Building Sci-tech Zone into Global Innovation Hub

Policy

By ZONG Shihan

China has unveiled a plan for the Shenzhen Park of Hetao Shenzhen-Hong Kong Science and Technology Innovation Cooperation Zone, aiming to build the cooperation zone into a highly influential international center of sci-tech innovation.

The plan, recently released by the State Council, focuses on pushing forward the high-quality construction of Shenzhen Park to top-level standards, and synergistic development with the Hong Kong Special Administrative Region (HKSAR) section in a mutually complementary manner.

A view of Shenzhen Park in the Hetao Shenzhen-Hong Kong sci-tech innovation cooperation zone. (PHOTO: XINHUA)

Setting construction goals

An efficient Shenzhen-Hong Kong technology synergetic innovation mechanism will be established by 2025, and a synergetic innovation configuration will be formed by 2035, developing the area into a world-class science research hub, according to the plan.

Located in a natural convergence between the northern part of the HKSAR and the central southern part of Shenzhen, the cooperation zone covers about 3.89 square kilometers.

It's only a thirty-minute drive from Shenzhen Park to the City University of Hong Kong (CityU), said Chen Furong, chair professor of Materials Science and Engineering of CityU, who conducts research in Shenzhen Park, emphasizing the advantageous geographical location of the cooperation zone.

Shenzhen Park has attracted a total of 10 high-quality scientific research projects from five universities, namely the University of Hong Kong and the Hong Kong University of Science and Technology, since Shenzhen and the HKSAR launched sci-tech innovation cooperation in 2017. With the implementation of phased development goals, the construction of the cooperation zone will enter a new stage.

Focusing on mutual benefits

The cooperation zone is the only unique platform in the Guangdong-Hong Kong-Macao Greater Bay Area with the theme of sci-tech innovation and has many advantages of cooperative development.

The plan has clarified three orientations of Shenzhen Park, including the Shenzhen-Hong Kong sci-tech innovation open cooperation pilot zone, the international advanced sci-tech innovation rule pilot zone, and the Guangdong-Hong Kong-Macao Greater Bay Area pilot-scale tests and transformation cluster zone.

The Ministry of Science and Technology (MOST) will give full play to the strengths of the HKSAR and Shenzhen to cooperate in various aspects such as science and technology projects, talent cultivation, and technology finance, said Lin Xin, secretary general of the MOST.

Promoting internationalization

To tackle the bottleneck of cooperation and promote the internationalization of cooperation, the plan outlines four key tasks for the zone: working with the HKSAR to promote international sci-tech innovation, establishing industrial pilot bases, creating an international mechanism for sci-tech innovation, and constructing a global platform for sci-tech cooperation.

The promulgation of the development plan injects new momentum into the collaboration on technology and innovation development by the two places, said John Lee, chief executive of the HKSAR.

Third Baseline Survey Set for Marine Environment Protection

By CHEN Chunyou

China launched its third marine pollution baseline survey this May, set for completion in 2025, said Wang Juying, director of the National Marine Environmental Monitoring Center, at a press conference centered on the marine environment governance held by the Ministry of Ecology and Environment (MEE) on August 28.

This baseline survey aims to grasp the basic status of the marine ecological environment in a certain historical period. China conducted the first and second baseline surveys in 1976 and 1996 respectively.

"Compared with the previous two surveys, this year's survey focuses more on the coastal waters and the country's 283 bays that are most directly affected by human activities," said Wang, adding that a greater emphasis has been put on assessing the environmental pressure and ecological status of the coastline. To ensure the quality and efficiency of the data collection, multiple high-tech means such as remote sensing satellites and aerial filming are being used.

The Dongzhai Port National Nature Reserve, located in Meilan district of Haikou city, Hainan province, boasts a mangrove forest that provides a habitat for egrets. (PHOTO: VCG)

Currently, the primary sources of nitrogen and phosphorus in coastal seawater are inbound river waters, agricultural non-point source pollution, urban industrial wastewater and sewage discharge, mariculture, and marine atmospheric sedimentation.

