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2016 National Science and Technology Awards Conference Held in Beijing

The National Science and Technology Awards Conference was held in Beijing on January 9, 2017. Party and State leaders Xi Jinping, Li Keqiang, Liu Yunshan and Zhang Gaoli granted awards to the laureates. Premier Li Keqiang delivered a speech on behalf of the CPC Central Committee and the State Council. The event was chaired by Vice Premier Zhang Gaoli and attended by 3300 delegates.

General Secretary of the CPC Central Committee and state president Xi Jinping conferred certificates of the 2016 National Top Science and Technology Award upon Chinese Academy of Sciences (CAS) member Zhao Zhongxian from the Institute of Physics CAS and Researcher Tu Youyou from the China Academy of Chinese Medical Sciences. The Party and State Leaders also granted the National Natural Science Award, the National Technology Invention Award, the National S&T Progress Award and the International S&T Cooperation Award to the laureates.

On behalf of the CPC Central Committee and the State Council, Premier Li Keqiang extended congratulations to all the laureates, paid tribute to all scientists and engineers, and expressed gratitude to international experts for their contribution to the devel-

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opment of science and technology in China.

Li Keqiang pointed out that despite the complicated internal and external environment over the previous year, economic and social development have made tangible progress under the leadership of the CPC Central Committee with Xi Jinping as the core. A large number of S&T breakthroughs were made, accompanied by a batch of landmark S&T outcomes, accelerated translation of science, technology and innovation (STI) achievements, thriving of mass entrepreneurship and innovation, and vitality across the country thanks to the emphasis on innovation. At present, a new round of technological and industrial revolution is in the making, along with economic restructuring and conversion of growth engines. Under such circumstances, we must study and carry forward the important speeches of President Xi, put innovation at the core of the landscape of national development, take the new development concept as the guidance and the supply-side structural reform as the major task, deliver the strategy of innovation-driven development, build new growth engines, transform and improve conventional growth engines, maintain the economic growth at medium-high rate and move towards medium-high ends.

Premier Li said that we need to enhance STI capacity, consolidate the foundation of national core competitiveness. While targeting at frontier technology development, focusing on the needs and making forward-looking arrangement, we must promote the development of national major S&T projects, major engineering projects and major infrastructures. We will enhance basic research and original innovation, build long-term supporting mechanisms to encourage research activities. Efforts will be made to establish technology innovation mechanisms with enterprises as the major players and the market as the orientation, make good use of new platforms and modes like the internet, pool and optimize innovation resources, and improve the efficiency of STI and transformation of S&T achievements.

Li Keqiang pointed out that we need to facilitate the reform of S&T system, delegate power, strengthen supervision and reduce government intervention in the area of science and technology, give more autonomy in research activities to research institutes and universities, and enable innovative leaders to have more access to personnel, funding and physical resources. We need to strengthen disposal of S&T outcomes, distribution of benefits and stock incentive compensation, so that innovators could get their due honor and returns. Efforts will be made to stimulate the public's potential in innovation. We will not only encourage local talents, but also attract overseas returnees and foreigners to China for innovation and entrepreneurial activities and create greater space for their talent.

Li Keqiang stressed that we need to facilitate the application of STI outcomes in all sectors, promote the integration among new technologies, new types of commercial activities, new modes and the primary, secondary and tertiary industries, and make the conventional industries vibrant again. We will, on the one hand, support collaborative innovation between enterprises and universities, research institutes and makers, strive to improve the quality of products "made in China" and impact of "created in China", and on the other hand, strengthen IPR protection by cracking down upon infringing and counterfeiting activities.

When chairing the event, Vice Premier Zhang Gaoli expressed his hope that scientists and engineers could take the awardees as role models, continue to carry forward the fine traditions of serving the country and benefiting the people, shoulder heavy responsibilities and deal with difficulties, and make

contributions to building an innovative country and a world-class S&T powerhouse.

Vice Premier Liu Yandong announced the State Council's Decision on Science and Technology Awards in 2016.

The 2016 National Science and Technology Awards were granted to 279 projects, seven experts and one international organization. The awards included two National Top Science and Technology Awards, 42 National Natural Science Awards (one first prize and 41 second prizes), 66 National Technology Invention Awards (three first prizes and 63 second prizes), 171 National S&T Progress Awards (two special prizes, 20 first prizes and 149 second prizes), and six International S&T Cooperation Awards for five foreign experts and one international organization.

(Source: Xinhua News Agency, January 9, 2017)

2017 National Conference Held on Science and Technology Work

The National Conference on the Work of Science and Technology was held in Beijing on January 10th, 2017. It aimed to act on arrangements of the 18th CPC National Congress; the third, fourth, fifth and sixth plenary sessions of the 18th CPC Central Committee; General Secretary Xi Jinping's important speech series and the National Conference on Science, Technology and Innovation. It also aimed to fully implement the strategy of innovation-driven development. It summarized the work of science and technology in 2016; identified the roadmap for 2017; deliberated on and decided on key initiatives of scientific and technological development and reform. A work report was presented by Wan Gang, Vice Chairman of the National Committee of Chinese People's Political Consultative Conference (CPPCC), and Minister of Science and Technology. The Conference was presided over by Wang Zhigang, Vice Minister of Science and Technology.

