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Research Report on the Investment Environment of

Yancheng Environmental Science and Technology City

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## Preface

In recent years, environmental protection has been high on the agenda in China. A series of policies and measures have been put in place, including the action plans for prevention and control of air, water and soil pollution, mapping out a comprehensive strategy for environmental protection. As envisioned in the Development Plan for the Energy-Saving and Environmental Protection Industry during the 13<sup>th</sup> Five-Year Plan Period, by 2020, China will have 20 agglomeration zones for the energy-saving and environmental protection industry, each as a key driving force in the regional industry development with strong supporting capabilities and high-quality services. In 2016, the National Development and Reform Commission of China (NDRC) proposed to "help nurture, by 2020, more than 50 companies specializing in environmental protection with annual output value exceeding RMB 10 billion". A new era has begun for the development of China's environmental protection industry and relevant industry parks.

Yancheng Environmental Science and Technology City (YCESTC) is located in a beautiful city in eastern China, known as the "oriental paradise of wetlands and home to wild elk and red-crowned cranes". Established in 2009, YCESTC is the first environmental protection industry agglomeration zone in China. Built on its unique strengths in environmental businesses, YCESTC strives to facilitate the integration of major industry resources to develop itself into a major industry base featuring energy-saving and environmental protection in Yancheng, and even China. In this way, it aims to nurture a new pillar industry worth RMB hundreds of billions for the city that will transform local development landscape.

After years of relentless efforts, YCESTC has established an integrated industry platform, with focus on air pollution control, water treatment, solid waste utilization, and new materials, featuring the following advantages:

- A distinct clustering of businesses: YCESTC is now home to over 100 established companies specializing in environmental protection from China and around the world, among which are some leading players in the industry;
- Excellent research and development capabilities for core technologies: YCESTC maintains close partnerships with dozens of major research centers and institutions at home and abroad, represented by the Institute of Process Engineering of Chinese Academy of Sciences.

Benchmark-setting practices for the industry: With major research projects such as the "National Action Plan for the Blue Sky Project", YCESTC aims to integrate the technology innovation with industry value-added chains, to spearhead the development of environmental protection businesses in China.

At a time of new opportunities, Deloitte China (hereinafter "Deloitte" or "we") is honored with the request from the Committee of YCESTC to develop this *Research Report on the Investment Environment of the Yancheng Environmental Science and Technology City* for investors from an objective third-party perspective using specialized research and analysis methodologies.

Based on the views and insights obtained through surveys and interviews with the YCESTC-based companies and their management, the Report uses qualitative and quantitative approaches to present a comprehensive overview of the following five dimensions of the investment environment in YCESTC from the perspectives of importance and satisfaction:

- · Business environment
- · Government policies and services
- Infrastructure
- Human resources
- · Living environment

The Report also analyzes the development planning of YCESTC and featured services provided by competent authorities, presenting insights into its advantages in investment environment and development prospects, specifically:

- · Practical and readily-available government services
- An enabling environment for industry development that drives growth and innovation
- Favorable geographic and ecological conditions

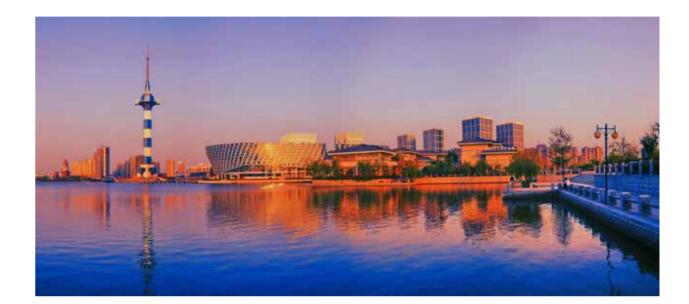
In the time of China's economic transformation and upgrading, and with the implementation of the national industry development strategies, YCESTC has become a unique and competitive base for the environmental protection industry, and a magnet for investors from across the world.

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# Overview of City



# The Yangtze River Delta (YRD), China's major engine for driving its international competitiveness

Encompassing Shanghai Municipality, Jiangsu, Zhejiang and Anhui Provinces, YRD is among the most economically dynamic, innovative and inclusive regions in China, with one of the most significant influxes of migrants. It is known as China's major powerhouse for growth and international competitiveness.

# Jiangsu Province, the most economically competitive province in China

Located across the sea from Kyushu, Japan and the Jeju Island, South Korea, Jiangsu Province is in the north of the YRD region with Yangtze River and Huaihe River flowing across it. As of 2016, it has been among the TOP 3 provinces in China in terms of the per capita GDP, overall economic competitiveness, and the Development and Life Index. All of its 13 prefecture-level cities ranked among the TOP 100 in China by GDP.

### Yancheng, a major player in the YRD City Cluster

Bordered by the Yellow Sea, Yancheng is preferably located within the coastal development zone to the north of Shanghai. In 2016, it is the only city in the north of Jiangsu that was included in the YRD City Cluster by the *Yangtze River Delta City Cluster Development Plan* jointly issued by NDRC and the Ministry of Housing and Urban-Rural Development of China (MOHURD). With its favorable geographic location and rapid economic development, the city is making its way into the "one-hour economic circle" around Shanghai.

Historically a hub of salt production, Yancheng is the only prefecture-level city named after salt ("Yan" in Chinese) in China. It is also the biggest prefecture-level city in Jiangsu, with the longest coastline, and the largest sea area and mudflat area, which continues to expand at 2,000 hectares a year, in the province. Abundant in natural resources, Yancheng is known as the city of fish, rice and rivers.

During the 12<sup>th</sup> Five-Year Plan period (2011-2015), Yancheng has enjoyed a steady economic growth. In 2016, its GDP reached RMB 457.60 billion, an increase of 11.1% over 2015; the per capita GDP reached RMB 63,277, 11.4% higher than the last year. In recent years, Yancheng has been optimizing its industry structure with improved development patterns. In 2016, the ratio of value added of primary-secondary-tertiary industries changed to 12.3:45.7:42 from 12.3:45.7:42 in 2015.

During the 13<sup>th</sup> Five-Year Plan period (2016-2020), Yancheng will build on its existing industry strengths to develop strategic emerging industries, while upgrading traditional industries, with focus on the development of modern services and high-tech businesses, to facilitate transformative industry development for a more competitive Yancheng. In the meanwhile, strategic efforts will be devoted to "making Yancheng an ecologically balanced city", to ensure sustainable development.

# Overview of YCESTC

### **Overview of YCESTC**

Established in June 2009, Yancheng Environmental Science & Technology City (YCESTC) is China's first environmental protection industry cluster recognized by the Ministry of Environmental Protection of China (MEP), and the only high-tech development zone of environmental protection industry in Jiangsu Province. Featuring a specific industry positioning, a proper layout planning and a sustainable development approach, YCESTC has become a fast-growing pioneering platform for environmental protection industry.

A Specialized Development Park Aggregating Industry-Leading Enterprises

The "Silicon Valley of Environmental Protection Industry in the East" Promoting Innovations

An Inclusive Platform for International Industry Cooperation

### **State-level Honors and Awards**

- The First Environmental Protection Industry Cluster in China
- The Most Competitive Development Park of Environmental Protection Industry in China
- National High-Tech Industry Zone Dedicated to Environmental Protection Equipment
- Engineering Research Hub Jointly Endorsed by Central and Local Governments in China
- National Environmental Protection Technology Center for Smoke Denitration of Industrial Eurnaces
- Smoke Denitration of Industrial Furnaces

  National Industry-University-Research Synergetic Innovation
- National Popular Science Education Base for Environmental Protection
- · National Post-Doctoral Research Station

Base for Environmental Protection Industry

- National Experimental Base for Emission Reduction of Coal-burning Pollutants
- Specialized Industry Base in China's Torch Program
- · National Demonstration Base for New Industrialization



### **YCESTC's Milestones**

### 2009 - Establishment

· YCESTC was founded.



# 2011 - Clustering Environmental Protection Industry Entities

- Host of Leading Business Entities: YCESTC has attracted top-notch players in air pollution control, such as China National Building Material Group Co., Ltd. and Zhejiang Feida Environmental Science and Technology Co., Ltd.
- International Cooperation: YCESTC has been widely collaborating with overseas entities represented by the University of Minnesota, the University of Melbourne, Eco Fuel Innovations Pty Ltd from Australia and GEA Group from Germany.



# 2014 - Developing Unrivalled Innovation Capabilities

- In-depth Cooperation with Prestigious Research Institutions: YCESTC has attracted a multitude of China's state-level research institutions in air pollution control, and hosted joint projects in collaboration with renowned research and education institutions, such as Chinese Research Academy of Environmental Sciences, the Institute of Process Engineering at Chinese Academy of Sciences (CAS), CTIEC Environmental Protection Research Institute, and Tsinghua University.
- Leading with Cutting-edge Core Technologies: Every year, over 200 new technologies are developed and deployed in YCESTC, including dozens of new technologies that are the most advanced in China, such as the technologies and full sets of apparatus for recycling highly concentrated ammonium-nitrogen wastewater, and the ultra-large Electrostatic-fabric Integrated Dust Collector.



# Starting from 2016 - Fostering an Integrated Platform

- In 2016, YCESTC was recognized as a provincial-level high-tech development zone.
- YCESTC is the first in China to implement the innovative six-in-one environment diagnosis and improvement model, featuring environment assessment, expert diagnosis, R&D for innovative solutions, implementation and operation, financial support, and quality assurance of third-party solutions. The new model has offered integrated regional and watershed management approaches, facilitating overall optimization of environment.

# ► Economic Development

### **Continuous Economic Growth**

Over recent years, YCESTC has witnessed a continuous economic growth from all aspects. In 2016, the total output value of mainstream industries in YCESTC achieved a year-on-year rise of 23.6%, recording a compound annual growth rate (CAGR) of 29.5% from 2011 to 2016.

The secondary industry plays a dominant role in YCESTC's economic structure and drives the regional economic growth. As of 2016, the value added to the overall output of YCESTC's industrial enterprises with an annual revenue of RMB 20 million or more increased by 49.3%, reaching a CAGR of 32.7% from 2011 to 2016.

### **Buoyant High-tech Industry Development**

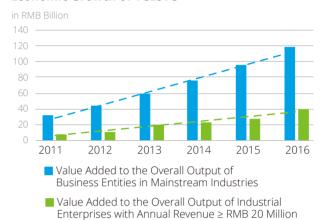
YCESTC hosts a large number of high-tech business entities specialized in the R&D and manufacturing of environmental protection offerings. In 2016, the total revenue of high-tech enterprises in YCESTC was up by 21.5% on a year-on-year basis, achieving a CAGR of 22.6% from 2011 to 2016.

### **Increase of Participation and Partnership**

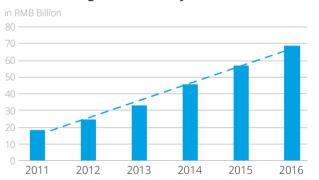
Envisioned to build a dedicated environmental protection industry cluster, YCESTC has adopted a sustainable development approach since its establishment to attract leading business entities and research institutions. As of 2016, it has welcomed 118 business entities, including 49 industrial enterprises with an annual revenue of RMB 20 million or more, as well as 22 research institutions, which have fostered close industry-university-research partnerships.



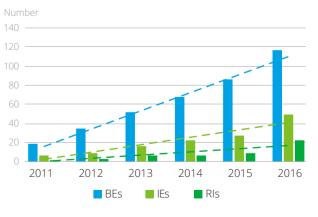
### **Economic Growth of YCESTC**



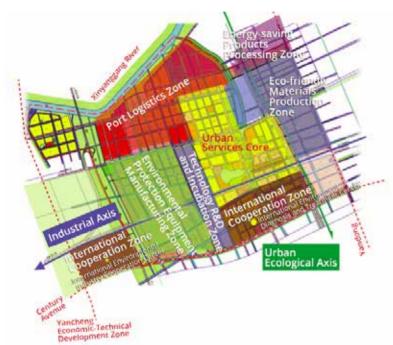
### **Revenue of High-tech Industry Entities in YCESTC**



### Numbers of Business Entities (BEs), Industrial Enterprises with Annual Revenue ≥ RMB 20 Million (IEs) & Research Institutions (RIs) in YCESTC



# Layout Plan of YCESTC



# The Core Driving the Development of Two Axes and Six Zones

### The Zones Functionally Complementary to Each Other

YCESTC, considering its characteristics and future positioning, has adopted a scientific layout to maximize overall benefits. It is now developing in the layout of "one core, two axes and six zones", with the core driving the development of the axes and zones, and the zones functionally complementing with each other.

One Core	Urban Services Core
Two Axes	<ul><li>Ecological Axis (North-South)</li><li>Industrial Axis (West-East)</li></ul>
Six Zones	<ul> <li>Environmental Protection Equipment Manufacturing Zone</li> <li>Technology R&amp;D and Incubation Zone</li> <li>International Industrial Clustering Zone</li> </ul>
	<ul><li>Port Logistics Zone</li><li>Eco-friendly Materials Production Zone</li></ul>

• Energy-saving Products Processing Zone

# The Urban Services Core Driving Synergistic Industrial and Urban Development

As the backbone of YCESTC, the Core consolidates the continuous development and improvement of the surrounding zones.