To better manage these pollution sources and reduce the total nitrogen and total phosphorus discharge of rivers into the sea, Wang emphasized the need for stronger control over nitrogen and phosphorus pollution into the sea, the construction of more coastal urban sewage collection and treatment facilities, the implementation of differentiated measures to address agricultural non-point source pollution, and the launch of artificial wetland purification and ecological capacity expansion projects.

Another important area of marine environment concern is mangroves. These are groups of trees and shrubs that live in the coastal intertidal zone and their dense tangle of prop roots is key to stabilizing coastlines. Meanwhile, mangroves provide natural infrastructure to help protect nearby populated areas by reducing erosion and absorbing storm surge impacts during extreme weather events such as hurricanes. Furthermore, they play a vital role in regulating and mitigating the effects of climate change by sequestering substantial amounts of carbon.

China's mangrove area has increased to 438,000 mu (29,200 hectares), marking an increase of approximately 108,000 mu (7,200 hectares) compared to the early 20th century. This development has positioned China as one of the few countries globally to witness positive growth in mangrove coverage, according to Hu Songqin, deputy director general of the Department of Marine Ecology and Environment at MEE, adding that the ministry will intensify the protection of mangroves, and guide China's coastal regions to implement measures to restore mangrove trees in bay areas.

In addition, the health status assessment of mangrove ecosystems will be carried out regularly across the country, and mangroves will be incorporated into the scope for refined investigation in terms of the bay's ecological environment monitoring accordingly, said Hu.

China to Implement Low-Carbon Technology Demonstration Projects

By ZHONG Jianli

China has introduced a plan to implement demonstration projects for researching, developing and applying green and low-carbon technologies.

The National Development and Reform Commission, Ministry of Housing and Urban-Rural Development, and eight other government bodies have set the goal that by 2030, there will be more effective policies, business models and regulatory mechanisms to support the application and popularization of such technologies.

The international competitiveness of green and low-carbon technologies and industries will be strengthened to achieve carbon neutrality goals.

The new plan proposed three key categories of demonstration projects: carbon reduction at the source and during the process, as well as carbon sequestration at the end.

For carbon reduction at the source, demonstration projects are encouraged to utilize non-fossil energy, clean and efficient fossil energy, advanced grids and energy storage technologies, and hydrogen power .

The process carbon reduction projects will be mainly implemented in the industrial, construction and transportation sectors.

Collaborative demonstration projects on pollution reduction and carbon reduction, and low-carbon industrial park demonstration projects will also be carried out.

For terminal carbon sequestration, the projects include whole-process large-scale carbon capture, utilization and storage, advanced and efficient CO_2 capture technologies, and utilization of CO_2 resources including using CO_2 to produce liquid fuels such as synthetic gas and methanol.

Different regions have been asked to summarize their demonstration project experiences in time and promote good practices with commercial potential.

Case Study

Xinjiang Grows Green with Technology Support

By ZHONG Jianli

The city of Hami in Xinjiang Uygur autonomous region in northwest China, famed for its luscious melons, is one of the most water-scarce areas in the region. But since it began to improve its water utilization efficiency by optimizing the allocation of water resources and promoting advanced water-saving technologies, Hami has seen both economic growth and ecological conservation.

Water-saving technologies

Zhang Xinyuan, director of the Hami Municipal Water Resources Bureau, said at a recent media briefing that the city has improved agricultural water saving and efficiency, modernized large and medium-sized irrigation areas, and adopted various modes of irrigation, ranging from pipeline and sprinkler irrigation to drip irrigation, for greater effect.

Dou Rencai, deputy director of the Hami Municipal Bureau of Industry and Information Technology, said the city has strengthened its water-saving technology and equipment such as efficient cooling and washing, wastewater recycling, and high-consumption water substitution.

In addition, Hami is promoting the use of recycled water. For example, in its Yizhou district, over 60 percent of the reclaimed water is utilized against the national average of about 21 percent.

A power panacea

The new energy industry is one of the key industries in Xinjiang with a number of wind and photovoltaic (PV) power generation bases coming up in recent years. However, the rapid growth of new energy installed capacity and power generation often face problems such as erratic wind and PV power generation.

Hami is resolving this by building a pumped storage power station, which will ensure a stable power system in Xinjiang and northwest China.

