

Accelerating Development of Core Technologies

Policy

By ZHONG Jianli

To meet China's strategic needs, the country will provide resources for original and pioneering scientific and technological research to achieve breakthroughs in some core technologies in key fields. That's according to the report presented to the 20th CPC National Congress.

Chinese academicians are upbeat about the resources and what it means to their research, and shared their thoughts on the topics below.

Develop new-generation IT

The research team of the Imaging and Intelligent Technology Laboratory of Tsinghua University has long been committed to developing new-generation information technology.

"In October, our team published the results of the meta-imaging sensor in *Nature*, which opened up a new way to solve the problem of optical aberration. The sensor can also be used in astronomical observation, biological imaging, medical diagnosis, mobile terminals, industrial detection, and other fields," said Dai Qionghai, an academician of the Chinese Academy of Engineering (CAE) and dean of the School of Information Science and Technology at Tsinghua University.

Dai explained that his team is always keen to carry out disruptive research to serve the major needs of the



An engineer checks equipment at a Cloud Computing Big Data Center in Jiujiang city, Jiangxi province. (PHOTO: VCG)

country. They are cognizant of the fact that major original innovations often sprout from basic research in interdisciplinary fields and that universities have natural advantages in this regard.

Therefore, they will maintain continuous investment in basic research, dare to question existing theories, and explore new research directions, to make their contribution to building China into a major sci-tech center and innovation hub in the world, he said.

Build new-type energy systems

"I have noticed that the report to the 20th CPC National Congress has repeatedly mentioned issues related to 'energy' and proposed to actively yet pru-

dently promote carbon peaking and carbon neutrality," said Wang Chengshan, also a CAE academician and director of the National Energy Storage Technology Industry-University Integrated Innovation Platform of Tianjin University.

Wang added that the development of new-type power systems are key measures to achieve carbon peaking and neutrality goals.

"With the rapid increase of the proportion of renewable energy in the power system, the transmission or distribution system, operation mode, and market mechanism will undergo profound changes. As power system researchers,

we need to make efforts to provide technical support for the development of new power systems," said Wang.

He also mentioned that universities undertake the important mission of cultivating talent, so it is necessary to organize various disciplines to work together to do research, and train high-level professionals to better serve the country's needs.

Boost agriculture innovation

In the past decade, the Hunan Academy of Agricultural Sciences (HAAS) has made a series of breakthroughs in technological innovation in the agriculture sector.

The third-generation hybrid rice developed by HAAS has achieved the world-record double-cropping rice yield of 1603.9 kg per mu (about 667 square meters) and was selected as one of the world's top 10 engineering achievements in 2021.

HAAS will continue to improve the talent cultivation mechanism, strive to train about 200 high-level agricultural experts within five years, and make sure the large-scale demonstration fields of saline-resistant rice will keep their yield at over 300 kg per mu, according to Bai Lianyang, a CAE academician and secretary of the CPC Committee of HAAS.

Apart from building well-functioning major sci-tech innovation platforms, HAAS will promote the construction of a comprehensive experimental base at Dongting Lake Ecological Zone, and support the development of local industries and rural revitalization, said Bai.

Hi-tech Zones

China to Have 220 National Hi-tech Zones by 2025

By LI Linxu

China will have about 220 national hi-tech zones by the end of 2025, covering most of its prefecture-level cities in the eastern part of the country and major prefecture-level cities in the central and western parts, according to a plan recently released by the Ministry of Science and Technology.

The new plan forms part of the country's efforts to advance high-quality development. Latest data shows that China has 173 national hi-tech zones. From January to July this year, these zones achieved a gross industrial output worth 17.5 trillion RMB, up 8.1 percent year-on-year.

With more than 30 years of development, hi-tech zones have become an important force to drive the country's high-quality development, making major breakthroughs in fields including quantum information, bio-medicines, smart manufacturing and industrial clusters as well as foreign talent exchanges.

To further promote the high-quality development of hi-tech zones, the new plan puts forward a series of key goals and major tasks during the 14th Five-Year Plan period.

Besides an increased number of hi-tech zones, the plan also proposes a batch of specific parameters for its objectives.

By the end of 2025, the hi-tech zones will contribute 15 percent of the country's GDP, up 1.7 percent compared with that of 2020, said the plan. At the same time, the number of hi-tech enterprises is expected to increase to 300,000 from 100,000 in 2020, and the value of technology contracts from these zones will reach 2.5 trillion RMB, more than double that of 2020.

To achieve these goals, major tasks are set up, such as strengthening original innovation capacities, pooling national strategic talent, developing world-level industrial clusters, increasing the number of innovative enterprises, and advancing high-level innovation and entrepreneurship.

Promoting green and smart development, boosting regional coordinated development, deepening cooperation and opening up, and elevating governance levels are also among the major tasks.

Foreign experts are also encouraged to take leading roles in the planned sci-tech programs, said the plan, vowing to optimize their working and living environment.



