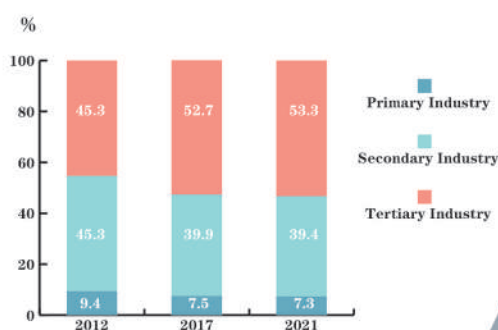


Striding Towards the Second Centenary Goal——

Sci-tech Drives China's High-quality Development

Economic structure continuously optimized



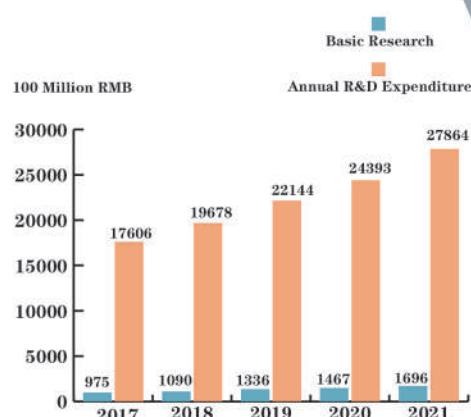
Shifts in China's economic structure
The proportion of the tertiary industry reached 53.3% of GDP in 2021.

Hi-tech industries leading the economic growth



In 2021, the output of high-tech industries jumped 18.2 percent year on year.

R&D expenditure continuously increasing



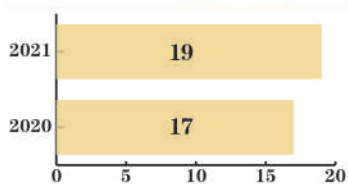
In 2021, the proportion of basic research spending in the total of R&D expenditure rose to 6.09%, surpassing six percent for the third year running since 2019.

Global Innovation Index ranking steadily on the rise



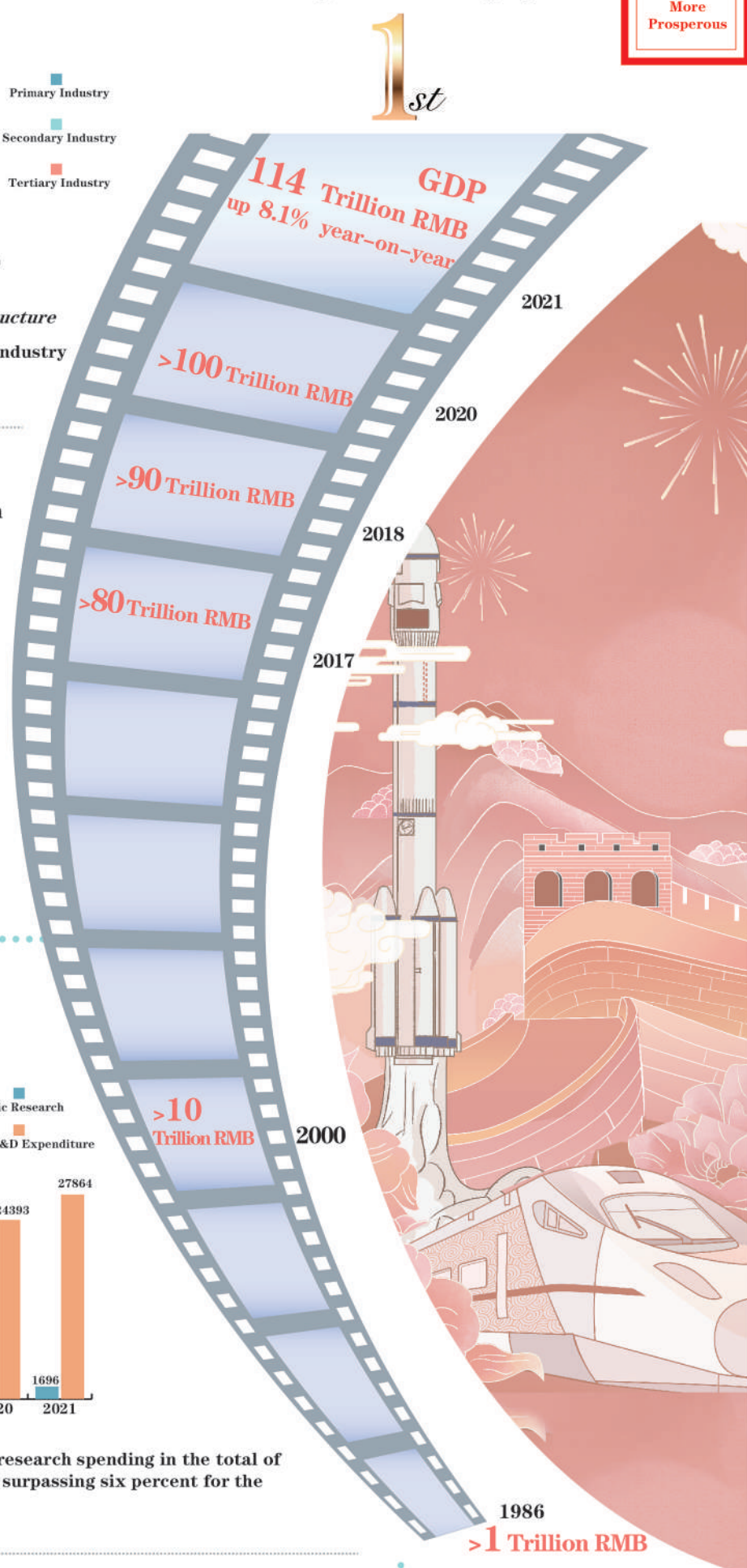
Since 2013, the country has moved up the GII ranks consistently and steadily, establishing itself as a global innovation leader.

