMBY effect. It was awarded the **Luban Prize** (National Quality Project) by the Ministry of Housing and Urban-Rural Development of the PRC ("MOHURD")



#### • Shandong Ji'nan WTE Project (2,750 tonnes/day)

- was awarded the **Luban Prize** (National Quality Project) by MOHURD



#### • Hainan Sanya WTE Project (2,250 tonnes/day)

- has been awarded as the **national AAA-rated** WTE project and selected as a demonstration PPP (Public-private Partnership) project by the Ministry of Finance of the PRC

## FEATURED PROJECTS

### Anhui Lingbi Integrated Projects

(Annual treatment capacity of 150,000 tonnes of waste and 300,000 tonnes of straw)

First urban-rural integrated biomass and WTE demonstration project in the industry and across China



Anhui Lingbi Integration Projects

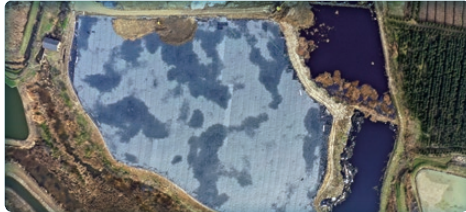
### Jiangsu Xinyi Integrated Hazardous and Solid Waste Treatment Projects

(Annual treatment capacity of 88,000 tonnes)

Everbright Environment's first integrated hazardous waste treatment park providing one-stop urban hazardous waste treatment solutions, such as waste incineration, landfill and harmless treatment of animal carcasses



Jiangsu Xinyi Integrated Hazardous and Solid Waste Treatment Projects



- **Jiangsu Suzhou Wujiang Qidu Waste Landfill Integrated Treatment Project**

The project adopts technical processes that integrate vertical barrier, in-situ extraction, in-situ chemical oxidation/reduction and bioremediation



- **Jiangsu Changzhou Chemical Plant Land Remediation Project**

The project adopts technical processes that integrate cement kiln coprocessing, chemical oxidation, room temperature analysis and risk control for soil remediation, and technical processes of in-situ high-pressure rotary spray chemical oxidation for underground water remediation



- **Jiangsu Changzhou Rooftop Solar Energy Project (installed capacity of 3.7MW)**

The project is located in the Wujin High-tech Zone of Changzhou City, the first demonstration cluster for the green construction industry and low-carbon development in China



- **Shanxi Ningwu Wind Power Project (installed capacity of 96MW)**

The project consists of the Changfangshan wind power plant and the Zhaojiashan wind power plant. It was awarded the High-quality Electric Power Construction Project "Fenshui Cup" Construction Award and Excellent Project Certificate In Shanxi Province

## FEATURED PROJECTS

### Jiangsu Zhenjiang Sponge City Construction PPP Project

Among China's first batch of demonstration projects on both the PPP model and sponge city development. Shortlisted among the Top 5 in the UNECE Building Back Better Infrastructure Award 2021



Jiangsu Zhenjiang Sponge City Construction PPP Project

### Jiangsu Jiangyin WWT Project (190,000m<sup>3</sup>/day)

A key demonstration project on the restoration of Taihu Lake



Jiangsu Jiangyin WWT Project



- **Shandong Ji'nan WWT Projects (1,225,000 m<sup>3</sup>/day)**
  - The projects were shortlisted for the 12 successful global PPP case studies at the 2016 International PPP Forum by the UNECE
  - Plant 1 and 2 under the projects were regarded as municipal Gold Cup demonstration projects



- **Shandong Zibo WWT Project (250,000 m<sup>3</sup>/day)**
  - China's first project located in a "heavy industrial city" that fully complies with the **national waste water treatment Grade 1A standard**.
  - Plant 1 of the project has added in-plant solar power facilities, with an installed capacity of 1.82MW and an estimated electricity supply of 1.9 million kWh. The electricity will be used by the plant first, while excessive electricity is for on-grid purpose



- **Shandong Ji'nan Huashan WWT Project (30,000 m<sup>3</sup>/day)**
  - It is Everbright Water's first fully underground WWT project and also Ji'nan's first large-scale fully underground WWT project



- **Jiangsu Nanjing Municipal Water PPP Project**
  - Everbright Water's first river-basin ecological restoration project



## FEATURED PROJECTS



- **Shandong Rizhao Streetlight Retrofitting Energy Management Contract (EMC) Project**

As greenery's first EMC project, it has retrofitted over 12,000 street lamps in Rizhao City by replacing the high-pressure sodium lamps with Everbright New Sodium lamps (the "Lamp"), which are more energy efficient



- **Shandong Ji'nan Streetlight Retrofitting EMC Project**

As greenery's first project in a provincial capital city, it is mainly responsible for retrofitting over 120,000 street lamps in the urban districts of Ji'nan City, Shandong Province. It is considered a project in the public interest because it involves no fiscal expense



- **Greenergy Intelligent Industrial Park**

Located in the JN Pioneer Area of Ji'nan City, the industrial park produces a series of intelligent lighting products, such as the Lamps, LED lamps and intelligent light poles. Upon completion of the construction work, the industrial park will become an intelligent industrial park and green lighting product R&D and production hub that includes the R&D, design and production of the Lamps, LED lamps, intelligent light poles and intelligent lighting systems.

## CORE MANAGEMENT TEAM

**Wang Tianyi**  
Chairman of the Board

**Luan Zusheng**  
Chief Executive Officer

**Yang Shiqiao**  
Vice President

**Hu Yanguo**  
Vice President

**Li Chunju**  
Vice President



**An Xuesong**  
Vice President and  
Chief Financial Officer

**Qian Xiaodong**  
Vice President



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Everbright Equipment  
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