The Core drives the development of the surrounding zones, achieving a synergistic improvement of industrial and urban functions. The integrated function areas perform different roles: the urban function area provides business, living, commercial, and cultural facilities and services, while the industrial function area is home to R&D, incubation, manufacturing, logistics, and trade operations.

# A Well-connected Transportation Network Facilitating Integrated Industrial and Urban Development

The Core is closely connected to the surrounding zones by west-east main and secondary roads. A well-connected transportation network has developed in YCESTC, covering one main road for freight transport, two expressways, three traffic arteries, and four commercial and residential arteries. This provides resident companies with convenient access to transportation and living facilities.

# **Ecological Landscape Supporting a Vigorous Industrial and Urban Interaction**

Based on the main ecological axis, which runs across the Core, and west-east secondary ecological axes, which connect the surrounding zones with the Core, an inter-connected and hierarchical ecological landscape system has developed, creating a green and healthy eco-environment in YCESTC.

# Industry Development

### **Industry System**

Since the Chinese government paid greater attention to environmental pollution, a series of strict pollution control measures have been implemented in recent years, presenting the environmental protection industry with a new round of development opportunities.

YCESTC boasts unique industrial features as a national environmental protection industry cluster. It promotes industry development with a focus on four areas, namely, air pollution control, water treatment, solid waste utilization, and new eco-friendly materials. Four industry-oriented bases are being built to facilitate the technological innovation, brands clustering, services output, and standards setting for environmental protection.

To date, YCESTC has developed a complete industry chain covering equipment manufacturing, R&D design, EPC contracting, and integrated river basin management, with substantial technological strengths developed in green energy, clean production, regional management, and new materials. It has also obtained independent intellectual property rights in areas such as soil remediation, clean coal combustion, catalyst regeneration, and membrane repair.

# New Eco-friendly Materials Solid Waste Utilization Four Bases to Be Built Environment Technologic Solid Waste Utilization

**Water Treatment** 

Through supply-side reform, YCESTC aims to upgrade the vast industry cluster, which centers on environmental protection engineering construction and supporting equipment business, into a systematic provider of environmental protection solutions that will closely follow the industry's development trends and incorporate technology integration and comprehensive services.

# Environmental Protection Technological Innovation Base Environmental Protection Brands Clustering Base Environmental Protection Services Output Base Environmental Protection Standards Setting Base

### Jiangsu Longking-CoaLogix Catalyst Reuse Co., Ltd.

Leading

**Companies** 

- Jiangsu Feida Environmental Science and Technology Co., Ltd.
- Jiangsu Wanbangda Environmental Tech Co., Ltd.
- Jiangsu CTIEC Environmental Protection Research Institute Co., Ltd.
- Jiangsu Kehang Group
- Yuanda Environmental Protection Co., Ltd. of State Power Investment Corporation
- · Jiangsu Gaohe Group
- Jiangsu Huahui Environmental Protection Technology Co., Ltd.

### International Cooperation

- International Cooperation
- Eco Fuel Innovations Pty Ltd

(Australia)

- GEA Group (Germany)
- CoaLogix Inc. (US)
- Toray Group (Japan)

# Integrated Environmental Solutions

# Leveraging Industry Leading Expertise for Standard Setting

With a good many domestically leading companies and professionals in environmental protection, YCESTC has been an active player in not only driving the industry's growth but also setting standards.

Industry-leading companies: Jiangsu CITEC Environmental Protection Research Institute Co., Ltd. (CITEC) is a prime example. It is the only environmental protection arm of China Building Material International Engineering Co., Ltd., integrating R&D, consulting, engineering and equipment manufacturing capabilities. CITEC has several R&D centers, including: one energy-saving and emission-reduction technology center, which is a national key lab; four provincial-and-municipal-level industry-university cooperation platforms and R&D centers for gas emission control and engineering technologies; and five research centers for international cooperation on environmental engineering technologies. Meanwhile, it has filled several technological gaps in China with successful completion of the first SCR Smoke Denitration project in the construction materials industry and the first high temperature (400 °C) electrostatic precipitator project. CITEC is also one of the first Chinese companies engaged in cement SCR projects.

# materials industry and the first high temperature (400 °C) electrostatic precipitator project. CITEC is also one of the first Chinese companies engaged in cement SCR projects. Top professionals in the industry: YCESTC has been partnering closely with many top professionals in the environmental protection industry.

YCESTC has been partnering closely with many top professionals in the environmental protection industry through Yancheng Academician Workstation under the Environment and Light Textile Engineering Department of the Chinese Academy of Engineering (CAE). One of the most prominent among them is Mr. Hao Jiming, member of CAE and Dean at Institute of Environmental Science and Engineering, Tsinghua University. He helped the location of the first national off-campus engineering lab for Tsinghua University in YCESTC, to drive its talent and technology development.

### **Economic Development Driven by Four Major Industries**

### ➤ Air Pollution Control

YCESTC is China's first smog treatment technologies R&D and industrialization base. Among its environmental industries, air pollution control is the biggest and most developed, with focus on the development of technologies and equipment for air pollution control and monitoring/measurement, new technologies and equipment for exhaust gas control, and materials and medicaments for air pollution treatment. With services spanning over 50 countries and regions worldwide, the industry has evolved into an integrated value chain of R&D and incubation, equipment manufacturing, project engineering, operation services, exhibition and trade, and application demonstration.

# Equipment Manufacturing

YCESTC has unique technological strengths in equipment production and manufacturing for air pollution treatment.

- It houses 7 of China's Top 10 companies specializing in air control.
- Its major products for air pollution control represent a 3.5% market share in China, and flue gas treatment equipment 19.8%.
- It operates 52% of the desulfurization and denitrification projects in the cement industry and 70% in the glass industry in China.

# and Design

R&D

YCESTC has a number of independent intellectual property rights in air treatment, with strong R&D capabilities and technical support.

- It is a pioneer in the research and development of desulfurization, denitrification and demercuration technologies in China, with 1,647 patents;
- In 2016, it contracted with Tsinghua University to jointly set up China's first and only national engineering lab that focuses on the technologies and equipment for flue gas multiple-pollutants control;
- It has core intellectual property rights in clean coal combustion, catalyst regeneration, membrane technologies and soil remediation.

YCESTC offers an increasing share of technology services across the industry chain, which facilitates a new form of business that integrates manufacturing with services – manufacturing servitization.

- It now houses 32 companies with EPC, BOT and BT capabilities, offering services in over 50 countries and regions, including the US and Germany.
- In 2016, Jiangsu CITEC Environmental Protection Research Institute Co., Ltd. set up five companies specializing in exhaust gas treatment, which have undertaken the first glass melter FGD project and SCR project in China's building material industry.

# Regional Environmental Governance

In cooperation with its national and international partners, YCESTC is actively seeking a new service mode for synergistic innovation in environmental governance, and has developed technology roadmaps, such as "coordinated control" and "end-of-pipe treatment" of flue gas, to achieve "near zero emission" across the industry chain.

- In March 2017, it signed cooperation agreements with six institutions including the University of Melbourne, the University of Minnesota, MCI Group from Austria and Institute of High Energy Physics of Chinese Academy of Sciences;
- Since 2017, it has hosted 13 delegations from nine provinces to negotiate on cooperation in regional environment governance;
- An international environment diagnosis and treatment center and an international environmental industry cooperation center are under planning in the International Environmental Industry Cooperation Zone within YCESTC.

### Water Treatment

The water pollution treatment industry within YCESTC builds itself on core technologies, including treatment of industrial and urban effluents, production of drinking water and high-quality reclaimed water, as well as water body remediation and eco-restoration. Specially, it focuses on the development of water purification and pollution treatment equipment, as well as new materials and products for water treatment.

YCESTC has established strategic partnership with the Research Center for Eco-Environmental Sciences at CAS, to jointly set up "China's first and only third-party testing platform" for water environment. The YCESTC-based Institute of Process Engineering under CAS has undertaken the national research project #863 "Technology and Project Demonstration on Recycling of Wastewater with High Ammonia Nitrogen Concentrations", jointly with Jiangsu Huahui Environmental Protection Technology Co., Ltd. The research was awarded first prize in the National Environmental Protection Science and Technology Award, and has provided technical support for the sustainable development of the non-ferrous metals and rare-earth industry.

### 🔷 🕻 Solid Waste Utilization 🛛 👝

The solid waste utilization industry within YCESTC involves waste recycling, remanufacturing of used products, and exploitation of urban minerals (renewable resources). Currently, a number of research projects and technology development programs are underway, such as the "R&D on Lightweight and High Strength Self-insulation Wall Materials Made from Silica-aluminum Solid Waste" project and the first-of-its-kind equipment for "Synergistic Disposal of Waste at Cement Kilns", providing support for integrated utilization of solid waste in Yancheng, with focus on solid waste minimization, recycling and harmless treatment. Going forward, YCESTC plans to put in place a robust system for waste reclamation and recycling, and to take measures for waste minimization, such as separate collection, green consumption and packaging, to eliminate waste from its source.

### ➤ New Eco-friendly Materials

Invested by Yancheng Haiying Industrial Investment Limited, the New Material Industrial Park is an incubator of new eco-friendly materials. Built on technological innovation, it focuses on establishing research, experiment and pilot scale production bases for new products, equipment and technologies, and a high-end equipment base for bulk amorphous alloy manufacturing, to integrate development of new composite materials, metal materials and functional membrane materials. YCESTC has set up teams of selected professionals to attract investment nationwide. Currently, it has signed deals with Northeastern University and Zhejiang Haitian Metal Forming Co., Ltd., to be joined by more companies involved in R&D, production and manufacturing of new eco-friendly materials.

# Water Environment Engineering R&D Center (WEERDC) of Jiangsu Industrial Technology Research Institute

As one of the 29 specialized research centers of Jiangsu Industrial Technology Research Institute, WEERDC integrates technology and equipment R&D with product development and platform building. It provides technical support for watershed pollution treatment, organic chemical wastewater treatment, urban wastewater reclamation, advanced purification of drinking water, concentrated treatment of domestic sewage in the countryside, and emergency treatment for water source pollution.

The National Environmental Protection Technology Innovation Alliance, initiated by WEERDC, consists of 151 professional R&D staff, and is listed as a Team of Innovation in Key Areas by the Ministry of Science and Technology of China. In recent years, WEERDC has made a series of research achievements, including the demonstration project of Lake Tai water pollution treatment, and technical operation support for the Coastal Industrial Park in Jiangsu Binhai Development Zone, which has been designated as a national pilot project. It has served over 300 companies from various industry parks in Jiangsu and other provinces and incubated a dozen technology-based businesses, and was awarded second prize of the National Science and Technology Progress Award. During the 13th Five-Year Plan period, WEERDC will focus on building a demonstration base for dissemination of major water-related research achievements, to provide effective and practicable techniques for ecological protection and environmental governance.

# Deloitte Perspectives: Market Potential of Solid Waste Treatment

In the ranking of the global environmental protection industries in 2010, solid waste treatment was the second largest market worth GBP 146.6 trillion preceded only by water treatment. For example, in the US environmental protection market, which is the world's largest worth GBP 629 trillion, municipal solid waste (MSW) treatment is under the supervision and support of the US laws and regulations. It typically operates through a mature mechanism, where the private sector is responsible for funding and management, and is supported by powerful treatment facilities, leading to substantial environmental and economic benefits.

Of the 258 million tonnes of MSW produced by American households annually, 34.6% are recyclable and 12.8% is combustible to generate energy. It is estimated that there are 86 municipal waste-to-energy facilities in the US, capable of turning 100,000 tonnes of waste into electric energy every day.

MSW not only generates energy but also brings huge economic benefits. Recycling of renewable resources is a large market with an output value of USD 240 billion. It is also the most productive industry in the US that creates the largest number of jobs, and has nurtured environmental protection magnates, for example, Waste Management, which is worth RMB 200 billion in market value.

### **Advancing the Environmental Services** Industry to Extend the Value Chain

Built on the sound development of the environmental protection equipment industry, YCESTC is committed to optimizing its industry structure by advancing the environmental services industry featuring environmental technology, environmental consulting, environmental protection EPC, and environmental trade and financial services. An increasing number of YCESTC-based enterprises are now capable of providing EPC and BOT services, extending their business line from manufacturing alone in the past to all stages of the value chain including R&D, design, production and operation.

### nvironmental Technology Services

# ronmental Protection Engineering, Procure

### **Environmental Trade and Finar**

### New Forms of Environmental Business Fostered by the Integrated Development of Diverse Industries

As part of its endeavor to advance the environmental protection industry with a multi-dimensional industry structure, YCESTC is stepping up efforts to foster new forms of environmental business, such as internet-based environmental protection, tourism featured by education on environmental protection, and the trade and manufacturing of green agricultural products, through in-depth integration of the environmental protection industry into multiple sectors.