Fuzhou High-tech Industrial Development Zone. (PHOTO: VCG)

New Industry Catalog Released to Encourage FDI

By LI Linxu

Foreign investment will be welcomed in more sectors, according to a new version of an industry catalog jointly released by the National Development and Reform Commission (NDRC) and the Ministry of Commerce (MOFCOM).

Compared with the 2020 version, the new version has added 239 more items and modified 167 existing ones, said an official from MOFCOM, adding that the catalog's structure has also been optimized.

There are a total of 1474 items in

the new catalog, of which 519 items are encouraged nationwide and 955 items are encouraged in the provinces and autonomous regions in the western, central and northeastern regions of China.

The new catalog continues to encourage foreign investment flowing into advanced manufacturing, such as the development, production and application of new technologies, new products, and new materials, said MOFCOM.

Meanwhile, modern service sectors are also encouraged, such as integrated technology services, specialized design

services, human resources services, and evaluation, certification and audit of clean productions.

In addition, the new catalog further encourages foreign enterprises to invest in the western, central and northeastern regions of China.

Foreign investment projects that are covered in the new catalog can enjoy preferential policies such as taxation and land use, according to MOFCOM.

The new catalog, released shortly after the conclusion of the 20th CPC National Congress, is one of the first batches of policy packages demonstrating the

country's resolve to promote higher-level opening up.

In the report presented to the 20th CPC National Congress, China vows to protect the rights and interests of foreign investors in accordance with the law, and foster a world-class business environment.

Latest statistics show that foreign direct investment in the Chinese mainland, in terms of actual use, grew 15.6 percent year-on-year to one trillion RMB in the first nine months of this year.

The new catalog will be effective from January 1, 2023.

Photovoltaic Industry Helps Yunnan Shine

Case

By CHEN Chunyou

When talking about Yunnan province, people always mention minerals, plateau agriculture, and culture tourism, which are truly traditional pillar industries

in the past. But today, Yunnan is going all out to become the country's photovoltaic hub by relying on its inborn resources and innovation environment.

A lot of photovoltaic manufacturing enterprises are located in cities of Qujing, and Baoshan, including LONGi Green Energy Technology Co., Ltd., a giant clean energy company. Many other photovoltaic upstream and downstream

enterprises producing modules, inverters, and intelligent photovoltaic products followed suit and settled here, forming a strong industrial cluster.

Currently, Yunnan has the largest production base for producing monocrystalline silicon photovoltaic materials in China, with an output accounting for about 23 percent of the country.

In addition, to strengthen the cooperation with South and Southeast Asian countries, the Ministry of Science and Technology and Yunnan province have jointly established the China-South Asia Technology Transfer Center and the China-ASEAN Innovation Center, to help local enterprises go global. Many local photovoltaic enterprises have also set up branches in neighboring countries, such as Thailand, Vietnam and Malaysia to expand their market.

Talented personnel is also a key resource. In order to give more vitality to industrial development, Yunnan made a series of talent-supporting policies in 2022, vowing to spend four billion RMB

every year to cultivate high-level talented individuals, supporting their research projects, offering them conveniences in terms of housing, children's schooling and medical security, and creating platforms to enhance regional communication.

This November, at the forum centered on the development of the new energy battery industry under the 6th Yunnan Conference on International Exchange of Professionals, academicians and entrepreneurs at home and abroad expressed their confidence in the province's future low-carbon development.

Rudolf Scharping, chairman of Germany's Rudolf Scharping Consulting (Beijing) Co., Ltd., said he acknowledged Yunnan's huge potential, rich resources and strong desire to accelerate development. He was willing to help in investment negotiations and industry promotion in Germany and other European countries, so as to facilitate bilateral business exchanges and industrial cooperation.



Aerial photo shows a photovoltaic power station in Yongren county, Yunnan's Chuxiong Yi Autonomous Prefecture. (PHOTO: VCG)

Clean Energy Keeps Homes Warm This Winter

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By far, the installed renewable energy capacity in China has exceeded 1.1 billion kilowatts, with hydro-power, wind power, solar power and biomass power generation all ranked first in the

world.

In 2021, China's clean energy consumption was 25.5 percent, 11 percent higher than 2012, according to the data released by the National Development and Reform Commission (NDRC) on Sep-

tember 22.

Coal consumption dropped to 56 percent, 12.5 percent lower than 2012, and the scale of installed wind and photoelectric power generation plants increased by about 12

times compared to 2012, the data noted.

"In the past ten years, China's central budget has allocated more than 100 billion RMB for the construction of environmental infrastructure," said Liu Dechun, official at NDRC, adding that the country will continually strengthen environmental protection for pollution prevention and control.

New Hi-tech Displayed at Airshow China 2022

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Making its maiden appearance at the exhibition, the country's C919 passenger aircraft attracted new orders (300 aircraft in total) from seven domestic leasing firms during Airshow China, according to the Commercial Aircraft Corporation of China, Ltd.

There were also advanced unmanned aerial vehicles (UAVs) and anti-drone systems displayed at the exhibition, including the Wing Loong series UAVs.

J-20 and J-16, fighter jets of the Chinese People's Liberation Army (PLA) Air Force, took part in the flying display at the airshow.