

Promoting Sci-tech Cooperation between Eastern and Western Regions

By LI Linxu

To balance and coordinate development among regions once again was one of the strategies prioritized at China's annual Two Sessions.

The strategy for balanced and coordinated regional development will be fully implemented, according to this year's government work report.

To further implement this strategy, as well as the innovation-driven strate-

gy, the sci-tech cooperation between the eastern and western regions is essential.

Such cooperation is of great significance to improve the innovation capability of western regions and solve the issue of unbalanced and inadequate development there, noted a document recently released by the Ministry of Science and Technology in conjunction with eight other ministries and departments.

The document, titled the *Implemen-*

tation Scheme of Sci-tech Cooperation between the Eastern and Western Regions During the 14th Five-Year Plan Period, details the goals and tasks of promoting such cooperation in the following years.

Focusing on national sci-tech strategies and major regional development needs, the mechanism of sci-tech cooperation between the eastern and western regions will be improved, and the orderly flow of innovation elements across regions will be promoted.

By 2025, the sci-tech innovation capability of western regions will be significantly boosted, with the spillover effects of eastern regions' sci-tech innovation being more noticeable, and the innovation and industrial chain more closely intertwined between eastern and western regions, as per the goals.

To achieve these goals, the scheme laid out a series of key tasks, such as the sci-tech assistance to Xinjiang, Xizang, Qinghai, Yunnan, Ningxia, Inner Mongolia, Guizhou, and Gansu.

Xinjiang will receive support in the joint R&D efforts on carbon peaking and carbon neutrality technologies in key fields, as well as their demonstration applications, said the scheme, add-

ing that Silk Road Economic Belt Innovation-driven Development Pilot Zone, and Urumqi-Changji-Shihezi National Innovation Demonstration Zone will play a leading role in building a regional sci-tech innovation hub.

Xizang will be supported in developing a systematic technological solution to the ecological protection of the Qinghai-Tibet Plateau, according to the scheme, calling for accelerating the transformation of sci-tech achievements in its specialized agricultural and animal husbandry industries.

Qinghai will deepen cooperation with Tianjin, Shandong, Anhui and Chongqing to build a world-class salt lake industrial base, as per the scheme, highlighting that the upstream and downstream collaborative innovation mechanism will be improved.

The innovation capability of Yunnan, Ningxia, Inner Mongolia, Guizhou and Gansu will also be boosted through cross-regional sci-tech cooperation.

Resources will be shared, platforms will be co-built, R&D will be jointly conducted, and talent exchanges will be enhanced across these regions, proposed the scheme.



Caka Salt Lake, Haixi prefecture, Qinghai province. (PHOTO: VCG)

Case Study

Green Development in Western China Takes Off

By CHEN Chunyou

When walking on the coal mine subsidence area in Wulanmulun town, Ordos city, Inner Mongolia Autonomous Region (Inner Mongolia), what used to be vast empty swathes of sand blown by relentless winds, is now an orderly layout of endless photovoltaic panels.

In recent years, Inner Mongolia has accelerated the development and utilization of clean energy, such as photovoltaic power and wind power, which offers a new reference for the development of China's new energy industry.

During the 14th Five-Year Plan period, the issue on how to promote the high-quality development of clean energy aroused the concerns of western China's delegates, who put forward their proposals during the Two Sessions that ended on March 11.

Wulanmulun town is busy with the ecological restoration of the coal mine subsidence area, which covers a land of about 42,000 mu (2,814 hectares). Once the restoration is finished, the mining subsidence area will be transformed into an intelligent photovoltaic pastoral complex. The theory is as follows: photovoltaic modules will be arranged above the ground on supporting structures. The upper layer is used for solar power generation, and the lower layer is used for agricultural and forestry planting and aquaculture, along with additional opportunities for supporting tourism industries, such as agricultural sightseeing.

To develop new energy in the context of carbon peaking and carbon neu-

trality, it is necessary to promote the orderly replacement of the old energy sources with new ones, to ensure a secure and stable energy supply, said Shi Taifeng, chairman of the Standing Committee of the People's Congress of Inner Mongolia.

From this year, Inner Mongolia will further accelerate the development and utilization of new energy sources, and take the lead in building an energy supply system and a new power system using new energy, so as to transform itself from a fossil energy consumption region into a clean energy consumption region.

Located in the hinterland of north-west China, Ningxia Hui Autonomous Region is rich in wind and solar energy resources. In 2012, it was designated as China's first comprehensive demonstration area of new energy by the National Energy Administration. As one of the most important clean energy resources, photovoltaic energy still accounts for a small percentage in its energy structure.

Fang Min, a delegate from Ningxia Electric Power Investment Group, proposed that a different technical route of solar thermal power generation should be supported, and a solar thermal power generation demonstration project should be built.

Fang noted that a diversified use of photovoltaic energy, facilitating agriculture, animal husbandry, aquaculture development, sand prevention and control, and ecological tourism, should be encouraged.



An aerial view of the solar photovoltaic power station at the mining subsidence area in Wulanmulun town, Ordos city. (PHOTO: XINHUA)

Policy Watch

Ushering in a Good Ecosystem for Basic Research

By CHEN Chunyou

Basic research is the foundation of the entire science system, the key to all technological challenges, and the precondition for achieving sci-tech self-reliance and self-strengthening at higher levels.

