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SUEZ commissions China's largest industrial membrane-based seawater desalination plant for Wanhua Chemical's Penglai Industrial Park to support industrial needs while conserving scarce water resources

A landmark seawater desalination plant, designed and built by SUEZ for Wanhua Chemical Group—one of the world's top 20 chemical companies—has officially begun operations at Wanhua Chemical's Penglai Industrial Park in Yantai, Shandong. Designed with a total capacity of 300,000 m³ per day to be delivered in three phases, this is the largest industrial membrane-based seawater desalination project planned in China to date. Officials from local government, and representatives from key partners—including Wanhua Chemical Group, China Railway Shanghai Engineering Group Co., Ltd., Beijing Shougang International Engineering Technology Co., Ltd., and SUEZ, gathered to mark this significant milestone in Sino-French cooperation in sustainable water solutions.

LIAO Zengtai, Chairman of Wanhua Chemical Group, said: *"The completion of the Penglai seawater desalination project represents not only a firm step forward for Wanhua's journey toward green and low-carbon industrial development, but also a significant milestone in the innovation and application of seawater desalination technology in China. Through our partnership with SUEZ, the project has achieved a world-leading standard by employing the advanced technology and the optimal process, thereby establishing a global benchmark for energy efficiency in the seawater desalination industry. As a leader in the chemical new materials industry, Wanhua will continue to partner with SUEZ to drive industry transformation and contribute to the global seawater desalination sector."*

Pierre PAULIAC, Co-CEO of SUEZ and Chief Operating Officer Water, said: *"With nearly 60 years of experience in designing, building, and operating more than 260 desalination plants worldwide, SUEZ delivers tailored, high-performance solutions for municipal and industrial clients. The Penglai facility, constructed to the highest industrial standards, is a landmark project between SUEZ and Wanhua Chemical Group, building on our successful partnership since 2017. The commissioning of the first phase today sets a benchmark for seawater desalination in coastal regions across China. It stands as a powerful example of what is possible when innovation, ambition, and partnership come together, to address the urgent need for fresh water in coastal areas."*

WANG Jianying, Chairman of China Railway Shanghai Engineering Group Co., Ltd., said: *"This marks the largest industrial membrane-based desalination project currently planned in China. With the shared mission to build it into a 'lighthouse' project, China Railway Shanghai Engineering Group has leveraged extensive resources, applied scientific planning, and maintained rigorous safety and quality management throughout the process. With the concerted efforts of the consortium partners, we achieved the high-quality delivery of the entire facility within 14 months, demonstrating our team's unwavering commitment, resilience, and pursuit of the highest standards."*

WU Liyun, Chairman of Beijing Shougang International Engineering Technology Co., Ltd., said: *"With nearly 800 projects for over 200 clients worldwide, this high-quality project exemplifies Shougang International Engineering's commitment to technology-driven innovation, utilising BIM technology to integrate the entire lifecycle of the desalination plant. Today, together with our partners, Wanhua Chemical Group, SUEZ, and China Railway Shanghai Engineering Group—all are leading companies in their respective fields—we celebrate this fruitful international cooperation in sustainable water solutions. We look forward to contributing further to the sustainable development of global water resources."*

Setting a new benchmark for China's industrial seawater desalination plant

As a global leader in membrane-based seawater desalination engineering, SUEZ brings international expertise and innovation to this plant. The Group deploys advanced reverse osmosis membrane technology to convert seawater into freshwater, supplying it as the primary industrial water source for Wanhua Chemical's Penglai Industrial Park.

The facility employs low-carbon, energy-efficient, and environmentally responsible processes, achieving over 15% cost savings compared to conventional dual-membrane technologies¹. With the full commissioning of first phase, it will produce 100,000 m³ of desalinated water daily, resulting in annual savings of over 36 million m³ of freshwater. Additionally, the facility features a highly advanced automation system, making it China's first fully automated desalination plant.

Meeting industrial water needs and preserving resources

As part of its national water security strategy, China is broadening the large-scale application of seawater desalination. Shandong Province, for instance, faces acute water scarcity, with per capita water resources measured at less than one sixth of the national average. Leveraging its geographical advantages, Shandong has prioritised seawater desalination as a strategic, fast-developing industry.

This Penglai facility is a flagship initiative under China's and Shandong Province's seawater desalination strategies. Its signing during French President Emmanuel Macron's state visit to China in April 2023—witnessed by senior officials from both countries—marks an important milestone in Sino-French cooperation on sustainable water solutions. By enhancing regional water resilience, the project helps ease local freshwater shortages while conserving scarce resources. It also sets a replicable model for water security in coastal areas and supports the climate change adaptation in the industrial sector.



SUEZ and its partners mark the commissioning of the seawater desalination plant at Wanhua Chemical's Penglai Industrial Park.

¹ The "dual-membrane technologies" integrates UF and RO technologies for desalination.

新闻稿

Press release



General

About SUEZ:

Faced with growing environmental challenges, SUEZ has been delivering essential services that protect and improve our quality of life for more than 160 years. SUEZ provides its customers with innovative and resilient solutions for water and waste services. With 40 000 employees across 40 countries, the Group works with customers to create value over the full lifecycle of their assets and services, and to drive their low carbon transition. In 2024, SUEZ provided drinking water for 68 million people worldwide and sanitation services for 44 million people. The Group generated 8 TWh of energy from waste and wastewater. In 2024, SUEZ has generated revenues of 9.2 billion euros. For more information: www.suez.com/ Twitter @suez

In Asia, SUEZ's journey began some 70 years ago, first in Southeast Asia before expanding to China 50 years ago. With 6,500+ employees across Asia, SUEZ has built over 600 water and wastewater treatment plants. Together with our local partners, we also provide water and waste recycling and recovery services to 25+ million people and 22 industrial parks across the region. SUEZ is recognized as one of the most influential companies in China and a service benchmark for leading Asia's environmental industry. Today, SUEZ works with municipal and industrial customers in more than 30 major cities and regions across China, manages China's first PPP water contract in Macao, operates one of Asia's largest hazardous waste incineration facilities in Shanghai, and has invested over RMB 6 billion in Chongqing.

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