In the work report, Wan pointed out that over the past year, efforts have been made to fully implement the new development concepts and the innovation-driven development strategy; a number of breakthroughs were made. China's scientific and technological strengths and innovation capabilities have been further enhanced, evident in a great number of innovation achievements in major areas. Scientific and technological innovation has been integrated with socio-economic development; the new growth engine is making headway and providing more support for the supply-side structural reform. Mass innovation and entrepreneurship are in full swing. Like never before, the whole society is so enthusiastic about supporting and engaging in innovation. The main structure of the systemic reform of science and technology administration was established. Substantive breakthroughs have been made in key reform areas such as business innovation policies, R&D project grant management, commercialization of R&D outcomes, and the income distribution system. R&D personnel now have a stronger sense of gain. The country is constantly improving its international ranking of innovation capabilities in scientific and technological areas. The gross R&D expenditure of China in 2016 is expected to reach RMB1.544 trillion, or 2.1% of its GDP. Business spending accounted for over 78% of the total. The overall value of signed technology contracts registered RMB 1.1407 trillion. Scientific and technological progress contributed more to economic growth, standing at 56.2%. The county has

made much headway in building an innovative country.

I. The country has by and large completed the top-level design of its innovation-driven strategy.

In 2016, the CPC Central Committee and the State Council held the National Conference on Science, Technology and Innovation, promulgated *The Plan for Implementing the National Strategy of Innovation-driven Development*, set targets for a three-step strategy in the pursuit of innovation-driven development, and clearly defined strategic arrangements of "sticking to the two-wheel drive (namely S&T and institutional innovations), building a national innovation system, and promoting six transitions".

II. The country has further consolidated the scientific and technological foundation for innovation-driven development.

Major breakthroughs were made in strategic high technologies. For example, the Shenzhou-11 manned spacecraft and the Tiangong-2 space lab completed space rendezvous and docking procedures successfully. China succeeded in launching the Long March-5, a new generation of heavy-lift rockets; the first quantum satellite "Micius", and a CO2 monitoring satellite, the first of its kind globally. The "Wukong" Dark Matter Particle Explorer Satellite has been orbiting the earth for one year. With a homemade chip and outstanding petaflops-per-second processing capacity, the Sunway-TaihuLight was crowned as the world's fastest computer. In the fields of basic and frontier research, China is racing faster to catch up with or even overtake frontrunners. Its number of international papers on science and technology ranks the second in the world. The international influence of its scientific research has been substantially enhanced. China also had the first success in the generation and detection of ultracold atomic spin entanglement in optical lattices; in developing the brainnetome atlas, the first map of the human brain based on in vivo research; and in identifying therapeutic antibodies against Zika virus and their working mechanism, etc. China also further improved its deployment of innovation bases. It launched the world's largest single-aperture spherical telescope FAST (Five-hundred-meter Aperture Spherical Telescope). The national management network of research facilities and equipment is up and running. Its forces for science, technology and innovation continue to grow, featuring the largest number of R&D personnel in the world.

III. Innovation has effectively bolstered the supply-side structural reform..

During the 12th Five-year Plan period, the central government spent RMB 76.9 billion on major projects of people's wellbeing, stimulated local investments of RMB 108 billion and directly helped increase an output value of RMB 1.42 trillion. These projects also brought in RMB 130 billion of real tax income, 11,000 granted patents and 8,478 technical standards. There were over 240,000 scientists and engineers who have made important accomplishments in innovation. It is estimated that 500,000 new energy vehicles were sold in 2016, up by over 60% year on year. The LED pilot project implemented in over 20 Chinese cities promoted the application of more than 24 million LED lights, making China the world's largest production base of LED lighting products. Demonstration projects such as computerized numeric control (CNC) and IT application in the manufacturing industry have come a long way. Over 350 types of special CNC systems and equipment have been developed; 223,000 equipment sets have been applied.

IV. Efforts have been made to further spur innovation and entrepreneurship in all social quarters.

A start-up service chain has been developed with more than 4,200 maker spaces, over 3,000 incubators for tech businesses, and 400 plus accelerators. It provides services to over 400,000 start-up businesses and teams, has nurtured nearly 1,000 listed companies and created 1.8 million jobs. There are 739,000 technical task forces (TTFs) serving 60 million farmers. The National Fund for Technology Transfer and Commercialization set up nine branches of start-up funds with a total value of RMB 17.3 billion. In addition, there are over 550 start-up investment companies (and funds) with a combined capital of RMB 230 billion. They were set up by science and technology administrative departments at various levels, national innovation demonstration zones and high-tech parks. What's more, the 2016 National Science Week was a full success, featuring more than 20,000 science popularization activities of all kinds and attracted over 200 million person-times of visitors.

