





For more than 160 years, SUEZ has been acting in support of our clients and partners to deliver essential services that protect and improve the quality of life wherever we operate.

Today, we are dedicated to becoming the trusted partner for circular solutions in water and waste, enabling its customers to provide access to water and waste services, with resilient and innovative solutions,

to create value over the entire lifecycle of their assets and services, and to drive their ecological transition, together with their end-users.



66 millio

people served by drinking water production plants operated by SUEZ



**8.3** TWI

renewable energy produced annually



33.7 millio

people with access to sanitation services provided by SUEZ

CO2

3.8 million tons

CO<sub>2-eq</sub> avoided through Energy-from-Waste and material recovery

## Global knowledge local expertise supporting the ecological transformation of China

SUEZ was among the first multinational corporations to enter the environmental market in China, and the first to enter into market-based cooperation in water supply with local governments. With a strong foothold in China that stretches back nearly 50 years, SUEZ has witnessed the country's rapid development in combining economic growth and environment protection.

We help businesses, governments, and communities develop resilient and innovative solutions. We innovate to conserve water and create value from waste, in the form of recycled materials and energy. We promote and implement responsible behaviours, more efficient technologies and circular solutions to recycle and make the best possible use of the finite resources of the Earth.

While growing its footprint in the Chinese environmental market, SUEZ has prioritised working with local partners. Today, SUEZ's

cooperative projects with municipal and industrial clients spread across over 30 major cities in China such as Shanghai, Chongqing, Suzhou, Tianjin, Qingdao and Macao. Across these locations, we support municipalities and industries to develop innovative solutions, contributing to China's ecological transition.

In the water sector, we have built over 400 water treatment plants (WTPs) and wastewater treatment plants (WWTPs). Additionally, we provide water services to over 20 million people in China. In the waste sector, we have built, and now operate, one of Asia's largest incinerators. Our smart environmental solutions are also applied across the region, in places like Chongqing, Shanghai, Hong Kong, Macao and Taiwan.



**50+** 

Our global solutions cover over **50 areas of expertise:** drinking water, wastewater, industrial and municipal waste, bio-factory, desalination, green landfills, carbon footprint, energy recovery, etc.

11,000+

Water treatment plants
designed and built by SUEZ worldwide,
including 255 desalination plants and
more than 50 wastewater reuse plants

### **Smart solutions**

Smart solutions portfolio combining new digital services: air quality monitoring, traceability, waste management and recovery, GHG emissions reduction

### **SUEZ development footprint in China**

With strong presence in China for nearly 50 years, we work with local partners to offer landmark solutions in water and waste.



#### Macao

We operate China's first water PPP, which has been recognised as a benchmark in China's water industry for its excellent operational performance.



### Shanghai

The Chinese Ministry of Ecology and Environment has recognised the water and hazardous waste treatment solutions we provide to Shanghai Chemical Industry Park as "Model Cases of Third-party Environment Pollution Treatment in Industrial Parks".



### Chongqing

Our partnership is considered as the most successful PPP model of Sino-foreign cooperation in China's water industry. Our wastewater treatment plant is also hailed as a benchmark for refined operation and management in the industry.



#### Dalia

Our "embedded" wastewater treatment solutions won the Special Climate Award for Innovation, protecting Bohai Sea's ecology and biodiversity.



































**6,500** employees



400+

water and wastewater treatment plants built



25+million

people received our water and waste services



17

industrial parks received SUEZ environmental services

 $^{5}$ 

# Three core businesses helping municipal and industrial clients overcome environmental challenges

In China, we offer customised, digital, resilient and innovative water and waste recycling and recovery solutions tailored to the specific needs of our municipal and industrial clients. In doing so, we ensure the sustainability and vitality of cities and assist industrial clients in excelling and transforming in the environmental transition.





