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SCI-TECH INNOVATION: NEW HIGHLIGHT OF BRI COOPERATION

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CHINA'S SCI-TECH RISE CHANCE FOR DEEPER COLLABORATION

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Xi Chairs APEC Meeting, Calls for Building Asia-Pacific Community

Chinese President Xi Jinping on Thursday called for further efforts to build an Asia-Pacific community and write a new chapter of the "Asia-Pacific miracle."

"We must strive to build an Asia-Pacific community characterized by solidarity and mutual assistance, openness and integration, enterprise and innovation, as well as inclusive development," Xi said as he chaired the 33rd Asia-Pacific Economic Cooperation (APEC) Economic Leaders' Meeting, held in Shenzhen, south China's Guangdong province, on Nov. 18-19.

Xi noted that for more than three decades, the Asia-Pacific region has undergone tremendous changes, creating the "Asia-Pacific miracle" of rapid economic growth.

In the face of new opportunities and challenges, the region must adapt to the new realities and open up new prospects for Asia-Pacific cooperation, he added.

Xi called for solidarity and mutual assistance in building an Asia-Pacific community, urging APEC economies to expand their shared interests, meet the difficulties and challenges together, and steadily foster a shared sense of community.

"Members of APEC are like passengers riding the same ship. To navigate the waves of the Pacific, we must unite as one and look out for each other," he said.

Xi highlighted the importance of openness and integration, calling for efforts to uphold open regionalism, steadily advance economic integration, and champion free and open trade and investment, while developing a cooperation pattern that is open and integrated rather than exclusive or fragmented.

Building an Asia-Pacific community requires enterprise and innovation, Xi said, urging stronger scientific and technological cooperation, the commercialization of innovation outcomes, and an open, fair, just and nondiscriminatory environment for cooperation.

He also underscored the importance of inclusive development, stressing the need to ensure that development benefits all, deliver for the people, and foster favorable conditions for turning the vision of an Asia-Pacific community into reality.

Four pillars

Founded in 1989, APEC now brings together 21 member economies, including China, Russia and the United States. China joined in 1991. The forum has helped expand trade and investment and strengthen economic ties across the region.

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This photo shows a flower decoration themed on the 2026 APEC "China Year," in Shenzhen, south China's Guangdong province. (PHOTO: XINHUA)

STI Frontier

A Super Stabilizer for New Energy Grids

By Staff Reporters

How can wind power be fed steadily into the power grid? Deep inside the CGN Shengshan Wind Farm in Sunwu, Heilongjiang, China's northernmost province, the world's first 35 kV high-voltage direct-mounted distributed synchronous condenser is solving the problem.

It acts instantly to stabilize fluctuating voltage and prevents the risk of large-scale blackouts. It can directly raise voltage from 10.5 kV to 35 kV, eliminating the need for a step-up transformer. Its developer, Harbin Electric Machinery Company Limited (HEMC), spent two years and five months to overcome three major challenges and complete this "world's first."

New insulation system

In spring 2024, HEMC took on a challenge no one had tackled: building a 35 kV direct-mounted synchronous condenser. Jin Huiyong, the project's chief professional engineer, likened it to a "super stabilizer" at key grid nodes — instantly injecting or absorbing reactive power to keep the voltage steady when new-energy sources fluctuate or the grid is disturbed.

Raising voltage directly means wrapping each copper conductor in an insulation sheath strong enough to withstand it — and at 35 kV, there was no precedent worldwide.

The HEMC team designed a complete set of mica insulation structures, but they still had to figure out each layer's thickness and how to press the layers together without gaps. To compound the problem, when the voltage rises, electricity "leaks" from both ends of the copper wire and burns the insulation sheath.

Hu Chunxiu, head of the insulation system, and her team camped beside the test bench for over a year. Of each batch of eight test bars, often only two or three passed the trial. After 64 test bars and hundreds of trials, the mica insulation structure was ultimately finalized. On that day, voltage reached nearly three times the rated value, but the curve held steady — no breakdown, no discharge.

Preventing coils from overheating

In autumn 2025 came the second hurdle: the insulation sheath blocked high voltage but also trapped heat. Thicker insulation means poorer heat dissipation, and overheating coils age the insulation.

The team tried making the sheath itself both voltage-resistant and heat-permeable, but the attempts failed. Then an engineer proposed integrating water cooling, having water flow directly through the bars to carry the heat from the core. This became the first application of "air-water cooling" in a synchronous condenser: Water cools where coils generate heat, and air cools where rotor friction does.