The station will be fully operational in 2028, with an annual power generation of over 1.3 billion kWh. It can reduce raw coal consumption by about 239,000 tonnes and slash carbon dioxide emissions by 596,000 tonnes per year.

Restoring the environment

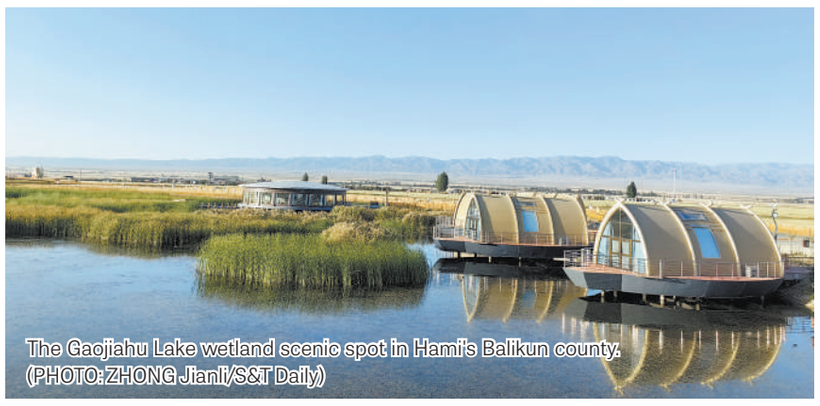
Hami carried out a major project to restore the ecology of the Hami River in 2019. The Hami River National Wetland Park is one of the tangible results. The green cover of the river area has increased from 18 percent to 78 percent and the wetland park has a 26-kilometer greenway for walking as well as sprawling gardens with an area of 19 hectares, teeming with different varieties of trees to popularize botanical knowledge. There is also more than 20 hectares of unconfined public space for people to do fitness activities.

A monitoring equipment has been installed along the river to check the water and air quality. "The river was previously dirty, but now it has become cleaner. The air quality has also got better," said Tian Zhigang, an 84-year-old retiree. Tian and his wife are regular strollers in the park.

Another example of ecological protection is the Gaojiahu Lake wetland scenic spot in Balikun county.

More than a decade ago, this area was described by locals as "soil on sunny days, and mud on rainy days", and some grasslands were salinized. Today, the vegetation in the area has been restored, which has seen the number of wild birds in the area, such as swans, increasing.

The development of the scenic spot has also created jobs for local farmers and herdsmen, and induced youngsters to return from cities where they had gone in pursuit of jobs or higher eduction, and start their own businesses.



The Gaojiahu Lake wetland scenic spot in Hami's Balikun county. (PHOTO: ZHONG Jianli/S&T Daily)

Action Plan to Uplift Rural Commerce

By CHEN Chunyou

A three-year action plan for commerce in county-level regions was recently released by the Ministry of Finance and eight other departments, aiming to strengthen China's county-level commerce system and inject vitality into rural areas.

By 2025, it is expected to create 500 exemplary counties across the country, which will feature county-level logistics distribution centers, township commerce centers and rural convenience stores. These initiatives seek to facilitate the efficient flow of industrial products to rural areas and agricultural products to urban regions, thus better satisfying the needs of rural people's life and production.

In addition, qualified rural areas are encouraged to develop smart logistics, instant retail and other business ventures, so as to diversify the villagers' consumption model, said the plan.

To expand the market for rural products, the plan calls for improving the quality of the supplied agricultural products by promoting industrial development and standardized production, and reinforcing brand building and commercialization of these products.

Song Danyang, an official from the Ministry of Agriculture and Rural Affairs, said the ministry will promote modified seed varieties and standardized production to enhance the competitiveness of agricultural products, while improving facilities for processing, storage, packaging and cold chain.

According to Li Gang, an official from the Ministry of Commerce, e-commerce influencers are encouraged to do live streams on the farmland, providing customers with an authentic product experience and ultimately increasing sales. Meanwhile, the country will help cultivate exquisite rural e-commerce brands, and build a three-tier logistics distribution system in counties, towns and villages, so as to facilitate quick market access.

Correction

A typing error was made in the title of an article in the Case Study column on Page 2, 108 Weekly Edition. The correct title should have been printed as "Innovation Demo Zone Spurs Gansu's Growth". We are sorry for the error.

The Editorial Office