### **Water Management**

We provide infrastructure, 0&M, smart and sustainable management of water cycles (drinking water and wastewater), smart water solutions and network performance:

- Design, construction and operation of water and wastewater treatment plants
- Drinking water production, network distribution and customer services
- · Wastewater collection, treatment and reus
- Smart water solutions
- Sludge treatment and recovery
- Environmental solutions for industrial parks

### **►**400+

Water and wastewater treatment plants built

► 1.5+Mm³/d

municipal and industria wastewater treated

► **6** + Mm³/d

drinking water produce and distributed

▶2,300+tons/d

sludge treated



### **Waste Recycling & Recovery**

Through waste recycling and recovery services, we produce secondary raw materials and renewable energy:

- Design, construction and operation of hazardous waste facilities
- Waste recycling and recovery
- Industrial services
- Soil remediation
- Waste to energy

### ► 150,000 ton/yr

Industrial hazardous waste treatment capacity

- ► Designed, built, and now operating one of **Asia's** largest hazardous waste incineration projects
- Our construction waste treatment project named
   China's first listed National Key R&D Demonstration
   Project



### **Smart Environmental Solutions**

We provide digital solutions and environmental innovations for water, air, waste and climate applications in order to support municipalities and industries in their environmental transition, at the same time facilitating access to more sustainable consumption.

- Environmental quality management
- Watershed management
- Sponge city
- Energy efficiency
- Asset performance enhancement
- ► AQUADVANCED® smart solutions cover a full suite of smart water management solutions for water supply, wastewater, and stormwater, as well as energy and watershed management

#### ► Environmental quality monitoring

Third-party environmental quality testing services across water, soil, and air with a network of service facilities throughout China

#### Exhaust gas treatment

Partnership with local VOCs treatment partner for exhaust gas treatment, energy savings, and VOCs emissions reduction

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### MACAO

Smart water services to enhance the resilience and prosperity of Macao



### CHONGQING

Providing drinking water, sewage, sludge and industrial water treatment to city's residents and industrial clients. Now it is recognised as China water industry's most successful Sino-foreign PPP



### CHANGSHU

Providing drinking water, municipal and industrial wastewater, as well as construction waste collection & recovery services in Changshu, supporting development of a sustainable urban environment



### ZHUHAI

Providing industrial wastewater treatment services to the Gaolan Port Industrial Park, facilitating Greater Bay Area's green development



### **TAIPEI**

Innovative, expeditious, effective, and affordable patented technology – Ice Pigging<sup>TM</sup> technology improves municipal water distribution network's water quality



### SUZHOU

Sludge and hazardous waste treatment services for Suzhou Industry Park, turning refuse into resources and energy



### SHANGHAI

Providing industrial water and wastewater treatment, hazardous waste treatment services to Shanghai Chemical Industry Park, helping industrial clients reconcile economic growth and environment protection



### **DALIAN**

Designed and built "embedded" wastewater treatment plant for refining and chemical complex. Innovative wastewater solutions to protect Bohai Sea's ecology and biodiversity



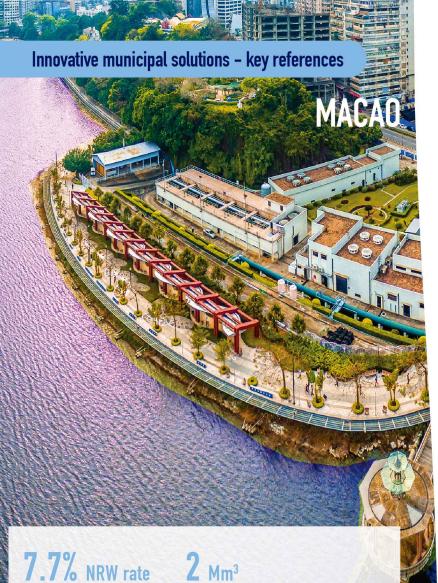
### QINGDAO

Providing drinking water treatment for Qingdao, a popular tourist city known as "the Switzerland of the East", and helping iron and steel companies achieve 100% industrial wastewater reuse - the epitome of the local circular economy