Number of Chinese S&T clusters among global Top 100



In 2021, China hosted 19 of Top 100 Global S&T clusters.

Manufacturing output ranking 1st for 12 straight years

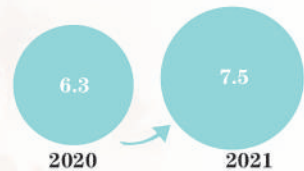


Economy More Prosperous

Global Innovation Index ranking steadily on the rise

Sci-tech More Advanced

Number of high-value patents per 10,000 people



By the end of 2021, there are

state-level enterprise technology centers: **1,636**

demonstration centers for business startups and innovation: **212**

state-level technology business incubators: **1,287**

national mass makerspaces: **2,551**

hi-tech enterprises: **330,000**

Cooperation More Substantial

By the end of 2021, China has

established diplomatic relationship with **181** countries;

built sci-tech cooperation relationship with more than **160** countries;

joined more than **200** international & multilateral mechanisms;

provided **2 billion** doses of Covid-19 vaccines to over **120** countries & international organizations.

Edited: Li Lin Xu; Source: NBS, MOST; Photo: VCG

Policy Watch

Regional Innovation, Cooperation Accelerate China's Prosperity

By CHEN Chunyou

When some people get rich first, others will be pulled up after them. Through this process, common prosperity of the entire population will be gradually achieved. This is a popular notion in China, and practice has proven that it works.

This year marks the fifth anniversary of the establishment of the Xiong'an New Area. As a key move to advance the coordinated development of the Beijing-Tianjin-Hebei region, Xiong'an's potential is stimulating the region's innovation vitality.

According to Liu Dongmei, researcher at the Chinese Academy of Science and Technology for Development, regional innovation is the key to building a national innovation system. With the expansion of a global innovation network, regional innovation needs to be more open and collaborative.

In the revised *Law on Progress of Science and Technology*, more targeted measures are put forward to encourage regional development.

For the projects that meet the needs of industrial development and have clear market application prospects, article 73 says the local government at or above county level should encourage enterprises to collaborate with research institutions and universities.

Article 74 stipulates that the country would support the construction and development of high-tech parks, such as high-tech industrial zones and national innovation demonstration zones, helping them form their characteristics and foster their advantages, so as to fully release their driving effects.

Central government should support local governments in building sci-tech innovation centers and comprehensive science centers, and allow them to give full play to their role in driving innovation, deepening reform and participating in global sci-tech cooperation, notes arti-



The sunrise scenery over Baiyangdian Lake, Xiong'an New Area, north China's Hebei province. (PHOTO: VCG)

cle 75.