### Internet-based Environmental Protection Industry

- Nurturing a smart environmental protection cloud platform for the environmental protection equipment manufacturing industry to realize digital product design, automatic production and network-based management for the supply of smart environmental protection products
- · Promoting the environmental services industry through innovative business models and enhanced services and products
- · Establishing an environmental protection cloud computing center and a big data service platform based on cutting-edge technologies such as big data, cloud computing, Internet of Things (IoT), and the new generation Mobile Internet technology

### **Eco-friendly Industrial Materials Market**

- · Offline: Having established China's first eco-friendly industrial materials town where all industrial materials are certified by national environmental standards, providing eco-friendly industrial materials for Yancheng and its surrounding areas
- · Online: Having set up a dedicated Alibaba-based e-commerce platform for the trade of eco-friendly industrial materials

procedures, standardized business management and effective decision making.

### **Exhibition and Trade Platform**

- Holding trade fairs to showcase the newest energy-saving and eco-friendly products and technologies
- Building professional exhibition and trade platforms underscored by comprehensive information including basic databases and updated industry policies accessed through

the Planning Exhibition Hall and the portal website of YCESTC, to help investors make informed decisions for their development in Yancheng

### Tourism Featured by Education on **Environmental Protection**

- Establishing a national education base for environmental protection incorporating the development of environmental protection manufacturing with public awareness raising activities and firsthand experience of green living
- Developing into an environmental protection-themed tourist attraction to be listed as a National Industrial Tourism Demonstration Area and a 3A-level Industrial Tourism Destination of China

### Smart Environmental Protection Cloud Platform

This platform was launched by the Institute of High Energy Physics and Beijing Advanced Sciences and Innovation Center, two CAS research institutes, jointly with three prestigious Chinese enterprises in the internet and environmental service sectors. Through dynamic allocation of computing resources worldwide, the platform enables information sharing on environmental protection between enterprises and governments, between enterprises, and between enterprises and clients, leading to enhanced overall efficiency of industrial enterprises featured by eco-friendly and internet-based business

# "Six-in-One"Integrated Service Platform

The International Environmental Diagnosis and Treatment Center, which integrates six functions ("Six-in-One"), offers a brand-new business pattern epitomizing YCESTC's endeavor to develop high value added and vertically-integrated environmental protection industry. The center provides overall solutions to region and watershed treatment, and helps businesses realize technical breakthroughs by enabling their communication and collaboration with universities and research institutes, thus accelerating the upgrading and transformation of YCESTC's industry structure.

### **Exemplary Case Study**

YCESTC has developed a transformation model to bring new technologies directly from lab to market through encouraging scientists to start or lead businesses.

Professor Li Aimin's work in YCESTC is a prominent example. Li Aimin is a Yangtze River Distinguished Professor awarded by the Ministry of Education of China, one of the first batch of leading science and technology experts qualified in the National Special Support Program of High-level Experts, and the leader of the Water Pollution Control and Treatment Project of the Huaihe River, which is a national key project during the 12th Five-Year Plan period. He has initiated and led the largest industry-university-research cooperation platform under Nanjing University, which currently has 117 professionals with a master's degree or above. The platform encourages scientists to start or lead businesses, conduct research and experiments in response to technical requests from market, thus enabling incubation and commercialization of new technologies.

Rooted in Yancheng and serving China - As of the end of 2016, the platform has incubated 17 start-ups and delivered over 30 provincial- and national-level scientific research achievements. Furthermore, the platform has been providing professional services to seven major chemical industrial parks in Jiangsu Province and over 300 companies nationwide.

### **International Environmental Diagnosis and Treatment Center**

Built on the cloud-based environmental data platform supported by Chinese Research Academy of Environmental Sciences, China National Environmental Monitoring Center, Foreign Economic Cooperation Office of the Ministry of Environmental Protection of China (MEP), and Institute of High Energy Physics of CAS, the Environmental Evaluation Platform collects and archives information of pollution sources, environmental management technologies and projects, and provides environmental evaluation, pollution source identification and problem diagnosis for specific regions and watersheds.

A standardized system for environmental engineering equipment has been jointly set up by China Association of Environmental Protection Industry, Chinese Society for Environmental Sciences, and leading environmental protection enterprises including China National Building Material Group, China Energy Conservation and Environmental Protection Group, State Power Investment Corporation, Feida Environmental Science and Technology Corporation, Longking Corporation, Water Business Doctor Corporation, Keda Clean Energy Corporation, along with 15 other YCESTC-based companies qualified for overall contracting for projects in China and abroad. The system provides patterned full-scale services covering design, construction, facility operation and management of environmental protection projects, and facilitates equipment maintenance for companies lacking related expertise.

Pooling the R&D expertise from top universities and research institutions in China and abroad including Chinese Research Academy of Environmental Sciences, School of Environment of Tsinghua University, the Massachusetts Institute of Technology (MIT) and the University of Melbourne, YCESTC is now home to multiple collaborative research bodies such as national laboratories and engineering centers, which are dedicated to the R&D of new technologies, approaches and materials on environmental management. Fully leveraging their strengths in collaboration with businesses, these research institutions have significantly boosted the technological innovation capacity of YCESTC.

This platform has built up a strong think tank of environmental management experts comprised of 12 CAS and CAE academicians (including renowned foreign academicians such as Ralph T. Yang and Chain-Tsuan Liu), 8 top professionals qualified in the "Recruitment Program of Global Experts" and over 200 masters and doctors. Supported by such a strong talent pool, the platform provides compensable contracted environmental management solutions to regional and watershed pollution through joint consultation of experts.

A range of VC and PE investment funds have been launched by Yancheng Haiying Group jointly with Beijing Fengyang Investment Fund Management Company and Shanghai Best Lion ECC, dedicated to the development of environmental protection industry in YCESTC. Additionally, YCESTC has developed in-depth partnerships with major Chinese banks including the Export-Import Bank of China, China Development Bank, Bank of China, Bank of Communications, Shanghai Pudong Development Bank, China Zheshang Bank and Bank of Nanjing, facilitating the clustering and development of financial institutions. YCESTC has been focusing on providing comprehensive and flexible services to YCESTC-based enterprises by enabling industry-university-research cooperation, as well as smooth investment, financing and capital withdrawal.

Thanks to the strong support from MEP and the favorable policies formulated by the Environmental Protection Department of Jiangsu Province and Yancheng Municipal Government, YCESTC has now put in place adequate mechanisms to manage project risks and performance, and regulate industry access and the assessment metrics system, fully ensuring the efficiency of the Service Quality Assurance Platform and optimizing the overall performance of the Diagnosis and Treatment Center.



# Overview

A favorable business environment is a precondition for attracting investment and talents, as this dimension of investment environment serves as an important metric when assessing the competitiveness of a region. Based on the International Environmental Diagnosis and Treatment Center, a "six-in-one" multifunctional service platform, YCESTC has helped enterprises address technical challenges to improve the overall capabilities of the region in environmental protection and trigger its industry transformation and upgrading. Meanwhile, it has devoted efforts to foster a favorable environment for innovation on the conviction that development is driven by innovation and technology, and has occupied the high ground in the R&D and application of environmental technologies with powerful influences in China. As the host of five sessions of the China Yancheng International Environmental Protection Industry Fair, YCESTC has remained fully committed to the strategy of "going global" by proactively promoting its international development, with an aim to build a global park of outstanding presence and competitiveness.

### Testimonial from a Resident Company

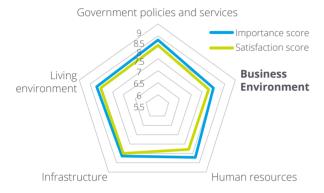
Longking CoaLogix has been focusing on foreign markets. However, YCESTC, which has a promising prospect with outstanding presence in the environmental protection industry across China, provides us with a great access to the domestic market. With many industry leaders located within YCESTC, an industry cluster supported by upstream and downstream companies has taken shape. What's more, the continuous development of YCESTC will offer more international cooperation opportunities.

liangsu Longking Coal ogix Catalyst Reuse Co., Ltd



# Research Summary of Business Environment

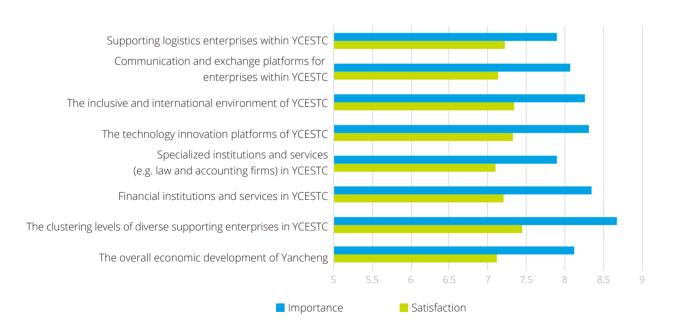
### Importance of / Satisfaction with Business Environment



# Feedback of surveyed enterprises on business environment

- YCESTC scores 8.5 out of 9 on the importance of this dimension:
- YCESTC scores 7.9 out of 9 on the satisfaction with this dimension;
- In this dimension, the clustering levels of diverse supporting enterprises, financial institutions and the services YCESTC provides, and the technology innovation platforms are rated as the most important;
- In this dimension, the clustering levels of diverse sup porting enterprises, the inclusive and internationa environment, and the technology innovation platforms are rated as the most satisfying.

### Breakdown of Importance / Satisfaction



# Innovation Based on Industry Platforms

 On the conviction that development is driven by innovation and technology, YCESTC has devoted to fostering a favorable environment for innovation. After several years of efforts, research institutions and enterprises in YCESTC have occupied the high ground in the R&D and application of environmental technologies with nationwide influences.

YCESTC has seen a total of 326 patents granted, showing an average annual increase of over 50. In 2016, the new and high technology industries in YCESTC contributed 65% of the total GDP and over 58% of the total output values of the resident enterprises whose annual revenue reaches RMB 20 million or more. YCESTC has built a variety of functional facilities including co-innovation centers, the incubation base for environmental protection industries, the Tsinghua Industry Park, the New Material Industry Park and the E-commerce Building, as well as the complete supporting infrastructure for work and life. This lays solid foundations for innovation and entrepreneurship, attracting high-caliber professionals specialized in various areas over the past few years.

# High-Quality Service Platform for R&D and Innovation

Dedicated to establishing innovative industry clusters and R&D bases, YCESTC has catalyzed the clustering of environmental protection industries by encouraging technology innovation, and enhancing partnerships between enterprises and universities or research institutions, to develop strategic alliances for industry technology innovation.

YCESTC, based on the International Environmental Diagnosis and Treatment Center, is currently developing new models, projects and forms featured by the integration of key factors including specialists, technologies, and capitals, to cultivate a host of technological leaders in segments of environmental protection industries and a cluster of enterprises with both robust R&D capability and excellent market development skills.

YCESTC plans to establish more technology innovation platforms by 2020, engaging research institutions and universities such as Chinese Research Academy of Environmental Sciences (CRAES), CAS, MIT, University of Minnesota, Tsinghua University, Fudan University, Tongji University, and Nanjing University, to provide enterprises in YCESTC with resources for R&D and innovation.

- **5** institutions directly affiliated to Chinese Academy of Science (CAS)
- 10 state-level enterprise technology centers
- **42** new and high technology enterprises
- **28** academicians of CAS and CAE (Chinese Academy of Engineering) as well as experts qualified in the "Recruitment Program of Global Experts" in China

# Part of the innovations and R&D achievements made by enterprises in YCESTC

- High-concentration ammonia-nitrogenous wastewater treatment technology (a National High-tech R&D Program, winning first prize of the 2012 Environmental Protection Science and Technology Award of China)
- Key technologies for recycling waste slag containing chromium and vanadium and waste water containing ammonia-nitrogen and heavy metals as well as their application (winning second prize of the 2014 National Technology Invention Award of China)
- Key technologies for treatment and toxicity reduction of hardly-degradable organic industrial waste water (winning second prize of the 2016 National Science and Technology Progress Award of China)
- Innovative technologies for high speed railway catenary / pantograph systems based on coupling dynamics and their application (winning second prize of the 2016 National Science and Technology Progress Award of China)
- Pyrolysis and recycling technologies for organic solid waste (15 patents granted in China and 3 in the US)
- Reclaimed water treatment method based on magnetic resin adsorption coupled electric adsorption (12 patents granted in China and 3 in the US)



### **Industry-University-Research Partnership**

YCESTC has been proactively providing favorable conditions and resources for scientific research and innovation to attract recognized specialists, research institutions and business entities in the environmental protection industry. As of now, it is home to five institutions directly affiliated to CAS and six state-level research institutions in China. For renowned specialists and teams working in YCESTC, competent authorities offer professional scientific research consulting services to help their entities make insightful decisions on research directions, technical roadmaps and technological resource allocation in accordance with market demands. YCESTC has always boasted distinguished industry-university-research partnerships, with more than 200 research achievements obtained and deployed locally every year.