### TIANJIN

Safe regenerative thermal oxidation technology applicable to VOCs treatment in different concentration ranges



a world-leading standard

520.000 m<sup>3</sup>/d

drinking water treatment capacity

water saved annually, about 3,200 households' annual water consumption

40 years

SUEZ has been a part of the Macao community for nearly 40 years

### **Smart water services** helping Macao achieve water sustainability

Since 1985, SUEZ has been delivering drinking water production, distribution, and customer services to the entire city of Macao, one of the world's most densely populated cities, to preserve Macao's natural resources. In 2009, we successfully renewed our contract with the Macao SAR Government for another 20 years - the first time a water supply concession project in Asia has completed a full cycle then received a successful extension.

By combining SUEZ patented smart water solutions with excellent management practices, we have improved water quality and operational efficiency, while reducing resource consumption. We enforce drinking water standards more stringent than the World Health Organization guidelines. China has set a target to bring the leakage rate from urban public water supply networks to below 9% by 2025. We have been leading the world in terms of non-revenue water, outperforming even this official target 10 years ahead of the Government's target. Additionally, our newly constructed state-of-the-art water treatment plant was the first to be accredited the "Green Building Design" label of its kind in Macao.

Today, Macao Water is recognised by International Water Association (IWA) as one of the "Most Inspiring Climate Smart Case", by the industry as one of Asia's most successful PPPs, as well as a benchmark of operational excellence in China's water industry. It is a multi-year winner of the Most Socially Responsible Water Company in China's water industry award. Moreover, Macao Water is a field study base for students from Tsinghua University.

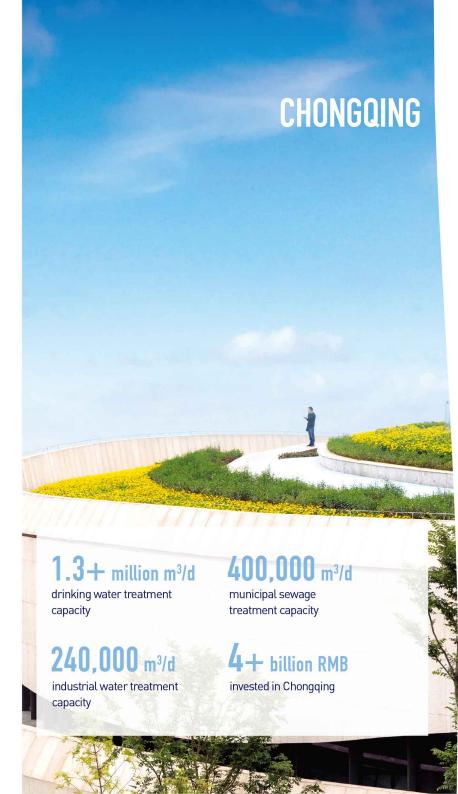




asset operation and



Enhance water quality, drinking water transcends WHO standard



### Integrated solutions help municipality build smart, resilient & resourceful cosmopolitan city

SUEZ has had a presence in Chongging for over 20 years. Our collaboration with the Chongging government and local partners has resulted in numerous impressive achievements and created positive social and economic impact. The scope of our services has expanded from water supply and wastewater treatment to industrial park environmental services. In addition, we are a strategic shareholder of Chongging Water Group and Sanfeng Environment, with a total investment of over RMB 4 billion in Chongging. Today, our partnership with Chongging is widely recognised as the most successful Sino-foreign PPP model in China's water industry. Our water project has been recognised as one of the Most Socially Responsible Water company in China's water industry.

We provide smart water services to more than 2 million residents, using SUEZ's AQUADVANCED® Plant and big data technology to equip the municipality with a "smart brain" for water supply, further optimising the operational efficiency of water supply facilities and networks, providing safer, better, and more reliable water services to the residents and commercial clients. Our wastewater treatment plant (WWTP) is further recognised by the industry as a benchmark "towards the next centenary goal" for sophisticated WWTP operation and management. The plant uses hydropower generation and biogas reuse, contributing to about 30% of the total power consumption. It also uses reclaimed wastewater recycling, which reduces water usage by 94%.

