

# Enhancing Strength in Smart Transportation

## Policy

By ZHONG Jianli

Transport is essential to the efficient working of an economy. Being cognizant of this, in the report to the 20th CPC National Congress, China will continue to advance new industrialization and move faster to boost its strength in the transportation sector.

By the end of 2022, China had 155,000 km of railways in operation, including 42,000 km of high-speed railways. In 2023, the country plans to build more than 3,000 km of railways, including 2,500 km of high-speed lines, and to upgrade the transport system into a modern advanced network, according to China State Railway Group Co., Ltd. (China Railway).

"Building digitalized, networked and intelligent railways is an important task for the transportation sector during the 14th Five-Year Plan period," said Ling Handong, chairman of China Railway Siyuan Survey and Design Group Co., Ltd. (CRSSD).

Ling added that CRSSD has initially



A Fuxing bullet train passes over Xierong Bridge in Qushui county, Lhasa, Xizang Autonomous Region. (PHOTO: VCG)

established an intelligent surveying system, by using such technologies as UAV surveying and mapping, oblique photography, laser radar, and an unmanned surveying ship. Moreover, the company has been busy developing a set of standards for intelligent transportation that other countries can learn from.

To build a modern, high-quality

and comprehensive transportation network, the BeiDou Navigation Satellite System will be more widely used on railways, highways, waterways, civil aviation and postal services, while intelligent transport equipment will be promoted, said an official from the Ministry of Transport.

Wang Guoqing, chairman of Hebei Transportation Investment Group, said

it is vital to increase investment in R&D and accelerate the commercialization of sci-tech achievements for transportation, noting that the R&D intensity of the company will rise to 2.5 percent by 2025 from 2.0 percent in 2022.

Wang also stressed the importance of attracting experts to make breakthroughs on major sci-tech projects, such as developing the intelligent detection technology for urban pipe networks and cloud controlled energy-saving trucks on the road.

"The independent innovation ability of China's urban rail transit industry has been greatly enhanced over the years. Many places in China, including Guangzhou, Shanghai, and Shenzhen, have taken the lead in building the world's most advanced smart subway stations," said Liu Wei, chairman of Jiadu Technology Group Co. Ltd.

Liu mentioned that the innovative development of the intelligent rail transit industry chain also creates opportunities for the upgrading of upstream and downstream industries, especially driving traditional manufacturing enterprises in materials, electronic parts and mechanical processing, to realize smart transformation.

## Case Study

# Zhejiang Makes Great Strides in Tech Trading

By CHEN Chunyou & JIANG Yun

Recently, the first local specification on trading scientific and technological achievements was released in east China's Zhejiang province. It was formulated by Zhejiang Science and Technology Department (ZSTD), Zhejiang Institute of Standardization, Zhejiang University of Technology and L&H Law Firm.

It clarifies basic principles, requirements and procedures for trading activity. Of note is that a cooperative pilot mechanism is introduced as a new market-based pricing trading mode, in addition to the traditional agreement pricing, listed transaction and auction.

Under this mechanism, research achievements from universities and research institutes can be piloted in enterprises, and enterprises can use these achievements for free after being authorized in a given time.

### Draw on past experience

The specification is established based on the experience of China (Zhejiang) Online Technology Market, a platform launched in 2002, which pioneered the model of trading and promoted close cooperation between industry and research.

In 2012, the online market tried to auction research achievements for the first time. Over the last decade, this mechanism has gained practical experience.

During the transfer and commercialization process, small and medium-sized enterprises or enterprises based in mountainous and county-level regions could not afford the costs and risks in the past.

In order to lower the barriers of entry for piloted enterprises, in October 2021, Zhejiang explored the mechanism

for advancing the transfer and commercialization. Universities and research institutes are motivated to pilot their research results at small and medium-sized enterprises from 26 counties in mountainous areas of the province.

