



A photo shows the data cabin of the Shanghai Lingang undersea data center demonstration project on Sept 11. XU CONGJUN / FOR CHINA DAILY

Waves with world’s first wind power undersea data center

Project combines renewable energy and AI-focused digital infrastructure

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China has begun operations of the world’s first undersea data center directly powered by offshore wind, as the country races to solve the soaring energy demands of artificial intelligence with greener and more efficient infrastructure.

The Shanghai Lingang undersea data center demonstration project, built by a subsidiary of China Communications Construction, officially entered operation in the waters off Shanghai’s eastern coast in May.

The project combines offshore engineering, renewable energy and AI-focused digital infrastructure in a model Chinese officials and engineers describe as a potential template for next-generation computing systems.

Located about 10 kilometers offshore in Shanghai’s Lingang area, the project has a planned capacity of 24 megawatts, which is enough to power roughly 20,000 households.

Its core innovation is what devel-

opers call a “direct offshore wind connection” model. Electricity generated by offshore wind farms is transmitted directly to submerged data modules through subsea photoelectric composite cables, bypassing traditional grid-routing systems.

The system also uses seawater as a natural cooling source through a circulating copper-pipe heat exchange design, reducing electricity consumption by 22.8 percent, eliminating freshwater use entirely and cutting land usage by more than 90 percent.

The move is not only an engineering breakthrough, but also a paradigm shift in the relationship between computing power, energy and geographic space in China, industry experts said.

The launch comes as China’s AI boom fuels a rapid rise in demand for low-latency, high-density computing infrastructure. Shanghai has become one of China’s leading AI hubs, home to large-model developers, autonomous driving

firms, biotech companies, fintech groups and advanced manufacturing enterprises — industries where milliseconds can determine commercial performance.

The project also reflects a growing global scramble to tackle the energy and cooling crisis facing AI infrastructure.

Data centers have become one of the world’s fastest-growing electricity consumers as companies expand AI model training and inference capacity. Cooling alone accounts for a large share of energy consumption in conventional data centers, particularly in densely populated urban markets.

Tsinghua University Professor Li Zhen said conventional data centers typically use about one-third of their total electricity consumption on cooling systems.

“For an undersea data center of the same scale, the electricity used for cooling would only account for about one-tenth of total power consumption,” Li said.

China’s data centers currently consume around 250 billion kilowatt-hours of electricity annually, Li said, with roughly 80 billion kWh used for environmental cooling.

“If data centers of the same scale were placed underwater, even allowing extra margins, cooling consumption could fall to around 30 billion kWh,” Li said. “That would save about 50 billion kWh of electricity each year.”

He estimated the reduction would be equivalent to not burning roughly 15 million metric tons of standard coal annually, significantly lowering carbon emissions.

Globally, major technology companies are searching for new ways to reduce the environmental footprint of AI infrastructure as model sizes and inference demand expand rapidly. The combination of offshore renewable power and seawater cooling could become increasingly attractive in coastal markets where land, electricity and freshwater resources are constrained.

For China, Li said, the country that has built the world’s largest manufacturing supply chains is now attempting to build a new generation of industrial infrastructure for the AI era — one where electricity, cooling and computing are engineered as a single integrated system beneath the sea.

Parks breathe fresh impetus into economies

BELJING — Fine spring sunshine, burgers sizzling on grills and the beat of a rock band pulsing across Beijing’s Chaoyang Park set a festive mood as the Juicy Burger Festival was in full swing during last month’s May Day holiday.

After savoring the last bite of her beef burger, Zhou Ziyue, a university student in Beijing, headed into the nearby mall inside the park. Around her, people lined up for an e-sports competition, while a pop-up store for *Black Myth: Wukong*, a hit Chinese video game, was met with long queues.

“The last time I came, the crowd wasn’t even a third of what I’m seeing today,” said Zhou, surprised.

In January, Beijing rolled out a set of measures that encourage urban parks to blend culture, tourism and commerce. Guided by these policies, the park, located in Chaoyang district in eastern Beijing, drew over 470,000 visitors during the five-day holiday, a 60.8 percent jump compared with the same period last year.

Through IP collaborations, e-sports games and festival markets, the park ranked third in Beijing in visitor numbers during the holiday, trailing only the Summer Palace and the Temple of Heaven, the top two parks that feature historical attractions.

Chaoyang Park is only one of many Chinese urban parks that are transforming green areas into lively venues for consumers by exploring exciting possibilities for leisure and enjoyment.

During the holiday, the country’s urban parks received over 212 million visitors, and hosted nearly 10,000 commercial and cultural events that generated more than 6.8 billion yuan (\$1 billion) in spending, according to the Ministry of Housing and Urban-Rural Development.

In Shanghai’s Zhongshan Park, a temporary wooden coffee stall appeared on the prime lawn during the May Day holiday, where visitors learned latte art to live music. The stall occupied just five or six square meters — a wooden hut, a few tents and scattered seating — leaving the

rest of the 400-square-meter lawn open for grass, sky and room to breathe.

“Parks don’t lack coffee shops,” said Wang Jing, deputy general manager of a local landscaping company that operates Zhongshan Park. “What they lack are coffee shops that know how to play with ideas and assemble experiences.”

Commercial activities in parks, she added, should “aim to be pleasing”, using services and content to activate spaces and enhance the quality and dynamism of public areas.

The park hosted over a dozen such events in May: two live concerts, an intangible cultural heritage dough modeling workshop and an international flower festival that helped generate about 2.6 million yuan in consumer spending inside the park. The park, previously regarded as “a landscape to be viewed”, has transformed into “an immersive space to be experienced”.

By the end of 2025, Shanghai had built 1,100 parks, while Beijing, home to 1,136 parks, plans to build 200 more in the next ten years. In 2025 alone, Beijing spent 4.2 billion yuan on park construction and maintenance covering ecological restoration, facility upgrades and heritage preservation. In January, enterprises were also allowed to operate parks under contract for up to five years, allowing more willing businesses to participate in the long-term operation of parks.

Behind the park boom across Chinese cities is a shift in thinking about urban construction: less about just building, more about making the most of what they already have — through spatial design, living environments and governance — to upgrade residents’ quality of life.

At the World Mayors Dialogue held from May 13 to 15 in Chengdu, a southwestern Chinese city, mayors from around the world praised the city’s eco-friendly environment and its efforts to improve urban living.

XINHUA



People taste creative hamburgers during the Juicy Burger Festival at Chaoyang Park in Beijing on May 2. PROVIDED TO CHINA DAILY

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