By introducing SUEZ's AQUADVANCED® smart solution, we have developed a smart storm water drainage system as part of the Sponge City initiative. With our local partner, we have established a R&D centre dedicated to developing smart solutions. Additionally, we have, through the establishment of Chongging Derun Environment, focused on developing integrated environmental management (watershed management and soil remediation, etc.), secondary resources, and environmental technologies.

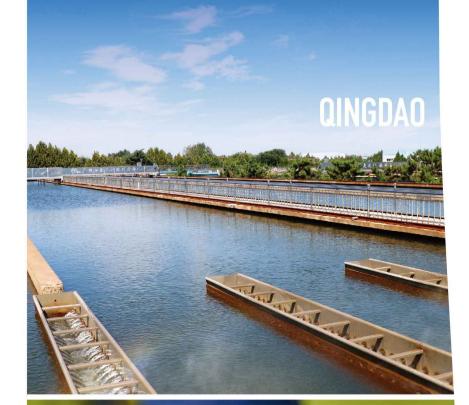


### Integrated environmental solutions Combining growth with sustainable urban development

SUEZ's partnership with Changshu dates back to over 15 years ago. SUEZ provides drinking water, municipal and industrial wastewater treatment, and construction waste collection & recovery services in Changshu. We manage three water treatment plants with smart water services, delivering quality drinking water to two million residents. We also operate nine municipal and industrial wastewater treatment plants to increase wastewater treatment capacity and improve sanitation for the city.

In water management, we are committed to smart water treatment plants, smart water networks and smart customer services to achieve higher operational efficiency and service excellence. Our joint venture develops proprietary, 24/7 smart solutions to enable digital water supply planning and dispatch management, water network management, and non-revenue water management, to minimise leakage and protect valuable water resources. Its advanced technologies, scientific management and quality services have received unanimous recognition from the government, clients and the industry. In addition, thanks to our proven experience in industrial park wastewater treatment services, SUEZ and Changshu have extended our partnership to Shaowu, Fujian, where we provide reliable wastewater treatment services for the local industrial park to protect the water ecosystem of the rivers.

In waste management, the Changshu Model, jointly developed by SUEZ and the city of Changshu, has achieved a 75% construction waste recycling rate. Construction and renovation waste is converted to secondary construction aggregates, reusable combustibles, and metallic materials after treatment. This model has been successfully replicated in Anji, Zhejiang, helping the city to achieve the goal of no less than 85% recycling rate of construction waste and giving construction waste a "new lease on life".





### Municipal and industrial water services contributing to green growth and ecological protection

SUEZ operates and manages two of the three main WTPs in Qingdao, a city known as "The Switzerland of the East". The daily water production capacity of the two WTPs' accounts for about 85% of the total water supply in the city proper area. SUEZ has also launched a locally adapted tertiary treatment project for the city's century-old WTP, to improve the quality and taste of drinking water in the city.

In Qingdao's Dongjiakou Economic Zone, SUEZ's industrial wastewater treatment plant provides customised services to Qingdao Iron and Steel Group, a large Chinese metallurgical company located in the Zone. SUEZ has invested, built, and now operates an industrial wastewater treatment plant to help clients achieve 100% reuse of industrial wastewater. This achievement epitomises the circular economy in the Dongiiakou Economic Zone.

### Adopting environment friendly pipe-cleaning technology to improve water quality

SUEZ applies a patented solution, Ice Pigging<sup>TM</sup>, which uses a relatively small amount of ice slurry to clean pipes. This solution has been deployed in Taiwan, Singapore, Hong Kong, Chongqing, Yixing, Shaodong and Tianjin. It helps remove mineral sediment, biofilm and other deposits from the inner walls of water pipes to improve water quality in municipal water distribution networks.

This innovative, fast, effective and economical technology is low risk, highly efficient and has a strong cleaning performance while consuming 50% less water than traditional cleaning technologies.