For example, Zhejiang Chuangxin Auto Air-Conditioner Co., Ltd. in Longquan, Lishui city, cooperated with Wenzhou University and Zhejiang Normal University, and was allowed free use of the two universities' research achievements, worth more than three million RMB, for two consecutive years.

This can better protect the interests of both sides, and increase their willingness and confidence in cooperation, said Liao Xuqing, vice director at Lishui Science and Technology Department.

### Introduce a digital app

Also in 2022, a digital trading application, co-developed by ZSTD, Zhejiang Provincial Department of Finance, and Hangzhou Dianzi University (HDU), was rolled out.

It covers many user-friendly functions, including online applications for commercialization, contract approval, contract registration and tax exemption registration, along with the registration of income distribution, which promote the technology flow and improve the transferring efficiency.

According to Li Hu, a head of the industry-university-research cooperation department at HDU, the specification offers a systematic guidance for this application and other related online transaction platforms.

By August 2022, more than 300 research achievements had been commercialized through this mechanism. They created new development conditions, facilitated enterprise development, and improved people's living standards, especially in impoverished regions.

# Quality Development High on the Agenda

By CHEN Chunyou

Promoting high-quality development and increasing the influence of Chinese brands is high on the agenda of the CPC Central Committee and the State Council, after the release of an outline in early February to ramp up China's efforts in this regard.

Quality, which is crucial for thriving international trade, promoting industrial development and improving people's well-being, has become a key factor in economy, foreign trade, science and technology, along with many other fields.

Measures will be taken to make obvious improvements to the quality and efficiency of economic development, increase the quality and competitiveness

of industries, and raise the quality levels of products, projects and services, said the outline.

Pillar industry clusters are encouraged to strengthen the application of advanced technologies, and upgrade their infrastructure in the quality stakes. Meanwhile, they are expected to rely on resources in state-level new areas, national high-tech zones, and pilot free trade zones, to create an innovation hub in technology, quality and management.

Eastern regions are urged to play a leading role in quality management, and technological and process innovation, and strengthen their traditional industrial advantages, while central and western regions are required to develop industries with local characteristics, and cultivate them to be pillar industries.

China will carry out measures to improve resource use efficiency in key industries, accelerate efforts to develop low-carbon, zero-carbon and carbon-negative technologies, and promote low-carbon transformation in energy-intensive industries.

Meanwhile, the country will work to promote the establishment of an internationally recognized carbon footprint standard, and a monitoring and effectiveness evaluation mechanism.

The outline also calls for strengthening the role of enterprises in innovation. The country will guide them to increase investment in quality and technology innovation, and support them in the application of new technologies, new processes and new materials, so as to produce new varieties of products

and achieve quality upgrading.

In addition, enterprises are being motivated to establish quality and technology innovation centers, and promote the R&D of advanced quality technologies in design, test and inspection, as well as reliability in engineering.

Micro, small and medium-sized enterprises are expected to engage in technological transformation, quality improvement and brand building, and enhance their quality-related technological innovation capacity.

It is planned to achieve greater progress in brand-building, construct more modern and effective quality infrastructure and fine-tune the country's quality management system by 2025, while seeing more notable results in building a powerhouse on quality.

# Registration-based IPO Reform to Spur Innovation Vitality

By ZHONG Jianli

The China Securities Regulatory Commission (CSRC) published draft rules on February 1 to expand the registration-based initial public offering (IPO) system to the A-share market, marking a big step towards reforming the stock market.

The essence of the registration-based reform is to give the right of choice to the market, said the CSRC, adding that the review process is transparent and open to public viewing.

The registration-based IPO system,

first adopted by the tech-focused STAR Market in 2019, was later rolled out to start-up board ChiNext in 2020 and the Beijing Stock Exchange in 2021. It will now be expanded to the main boards in Shanghai and Shenzhen.

The pilot registration-based system has helped spur vitality of high-tech enterprises during the past four years, for the system considers diversified and inclusive listing conditions, allowing promising unprofitable high-tech enterprises to go public, said an official from the CSRC, adding that a number of such enterprises in the integrated circuit, biomed-

icine, high-end equipment manufacturing and other industries, have been listed and gained capital for research and development.