V. Substantive breakthroughs have been made in reforming key areas.

The General Office of the Central Committee of the CPC and the General Office of the State Council issued The Guideline on the Allocation Policies Highlighting the Value of Knowledge. The management reform of S&T programs achieved remarkable progress, restructuring close to one hundred S&T programs (projects and funds) into five categories. 1163 projects have been launched under 42 sections of the National Key R&D Program, covering all provinces, autonomous regions and municipalities. The number of granted proposals dramatically decreased and the funding for individual project went up. Policies applied to an extensive range of eligible tech businesses have been put into place. Newly registered high-tech companies reached 25,000, totaling 104,000. According to the statistics issued by the State Administration of Taxation, corporate income tax deductions and exemptions for high-tech companies totaled RMB 115 billion in 2016 and R&D cost super-deduction reached RMB 76 billion.

VI. Space for innovation has been expanded.

Regional innovation hubs are taking shape, such as national innovation demonstration zones, high-tech development zones, science and innovation centers in Beijing and Shanghai, and eight regional experiment zones for all-round innovation reform. The operating revenues of 146 national high-tech development zones totaled RMB 28 trillion, up by 11.5% over the previous year. The cooperation in science and technology has been promoted to deliver bilateral and multilateral intergovernmental S&T agreements and leaders' commitments. The 1st G20 Science, Technology and Innovation Ministers Meeting was held, releasing a statement to follow up on the 2016 G20 Hangzhou Summit. The Plan for Science, Technology and Innovation Cooperation along the Belt and Road Region was issued. Great support was given to Our Hong Kong Foundation for organization of InnoTech Expo 2016 and Macao Science and Technology Development Fund for the Exhibition of China's Science and Technology Achievements during the 12th Five-Year Plan Period (2011-2015).

Minister Wan Gang stressed that China stood at a new starting point of scientific and technological development, facing both marvelous opportunities and unprecedented challenges. Wan underlined the four kinds of consciousness, especially the consciousness to keep a high degree of conformity with the CPC Central Committee led by Xi Jinping and deliver Xi's ideas on science, technology and innovation. To build a country strong on science and technology, continuous efforts need to be made to consolidate the foundation, follow the trend of a new round of technological and industrial revolution, gain a head start at the cutting edge of science and technology, adapt to the new

normal of economic growth, give full play to the role of science and innovation in facilitating supply-side reform and foster new driving force. To change the role of the government, emphasis needs to be put on four aspects, i.e. strategies, planning, policies and services.

Minister Wan mapped out the science and technology work for 2017. The science and technology community should take actions to deliver the statements of the 18th CPC National Congress, the 3rd, the 4th, the 5th, and the 6th plenary sessions of the 18th CPC Central Committee, the Central Economic Work Conference, the Central Rural Work Conference, and the National Conference on Science, Technology and Innovation, the Series of Key Speeches of General Secretary Xi Jinping, the new ideas and strategies in his book *Xi Jinping: The Governance of China*, and promote all-around economic, political, cultural, social, and ecological progress, while coordinating the Four-Pronged Strategy. Wan called on the science and technology community to embrace new development ideas, adapt to and lead the new normal of economic growth. The keynote is to ensure steady progress along the main line of underpinning supply-side reform to meet the objective of building a country strong on science and technology. One special focus of 2017 is the implementation of the Plan for the National Strategy of Innovation-driven Development and the 13th Five-Year Plan on Scientific and Technological Innovation. Efforts should focus on innovation capacity, institutional reform, technology transfer and transformation, transition of governmental functions, sound innovation ecosystem, widespread innovation and entrepreneurship so as to promote sound economic growth, social harmony and stability with STI playing a key role and prepare for the19th CPC National Congress.

Minister Wan laid down ten major tasks for 2017:

1. Deploying and implementing major S&T projects and keeping the competitive edges in key areas.
2. Establishing national labs to enhance science and technology strengths.
3. Consolidating basic and frontier research and improving original innovation capacity.
4. Engaging in global innovation governance and adopting international perspectives in science, technology and innovation.
5. Speeding up the making of breakthroughs in key generic technologies and moving industry towards medium and high ends of the value chain.
6. Developing science and technology for social wellbeing and sustainable development.
7. Taking actions to transfer and translate scientific and technological outcomes and promoting technology-enabled innovation and entrepreneurship.
8. Building regional innovation hubs to push forward coordinated regional innovation.
9. Facilitating reform and delivering of key reforming actions.
10. Improving incentives and operation mechanisms to motivate researchers and the public.

The meeting distributed Document NO. 1 of the CPC Leading Group of MOST on implementing the strategy of innovation-driven development and starting a new journey towards a country strong on science and technology as a follow-up on the 6th Plenary Session of the 18th CPC Central Committee.

(Source: MOST, January 10, 2017)