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Observer

Sci-tech Tourism Gains Popularity

By QI Liming & LI Jun

"Orders for science and technology (sci-tech) attractions rose 107 percent year on year in 2026," according to recent data from Trip.com Group. Interest in sci-tech-themed cultural tourism continued to surge during this year's National Day holiday. In particular, sci-tech-themed itineraries were among the most popular among inbound day-trip products, becoming a new choice for foreign visitors.

From cute quadruped robot dogs, immersive check-ins with AI glasses, delivery drones zipping through low-altitude airspace, to new-energy vehicles on display that draw visitors to stop and take a closer look, overseas tourists are no longer content to linger only at famous gardens and historical sites. Fresh and exciting "sci-tech tourism" is rapidly gaining popularity among inbound travelers.

Sci-tech tourism becomes a new hit

Inside the Pudong robot experience store in Shanghai, a German tourist held the control handle and gently pushed the joystick. As the humanoid robot raised its mechanical hand, she exclaimed in admiration, "This experience is so special — it's worth coming all the way here to try it!"

On Hefei Science Island in east China, foreign tourists gathered to watch the "artificial sun" (Experimental Advanced Superconducting Tokamak, EAST) model. While listening to the commentary on the breakthrough in clean energy and controlled nuclear fusion, they asked frequent questions, expressing amazement at this sci-tech innovation journey.

A threefold transformation is taking place in inbound tourism: shifting from traditional sightseeing and photo-taking to immersive experiences in sci-tech scenarios, changing from one-way touring to dual consumption of "sci-tech tours plus sci-tech shopping", and moving from a single cultural and tourism industry model to a deep integration of sci-tech innovation, culture, and commerce.

The popularity of "sci-tech tours" aligns with the new consumption demands of inbound tourists.

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New Graphic



WECHAT ACCOUNT

E-PAPER

International Cooperation

Chinese Companies Help UAE's Green Transition

Edited by WANG Xiaoxia

Under the sunlight, rows of photovoltaic panels are set on light yellow sand, spreading into the distance along the terrain. This is the 1.5 GW PV3 Ajban photovoltaic (PV) project in the northeast of Abu Dhabi, the UAE, which is about to be connected to the grid.

From collecting sunlight to gathering and transmitting power, the outline of a large PV power plant is gradually becoming clear in the desert.

The project is expected to generate 4.4 billion kWh annually, meeting the electricity demand of about 160,000 households and reducing carbon dioxide emissions by about 2.4 million tons per year, according to Wang Xinjin, project manager with PowerChina.

PowerChina Huadong Engineering Corporation Ltd. is responsible for the engineering design, procurement and construction general contracting of the project, which is its first large-scale PV project in the UAE.

Wang said the Ajban project will support the UAE in expanding clean energy supply and advancing its low-carbon transition.

During the construction, Chinese-made PV installation robots were put into use, providing a new construction method for large-scale module installation. From PV modules to intelligent construction equipment, the achievements of China's new energy industry are being deployed in energy infrastructure construction in the Gulf.

The UAE is diversifying its energy structure, developing renewable energy, and has committed to achieving net-zero greenhouse gas emissions by 2050. A number of solar and wind projects built with the participation of Chinese companies are converting the region's abundant sunlight and wind into clean electricity and supporting its low-carbon transition.

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WEEKLY REVIEW

Mengxiang Sets New Record with 2,000-m-class Drilling System

China's ocean drilling vessel Mengxiang has successfully completed sea trials of the first domestically developed 2,000-meter-class riserless mud recovery and circulation drilling system, setting a new world record for the maximum operating water depth of its kind, according to the China Geological Survey under the Ministry of Natural Resources.

World's First Commercial HTGR Project Begins Construction

The Chilong One high-temperature gas-cooled reactor (HTGR) has successfully completed the first concrete pour for its nuclear island at the Xuwei Nuclear Energy Heating and Power Plant project in Jiangsu province, marking the start of construction of the project's main facilities. The project is the world's first commercial application of HTGR technology.

Organ-on-a-chip Can Simulate Tumor Growth

Scientists from Sweden and Italy have developed an organ-on-a-chip no bigger than a postage stamp that can simultaneously grow cancer cells, blood vessels and nerves, enabling researchers to observe how tumors grow and interact with surrounding tissues. The technology provides a new tool for studying the tumor microenvironment.

Diamond Maser Amplifies Quantum Signals More Than 1,000-fold

Researchers at the Okinawa Institute of Science and Technology in Japan have developed a spin-based maser amplifier that can operate at temperatures close to absolute zero, amplifying microwave signals by more than 1,000 times. The device can handle much stronger signals and operate in magnetic fields, potentially advancing the development of practical quantum computing and high-resolution sensing technologies.

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