### State-level Research Institutions in YCESTC

- National Engineering Laboratory for Flue Gas Multi Pollutant Control Technology and Equipment at Tsinghua University
- National Engineering Laboratory for High-Concentration and Hard-to-Degrade Organic Wastewater Treatment Technologies at CAS
- National Environmental Protection Technology Center for Smoke Denitration of Industrial Furnaces (Jiangsu Kehang Environmental Protection Technology Co., Ltd.)
- Engineering Research Hub for Reusing Organic Solid Waste Jointly Endorsed by Central and Local Governments of China (Jiangsu Tongyan Environmental Protection Technology Co., Ltd.)
- Technology Center of Jiangsu Kehang Environmental Engineering Technology Co., Ltd.
- Technology Center of Jiangsu Changhong Intelligent Equipment Group Co., Ltd.

### Yancheng Co-Innovation Center for Environmental Protection Technologies

Yancheng Co-Innovation Center for Environmental Protection Technologies serves as a critical platform for YCESTC to develop a new model for the environmental protection industry. Comprised of five buildings, the Center is now home to 42 entities, including the Bank of Communications, Hwabao Securities, Beijing Fengyang Investment Fund Management Company, R&D Center of the Institute of Earth Environment at CAS, International Associated Lab for Particle Technology, Foreign Economic Cooperation Office under the Ministry of Environmental Protection of China, Australia-China Research and Development Centre for Soil Pollution and Remediation, and a smart environmental protection cloud platform.

In the coming days, the Center aims to build a comprehensive chain of supporting services for the environmental protection industry in YCESTC by attracting various service providers specialized in financial investment, testing, third-party certification, environment trade, consulting, online and offline transaction, and environmental futures and options. In addition, it will develop more supporting facilities, such as cafes and gyms, to promote a convenient lifestyle for people working in the Center.



### **Trade Hub of Three Environmental Derivatives**

### 

opment projects.

The quotas of legitimate emissions of a business entity are identified by an emissions permit issued by YCESTC; the entity's additional quotas for new, renovated or expanded projects shall be obtained by bidding in a unified emissions trading platform. In 2017, YCESTC witnessed its first trading auction of four major emissions indices (COD, NH3-N, SO2 and NOx), so as to support environmental infrastructure projects

Carbon

Trading Energy Savings

Trading

**Trading** 

### **2.** Energy Savings Trading

Today, a series of binding energy savings indices have been designed in China to reduce energy consumption. In energy savings trading, a business entity can buy or sell quotas based on its energy consumption demands and the quotas it has obtained. As a business asset, energy savings have become a major type of commodity in the energy saving market.

Leveraging the opportunities offered by Yancheng as a pilot city in the energy savings trading project of Jiangsu Province, YCESTC aims to: (i) build a prominent energy savings trading platform that serves the whole country, (ii) develop a sound system for initial allocation of energy savings quota, (iii) support the establishment of a nation-wide energy savings trading market in China, and (iv) gradually engage in the international energy savings trading.

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# In 2009.

SEEE Yancheng Branch was established in YCESTC.

and key regional economic devel-

**3.** Carbon Trading -----

As global warming emerges as an in-

creasingly devastating challenge, the

market-driven carbon trading mechanism

is created to reduce CO2 emissions. In 2009, YCESTC

started its cooperation with Shanghai Environment

and Energy Exchange (SEEE). Since then, it has gained

extensive experience in local and international carbon

trading and attracted large potential markets, ready to

### In 2010,

YCESTC deployed low-carbon technologies in constructing the office building Green Nest.

serve as a regional carbon trading center.

### In 2012,

YCESTC opened the first demonstration zone of low-carbon lifestyle in China.

### In 2016,

YCESTC welcomed third-party carbon trading service providers.

### In 2016,

trading of carbon-emission quotas and Chinese Certified Emission Reductions (CCERs) was available in YCESTC.

### **SEEE Yancheng Branch**

From July 2016 when SEEE Yancheng Branch was open for business to the end of 2016, it traded nearly 1 million tonnes of carbon-emission quotas and 1.2 million tonnes of CCERs, together accounting for about 40% of the total carbon emissions and CCERs traded in China during the same period. Today, SEEE Yancheng Branch is China's most successful and busiest carbon trading exchange after the seven exchanges designated by the National Development and Reform Commission of China.

Innovative Trading Platform: YCESTC is the first industry zone in China that carries out carbon trading. SEEE Yancheng Branch is the only carbon trading exchange in China located in a non-capital city, and the only specialized platform in a Chinese industry zone that aggregates providers of third-party services, carbon asset development, carbon asset management, carbon trading and carbon financing.

Innovative Trading Methods: SEEE Yancheng Branch has taken the lead in establishing carbontree.com, deploying Alipay to launch an experience center, designing a business unit of carbon trading, and operating a pilot Carboner Space.

Innovative Service Arrangements: SEEE Yancheng Branch has introduced third-party carbon trading service providers, established Jiangsu Yanhu Carbon Emissions Trading Center, and provided professional talent management and trading registration services.

# International Cooperation

### A Magnet for Investment by International Companies

After years of development, YCESTC is now home to many of China's leading companies and the most cutting-edge research institutions specializing in environmental protection. Guided by the "Going Global" national strategy, it is also seeking to bring in more established international players. To date, YCESTC has signed cooperation agreements with companies from various countries, such as GEA Group (Germany), EFI (Australia), FlowVision (Denmark) and CoaLogix (US). Meanwhile, it has established partnerships with a number of international associations and universities, including the Cleantech Scandinavia in northern Europe, as well as the University of Minnesota and MIT.

By now, YCESTC has partners and joint venture partners from more than 20 countries and regions, including the US, Germany and Japan, and has established six international centers for clean-tech transfer between China and other regions or counties, such as Europe, Germany, and the Netherlands.



# China Yancheng Environmental Protection Industry Fair (EPIF)

A major industry gathering: EPIF is China's first and only specialized fair that is organized by an industry park. Hosted in the professional setting of YCESTC and built on its unique industry strengths, EPIF is a major gathering for the environmental protection industry, bringing together the most up-to-date industry expertise to drive innovation and explore new possibilities for the industry.

- Expanding influence: as of 2016, YCESTC has successfully held five sessions of EPIF, attended by nearly 700 companies and 200,000 traders, industry experts and researchers worldwide, presenting more than 800 new and innovative technologies.
- International participation: the fifth EPIF in 2016 attracted 7 Fortune 500 Companies, 46 world-leading companies, 108 environmental protection companies, as well as many overseas purchasing groups and EU exhibition groups.
- > Substantial benefits:through EPIF, YCESTC has signed contracts for 38 major industry projects and strategic cooperation projects both domestically and internationally, with 85% successfully launched. EPIF not only increases the international presence of YCESTC, but also brings substantial economic benefits for participating companies, resulting in trade deals worth a total of RMB 11 billion.



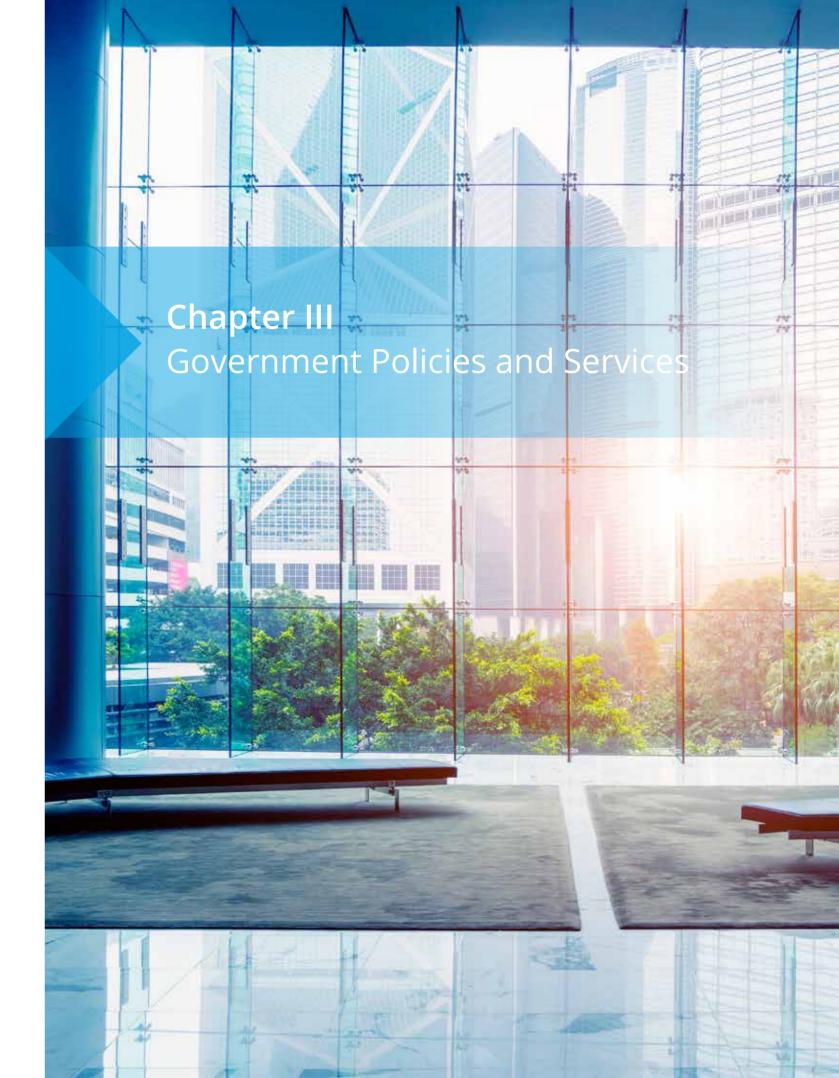












## Overview

Well-designed government policies and practical services help promote the transformation and upgrading of companies and hence economic development. Meanwhile, an efficient and transparent administrative system is established to ensure an enabling environment for businesses to develop and thrive.

To support market-driven and government-guided development, the competent authorities of YCESTC have put in place a series of preferential policies to accelerate industrial transformation and upgrading, attract high-caliber professionals and drive innovation. This has created a favorable policy environment for various companies to settle in YCESTC. The resident companies also benefit from the comprehensive and efficient administrative services provided by the competent authorities to help ensure smooth business operations.

### **Testimonial from a Resident Company**

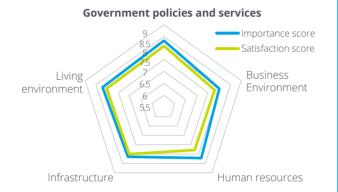
For us, favorable administrative environment and business atmosphere is a key criterion in determining the location of our company. In YCESTC, the support staff from competent authorities help newly-established companies like us go through all the registration procedures to make the business start-up substantially easier and time-saving. They are always ready to help us solve any problems, and keep informing us of bidding opportunities. Our operations benefit a lot from their attentive and considerate services.

Jiangsu Wanbangda Environmental-Tech Co., Ltd



# Research Summary of Government Policies and Services

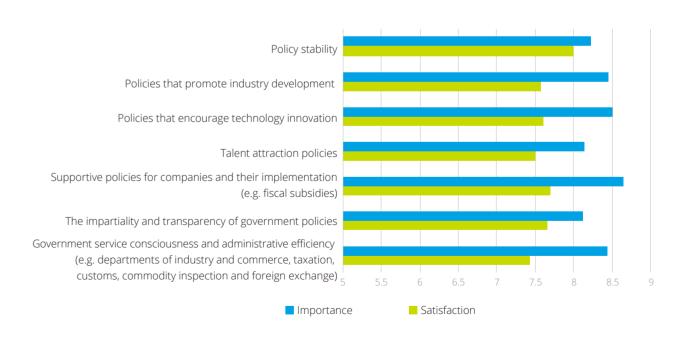
# Importance of / Satisfaction with Government Policies and Services



# Feedback of surveyed enterprises on government policies and services

- YCESTC scores 8.4 out of 9 on the importance o this dimension:
- YCESTC scores 7.7 out of 9 on the satisfaction wit this dimension:
- In this dimension, supportive policies for companies and their implementation, policies that encourage technology innovation and that promote industry development are rated as the most important;
- In this dimension, policy stability, supportive pocies for companies and their implementation, ar the impartiality and transparency of government policies are rated as the most satisfying.

### **Breakdown of Importance / Satisfaction**



# Favorable Policies for the Environmental Protection Industry



In recent years, China's central and local governments have put in place a number of favorable policies for the development of the environmental protection industry, making it a new hotspot for economic growth in a time of industrial transformation and upgrading. With the launch of such laws and policies as the new Environmental Protection Law, the action plans for prevention and control of air, water and soil pollution, and the Environmental Protection Tax Law, environmental protection has become a major national strategy of China.

As noted in the 13<sup>th</sup> Five-Year Plan for National Strategic Emerging Industries issued by the State Council of China at the end of 2016, China will speed up the development of strategic emerging industries, including energy-saving and environmental protection, for a transition into a new model of sustainable development. In Jiangsu, China's most environmentally developed province, the energy-saving and environmental protection industry has been listed as one of its priority strategic emerging industries for development during the 13th Five-Year Plan period. Specifically, industry bases dedicated to energy-saving and environmental protection will be developed in cities such as Wuxi, Yancheng, and Nanjing, to facilitate clustering of environmental businesses for more coordinated development.

