

# 2024 Two Sessions INNOVATIVE CHINA



## Policy Express

### Spurring Sci-tech Innovation

In 2023, China for the first time overtook the U.S. as the economy with the highest number of science and technology clusters that rank among the top 100 worldwide, according to the *Global Innovation Index 2023* released by the World Intellectual Property Organization.

China has also been topping in international patent applications through the *Patent Cooperation Treaty* for four consecutive years, establishing itself as one of the world's leading countries in the area of intellectual property and innovation.

All this progress would not have been possible without the government's support.

The government has continued to increase investment in R&D. In 2023, China's R&D input crossed 3.3 trillion RMB (458 billion USD), with the R&D input intensity reaching more than 2.64 percent.

Since enterprises are the main inno-

vation makers, specific policies have been made to offer preferential taxation and financial support for high-tech enterprises to encourage innovation.

The government has also introduced a set of new measures to cultivate more young experts, including prioritizing their role in major R&D projects and tasks.

What's more, foreign investors are encouraged to set up R&D centers in China, while foreign experts are welcome to innovate in the country.

In its efforts to set ethical guardrails for developing science and technology, China introduced a range of trial measures for the ethical reviews of R&D activities.

Overall, these policies are designed to create a sound environment for sci-tech innovation and drive economic growth.

#### Editor's Note:

China's much-awaited Two Sessions start with the CPPCC, the top political advisory body, opening on March 4, and the NPC, the top legislature, on March 5. This is the annual period when NPC deputies and CPPCC members discuss new plans and policies for China's development in the following year.

On the eve of the Two Sessions, we look back on the impressive sci-tech achievements China has made over the past year, the policies introduced by the government to boost sci-tech innovation and facilitate international exchanges, as well as the changes and benefits from the proposals submitted during the previous editions of the Two Sessions.

## 2023 Milestones

### Self-reliance and Strength at Higher Level

For China, 2023 is a year of major achievements in science and technology. As the Two Sessions discuss new plans for China's development, let's take a look at some of those exciting and impressive events:

#### Manned submersible Fendouzhe

Manned submersible Fendouzhe, which means "Striver", was carried by the scientific research ship Tansuo-1 to complete its first international manned deep-diving scientific research mission in Oceania in March last year. The domestically developed Fendouzhe has greatly improved the independent innovation level of China's deep-sea equipment technology.

#### C919 passenger aircraft

The C919, China's self-developed large passenger aircraft, completed its first commercial flight from Shanghai to Beijing on May 28, 2023, marking its official entry into the civil aviation market. This February, the C919 made its international debut at the Singapore Airshow. It attracted considerable global attention with visitors flocking to see the aircraft and how it performed.

Many aviation experts have commented that the C919 could break the duopoly of Boeing and Airbus in China's domestic market. The size of China's aviation market and strong industrial policy give the C919 an edge to advance the "Made in China" strategy in aviation.

#### Adora Magic City

China's first domestically-built large cruise ship, the Adora Magic City, was delivered in November 2023. It took eight years of research and five years of designing and construction. In January 2024, the massive Adora Magic City, resembling a modern city on the sea, completed its maiden voyage. The international media hailed it as a milestone for China's shipbuilding industry.

#### Nanohertz gravitational waves

Chinese researchers have found key evidence of the existence of nanohertz gravitational waves by using the Five-hundred-meter Aperture Spherical Radio Telescope, or FAST. Overseas media outlets called the discovery pivotal in understanding the structure of the universe and the behavior of supermassive black holes, paving the way for future exploration of gravitational waves.

#### Shenzhou aircrafts

China's space exploration efforts made significant strides in 2023. The crew of the Shenzhou-15 and 16 aircraft successfully met each other in China's Tiangong space station. The Shenzhou-16 mission also stood out for taking the first Chinese civilian astronaut to space. After a five-month stay in space, it returned to earth, passing the baton of space exploration to the Shenzhou-17.

Looking forward, we will see China making further strides to take its sci-tech self-reliance and strength to a higher level to support national development.

## Proposals Review

### STB Promotes Poverty Reduction in Rural Areas

With the 2024 Two Sessions about to commence, deputies to the NPC have gathered in Beijing to submit their proposals. What the delegates proposed in the previous Two Sessions and the changes they have brought will also be in the spotlight.

In 2023, NPC deputy Zhang Fusuo, a professor at China Agricultural University (CAU), put forward a proposal that remains highly relevant. Zhang called for prioritizing prevention and control of nonpoint source pollution in river basins and high-quality agricultural development. His proposal stemmed from his in-depth, hands-on work in Gusheng, a village in Yunnan province, where he set up a science and technology backyard (STB) with his colleagues.

In 2009, the CAU established the country's first STB in Baizhai in Hebei province. Under this model, agriculture postgraduates reside in rural areas for some time. They experiment with new rice or other planting technologies on farmland, teach farmers to use new technology, and help them resolve the problems encountered in farming.

STBs play a huge role in rural revitalization. Over the past two years, central departments have issued documents to support the construction of STBs in rural areas.

To date, more than 30 agriculture-related universities have established about 300 STBs, covering nearly 20 provinces and provincial-level regions. The Food and Agriculture Organization of the United Nations recognized it as one of the best poverty reduction practices.

This February, the STB was written into the No. 1 Central Document, encouraging more research institutions and experts to engage in this initiative.

Today, STB work not only includes agricultural advice for farmers, but also extends to more fields, like contributing solutions to pollution control, and conducting e-commerce training for beginners to grow their business.

