

the China Ship Scientific Research Centre. Yan, a deputy to the National People's Congress, told state-run Xinhua news agency on the sidelines of the annual legislative session that the submersible is part of the Jiaolong family, whose manned device set China's record of reaching 7,062 metres deep in the Pacific Ocean's Mariana Trench in 2012. Earlier March 2017, one of the submersibles, Jiaolong, operating in the northwestern Indian Ocean, to search for deposits of precious metals descended to a new depth of 3,117 metres below sea level and collected a variety of samples. Yan said the record-setting dive boosted the confidence of Chinese scientists in conducting deep-sea research exploration on their own and laid a solid foundation of developing even more sophisticated devices. The known deepest part of the ocean is the Challenger Deep at a depth of around 11,000 metres in the Mariana Trench. Submersibles capable of reaching that depth will offer new hopes of setting up deep-sea labs, where scientists can conduct biological, medical and genetic research and explore mineral, oil and gas resources. But Yan said 11,000-metre submersible research still faces challenges in areas including pressure-resistant materials, design, energy and telecommunications. Meanwhile, Yan's lab is in the final stages of developing a 4,500-meter submersible to be delivered to the Institute of Deep-sea Science and Engineering under the Chinese Academy of Sciences in the second half of this year.¹³⁷⁰

8.7.5 Electronics and information technology

The State Council piece of **information** titled "**Ministry of Industry and Information Technology**", updated on **Aug 20, 2014**, stated that **The Ministry of Industry and Information Technology (MIIT)** of the People's Republic of China was established in 2008 as a department under the State Council responsible for the administration of China's industrial branches and information industry.

The main responsibilities of the ministry:

- To determine China's industrial planning, policies and standards
- To monitor the daily operation of industrial branches
- To promote the development of major technological equipment and innovation concerning the communication sector
- To guide the construction of information system
- To safeguard China's information security.¹³⁷¹

8.7.5.1 The Institute of Electronics of the Chinese Academy of Sciences (IECAS)

The Institute of Electronics of the Chinese Academy of Sciences (IECAS) was founded in 1956. It was the first comprehensive institute in China in the fields of electronics and information science and technology. IECAS focuses on research in the areas of microwave imaging technology, microwave vacuum electronic technology, geospatial information technology, electromagnetic detection technology, high power gas laser technology, transducer technology and programmable chips and systems. The institute comprises 11

¹³⁷⁰ Live Mint News item captioned "China developing manned submersible to reach deepest points" Dated March 09, 2017, written by K J M Varma available online at URL: <https://www.livemint.com/Science/pjnLxkwcOM8hJ97c8ym2FP/China-developing-manned-submersible-to-reach-deepest-points.html>

¹³⁷¹ The State Council piece of information titled "Ministry of Industry and Information Technology", updated on Aug 20, 2014 http://english.www.gov.cn/state_council/2014/08/23/content_281474983035940.htm

research units: the State Key Laboratory of Microwave Imaging Technology, the Geography and Cyberspace Information Technology Laboratory, the State Key Laboratory of Transducer Technology (North Base), the State Key Laboratory of High-power Microwave Sources and Technology, the State Key Laboratory of Electromagnetic Radiation and Detection Technology, the R&D Center for Space Traveling-Wave Tubes, the Department of High Power Gas Laser Technology, the Department of Space Microwave Remote Sensing Systems, the Department of Airborne Microwave Remote Sensing Systems, the Information Processing and Image Analysis Laboratory and the Laboratory of Programmable Chips and System.

IECAS obtained China's first Synthetic Aperture Radar (SAR) image in 1976. Now, IECAS is one of China's leading solution providers for space-borne SAR systems, airborne SAR systems, and remote-sensing ground processing centers. IECAS was also one of the first institutes engaged in the study of microwave vacuum electronics technology and has become an important research and production base for related devices. For example, such devices developed and fabricated by IECAS have been successfully used in satellites, radar systems, rockets, and large-scale scientific facilities. Of these devices, the high power klystron and space-borne traveling-wave tube are the most advanced in China.