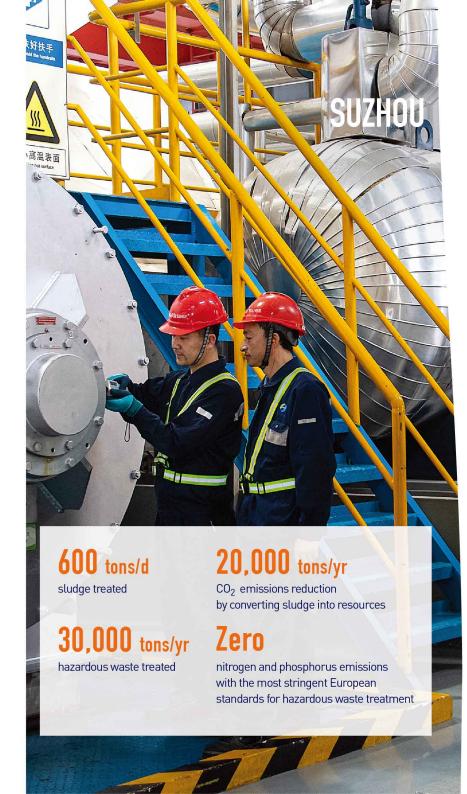
### Sustainable industrial solutions - key references **SHANGHAI** 2 M m³/yr 120,000 tons/yr water resource savings hazardous waste treatment capacity. one of Asia's largest hazardous waste incineration facilities 143,000 tons/yr Model Case Studies reduction in CO<sub>2</sub> of Third-Party Environmental Solutions in Industrial Parks by MEE emissions equivalent

### Helping industrial clients reconcile economic growth and environment protection

The Shanghai Chemical Industry Park (SCIP), one of the world's largest industrial parks, has chosen SUEZ as its long-term partner since 2002. To help it become a global benchmark of excellence in ecological protection and boost circular economy, SUEZ has designed and co-invested with SCIP in centralised, state-of-the-art infrastructure for water production, wastewater treatment as well as hazardous waste incineration. Operated by experienced staff backed by the expertise of SUEZ, the facilities provide the Park's petrochemical industries with a safe, reliable and cost-efficient solution for their effluents and hazardous waste.

Our technologies avoid the Park industries to carry out complex pre-treatment and by combining different residues, we facilitate the various treatment processes. We adjust to our clients' fluctuating production and thanks to our several treatment lines, storage capacities and redundancies, we can guarantee 365-day acceptance even during maintenance operations. Besides, industrial steam produced by our operations is returned to our clients to save energy.

To maintain technological excellence, SUEZ and SCIP have established R&D centres for water and waste, supporting our operations and promoting innovation in environmental protection. We also leverage on our international operations to deploy smart solutions to achieve water and wastewater refined management. In addition, SUEZ's patented Zone Libellule® technology was introduced to SCIP and will be used for its artificial wetland expansion project – the first project in a Chinese industrial park to use the Zone Libellule® technology to treat industrial wastewater and an exemplary nature-based solution.



### A circular economy model of excellence converting waste into resources

The Suzhou Industrial Park (SIP) is among the fastest growing and most internationally competitive development zones in eastern China, a sign of China's ultra-resilient economy. In support of SIP's "five 100%" scheme to develop a circular economy, SUEZ designed, invested, built, and operates the sludge treatment and hazardous waste disposal services for SIP.

Our sludge facility adopts a circular and zero-liquid discharge model to convert sludge into resources and mitigate its climate impact, enabling seamless process flow and strong industrial synergies among the sludge drying plant, co-generation plant, and wastewater treatment plant. It can treat 600 tons of wet sludge produced by the park's wastewater treatment plant every day and has operated around-the-clock and year-round since it was commissioned nearly 12 years ago. Its operational stability and low energy consumption profile are industry-leading, consuming only 0.63 tons of residual steam per ton of wet sludge treated, which is 40% lower than other similar processes. Furthermore, our distributed photovoltaic power station has the capability to generate an average of 800,000 kWh of electricity annually, which can be integrated into the grid for consumption. It has been recognized as a circular economy model of excellence, awarded the Special Climate Prize in Innovation and Excellence in Carbon Neutrality Award of International Corporate Social Responsibility, and noted as a model of third-party environmental solutions in China. Best practices from the project have been successfully replicated in Suzhou's Xiangcheng District and Yangzhou in Jiangsu province to enhance the sludge disposal capacity and support water conservation among cities on the Yangtze River Economic Belt.