In the revised *Law on Progress of Science and Technology*, the articles concerning basic research are placed in the second chapter, only behind the General Provisions, which shows the importance of basic research and demonstrates China's determination to enhance original innovation capacity.

Urgency to reinforce basic research

According to Lyu Wei, researcher of Development Research Center of the State Council, China's investment in basic research had been hovering around five percent of the total national R&D spending for a long time until increasing to six percent in 2020. Compared with innovative developed countries, whose investment in basic research stood at

about 15 to 20 percent, China still lagged behind.

The achievements in scientific theories and original ideas in China are limited, with only a few researchers engaged in basic theory, said Ding Minglei, researcher at the Chinese Academy of Science and Technology for Development.

With the development of science and technology, the boundary among basic research, applied research, technology development and industrialization has become increasingly blurred, said Ding, noting that a time, featuring a more flexible sci-tech innovation chain, a convenient technological update and commercialization of sci-tech achievements, and an increasingly accelerated industrial upgrading, has appeared.

It is required to break the bottleneck, and make breakthroughs in forward-looking basic research and leading original achievements, said Ding.

Legal protection for basic research

To achieve great development of ba-

sic research, fund investment is an important guarantee. In this regard, the country's legal obligation to finance basic research is legally specified. In article 20 of the revised law, it stipulates that China would gradually increase the proportion of basic research funding in total national R&D spending, which fits the requirement of making China an innovative sci-tech powerhouse.

Article 21 says the country would establish more natural science funds to finance basic research, and support personnel training and team building. In article 20, the country encourages local governments whose economic condition allows, to set up local natural science funds to support basic research.

In the past, research institutions and universities are thought to be the main players in basic research to make breakthroughs. In article 19 of the revised law, the role of enterprises is emphasized as an innovation agent for basic research, saying that the enterprises

are expected to give full play to their advantages, strengthen basic research and promote original innovation. Article 20 also stipulates that China would guide the enterprises to enhance investment in basic research and provide them with fiscal, financial and tax policy support.

At the same time, article 20 highlights the involvement of social capital, saying that social forces are encouraged to support basic research by donating and setting up funds.

With regards to talent cultivation, article 25 says the country supports universities to strengthen the construction of basic disciplines and the training of talent, and promotes the high-quality development of basic research in institutions of higher learning.

In order to solve the problem of talent shortage in basic research, article 23 also says the country encourages and attracts quality sci-tech personnel to devote themselves to basic research.

East Data West Computing

Photo shows the National (Zhongwei) New Internet Exchange Center, Ningxia. Zhongwei has sufficient energy, suitable climate and few natural disasters. The construction of an Internet exchange center here will provide a large cloud computing data center with complete network infrastructure conditions.

Currently, data centers are mainly distributed in eastern China, facing land and resource shortages.

The computing resource in western China will support computing in the east, thus empowering the development of the country's digital economy.

(PHOTO: XINHUA)



China Tops Manufacturing for 12 Straight Years

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The industrial structure continued to improve last year, with the output in high-tech manufacturing and equipment

manufacturing industries expanding by 18.2 percent and 12.9 percent respectively. Meanwhile, productivity improved and energy consumption per unit of add-

ed value of industrial enterprises above designated size declined by 5.6 percent year-on-year.

The digital and green transformation of the manufacturing sector has also been accelerated. With more than 1.4 million 5G base stations and 520 million 5G mobile terminals connected, China has built the world's largest opti-

cal fiber and mobile communication network.

An impressive 55.3 percent of technological processes in key areas have been digitally controlled, and 74.7 percent of R&D and design tools are digitalized, creating a strong driver for sustainable and healthy economic and social development.

Innovation-driven Development Blueprint for 2022

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Regarding talent policies, Wang said it is necessary to further optimize and implement relevant policies to stimulate the enthusiasm and creativity of scientists, adding that young scientists are vital to the future development of science and technology and should be offered more opportunities.

Enterprise innovation

Enterprises play a leading role in the country's innovation, and that role will be further strengthened. China expects to make more efforts in promoting breakthroughs in key core technologies, and deepen the cooperation among enterprises, universities and research institutes.

According to Wang, 79 percent of key national R&D programs are led or participated in by enterprises. In such fields as high-speed rail, 5G, nuclear power and new energy vehicles, enterprises are playing a leading or main role in advancing their development.

"Whether it is a large, medium-

sized or small enterprise, state or private-owned, the country will provide opportunities for them as long as the enterprises are capable of being innovative," Wang said.

Tax incentives

China will further implement the R&D expense deduction policy. The additional deduction for small and medium-sized high-tech enterprises is to be increased from 75 percent to 100 percent. Tax preferential policies are to also be given to enterprises investing in basic research, and to high-tech enterprises in terms of their corporate income tax.

Other tasks for boosting innovation-driven development are also high on the agenda of the government work report, including advancing international sci-tech cooperation, supporting different regions to invest more in innovation according to their distinctive features, strengthening the protection and application of intellectual property rights, and producing more innovative sci-tech financial products and services.