In the field of geospatial information technology, IECAS is one of the largest research bases for remote sensing satellite ground processing systems. Its multi-satellite, multi-sensor integrated remote sensing processing and application system is one of the best in China. The institute has also built an R&D base for high-level research in modern electromagnetic field theory, microwave technology and its technology. As part of this effort, IECAS has developed ground penetrating radar technology designed to investigate moon soil as part of China's Chang'e-3 and Chang'e-5 lunar exploration missions, as well as wall-penetrating radar and Terahertz imaging radar.

IECAS was one of the first organizations to engage in gas laser technology research in China and its gas laser and laser radar R&D is consistently at the forefront in China. Its research on high-repetition-rate pulsed CO₂ lasers has reached an international advanced level. IECAS stands on the domestic frontier in the field of programmable chips and systems. The institute developed "Huixin," an advanced, reliable programmable logic chip as well as its application software.¹³⁷²

China's State Council Information Office White paper, titled "**China's National Defense in the New Era**", published in **July 2019**, mentioned that driven by the new round of **technological and industrial revolution**, the application of cutting-edge technologies such as **artificial intelligence (AI), quantum information, big data, cloud computing and the Internet of Things** is gathering pace in the military field. International military competition is undergoing historic changes. New and **high-tech military technologies based on IT** are developing rapidly. There is a prevailing trend to develop long-range precision, intelligent, stealthy or unmanned weaponry and equipment. War is evolving in form towards informationized warfare, and intelligent warfare is on the horizon.¹³⁷³

¹³⁷² The Institute of Electronics of the Chinese Academy of Sciences (IECAS), A brief Introduction of IECAS, available online at URL: <http://english.ie.cas.cn/au/bi/>

¹³⁷³ China's State Council Information Office White paper, titled "China's National Defense in the New Era", published in July 2019, Pg 6, available online at URL: http://english.www.gov.cn/archive/whitepaper/201907/24/content_WS5d3941ddc6d08408f502283d.html

8.7.5.2 13th Five Year Plan

13th Five-Year Plan for Economic and Social Development of the People's Republic of China (2016–2020):

Part VI Cyber Economy, Chapter 28 Strengthen Information Security, Section 3

Box: Information Technology Projects

Information Technology Projects
<p>1. The National Broadband Agenda</p> <ul style="list-style-type: none">• Establish a high-speed, high-capacity optical telecommunications system;• Implement projects to extend broadband connectivity to rural villages and improve basic network infrastructure in small and medium cities in the central and western regions;• Expand international internet bandwidth capacity;• Plan for the development of 4G and subsequent evolutionary technologies;• Extend full 4G coverage to regions where it is needed.
<p>2. Promoting application of the Internet of Things</p> <ul style="list-style-type: none">• Develop infrastructure and service platforms for uses of the Internet of Things;• Promote the development of demonstration projects of major applications of the Internet of Things;• Make extensive innovations in integrated applications and models of Internet of Things technology;• Enrich services through the application of the Internet of Things
<p>3. Cloud computing innovation and development</p> <ul style="list-style-type: none">• Support the development of public cloud service platforms;• Plan for the establishment of cloud computing and big data centers;• Improve the ability to provide cloud computing solutions;• Promote cloud application services in manufacturing, banking, people's wellbeing, logistics, medical services, and other key industries;• Continuously improve cloud computing ecosystems
<p>4. "Internet +"</p> <ul style="list-style-type: none">• Promote "Internet +" in starting up businesses, innovation, collaborative manufacturing, smart energy, inclusive finance, public-interest services, high-efficiency logistics, e-commerce, convenient transportation, ecological conservation, artificial intelligence, e-taxation, convenient judicial services, education, training, scientific popularization, geographical information, credit, and cultural tourism;• Continuously expand areas which take advantage of the internet.
<p>5. Big data applications</p> <ul style="list-style-type: none">• Establish a unified open platform for big data;

- Progressively release public datasets;
- Encourage enterprises and the general public to analyze and utilize data;
- Promote the innovative use of big data in fields such as government governance, public services, industrial development, and technological research and development;
- Promote the development of comprehensive big data experimental zones in Guizhou and other areas.

6. A more IT-based government

- Accelerate the development and utilization of a national unified e-government network;
- Improve platforms for approval oversight, credit information, public resources trading, information on the reporting of price violations, and others;
- Accelerate the development and utilization of a national database for basic information resources.