- As envisioned in its Outline of the 13<sup>th</sup> Five-Year Plan, Yancheng will strive to develop four pillar strategic emerging industries, with a focus on low-carbon green technology innovation and application throughout the industry chain. Guided by the "New Path of Industrialization" strategy, and building on its unique strengths in the environmental industry, the city plans to establish a national high-tech industry base dedicated to energy-saving and environmental protection.

Four Pillar Strategic Emerging Industries of Yancheng



Jiangsu Province As early as 2014, the Environmental Protection Department of Jiangsu Province began to partner with Yancheng Municipal Government in facilitating the development of YCESTC, and to help secure national earmarked funding for YCESTC.

Yancheng

During the 13<sup>th</sup> Five-Year Plan period, Yancheng aims to speed up the internationally-oriented, market-driven and capital-efficient development of its industry parks represented by YCESTC, to establish a national high-tech industry base dedicated to energy-saving and environmental protection. Stronger policy support will be provided, in terms of infrastructure construction, technological innovation, investment and financing system reform, land supply for projects, financial support, talent development, and more efficient administrative approval processes.

YCESTC

While staying dedicated to the development and clustering of environmental protection businesses, YCESTC is actively pursuing green development. It has introduced a range of policies to help resident companies strengthen their core competitiveness and embrace transformation, thus promoting the further integration of information technologies into industrial development, and increasing corporate innovation capabilities.

YCESTC has been implementing the city's *Policy for Attracting Leading Innovators and Entrepreneurs* and the 515 Three-year Action Plan for Talent Attraction, to attract, engage, and retain a strong talent pool for resident companies.

For high-tech and major industrial projects or foreign-invested projects, YCESTC provides customized support or policies tailored to each project.

# Incentive Policies for Industrial Transformation and Upgrading

In recent years, guided by the "New Path of Industrialization" strategy, Yancheng has been promoting industrial transformation and upgrading, while cultivating strategic emerging industries. Adhering to the principle of market-oriented and government-guided development, Yancheng helps companies improve their innovation capabilities and operation efficiency to grow and expand businesses, and achieve transformation and upgrading.

### **YCESTC Incentive Policies for Industrial Transformation and Upgrading**

### Supporting business expansion and growth

- Incentives for various projects of merger and restructuring, including those of leading companies, strategic brands, technology resources, and human capital
- Incentives for scale development of industrial companies in reference to the sales number in the invoices and sales increase
- A one-time allowance for restructured companies to compensate for administrative charges in property ownership transfer and intermediary service fees for consulting, audit, and assessment during the merger and restructuring process
- A five-year wage subsidy for restructured companies, which have hired high-level management professionals with a contract term of at least five years

### Supporting technological transformation

- Subsidies for technological transformation projects with an annual investment in equipment reaching the specified threshold
- Subsidies for new major industrial projects with an annual investment in equipment exceeding RMB 10 million
- Subsidies for companies with purchase of equipment worth over RMB 1 million per unit, and an investment

- in new equipment for production purposes exceeding RMB 3 million
- Subsidies for industrial companies with R&D and/or testing centers in fixed locations, whose annual investment in R&D and testing equipment in such centers exceeding RMB 1 million

### Facilitating public listing of companies

- Subsidies for qualified IPO candidates and pre-IPO companies to offset in part additional costs incurred following successful listing
- Reduction or exemption of policy-related fees and deed tax charged during the company restructuring process for IPO candidates
- Rewards to qualified IPO candidates for successful public listing
- · A "green channel" policy support for IPO candidates

### Encouraging innovation capacity building

- Rewards for companies whose products are recognized as national- or provincial-level key products or provincial-level hi-tech products, or listed in the provincial catalogue of products for priority uses, or with provincial or municipal brand-name product certifications
- Rewards for companies whose equipment and components are certified as the first-of-its-kind unit (set) of equipment and key components at provincial level in key areas of equipment manufacturing
- Rewards for companies with qualifications for technological innovation
- Rewards for companies with technological or research center(s) and public testing platform(s)

### Promoting green and low-carbon development

- Rewards for energy-saving transformation and industrial circular economy projects with an annual saving of no less than 500 tonnes of coal equivalent
- Rewards for industrialization programs in energy-saving and environmental protection with an investment in technologies and equipment exceeding RMB 5 million
- Rewards and support for companies undertaking energy performance contracting projects, implementing energy management systems, and carrying out technological transformation for better environmental control



Incentive Policies for Industrial Transformation and Upgrading

22

# Incentive Policies for Technological Innovation

Technological innovation not only drives business growth, but also holds the key to China's supply-side structural reform. The technology management authority of Jiangsu Province has formulated a series of incentive policies to encourage technological innovation, as part of the provincial government's efforts to manage and improve technological programs, and to optimize its R&D and funding mechanisms. YCESTC makes a better use of these supportive policies and government funding to inspire motivation and creativity in its R&D force, creating a favorable ambience for environmental technology innovation.



# A Cluster of Innovative Enterprises

- Cultivating 100 major technology platform companies with a total industry value of one trillion RMB generating 100 billion RMB worth of profits and taxes
- Enhancing cooperation among businesses, universities and research institutions
- Supporting enterprises to establish top-notch research departments guided by the provincial "Two Promotes and Two Enhances" R&D capacity building initiative

# **Enhanced Technological Innovation for Public Well-being**

- Developing the healthcare sector through technological innovations
- Achieving ecological progress powered by technologies

# Establishing examination and evaluation r

- Establishing examination and evaluation mechanisms for technological innovations
- Striving for strengthened protection of intellectual property rights in liangsu Province
- Investing in technological development through diversified channels

### Accelerated Industrial Transformation and Upgrading



- Supporting traditional industries to move up the value chain
- Promoting innovative development of the service sector

# Completed Regional Planning for Technological Innovation

- Deepening the efforts to build Yancheng into one of the most innovative cities
- Coordinating technological innovation resources of universities and research institutions
- Conducting systematic planning for high-tech infrastructure construction

### **Deepened International Technological Exchange and Cooperation**

- Enhancing technological cooperation for innovation with environmentally advanced countries and territories
- Accelerating the acquiring of overseas advanced environmental technologies
- · Setting up an international base for environmental technology cooperation

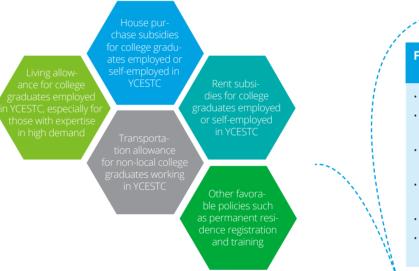


# ► Talent Attraction Policies

### "515 Program" for Talent Attraction

The local government of Tinghu District where YCESTC locates launched the "515 Program" for talent attraction in 2015, as part of the effort to achieve intellectuals-enabled development. The program is aimed at providing targeted incentive packages and favorable policies for college students, specialized professionals, leading industry and technology professionals, and college entrepreneurs. The "Green Card" incentive packages of three-star, four-star and five-star in the program offer comprehensive supporting services in permanent residence registration, home-buying, startup guidance, and training to talented professionals with different expertise who choose to settle in Yancheng.

### "Three-Star Green Card" Incentive Package for College Graduates



### Favorable Policies for College Entrepreneurs

- Specified fund for start-ups
- Living allowance granted to entrepreneurship training programs
- Rental and utility allowances for business premises
- Subsidies for first-time entrepreneurs
- Social security allowance
- Guaranteed small business loans at a subsidized interest rate

# "Four-Star Green Card" Incentive Package for Specialized Professionals

Home-buying allowance

Rent-free star apartments fo three years Subsidies for the purchase of locally produced vehicles

Employee benefits for senior executives, rehired retiree with expertise in high demand, and vice-presidents with doctoral degree in technological field

Employee benefits for specialized professionals hired be enterprises or public institutions

Employee benefits for technicians in high demand hire by enterprises

# "Five-Star Green Card" Incentive Package for Leading Industry Professionals

The Tinghu District government provides integrated supporting services in living, startup development, and R&D to attract leading professionals/teams from both China and abroad.

An attending physician An assistant help providing timely access to healthcare services A business car supporting transportation need tices

A government official pro- An assistant help daily work and daily work to the supporting R tices.

staff apartment satisfying A recreationa

Research Report on the Investment Environment of Yancheng Environmental Science and Technology City 25

# Government Services

Currently, YCESTC is proactively transforming towards a modern industry zone. For this, efforts are continuously made in: (i) sticking to modern development concepts, (ii) promoting innovative reforms, (iii) speeding up the industry structure reform towards the medium-high end of the value chain, (iv) serving as a major platform for innovative development, and (v) implementing a safe, green and energy-saving development model. To this end, the competent authorities in YCESTC have been endeavoring in the following two aspects: first, strengthening supports in helping businesses address major problems; and second, enhancing targeted guidance in accordance with the specific development stage, function positioning and regional advantages.



### **Targeted Business-supporting Services**

As of now, a unified business-supporting service system has been implemented in YCESTC to provide efficient and targeted services for resident businesses throughout the implementation of projects. With this system, an official leader is assigned with a dedicated team to offer consistent supporting services according to an updated progress schedule and a unified reward and punishment system. Furthermore, a service contact card is given to the YCESTC-based companies for their convenience.

Our survey of the resident businesses shows that all respondents speak highly of the services they have enjoyed in YCESTC. Every business entity is served by a dedicated official-led business-supporting team, which provides regular services to help them address various challenges. For instance, the business-supporting team offers regular policy interpretations, and is always ready to carry out specialized training regarding the technological projects that were filed and registered by business entities.



### An Optimized Platform of Public and Intermediary Services

YCESTC has been proactively building a diverse public service platform that incorporates a comprehensive set of environmental protection-related technical services, such as testing, environmental impact assessment, and technology R&D.

In addition, YCESTC has been relentlessly attracting various professional service agencies to provide small- and medium-sized companies and incubating companies with integrated, high-quality services, such as business management consultancy, technology trading, intellectual property, technological information and financial management.

### **A Financial Support Platform Enabling Easier Funding**

Leveraging favorable partnerships with various financial institutions, YCESTC is able to provide businesses with rich funding opportunities through a mixture of financing channels, such as seed funds, guaranteed loans, venture capital investment and private equities.





### A "Green Channel" for Listing

To simplify the listing approval process for companies preparing to be listed, YCESTC has established a "green channel", where one-stop approval services are provided through one service window regarding the company's projects, planning, land use, taxation, environmental protection and safe production.

YCESTC will offer adequate support to companies preparing to be listed, such as helping them to be prioritized in being recognized as a municipal or provincial major project, or in applying for land resources, national funds and other government-regulated resources.





# Overview

Infrastructure is one of the critical factors in determining the location of business operation, given that a well-established transport network and adequate resources are the foundations for successful business growth. Located in the north of the YRD region, YCESTC enjoys remarkable geographic advantages and a convenient transport network as the gateway for the coastal area of Jiangsu to metropolises such as Shanghai and the economic zone along the Yangtze River. Today, since China launched three national strategies – the Belt and Road Initiative, the coordinated development of the Beijing-Tianjin-Hebei region, and the development of the Yangtze Economic Belt, YCESTC comfortably sits in the overlapping area of these strategic development zones. Leveraging a connected transport network, it is set to benefit from these ambitious strategies, and in turn contribute to regional economic growth.

Moreover, YCESTC offers abundant land resources and energy supplies, such as circulating water, power, heat and natural gas, guaranteeing a long-term development for resident companies.

### **Testimonial from a Resident Company**

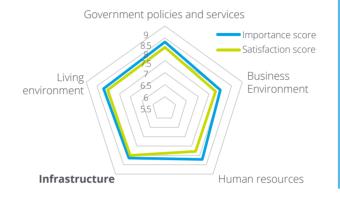
YCESTC is advantageously located within the "two-hour economic circle" of Shanghai, connected outward by Xinyanggang River to the north and Shenyang-Haikou Expressway to the west. During recent years, YCESTC has witnessed tremendous development in transport network and infrastructure. With the newly-built Century Highway and Environmental Highway, as well as the adjacent railway station, coach station and airport, it is increasingly convenient for us to operate in YCESTC. In terms of operation benefits, thanks to the premium location and transport network of YCESTC, we have enjoyed lower transportation costs and more talent resources.

iangsu Feida Environmental Science and Technology Co., Ltd.



