

China to Advance Energy Revolution

Policy

By CHEN Chunyou

China has quickened its pace in constructing a clean, low-carbon, safe and efficient energy system.

According to the report given to the 20th CPC National Congress, China will advance the energy revolution. Greater efforts will be made to explore and develop petroleum and natural gas, discover more untapped reserves, and increase production.

Exploiting traditional energies

China is the largest energy consumer in the world, and its oil and gas supply is highly dependent on foreign countries. It is no surprise, therefore, that Sun Jinsheng, an academician at the Chinese Academy of Engineering and the chief engineer at the CNPC Engineering Technology R&D Company Limited (CPET), stressed the urgency to deepen the oil and gas exploration.

For nearly a decade, China has made remarkable achievements in petroleum engineering. Many pieces of equipment are self-developed, such as the world-leading 7000 meter deep drilling rig and continuous pipe threading equipment. Some tools, like rotary steerable tools and long-distance expansion tools, are also no longer dependent on imports.

Oil and gas exploration has been expanded from the shallow layer to deep and extra-deep layer to date, aiming to tap into more underground resources, such as hot dry rock and hydrate.



A team from Sinopec Group conducts geological survey in Taklimakan Desert of Xinjiang Uygur Autonomous Region, where is rich in oil and gas resources. (PHOTO: VCG)

Against this background, the exploitation of oil and gas is faced with a more demanding geological environment, which requires high-performance equipment, and high-temperature and high-pressure resistance tools, said Sun.

To have a safe and efficient exploration of oil and gas, in October 2022, CPET, China University of Petroleum, and Southern University of Science and Technology were jointly involved in a project, which focused on tackling major basic scientific obstacles in developing ultra-deep and extra-deep oil and gas.

This project has managed to master drilling fluids technology, which can resist ultra-high temperatures, and break

through the bottlenecks in drilling and production flow control of ultra/extra-deep oil and gas reservoirs.

Developing new energies

Energy transformation is being accelerated across the world. China's new energy industry has become increasingly competitive, with broad market prospects and great potential for development.

More than half of the world's top 10 power battery enterprises are from China, and the consumption of power battery products from Contemporary Amperex Technology Co., Ltd. (CATL) has ranked first globally for five consecutive years.

Zeng Yuqun, chairman of CATL, said, in order to remain competitive in the energy sector, it is necessary to strengthen the exploitation of domestic lithium resources and stabilize the supply of upstream mineral resources while promoting battery recycling.

In addition, it is required to create eco-friendly advanced technologies, processes and equipment, which are the prerequisite for saving energy and reducing consumption and carbon emissions.

Zeng also stressed that new energy enterprises should cooperate with global industry chains of new energy, making positive contributions to the high-quality growth in this sector.

New Financial Reform Pilot Zones to Spur Innovation

By LI Linxu

In its latest move to facilitate sci-tech innovation, China has unveiled a new plan to set up financial reform pilot zones for sci-tech innovation in five cities in the Yangtze River Delta region — Shanghai, Nanjing, Hangzhou, Hefei and Jiaxing.

In five years' time, these pilot zones are expected to be cultivated into demonstration zones for sci-tech innovation and finance cooperation, clusters for product and service innovation, and leading zones for industry and city integration, according to a notice jointly released by eight government bodies, including the People's Bank of China, the National Development and Reform Commission, and the Ministry of Science and Technology.

Experts believe that aiming to better link finance, sci-tech and industries, these pilot zones, located in China's most economically dynamic regions, will further advance the coordinated development of original innovation, technological innovation and industrial innovation.

Under the plan, Shanghai will be promoted as an international financial hub and a sci-tech innovation center with global influence, Nanjing as a leading national innovative city, and Hefei as a place of origin for sci-tech innovation with international influence as well as a hub for emerging industries.