7. E-commerce

- Support the development of e-commerce infrastructure;
- Promote the innovation and adoption of e-commerce in key areas;
- Promote the development of comprehensive experimental zones for cross border e-commerce in Hangzhou and other areas so as to build international e-commerce thoroughfares.

8. Cyber security

- Implement the national information security project;
- Become better able to ensure security for key information infrastructure, important information systems, and classified information systems, and use them to better support industrial development;
- Implement national science and technology projects for ensuring cyberspace security;
- Make breakthroughs in key technologies such as core chips, basic software, key components, and major machinery systems;
- Establish a national system for cyberspace security and security technology.

Source: Box 9, Information and Technology Projects, Pg 77

URL: https://en.ndrc.gov.cn/policyrelease_8233/201612/P020191101482242850325.pdf

Part VIII New Urbanization, Chapter 34 Develop Harmonious and Pleasant Cities, Section 1 New Style of City:

We will build green cities by adjusting the scale of cities in accordance with their resource and environmental carrying capacities, using eco-friendly planning, design, and construction standards, and carrying out initiatives to build ecological corridors and restore ecosystems. We will build smart cities as we strengthen modern information infrastructure and promote the development of big data and the Internet of Things. We will build innovative cities by making full use of the concentrations of creative resources found in cities to develop business parks and cradles of innovation. We will build cities of culture through efforts to make cities more open and inclusive, strengthen the protection of cultural and natural heritage, and keep historical heritage alive. We will strengthen the development, use, and regulation of urban spaces and build high-density and public transit-oriented compact cities with integrated functions.

Make full use of modern information technology and big data to develop a number of exemplary new-style smart cities, focusing on developing smart infrastructure, convenient public services, and refined social governance.

Part XIV Better Education and Health for all Citizens

Chapter 59 Modernize Education, Section 5 Education Reform and Development

Box: Education Modernization Projects

Education Modernization Projects
<p>1. Standards providing compulsory education</p> <ul style="list-style-type: none">• Implement an action plan to accelerate the development of education in the central and western regions;• Gradually ensure that state-run compulsory education schools that cannot yet meet required standards work to bring their buildings, premises, and staffing up to standard.
<p>2. Senior secondary education access plan</p> <ul style="list-style-type: none">• Increase senior secondary education resources in poor areas in the central and western regions, particularly in contiguous poor areas;• See that basically all junior secondary school graduates in poor parts of these regions who did not enroll in regular senior secondary education enter into secondary vocational schooling
<p>3. Development kindergartens open to all children</p> <ul style="list-style-type: none">• Strengthen the development of such kindergartens, focusing particularly on making sure children of kindergarten age in rural parts of the central and western regions as well as children born in urban areas after the introduction of the two-child policy have access to kindergarten education
<p>4. Integration education into industry</p> <ul style="list-style-type: none">• Support 100 higher vocational institutions and 1,000 secondary vocational schools in strengthening cooperation with enterprises to develop vocational education internship and training facilities;• Support colleges providing undergraduate education in improving their basic conditions including facilities for teaching, conducting experiments, and training;• Establish a number of high-quality applied undergraduate colleges;• Support the development of clusters of emerging disciplines and majors to serve modern industry through cooperation between universities and enterprises.
<p>5. Development world-class universities and disciplines</p> <ul style="list-style-type: none">• Give high priority to supporting the development of a number of world class universities and disciplines, and ensuring that some disciplines reach the highest ranks worldwide;• Continue the initiative to improve universities' capacity for innovation.
<p>6. Development of continuing education</p>

- Support higher learning institutions and vocational institutions in providing continuing education and training for migrant workers in cities, modern professional farmers, modern industrial workers, and demobilized service personnel;
- Establish personal learning accounts and an academic credit certification platform.

7. Teacher development

- Support the development of teacher training and launch a program to cultivate high-caliber teachers;
- Add to bilingual teacher numbers in areas with concentrations of ethnic minorities and to secondary vocational teacher numbers in poor areas;
- Recruit teachers for the special rural teacher program every year to gradually bring their number to 100,000;
- Build accommodations for teachers in rural areas;
- Implement the head teacher plan in primary and secondary schools in the central and western regions and a plan to attract excellent teachers to universities in these regions;
- Strengthen efforts to train special needs teachers.