# ► Research Summary of Infrastructure

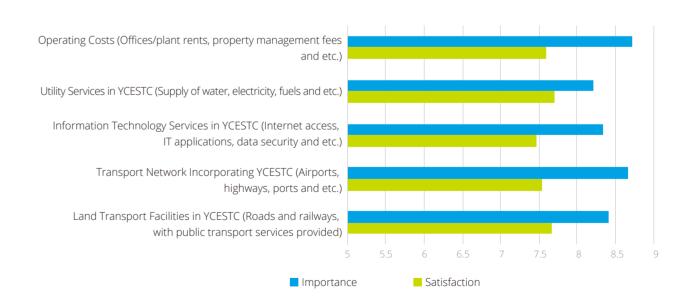
### Importance of / Satisfaction with Infrastructure



# Feedback of surveyed enterprises on infrastructure

- YCESTC scores 8.1 out of 9 on the importance of this dimension:
- YCESTC scores 7.2 out of 9 on the satisfaction with this dimension:
- In this dimension, operating costs and the sur rounding transport network are rated as the mos important;
- In this dimension, utility services and land trans port facilities are rated as the most satisfying.

### **Breakdown of Importance / Satisfaction**



# Transportation Network

- YCESTC is located in the north of the YRD region, which serves as the gateway for the coastal area of Jiangsu to metropolises such as Shanghai and the economic zone along the Yangtze River, as well as a hub for Jiangsu Province to connect with overseas markets. This remarkable geographic advantage will be further highlighted by the high-speed railway network in Yancheng. It is believed that in the near future, Yancheng will rise in East China as a more prosperous city that integrates commercial services, geographic advantages and ecological resources.



### **Road Transportation**

With Huanbao Avenue as its axis, YCESTC boasts a well-constructed road network consisting of nine arterial roads running from east to west and nine from north to south. Based on this and the elevated highways under rapid construction in the urban area, it will enjoy easy access to the downtown of Yancheng. Before long, it will take only 10 minutes driving from YCESTC to the downtown.

In close proximity to the entrance of Shenyang-Haikou Expressway, YCESTC is only five-minute drive away from the Jingjiang-Yancheng and Xuzhou-Huai'an-Yancheng expressway network and two-hour from Shanghai. Six first-grade highways running from west to the coastal areas in the east are interconnected with the Beijing-Shanghai Expressway, and two provincial coastal expressways running from north to south, providing easy access for the five economic hubs of Yancheng to high-level expressways and highways. An expressway directly connecting Yancheng with Nanjing has been listed in the 2016 plan of the Jiangsu Provincial Department of Transportation. Once it is completed, it will take only two hours to get to Nanjing.

### **Elevated Highways**

At the end of 2016, an elevated-highway network in Yancheng featuring one ring road and five radial roads with a total length of 57 km took shape and was open to traffic. The interconnected elevated highways form the main frame of the urban transportation network, serving as corridors easing the traffic pressure of the main roads and collector streets. This enables most residents in the urban area of the city to get access to rapid transit within 15 minutes.

### Rail Transportation

Within 10-minute driving time from YCESTC, the Yancheng Railway Station provides direct railway services to major cities such as Beijing, Chengdu, Nanjing, Qingdao, Taiyuan, Shenyang, Jinan, Changchun and Shijiazhuang, and many small-medium cities.

Yancheng is working on the construction of a "5+1" high-speed railway network, consisting of:

- Three high-speed railways under construction: the Yancheng-Xuzhou High-Speed Railway to Beijing and Xi'an, the Yancheng-Huai'an-Yangzhou-Zhenjiang High-Speed Railway to Nanjing, the Yancheng-Lianyungang High-Speed Railway to Qingdao;
- Two high-speed railways under planning: the Yancheng-Nantong High-Speed Railway to Shanghai and the Yancheng-Taizhou-Wuxi-Changzhou-Yixing High-Speed Railway to Hangzhou; and
- One intermodal passenger transport hub under planning. Once the network is completed, it will take only one hour from Yancheng to Shanghai or Nanjing, and four hours to Beijing. The Yancheng Railway Station will rise as an important hub in the coastal areas of Jiangsu Province, and the city will usher in a high-speed railway era. The network will promote the "One-city Effect" between Yancheng and other cities in the YRD region, thus contributing to the integrative growth of the regional agglomeration.



YCESTC is within 30-minute drive away from the Dafeng Port, a National Category-I open port in China, and 15-minute drive away from the Yancheng Nanyang Airport, a National Category-I airport. The complete and convenient transportation system fosters closer ties between Yancheng and the first-tier metropolises in China and the rest of the Asia-Pacific region.



### **Air Harbor**

The Yancheng Nanyang Airport, a National Category-lair harbor featuring sophisticated airport facilities and high-quality services, is located near YCESTC. It currently serves major destinations in China and the rest of the world, including Beijing, Changsha, Guangzhou, Dalian, Xiamen, Harbin, Tianjin, Hangzhou, Fuzhou, Shenzhen, Hong Kong, and Taipei, as well as Seoul in South Korea.

The reconstruction and extension project of the airport, which started in 2015, is now in full swing. It includes the construction of the domestic terminal, aprons, the square, parking lots, the airport transportation system, and supporting facilities like the aircraft catering center. The new terminal is expected to open in 2018, which will be able to handle 2.8 million passengers per year, compared to the 852,000 passengers in 2015, and 20,000 tonnes of cargo, far more than the 3,005.7 tonnes in 2015. The annual flights are also expected to hit a new record of 30,000.

### **Coastal Harbor**

- Dafeng Port: A National Category-I open port located within 30-minute drive away from YCESTC. The port is navigable by ships of more than 100,000 gross tonnes and operates more than 300 days a year. It now has international container shipping routes directly linking to the Port of Incheon (South Korea), the Port of Busan (South Korea), and the Moji Port (Japan), and indirectly linking to major destinations in Europe and the US through the Shanghai Port. It is expected that by 2020, 34 berths, each with a capacity over 10,000 tonnes, will be completed with a total bulk cargo throughput of up to 50 million tonnes and a container throughput of one million TEUs. The port will then become the largest trading port in the middle area of Jiangsu Province and another 100 million-tonne port in the coastal area of China.
- ▶ Binhai Port: A National Category-II port with complete supporting facilities and privileged transportation conditions located near YCESTC. As one of the best 10,000-tonne deep water ports in Jiangsu Province, it is developing towards a 300,000-tonne regional port dedicated to energy and specific industry development with global presence.
- Xinyanggang River and Sheyang Port: Located to the north of YCESTC, Xinyanggang River is a Class-V waterway traversing the urban area of Yancheng, and navigable by ships of more than 1,000 gross tonnes and fleets of more than 3,000 tonnes. Sheyang Port is developing into a National Category-lopen port, whose development will be fully integrated with Shanghai's International Shipping Center Initiative.



# Resources Supply

### **Land Supply**

Faced with the increasingly tight supply of land in the YRD region, YCESTC has been promoting intensive land use through proper layout planning. As of 2016, YCESTC had covered a total land area of 50 km2. Now with the construction of an eight-km2 area completed, sufficient land supply is secured for various new production and investment projects.

An overall planning of land use has been developed based on the demands of different projects settled in YCESTC. A number of industrial zones have been set up targeting specific groups of businesses, with part of land shared between zones for similar facilities, creating a favorable, efficient and optimized environment for production and investment.

### **Water Supply**

Yancheng, reputed as "a city of rivers" since ancient times, offers abundant water resources of national level-1 water quality. YCESTC enjoys extensive waterways and complete water conservation facilities. Benefiting from these advantages and the furrows ditched up in the riverside green land areas that slow rainwater infiltration, YCESTC has managed to hold initial rainwater for recycling utilization.

### **Waste Disposal**

YCESTC has a highly efficient waste disposal system consisted of a waste water treatment plant with a maximum daily capacity of 30,000 tonnes and a waste transfer station with a maximum daily capacity of 300 tonnes.

### **Telecommunications**

A multidimensional telecommunications network featuring high-speed optical cables, satellite communications and digital microwave signals has been developed across YCESTC, providing efficient and prompt communications services for businesses and technicians.

Water Rate					
Category	Water Con- sump- tion of House- holds	Water Con- sump- tion of General Indus- tries	Water Con- sump- tion of General Commer- cial and Service Sectors	Water Con- sump- tion of Special Indus- tries	Sewage Treat- ment
Rate (RMB/ tonne)	3.05	3.5	3.15	4.4	2.5



### **Electricity Supply**

The Yancheng Power Plant located on the north bank of Xinyanggang River has a total installed capacity of 330 MW, operating two units of 125 MW generators, two units of 25 MW generators and 4 units of 6 MW generators. It provides sufficient electricity for YCESTC, which has an estimated electricity demand at 550 MW, including 360 MW planned for the industrial sector.

Driven by the concept of environmental protection, YCESTC is vigorously promoting solar, geothermal and photovoltaic power generation as part of its effort to build a stable, efficient, clean and safe electricity supply system. Thanks to eco-friendly electricity supply terminals that enable companies to reduce energy consumption by 20%, YCESTC has realized efficient electricity utilization and its goals in environmental protection and energy conservation.



Catagory	Electricity Rate (RMB/kWh)					
Category	≤1kV	1-10kV	20-35kV	35-110kV	110kV	≥220kV
Electricity Consumption of Households	0.5483	0.5383				
Electricity Consumption of General Industrial and Commercial Sectors	0.8183	0.8033	0.7973	0.7883		
Electricity Consumption of Large-scale Industry		0.6418	0.6358	0.6268	0.6118	0.5968
Electricity Consumption of Agricultural Sector	0.5090	0.4990	0.4930	0.4840		





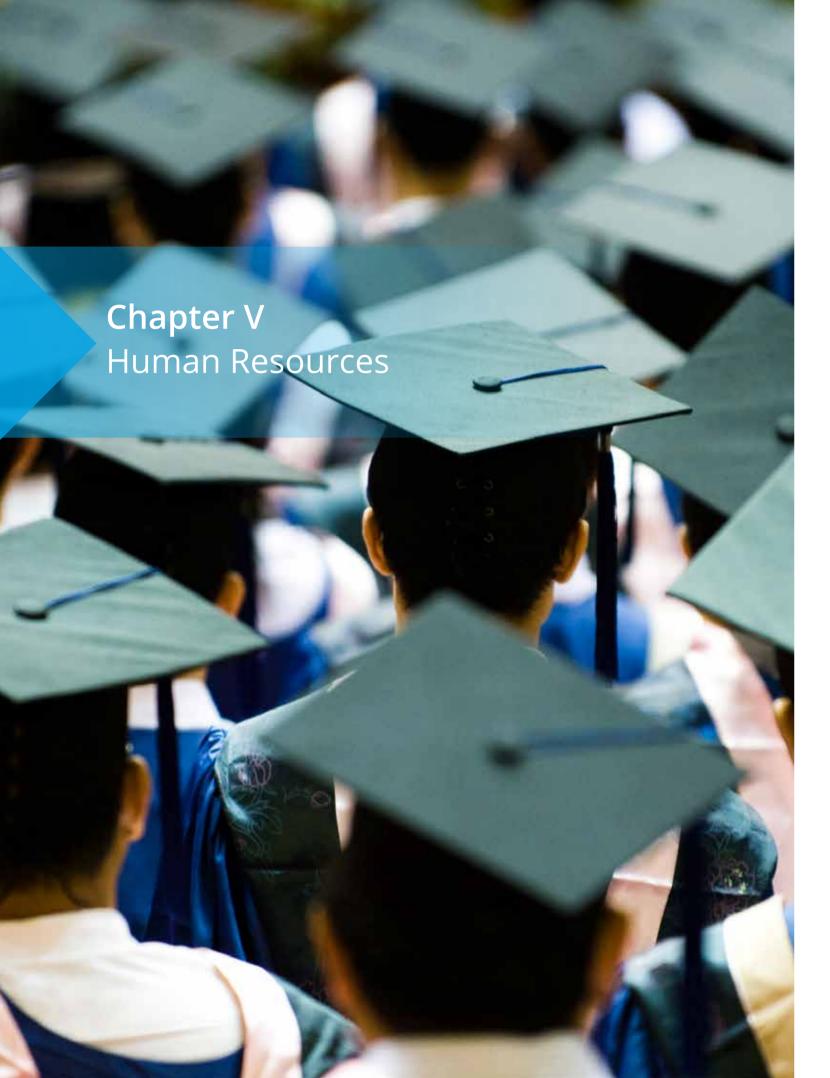
### **Natural Gas Supply**

YCESTC is home to the Yandong Gas Field, the largest natural gas field in East China with a proven natural gas reserve of 80 billion m3 and an estimated total reserve of 200 billion m3. It is adjacent to the Yellow Sea sedimentary basins group that has China's second largest natural gas and oil reserve off the coast. Sufficient natural gas supply ensures stable and efficient production and operation for businesses in YCESTC.

### **Thermal Power Supply**

Provided with direct access to steam pipelines of the Yancheng Power Plant in addition to its own newly-built thermal power plant, YCESTC is able to ensure ceaseless and quality thermal power for all of its industrial zones.

Capacity: 150 T/H Pressure: 1.0-1.2 MBAR



# Overview

Powerful human resources are key to the overall competitiveness of a company, and qualified professionals are an important driver for achieving business growth and revenue goals. In the context of China's "new normal of economy", industry transformation and upgrading, coupled with technological innovation, have led to increasing demands for high quality human resources.