With the STB entering a new stage, there is confidence that the efforts of the STB faculty and students nationwide will bring more changes, taking rural areas further ahead on the road to common prosperity.

### Dedication to Green Development

Green development has become a defining feature of Chinese modernization in the new era.

At the end of December 2023, China issued a guideline to promote a "Beautiful China." The goal is to improve the ecological environment fundamentally by 2035. This will be done by broadly adopting green ways of production and life.

To respond to climate change, a guideline was issued in April 2023 to establish a system of standards for achieving carbon peaking and carbon neutrality. Then in November 2023, before the United Nations Climate Change Conference in Dubai, it was followed by a plan to select 100 pilot cities and industrial parks to explore the path for carbon peaking, once again demonstrating the determination to handle this global issue.

Besides, China issued a roadmap

for biodiversity conservation (2023-30) to implement the Kunming-Montreal Global Biodiversity Framework, which urges all countries to halt and reverse biodiversity loss by 2030.

To improve the air quality, China issued an action plan emphasizing the development of a green and low-carbon circular economy system, and accelerating the green and low-carbon transformation of industries, energy and transportation.

To better leverage the role of technological innovation in green and low-carbon development, the country released an implementation plan to improve the market-oriented green tech-innovation system.

Thanks to these efforts, not only have the Chinese benefited from a bluer sky and cleaner water, but the rest of the whole world has benefited too from China's expanding green landscape.

## Service Guides

### Enhance Appeal to Foreign Professionals

China aims to promote people-to-people exchanges as well as cross-cultural exchanges. For that, several measures were implemented last year to make it easier for foreigners to work or reside in China. With the annual two sessions coming up, let's look at some of these efforts.

A recent measure is the National Immigration Administration announcing in January, 2024, five visa measures to facilitate the entry of foreign nationals for business, education and tourism. They include a provision that says eligible foreigners needing to visit China urgently can apply for a port visa on arrival.

From October 9, 2023, the service platform of the National Immigration Administration added more functions. Now foreign visitors can make their appointments and inquiries online. They can also carry out other functions re-

lated to visas and other documents online.

According to the National Immigration Authority, a new version of the foreign permanent resident ID is being used from December 1, 2023. It will make it easier for the cardholders to conduct their personal affairs online.

Also, China now has a mutual visa exemption agreement with Singapore. Singaporean citizens holding an ordinary passport can enter and stay in China visa-free for up to 30 days, and vice versa. This arrangement took effect on February 9 and a similar arrangement with Thailand starts from March 1, expanding the "visa-free era."

These initiatives underscore China's dedication to fostering a more inclusive and accessible environment for foreigners, promoting mutual understanding and facilitating international cooperation and development.

### Regulating BCI for Common Good

In 2022, NPC deputy Yao Dezhong, a professor at the University of Electronic Science and Technology of China proposed enriching brain-computer interaction to delay the process of Alzheimer's disease.

In recent years, brain and computer interface (BCI) technology, which creates information channels between the brain and external devices, enabling direct information interaction, has become a hot technology.

R&D in BCI technology gets strong support from the central department, which we can see from the series of guidelines issued to support future industries.

Its application mainly includes medical health, communication and entertainment, particularly improving motor and perceptual functions for patients with neurological disabilities.

The latest breakthrough in China was made in February by a joint research team led by Jia Wang, a professor at the Beijing Tiantan Hospital affiliated with China's Capital Medical University, and Tsinghua University Professor Hong Bo. They managed to use a minimally in-

vasive BCI to help a patient with high paraplegia move a computer cursor with thoughts.

This technology brings hope for people with disability and neurological diseases. However, it also raises ethical questions about the risks and caution should be exercised for its commercial use.

The Ministry of Science and Technology released a document in February 2024, which emphasizes that the research should primarily focus on restorative BCI technology and meet people's health needs. For non-medical purposes such as attention, sleep or memory regulation and other augmentative BCI, exploration and development should be conducted under strict standards and clear benefits.

The development of any new technology has its risks and hidden dangers. But to promote the progress of science and technology and make it benefit the people, the good side of science and technology and research ethics should always be emphasized, no matter where science and technology develops.

## 2024 Missions

### Space Industry Set for New Milestone

Looking ahead, China has several ambitious missions planned for the next decade. Starting with 2024, let's look at some major and challenging space exploration programs.

A major highlight is the Chang'e-6 mission, scheduled later this year. The goal is to bring back samples from the far side of the moon, a never-before accomplished feat.

The Chang'e-6 will also see notable international collaboration, as it will carry scientific instruments from foreign countries like France on its lander. The news outlet *Space Daily* said this level of international participation highlights the global interest in lunar exploration and the growing recog-

nition of China's capabilities in space missions.

The China Manned Space Agency has already announced that there will be four manned space missions this year: the cargo crafts Tianzhou-7 and Tianzhou-8 will be launched, as well as the manned spaceships Shenzhou-18 and Shenzhou-19. The upgraded Tianzhou-7, sent to Tiangong in January, marked China's first space station mission in 2024.

As more missions follow, they will not only enhance our understanding of space but also foster international collaboration, representing a significant step forward in the collective pursuit of exploring the final frontier.

Written by  
ZHONG Jianli  
CHEN Chunyuo  
GONG Qian  
LIANG Yilian

Edited by  
TIAN Xueke  
SONG Ziyan  
YU Haoyuan  
TIAN Jingjuan

Planned by  
WANG Junming  
HE Yi  
FANG Linlin