The basic structure and rules of the registration-based system have now been widely agreed on by different parties in the market, so it is the opportune time to extend it to the whole market, said the official.

Under the new system, stock exchanges will take the responsibility to review IPOs, which will require full information disclosure by companies once they submit listing applications. The CS-

RC will make sure listings are in line with national industrial policies.

"The reform will further improve the efficiency of the capital market and make the market more predictable, helping venture capital institutions and innovative enterprises make right decisions in the future," said Guo Xin, a partner of CASSTAR, a venture capital investment company in China.

Financial experts said that the adoption of the system across the board will significantly improve the ratio of direct financing in China, thereby promoting the development of the real economy.

# Integrated Innovation Highlighted in Decoding Frontier Sci-Tech

By LI Linxu & SU Jingjing

With the rapid evolution of frontier sci-tech it is now more important than ever to utilize integrated innovation to help decode this progression.

Frontier sci-tech plays a key role in building a sci-tech powerhouse, said Shang Yong, vice chairperson of the Committee on Education, Science, Health and Sports of the CPPCC National Committee, at a recent seminar.

Innovation is a complex process of value creation, including the creation of scientific value, technological value, eco-

nomical value, social value, and cultural value. It involves scientific discovery, technological invention, methodological innovation, as well as commercial application and social promotion, said Mu Rongping, director of National Research Center of Frontier S&T Integrated Innovation under University of Chinese Academy of Sciences (UCAS).

He believed that the breakthroughs and integrated innovation of frontier sci-tech are critical to the path of building a sci-tech powerhouse.

To assess breakthrough directions of frontier technologies, it is of great sig-

nificance to conduct cluster analysis and selection of high-impact patents through advanced technologies and methods, said Pan Jiaofeng, dean of School of Public Policy and Management, UCAS.

Chen Kaihua, distinguished professor of School of Public Policy and Management, UCAS, thought that frontier technologies in the digital fields are a new driving force for innovation to take place and develop. Their application is injecting impetus into the integrated development of multidisciplinary technologies.

Zhao Zhiyun, director of the Institute of Scientific and Technical Information of China, noted that with growing volumes of data and improved accessibility of computing power, AI is exhibiting powerful computing capacity in scientific research.

In recent years, China has rolled out a series of policies to support integrated innovation in the field of frontier sci-tech.

Of particular note is that integrated innovation was also highlighted at a recent group study session held by the Political Bureau of CPC Central Committee.

# Ecological Economic Zone Set to Promote New Development Pattern

By LI Linxu

To accelerate its transition to a green, low-carbon, and high-quality development, China has approved a plan to establish the Dongting Lake Ecological Economic Zone.

Dongting Lake, China's second largest freshwater lake, is located in the middle reaches of the Yangtze River, and possesses an important regulation capability in the Yangtze River basin.

Listed as one of the 200 most important ecological areas in the world by the World Wide Fund for Nature, the lake is an important staging, wintering and feeding site for migratory birds, and provides a breeding ground and sanctuary for important aquatic species.

Meanwhile, the region is also one of the country's most important production bases of grain, cotton, oil-bearing crops, and fish.

The newly designated zone is tasked with implementing the new development philosophy, accelerating the establishment of a new development pattern, and promoting innovation-driven development, according to a notice recently released by the State Council.

It is urged to build a harmonious relationship between people and water, and promote green transformation and upgrading of industries.

Efforts will be made to improve people's living standards, coordinate development and security, and comprehensively deepen reform and opening-up, while also prioritizing environmental protection and restoration.

The policy is a follow-up to the 20th CPC National Congress report, pledging to prioritize ecological protection, conserve resources and use them efficiently, and pursue green and low-carbon development.



Migratory birds flying over Dongting Lake. (PHOTO: XINHUA)