With favorable geographical location, YCESTC enjoys easy access to diverse vocational and higher education resources, which ensures a strong pool of qualified human resources for resident companies available at advantageous costs.

### Testimonial from a Resident Company

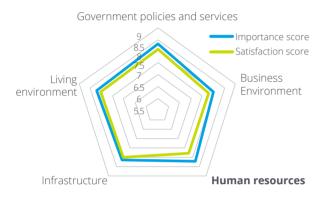
YCESTC has a strong pool of human resources available at competitive costs. Many of our employees are local residents of Yancheng living within neighboring communities. This greatly reduces our human resource costs. In addition to the existing technica institutes in Yancheng, a new technical school is being built in YCESTC, to provide future employees for resident companies. We are also supported by the 515 Talent Attraction Program of Tinghu District to attract more high-caliber technical and management professionals to join us.

Jiangsu Huahui Environmental Protection Technology
Co., Ltd



# Research Summary of Human Resources

### Importance of / Satisfaction with Human Resources



### Feedback of surveyed enterprises on Human Resources

### **Breakdown of Importance / Satisfaction**



# Human Resources Supply

Yancheng is the second largest city by population in Jiangsu Province, with its residents accounting for one tenth of the province's total population. Since living costs in China's first-tier cities rise continuously, recent years have seen a steady influx of industry workers into second and third-tier cities.

### **A Steady Talent Supply**

Enjoying an easy access to the education resources and labor markets in Yancheng and its neighboring cities, such as Nanjing, Shanghai and Suzhou, YCESTC guarantees a multi-layered and diverse supply of human resources for resident companies.

As one of China's key strategic locations for talent attraction, Yancheng is home to leading technical and vocational education institutions in China, with abundant human resources. Of the 4.46 million working population in the city by the end of 2015, around 130,000 are college students, with more than 48,000 graduates annually.

### **Vocational Education Resources**

Yancheng is now home to 35 secondary vocational schools and 25 post-secondary vocational and technical schools, including Yancheng Environmental Protection Vocational and Technical College in YCESTC. These schools offer a wide range of specialty courses with high-quality teaching, preparing highly qualified and specialized professionals for companies in YCESTC.

### Leading technical and vocational schools in Yancheng

- · Jiangsu Yancheng Technicians College
- · Yancheng Institute of Industry Technology
- · Yancheng Yannan Secondary Vocational School









### **Higher Education Resources**

The abundant higher education resources in Yancheng and its neighboring cities promise a steady supply of management and R&D professionals for companies in YCESTC. Yancheng is now home to six higher education institutions, with more than 30,000 students. It also enjoys a convenient proximity to the 75 higher education institutions in Nanjing, among which eight are China's leading "211 Project" universities, and 68 in Shanghai, including ten "211 Project" universities, all within the "two-hour economic circle".

### **Examples of Higher Education Institutions in Yancheng**

of Technology

• The first undergraduate college in Yancheng National Award for Excellence in Undergraduate Teaching

Yancheng Teachers University

A provincial-level normal university in Jiangsu

National Award for Excellence in Undergraduate

Normal School

- Yancheng Higher The largest normal school in Jiangsu Province offering the most diverse specialty programs
- A leading institute for vocational education in liangsu Province liangsu Vocational
- College of Medicine Under the direct supervision of Jiangsu Health and Family Planning Commission

### A Shared Pool of Intellectual Resources for Industry Development

YCESTC features a shared pool of industry-leading professionals for resident companies. On one hand, the intellectual resources are available to all companies to support an industry chain-wide development; on the other hand, specialized professionals are targeted by different environmental protection companies to help address various problems in the R&D and production processes.

In recent years, YCESTC has established close cooperation with Academicians Hao liming, Meng Wei, He Kebin, and Zhang Yi from the Environment and Light Textile Engineering Department (ELTED) of the Chinese Academy of Engineering. The various research institutions and leading experts have contributed to enhanced R&D capabilities and industry competitiveness of YCESTC. The Yancheng Academician Workstation under ELTED in YCESTC gives full play to the most cutting-edge expertise and insights of academicians to drive technology improvements for the environmental protection industry. The cooperation covers all aspects including decision-making consulting, platform building, technology R&D, academic exchanges, and talent training.

# Human Resource Costs

Direct production costs are a major criterion in determining the preferred location for business investment. In the context of China's shrinking demographic dividend, human resource costs, which mainly consist of wages, salaries and social security contributions for employees, are attracting greater attention of many companies.

### **Employee Salary Costs**

In 2015, the average annual salary for on-post employees in Yancheng was RMB 43,710, which translates into attractively lower salary costs than in neighboring cities, such as Nanjing, Shanghai, and Suzhou.



### **Social Security Contribution Costs**

In China, companies are legally liable to pay social security contributions for their on-post and retired employees, including pension, employment injury, and unemployment insurances. In 2016, the amount of social security contributions paid by employers amounted to 33.9%-40.9% of gross salaries in Yancheng.

# Human Resource Costs in Yancheng by Industry (2015)



# Percentages of Social Security Contributions Paid by Employers in Yancheng (2016)

Category	Percentage		
Pension Insurance	19%		
Employment Injury Insurance	0.9%		
Maternity Insurance	0.5%		
Medical Insurance	8%		
Unemployment Insurance	0.5%		
Housing Provident Fund	5%-12%		



# Chapter VI Living Environment



# Overview

Ecological environment, amenities of life, education and medical resources, business facilities, and natural and cultural attractions are all important components of living environment, which is closely related to the quality of daily life, work, recreations, and social interactions of residents. With favorable ecological resources, well-developed amenities of life, abundant education and medical resources, and beautiful cultural landscapes, YCESTC provides an ideal living environment for both domestic and overseas investors.

### **Testimonial from a Resident Company**

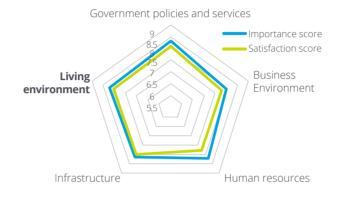
YCESTC has well-developed infrastructure for convenient living, and a sound ecological environment, which we believe can bring more enjoyment for our employees, and is a major reason that people are attracted to YCESTC. It is a wonderful place where our employees can both work efficiently and enjoy relaxing moments. We love to live and work in YCESTC.

iangsu CRRC Urban Transport Equipment Co., Ltd



# Research Summary of Living Environment

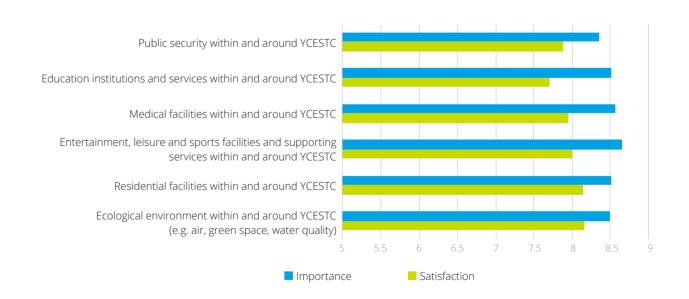
### Importance of / Satisfaction with Living Environment



# Feedback of surveyed enterprises on living environment

- YCESTC scores 8.2 out of 9 on the importance of this dimension;
- YCESTC scores 7.7 out of 9 on the satisfaction with this dimension;
- In this dimension, the entertainment, leisure and sports facilities and supporting services, medical facilities, and residential facilities within and around YCESTC are rated as the most important;
- In this dimension, the ecological environment residential facilities, and the entertainment, leisure and sports facilities and supporting services within and around YCESTC are rated as the most satisfy ing.

### **Breakdown of Importance / Satisfaction**



# Living Environment

- Hailed as "a city where breathing is a pleasure" and listed by People's Daily Online as one of the "10 Cities Best for Lung Cleansing" in China, Yancheng is committed to low-carbon, environmental- and eco-friendly development.

### **High-quality Ecological Environment**

Thanks to the great endeavors of Yancheng Municipal Government to make the city more harmonious, livable and eco-friendly in recent years, high quality ecological environment has become a distinctive feature of the city, which has won it a series of honorable titles, including "National Garden City", "National Health City", "National Model City for Greening" and "Exemplary City of Jiangsu Province for Prevention and Control of Air Pollution in 2014". Located in such a livable city, YCESTC has been striving to become an eco-friendly demonstration zone featured by clean air and river channels, environmental-friendly factories and neatly-organized small towns, providing an outstanding living environment where residents and investors can live and work happily and peacefully.

The percentage of good air quality days in Yancheng reached 72.2% in 2015, and 75.8% (285 days) in 2016, ranking first in Jiangsu Province in both years.





### Greening

As a result of the enhanced afforestation efforts by the municipal government during the 12th Five-Year Plan period, the city's forested area increased by over 164,000 acres to more than 817,000 acres. Its forest coverage has risen from 17.6% to 22%, ranking first provincially in terms of forestation, while its tree coverage reached 26%, 3.5% higher than the provincial average.

### **Air Quality**

The air quality of Yancheng has been substantially improving since 2013, which is manifested by the city's now-common scenery of clear blue sky and white clouds. The city's air quality not only ranks first in Jiangsu Province, but also makes it among the best in China. From 2014 to 2016, Yancheng was a constant occupant on the official list of top 10 cities with the best air quality in China. The year 2016 saw Yancheng ranking 7th nationally, and listed by People's Daily Online as one of the "18 Cities Best for Lung Cleansing" in China.

### **Well-developed Life Amenities**

- > Comprehensive Infrastructure: YCESTC houses a wide range of large international supermarket chains, popular fast food and coffee shop chains, gyms and parks. Furthermore, Yancheng is home to abundant cultural venues which greatly enrich local residents' cultural life, including 10 cultural centers and public art centers, 101 cultural stations, 10 museums and memorial halls, and 10 public libraries (as of the end of 2015).
- ➤ Diverse City Functions: Yancheng has been developing a pioneering city ecosystem incorporating eight major elements low-carbon transport, green space, green healthcare, ecological resources, environmental protection industry, advanced education, eco-friendly urban facilities and comprehensive living complex. Human-centered and multifunctional urban living areas are taking shape, featuring five-star hotels and clubs, enjoyable lakeside scenery, high-rise housing proximity to schools, 100,000 m2 leisure commercial blocks and international headquarter office buildings.
- ➤ Deep Integration of Industries and Urban Functions: YCESTC is vigorously providing its residents with easy access to public services, ensuring that education, healthcare and fitness services, among others, are accessible within 10-minute walk from every household. Meanwhile, YCESTC is making further efforts to develop a wide range of life facilities including Baoping Lake Park, BRT system, Greenland urban complex, public squares and community parks, shaping a better future for YCESTC as an emerging livable zone with deep integration of industrial and urban functions.

# ► Infrastructure

### **Educational Resources**

As of 2016, Yancheng was home to 5 colleges and universities, 276 general secondary schools, 326 primary schools, 10 secondary vocational schools, 653 kindergartens, and 10 special education schools, providing abundant educational resources to meet the different educational needs of YCESTC investors' children

The newly-established YCESTC Experimental School and the Yancheng Vocational Technical Institute of Environmental Protection in YCESTC provide more choices of education with well-developed faculty and teaching facilities for local residents, and serve as fresh talent pools for YCESTC-based companies.

### **Medical Resources**

Yancheng operates a sound healthcare network which provides easy access to high-quality medical services for employers and their staff in YCESTC.

With a view to delivering better medical services, Yancheng takes the lead in establishing the Transfer and Continuation Mechanism of Health Insurance and piloting the Contracted Family Doctor Services which has been listed as one of the "Ten Major Innovations in China's Healthcare Reform". The city is also dedicated to integrating medical resources in urban and rural areas, establishing telemedicine systems, and promoting outpatient appointment services.

### **Prominent Schools in Yancheng**

- · Jiangsu Yancheng Middle School
- Tinghu High School of Yancheng (former Jingshan Senior High School of Yancheng)
- Yancheng No.1 High School
- Yancheng Jiefang Road Experimental School
- Yancheng City Yu Long Road Experimental School
- · Yancheng Foreign Language School
- · Yancheng Toronto International School

# Renowned Hospitals it.

### Renowned Hospitals in Yancheng

- Yancheng City No.1 People's Hospital (The Fourth Affiliated Hospital of Nantong University)
- Yancheng Second People's Hospital (also known as Yancheng Tumor Hospital)
- · Yancheng City Fourth People's Hospital
- · Yancheng Hospital of Traditional Chinese Medicine
- · Maternal and Child Health Hospital of Yancheng
- Yancheng Stomatology Hospital
- Yancheng Yanfu Hospital (managed by Shanghai Renji Medical Group)

### **Business Facilities**

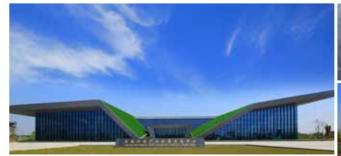
Embodying the concept of green development, YCESTC has in place an extensive array of "technology-based, environmental-oriented and eco-friendly" business facilities represented by the YCESTC Exhibition and Trade Center, the Low-carbon Demonstration Zone, and the five-star Wyndham Hotel (under construction).