In addition, our **hazardous waste treatment facility** recovers energy during the incineration process to **produce steam** for consumption by nearby companies. The facility is fitted with extensive flue gas and odor treatment going beyond the national emission standards.

### Sustainable industrial solutions - key references 7+ M kwh/yr 20,000 tons/yr CO<sub>2</sub> avoided from CO<sub>2</sub> capture, power consumption saved chemical and power consumption saving **Special Climate Prize** 14 M m<sup>3</sup>/yr in Innovation reclaimed water reused by France-China Committee

### Innovative wastewater solutions to protect ecology and biodiversity of Bohai Sea

Hengli Group, a Fortune Global 500 company operates a 20 million ton/year integrated refining and chemical project off the coast of the beautiful Changxing Island in Dalian. This project is an important part of the Hengli Petrochemical Industrial Park and is located in the Bohai Gulf area, a region that is approaching its environmental capacity limits and facing the greatest challenges of pollution cleanup in China.

Recognising its large size, the complex mix of pollutants discharged from the refinery, the refractory wastewater streams, and the demanding discharge and reuse requirements, SUEZ pioneered the "embedded WWTP" concept in its industrial wastewater treatment plant, providing a solution for wastewater treatment, reuse, and final discharge of concentrated brine to meet effluent standards. SUEZ does this by using 12 of the Group's patented technologies to deliver performance beyond the most stringent existing specifications, while focusing on upstream infrastructure and pollutants (water, gas, and slag) generated at each stage of the refining process to reduce energy and material consumption, emissions, and secondary pollution.

In addition to meeting its own stringent parameters, our "embedded WWTP" solution was awarded the **Special Climate Prize in Innovation** for its outstanding contribution to CO<sub>2</sub> emissions reduction and climate change mitigation. The project **protects the biodiversity of nearby nature reserves**, preserves the habitat of spotted seals, and creates shared value for clients and the community.





### Industrial wastewater services facilitate Greater Bay Area green development

SUEZ designed, built, and operates a wastewater treatment plant for the Gaolan Port Industrial Park in Zhuhai, one of the core cities in the Guangdong-Hong Kong-Macao Greater Bay Area. We provide customised industrial wastewater solutions for the Park, which currently accommodates 130+ leading industrial companies, helping the local government and industrial companies address environmental challenges. We applied SUEZ's patented technology - Pulsa Green Carbon Adsorption Pulse Clarifier - in a WWTP with a daily treatment capacity of 25,000 m³, ensuring effluent quality beyond the discharge limits of municipal WWTPs, with no more than 40 mg/L COD (chemical oxygen demand) in the effluent. In the next phase, industrial clients' wastewater will also be recycled to promote water resource recycling.

### Safe regenerative thermal oxidation technology applicable to VOCs treatment in different concentration ranges

The CNOOC Boxi Waste Gas Treatment Project is to treat the **exhaust gas** generated by the MDEA decarbonisation of natural gas. There are high concentrations of methane and C2-C8 non-methane total hydrocarbons VOCs in the waste gas components. In the meanwhile, environmental management and safety requirements are high. The operation of the exhaust gas treatment device meets the oxidation temperature requirements through the heat released by the VOCs itself, without the need to supplement additional heat, to achieve **air purification, energy saving and emission reduction,** the system operates intelligently, i.e. it requires no human intervention to do so. The treatment effect fully meets local non-methane total hydrocarbon emission standards. It emits no peculiar odors, due to successfully eliminating the greenhouse gas methane.