Hangzhou is positioned as a "practice window" to build a modern sci-tech innovation financial system, as well as a demonstration base for finance serving sci-tech innovation and development,

while Jiaxing is seen as a highland for the transformation of sci-tech achievements in the Yangtze River Delta, as well as a service base for the integration of sci-tech innovation and finance. Both Hangzhou and Jiaxing are located in Zhejiang province.

To achieve these goals, the plan puts forward a series of measures, such as improving organizational systems of sci-tech financial institutions, promoting innovation in sci-tech financial products, and leveraging multi-tiered capital market systems.

Advancing the sci-tech empowerment for finance, consolidating the foundation of sci-tech finance, and improving relevant regulation capabilities are also among the measures.

Of particular note is that cross-border investment and financing are encouraged in the pilot zones. It welcomes foreign private equity firms to invest in onshore technology companies via the QFLP (Qualified Foreign Limited Partnership) route. Qualified domestic financial institutions are encouraged to take part in mergers and acquisitions of overseas technology companies via the QDLP (Qualified Domestic Limited Partnership) route.

Meanwhile, sci-tech innovative companies are encouraged to raise capital in both the domestic and overseas markets, and list shares and bonds in regional equity markets.

The policy is a follow-up to an outline of the integrated regional development of the Yangtze River Delta and an outline of the national innovation-driven development strategy.

Pilot Program to Accelerate Service Sector Opening-up

By CHEN Chunyou

A circular was released by the State Council in December 2022, to approve the launch of a three-year comprehensive pilot project to expand opening up the service sector in Shenyang, Nanjing, Hangzhou, Wuhan, Guangzhou and Chengdu.

The pilot program dates back to May 2015, when Beijing became the country's first pilot city for wider open-

ing up in the service sector. In April 2021, Tianjin, Shanghai, Hainan and Chongqing were included in the pilot list.

The program aims to accelerate the development of the modern service sector, create new advantages in international cooperation, and expedite the construction of new development patterns.

The service sector in major developed countries accounts for about 75 percent of their GDP, while in China it accounts for 54 percent. China has sub-

sequently intensified its efforts in opening up the service sector in recent years.

According to data released by the Ministry of Commerce, from January to November 2022, the amount of foreign investment actually utilized in China reached 1.156 trillion RMB. The service sector accounted for over 70 percent, indicating huge potential for further opening up.

Generally, the service sector offers intangible products such as information,

professional and social assistance, healthcare, warehousing and transportation services.

The six cities are chosen because they have solid industrial foundations. They are expected to combine their resources and industrial advantages with the service sector, and establish more practices that can be replicated in accelerating the development of the modern industrial system, and the higher-level opening-up of the country.



Shanghai's Pudong New Area. (PHOTO: VCG)

Establishing Mechanisms for Cross-border Data Flow

By ZHONG Jianli

China recently released a document detailing a host of specific measures to build basic systems for data, and explore the potential of its massive data resources, which has become a new type of valuable product.

The document, jointly released by the Central Committee of the Communist Party of China and the State Council, says that the country's systems for data will involve the establishment of a

data property system, a circulation and trading system, an income distribution system, and a governance system.

It will help make best use of data resources, give new impetus to the real economy, and strengthen and expand the country's digital economy.

The move will also promote sharing of the development dividends of the digital economy, and at the same time, improve the governance efficiency of data resources and modernize the data governance system and capacity.

Establishing a mechanism for the safe, compliant and orderly cross-border circulation of data is highlighted in the document. It calls for international cooperation in data exchange, business interoperability, mutual recognition of regulations, and sharing of services, and promotes the building of cross-border digital trade infrastructure.

Domestic and foreign enterprises and organizations are encouraged to cooperate in cross-border data flow businesses, in accordance with laws and reg-

ulations.

In view of typical data application scenarios such as cross-border e-commerce, cross-border payment, supply chain management and service outsourcing, it is necessary to explore secure and standardized cross-border data flow modes, according to the document.