Nearby Hotels: The upscale hotels including three fivestar ones around YCESTC are equipped with excellent facilities and easy access to transportation network, offering high-class services for business meetings and leisure vacations.

# The Low-carbon Demonstration Zone – "Green Garden": Being the first and currently largest low-carbon demonstra-

tion zone in Jiangsu Province, the YCESTC-based Green Garden is developing itself into a sound community complex well equipped with more schools, business centers and medical establishments.

The YCESTC Exhibition and Trade Center: Serving as a significant platform of external exchanges and exhibition economy in Yancheng, the YCESTC Exhibition and Trade Center has successfully held five sessions of China Yancheng International Environmental Protection Industry Fair (EPIF).





# A City of Beautiful Scenery and Rich Culture

Yancheng enjoys beautiful natural scenery and is reputed as the "oriental paradise of wetlands and home to wild elk and red-crowned cranes". Boasting a long history and the tradition of admiring erudition and education, it is the birthplace of many cultural celebrities such as Chen Lin, one of the seven esteemed scholars in the Jian'an period of Eastern Han Dynasty, Shi Nai'an, the author of the Chinese classical novel Water Margin, Xu Daodu, a renowned physician in the Northern and Southern Dynasties, Lu Xiufu, a prime minister in the Song Dynasty, and Song Cao, a famed calligrapher in the Ming Dynasty. The city is also the cradle of the Huaiju opera and the home of Chinese acrobatics. The long history and rich cultural legacy of the city is epitomized by its scenic spots including the waterfront commercial street, historic sites in memory of China's War of Resistance Against Japanese Aggression and War of Liberation, and the ruins of Kaizhuang in the Neolithic period.

- Top Tourism City of China
- · Asia Travel Gold Award (ATGA) winner
- ATGA Top 10 Green and Eco-friendly Tourist Destination
- Listed among the Most Unique Eco-friendly Tourist Destinations in China
- Cultural and Tourism City on the Belt and Road
- Top 10 Green and Eco-friendly Tourist Destination in China

### **Top10 Sightseeing Highlights in Yancheng**

- Rare Birds National Nature Reserve
- Dafeng Elk National Nature Reserve
- Withered-branch Peony Park
- Dazong Lake Tourist Resort
- Jianhu Jiulongkou Scenic Area New Fourth Army Memorial
- Shi Nai'an Memorial
- · Taishan Temple in Dongtai
- · Agricultural Bank of China Tower
- Yingbin Park

### Yandu District, "Home of Chinese Ballad Songs"

Recognized as the "Home of Chinese Ballad Songs" by the Chinese Ballad Singers Association in June 2017, Yandu District is the first to win this honor in the northern part of Jiangsu Province. Yancheng, a cradle for generations of ballad performers, is featured by a variety of ancient and distinctive ballad art forms, including Chinese allegro, Daoqing (Daoist lyric), three-people flower drum opera, oral storytelling and Yancheng ballad rap. In recent years, 14 performance venues have been set up in Yandu District, offering over 30 performances each year for visitors from home and abroad to appreciate the charm of traditional Chinese ballad art.

### Sea Salt Culture

Yancheng has gained a fame for its numerous salt ponds since its flourishing in ancient times, when a large portion of the nation's revenue came from salt. The China Sea Salt Museum located in the Yancheng Sea Salt Historic and Cultural Zone, a national 4A-level tourist attraction, offers visitors a glimpse of the sea salt culture of Yancheng. The sea salt-themed tourism zone offers other tourism highlights such as the waterfront commercial street featured by ancient-style bridges and greyish bricks, the Dongjin Road where visitors can enjoy local delicacies, and the Yandu Park which is the largest ecological park in the city's urban area. It is now a must-see site for tourists visiting Yancheng.



### **Dafeng Elk National Nature Reserve**

The Dafeng Elk National Nature Reserve is a national 4A-level tourist attraction that is 85 km from YCESTC. It is the largest elk nature reserve with the largest elk gene pool in the world.

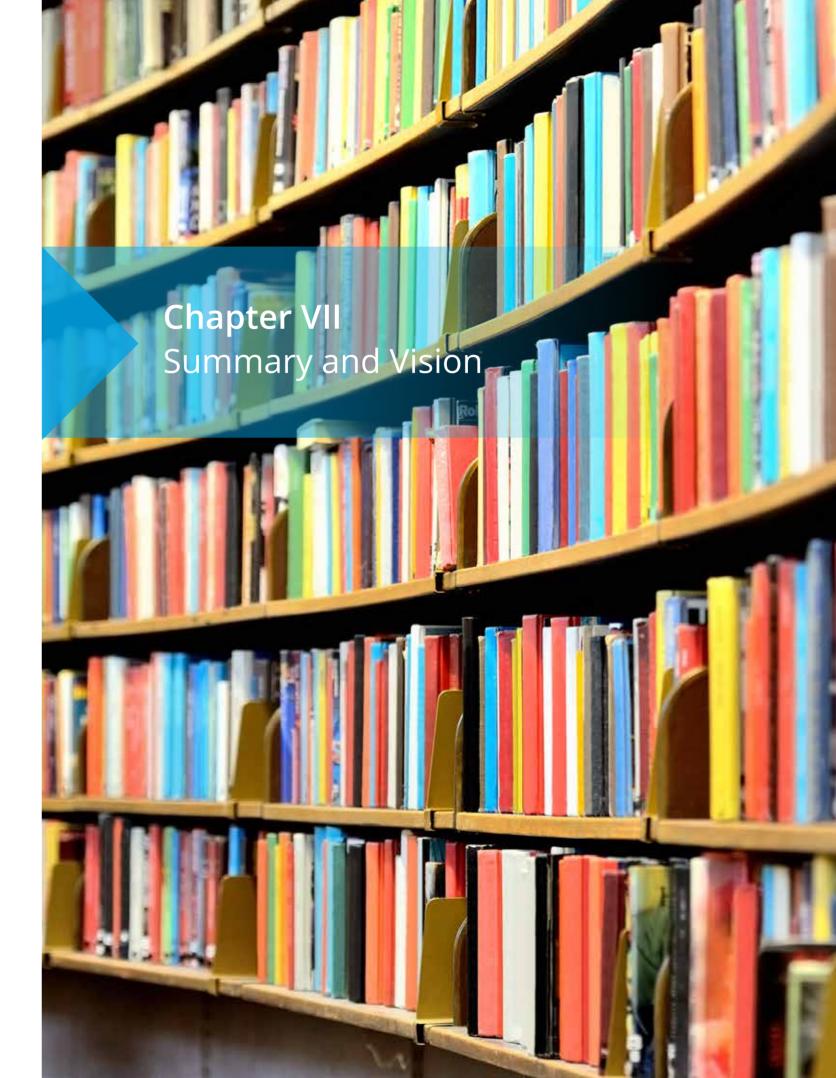
Located in the coastal area of the Yellow Sea, the nature reserve presents a typical costal wetland landscape. It indulges visitors in its picturesque scenery from crisscrossed seasonal river flows to multitudes of woodland, marshland and grass land.

### **Rare Birds National Nature Reserve**

The Rare Birds National Nature Reserve, located 30 km from YCESTC, is a national 4A-level tourist attraction dedicated to the protection of local wetland, red-crowned cranes and other rare animals. The reserve, featuring a large diversity of species, is home to 450 species of plants, 402 species of birds and 284 species of fish, including 14 national Class I protected species of wild animals. As a listed biosphere reserve in the UNESCO's Man and the Biosphere Programme as part of the World Biosphere Reserve Network, it attracts streams of visitors to enjoy the natural scenery and leisure throughout the year.

### **Dazong Lake Tourist Resort**

Located in the Dazonghu Town which is 75 km from YCESTC, the Dazong Lake Tourist Resort is a national 4A-level tourist attraction renowned for clear lake water and balmy climate throughout the year. The serene and natural beauty here makes it an attractive destination for tourists from all over the world.



# Summery and Vision

- In recent years, the Central Government of China has attached great importance to the environmental protection industry. To proactively facilitate standardized development of the industry, a series of state-level policies and measures have been issued, including (i) the action plans for prevention and control of air, water and soil pollution, (ii) development plans for the environmental protection industry during the 13th Five-Year Plan period (regarding ecological environmental protection, national strategic emerging industries, and energy-saving and environmental protection industries), and (iii) policies on regional environmental improvement based on the PPP model.

The environmental protection industry has witnessed rapid growth, with significant potential still untapped. The total output value of China's environmental protection industry has been increasing by over 15% per year, recording RMB 2.99 trillion in 2012, RMB 4.55 trillion in 2015, and more than RMB 5 trillion in 2016. In addition, China is speeding up activities of "bringing in" and "going global" in the industry. We believe China's environmental protection industry is undergoing critical transformation, and will generate great opportunities and challenges for environmental protection industry zones represented by YCESTC. These specialized industry zones are supposed to actively introduce state-of-the-art environmental restoration solutions across the globe, while addressing demands of international environmental protection markets, so as to achieve global presence and benefit from the Belt and Road Initiative.

Based on thorough surveys on resident companies, in-depth interviews with competent authorities, and observations during the field research and talks in YCESTC, this report hereby concludes that YCESTC has distinguished advantages in the following three aspects:

- · Government policies and services;
- · A full-fledged value chain driven by competitive industries; and
- · Premium location with easy access to other markets.

# **1.** Government Policies and Services

Providing both guiding policies and needed services, the Tinghu District Government plays a critical role in the development of YCESTC.

First, the following platforms have been established in YCESTC to facilitate industry innovation, transformation and upgrade:

- (1) The supporting public service platform, consisting of the Quality Supervision and Testing Lab for Environmental Protection Equipment of China, the Service Center for Start-up Investment, and the incubation base for environmental protection businesses;
- (2) The international cooperation platform, consisting of the International Technology Exchange and Cooperation Center and the International Business Headquarters; and
- (3) The scientific research platform, consisting of the Scientists' Studio, state-level enterprise technology centers, and other institutions that provide strong technology supports for businesses.

Second, YCESTC has offered business entities extensive opportunities to give full play to their own capabilities. Efforts have been made in YCESTC to launch a transformation and upgrade project focusing on independent R&D, branding and production with increased R&D investment, to encourage businesses to achieve accelerated innovative growth based on self-developed intellectual properties.

According to Deloitte's surveys on YCESTC-based businesses, respondents described the work of competent authorities in YCESTC as "efficient", "attentive" and "service-based", and regarded YCESTC as "a promising place for start-ups and innovation". Respondents all mentioned that competent authorities have taken the initiative to offer them needed services since they settled down in YCESTC, and created a favorable operating environment for them to roll out projects of technology reform and productivity expansion, transformation and upgrade, and core competence enhancement.

# **2.** A Full-fledged Value Chain Driven by Competitive Industries

Built on China's first smog treatment technologies R&D and industrialization base, YCESTC has been focusing on developing industries such as water treatment, solid waste utilization and new eco-friendly materials. After years of industry development, a full-fledged value chain in the environmental protection industry has taken shape, integrating R&D and incubation, equipment manufacturing, project engineering, operation services, exhibition and trade, and application demonstration, to provide comprehensive solutions to environmental issues. Deloitte finds that the continuously upgrading environmental protection industry in China is demanding more comprehensive solutions rather than single-purpose ones. YCESTC is well-positioned in the market with its full-fledged value chain strategy. It has also introduced the third-party, PPP and other business models to create more opportunities for industry development. As the demand in environmental improvement keeps rising, the environmental protection market now provides immense opportunities. Furthermore, as the supply-side structural reform in China made further headway over the past early years in the 13th Five-Year Plan period, more efforts have been devoted to promote environmental protection. In response, YCESTC is working on capacity upgrading, function enhancement and has adopted diversified business models to attract more environmental protection enterprises to facilitate industry growth.

# **3.** Premium Location with Easy Access to Other Markets

YCESTC is located in the north of the YRD region, which serves as the gateway for the coastal area of liangsu to metropolises such as Shanghai and the economic zone along the Yangtze River, as well as a hub for liangsu Province to connect with overseas markets. The well-structured road network consisting of expressways and elevated highways provides YCESTC with easy access to the downtown of Yancheng. Based on the coastal ports, especially the Dafeng Port, a National Category-I open port in China within 30-minute drive away, YCESTC is enabled to be fully included in Shanghai's International Shipping Center Initiative. The Yancheng Nanyang Airport which is a National Category-I airport within 15-minute drive away, together with the coastal ports, facilitates YCESTC to foster close ties with the first-tier metropolises within the Asia-Pacific region and broader markets.





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Jiangsu Renfa Environmental Technology Co., Ltd.

Jiangsu Wanbangda Environmental Tech Co., Ltd.

Jiangsu CRRC Urban Transport Equipment Co., Ltd.

Jiangsu Huahui Environmental Protection Technology Co., Ltd.

Jiangsu Yuan Zhida Rail Transit Development Co., Ltd.

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