### **SUEZ's innovative power**

### committed to creating value for our clients and helping them pursue green development

position as the partner of choice for its clients. To this end, we work hard and resource concerns. To help China's transition towards a more





R&D centres worldwide, of which. 6 are located in China

patents

areas of expertise



#### **Chongging Sino French Environmental Excellence R&D Centre**

We provide technical support to our Chongging joint ventures to improve the performance of water assets. We also focus on research concerning smart and digital water applications and other smart environmental solutions.



### Shanghai Chemical Industry Park Water Research Centre

Dedicated to research into industrial water and wastewater treatment. particularly the petrochemical industry. China's first R&D facility dedicated to industrial water supply and wastewater treatment, focusing on research and the analysis of industrial wastewater, sludge treatment and recycling technologies.



### Shanghai Chemical Industry Park Waste R&D Centre

Supporting operation of one of the largest hazardous waste incineration plants in Asia, R&D is focused on advanced incineration processes and smart waste management.



### Changshu

R&D involves smart water system development, IoT hardware devices, data analysis, hydraulic model simulations, and automation control.



#### Macao Water

Dedicated to research into water technologies, smart water applications, and new methodologies for water analysis.



#### **Treatment Infrastructure**

Based in Beijing, dedicated to testing industrial wastewater, drinking water, and sludge and biological treatment, the laboratory also has the capacity to run 40+ types of certification tests for water engineering projects.

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# China's green vision: a good match for SUEZ

As the pace of green development quickens, China has announced its ambitious goal of peaking CO<sub>2</sub> emissions by 2030 and achieving carbon neutrality by 2060. The country's pledge to build a green, low-carbon circular economy that contributes to global sustainable development is bold and it bolsters our own ambition to further grow the SUEZ business in this country.

SUEZ's development strategy and goals are perfectly aligned with China's ambitious agenda. We have also set out a new sustainable development roadmap with ambitious targets for 2023 to 2027. This enables us to meet the specific needs of our diverse customers in terms of business and economics while also fulfilling our commitment to climate change, protecting natural resources, and social responsibility. Our sustainability strategy has become one of our strongest competitive advantages in the market.

## 50 years of unwavering commitment In China for China

Deeply rooted in our communities, we are committed to providing people and the planet with the resources for a common future. In China, SUEZ has always been recognised by the industry as a pioneer in promoting sustainable development. We have long considered climate change mitigation and adaptation as one of the key strategies for our sustainable development and business growth. We are committed to reducing carbon emissions and promoting decarbonization in energy by improving energy efficiency, developing clean energy, and implementing effective measures in water and solid waste management to reduce greenhouse gas emissions in our operations.

Additionally, we create secondary resources or energy in our operations, helping to reduce greenhouse gas emissions in our value chain, including for our customers and partners.

Our sustainable development actions go beyond just addressing climate change. We think 360° sustainability when we manage water and waste. We are leveraging our technological innovations to address the five factors responsible for biodiversity decline, including land artificialization, over-exploitation of resources, climate change, pollution, and invasive species. Through the implementation of biodiversity preservation plans, we secure the positive nature impact during our own operation. We provide nature-based solutions and improve resource recycling efficiency, supporting China meet its goals for enhanced natural protection.

At the same time, we also integrate these concepts and actions into our value chain, cooperate with our partners, upstream and downstream, in order to seek a balance between social livelihood and economic development, and expand the positive impact of our business activities on society.

Together, we support China in achieving its ambitious sustainability goals.



### reating local jobs and nurturing local talents

99% of employees are local, and 40% of management positions are held by women



#### Recognised industry leader

The only multinational company to feature in "Top 10 Most Influential Water Companies in China" list for 19 consecutive years



#### Highly respected expertise

Our Water Handbook is known as the "Bible of Water Treatment" in the industry



#### Contributing solutions for urban development

Invited to sit on the mayoral strategic advisory councils of Chongqing and Chengdu since 2008 and 2012, respectively



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