In addition, Zhejiang province in east China, along with other regions, as well as industries and enterprises, are encouraged to play the pioneering role in exploring new practices in this regard.

Xinjiang's Fourth National High-tech Zone Launched

Hi-tech Zones

By Staff Reporters

A ceremony was held on December 20 to officially inaugurate the Karamay National High-tech Industrial Development Zone (KNHZ) in northwest China's Xinjiang Uygur Autonomous Region, which was elevated to a state-level high-tech zone by the State Council in June.

As Xinjiang's fourth national high-tech zone, KNHZ has formed a diversified industrial system with the petrochemical industry as the core, and oil &

gas technical service and high-end equipment manufacturing as two essential sectors. Its development of new energy and digital economy is also gaining momentum.

In the traditional petrochemical industry, KNHZ has built a million-ton high-grade lubricating oil production base, a world-class naphthenic lubricating oil production base, and the largest high-grade white oil production base in China.

It has successfully tackled technical problems in the processing and exploitation of low-quality heavy oil in the energy and chemical industry, accelerated the development of clean and efficient energy, and increased the added value

of petrochemical products.

In terms of the digital economy, KNHZ has made bold attempts to promote the deep integration of informatization with industrialization. The Xinjiang Central Asia Commodity Exchange Center in the zone has successfully launched the country's first direct wholesale business of refined oil products, with a cumulative transaction value of more than 20 billion RMB.

As a national high-tech enterprise, Jinniu Energy Internet of Things (IoT) Co., Ltd. has established the only oilfield IoT engineering and research center in Xinjiang, and its remote intelligent operation and maintenance system for IoT equipment has been selected as the na-

tional new-type IT demonstration project.

Since 2019, KNHZ has established databases to provide services for high-tech enterprises and sci-tech innovation projects. Seventy-two enterprises have benefited from the all-round, whole-process and multi-level targeted services, and 39 sci-tech projects have been approved.

In the next step, the zone will continue to focus on developing industrial clusters, promoting the integration of industry and city, and opening its arms to deepen cooperation, so as to build itself into a demonstration area for innovation-driven high-quality development in Xinjiang and western China as a whole.

New Opportunities for Cooperation — Tiangong Space Station Completed

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At a review meeting in April 2022, China Manned Space Agency (CMSA) suggested that the tasks and objectives set for the key technologies verification phase had all been realized, laying a solid foundation for the construction phase.

The construction phase started with the launch of Tianzhou-4 cargo craft in May. The Shenzhou-14 manned spacecraft was then launched in June, and the lab module Wentian in July. The lab module Mengtian, the Tianzhou-5 cargo craft and Shenzhou-15 crewed spaceship were launched later in 2022.

Operation outlook

Once the in-orbit construction is completed, the Tiangong space station will enter a decade long new phase of application and development, said Hao Chun, director of CMSA, at a press conference in April, 2022.

Two manned spaceships and two cargo spacecraft will be launched each year during this phase according to the initial plan. The astronauts will stay longer to conduct scientific experiments and technological tests, and maintain the space station.

Zhong Hongen, deputy chief de-

signer of the space utilization system of the China Manned Space Program, said that 14 high-level scientific experiment cabinets have been installed inside the cabin, each like a small space lab.

Outside the cabin, Zhong said, there are flagship research facilities like three large payload mount points, two exposure experiment platforms, and the Xuntian Space Telescope that will fly independently in the same orbit as the space station.

Such facilities will support scientific research on space life science, microgravity physical science, space astronomy and geoscience, new space technologies and application, according to Zhong.

Tiangong will also become a crucial platform for international cooperation in aerospace. By far, nine international cooperation projects, involving 17 countries, have been selected to be conducted in the space station.

"We are willing to build China's space station into a platform to promote construction of a community with a shared future for mankind, and join hands with astronauts and space technology personnel to explore the mighty universe and benefit mankind," said Hao.