This year, the building of sci-tech innovation centers is in full swing in China. Many cities have already formulated their plans. For example, Changsha, the capital city of central China's Hunan province, aims to establish more than three innovation platforms, including a technology innovation center and a manufacturing innovation center, before 2025.

Article 76 rules that the country establishes regional cooperation mechanisms for sci-tech innovation, and encourages local governments and relevant departments to carry out trans-regional cooperation, so as to promote rational flow and efficient convergence of various innovation factors.

A typical example is the cooperation between Shanghai city and Gansu province. To understand the mutual development needs and provide precise services for respective enterprises, Shanghai and Gansu transfer public officials to each other. These officials worked in enterprises or sci-tech parks, which facilitates the exchanges and integration of development concepts of the two regions.

Moreover, in response to accelerat-

ing the development of Xiong'an, a lot of central state-owned enterprises located in Beijing have decided to move to Xiong'an, and many universities have also chosen to establish their branches there. Liu said the establishment of branches of universities and enterprises will help to optimize the region's conditions for innovation and promote its development.

In the era of the digital economy, it is an opportunity for the underdeveloped regions to enhance their innovation capacity by strengthening cooperation with the outside. Liu said the digital technologies offer more possibilities for regional development, noting that each region should be active to make forward-looking strategic planning to create new momentum for innovation, instead of making plans solely based on the region's existing economic layout.

"It is important to create a healthy innovation environment. Regional innovation should avoid industrial homogeneity," said Liu, adding that due attention should be paid to the coordination of industries and the balance between industrial development and industrial ecology, to prevent competition for resources.

Promising Outlook for New Energy Storage Solutions

By ZHONG Jianli

New energy storage solutions have been identified as a critical component to build a new power system and enable green and low-carbon energy transformation.

To promote large-scale, high-quality development of new energy storage ability, the National Development and Reform Commission and the National Energy Administration of China recently issued the *14th Five-Year (2021-2025) Plan for Development of New Types of Energy Storage*, aimed at providing more support for China's carbon emissions peaking and carbon neutrality goals.

According to the policy, by 2025, new types of energy storage should enter the stage of large-scale development for wider commercial use. This entails promoting innovation in new energy storage technologies, setting up a standard system, and completing the industrial system.

With the production of wind and solar energy on the rise, energy storage

solutions are becoming more significant, more especially, when there is a lack of wind or sunlight.

Energy storage can help integrate more solar, wind and other energy resources into the grid. It can also improve the flexibility of the power system through peak and frequency regulation.

Generally, new types of energy storage refer to those other than pumped storage hydropower, such as new lithium-ion batteries, flow batteries, flywheel, compressed air, hydrogen (ammonia), and thermal (cold) energy storage.

The construction period of pumped storage hydropower is usually six to eight years, while that of electrochemical energy storage projects is three to six months. In addition, new energy storage projects are more capable of regulating the grid with quicker response systems.

Regarding technological innovation of new energy storage solutions, the policy calls for strengthening the strategic and systematic planning for related technologies. It encourages development of diversified technologies, ensures whole-

process safety, and promotes innovative intelligent control systems. High-reliability, low-cost and sustainability are always the ultimate pursuit of all different technologies.

The industries, universities, research institutes, and end users should collaborate with each other to establish the new energy storage innovation platform and cultivate professionals in the field, says the policy.

Different from subsidized photovoltaics and wind power in their initial stage, the development of new energy storage will rely on the market mechanism. The policy clarifies that the establishment of the electricity market system should be accelerated, in order to create a favorable market environment for developing new energy storage solutions.

Meanwhile, the international cooperation on promoting technical and industrial development of new energy storage should be advanced, so as to enhance global competitiveness of local enterprises, noted the policy.

Taikonauts Answer Questions from U.S. Students

From page 1

"We hope the young generation of China and the U.S. can pursue their

dreams as boldly as the astronauts and make contributions to mankind," he said.

Thomas pointed out at the event that

despite the differences between Chinese and American cultural traditions, space exploration inspires the whole world.