8. Information technology in education

- Move faster in implementing the project to ensure that broadband internet is accessible to each school, quality digital educational resources are accessible to each classroom, and an online learning space is accessible to each student and to put in place platforms for educational resources and management;
- Continue support for IT infrastructure construction in rural primary and secondary schools;
- Establish a national quality learning resource platform through government service procurement;
- Develop modern remote and online learning with a focus on vocational education and applied higher education.

9. International exchanges and cooperation in education

- Promote educational activities related to the Belt and Road Initiative;
- Implement the study abroad action plan;
- Continue to ensure Confucius Institutes are run successfully.

Source: Box 20, Education Modernization Projects, Pg 164

URL: https://en.ndrc.gov.cn/policyrelease_8233/201612/P020191101482242850325.pdf

Part XIX Coordinated Economic and Defense Development

Chapter 77 Pursue Development of Defense and the Armed Forces

We will develop new combat capabilities, strengthen the development of defense-related science and technology, equipment, and modern logistics, carry out combat training, and strengthen network information system-based joint combat capabilities of the military. We will basically complete the reform objectives for defense and the armed forces, basically accomplish military mechanization, and make major strides in the adoption of **information technology in the military, thereby building Chinese-style modern**

armed forces that are capable of successfully engaging in information technology-based warfare and effectively accomplishing their missions. We will strengthen international military-related exchange and cooperation and take an active role in international peacekeeping missions.

Chapter 78 Integrate Military and Civilian Development

We will ensure a better allocation and appropriate sharing of resources between the military and localities so that both peacetime and wartime needs can be met; encourage flow of factors such as **technology**, personnel, capital, and information between the economic and defense sectors; and strengthen coordinated development between the military and localities in the areas of infrastructure, industries, science, technology, education, and public services. We will explore the establishment of a mechanism for funding integrated military-civilian development projects. We will deepen institutional reform of defense-related science and **technology industries**, put in place an initiative to strengthen the foundations of these industries, and establish mechanisms for achieving collaborative innovation in defense-related science and **technology**. We will reform systems and mechanisms concerning defense-related research, production, and weapons and equipment procurement, move faster in opening military industries to competition and promoting the application of defense-related **scientific and technological advances**, and guide private businesses with a competitive advantage in entering the fields of research and development, production, and maintenance of military products. We will accelerate the development of standards that apply to both the military and civilian sectors. We will implement integrated military civilian development projects, including ocean, space, and **cyberspace projects** and measures, the development of innovation demonstration zones for military-civilian integration, and the strengthening of coordination between the military and civilian sectors in the sharing of advanced technologies, industries, products, and infrastructure. We will strengthen infrastructure for border and coastal defense.¹³⁷⁴

8.7.5.3 Ministry of Industry and Information Technology (MIIT)¹³⁷⁵

工业和信息化部

Website: www.miit.gov.cn

The Ministry of Industry and Information Technology (MIIT) is responsible for regulating and managing China's telecommunications and software sectors, as well as the electronics and information technology manufacturing industries. Its functions also include project planning, industry development, and regulatory management of China's radio and television (including cable) transmission networks, as well as satellite telecom networks. MIIT oversees China's defense industry.

Minister: Miao Wei

Vice Ministers and Other Senior Officials

¹³⁷⁴ Excerpts from 13TH FIVE-YEAR PLAN FOR ECONOMIC AND SOCIAL DEVELOPMENT OF THE PEOPLE'S REPUBLIC OF CHINA (2016–2020), available online at URL:

https://en.ndrc.gov.cn/policyrelease_8233/201612/P020191101482242850325.pdf

¹³⁷⁵ The US-China Business Council (USCBC), Ministry of Industry and Information Technology (MIIT), available online at URL: https://uschina.org/sites/default/files/2018.12.28_miit.pdf

- **Zhang Kejian 张克俭**
(Vice Minister)
Oversees the Civilian-Military Integration Promotion department
- **Chen Zhaoxiong 陈肇雄**
(Vice Minister)
Responsible for Software Services, Communications, Info communication Management Bureau, Network Security Bureau, Radio Regulatory Bureau (State Radio Office), and Personnel and Education bureaus
- **Guo Kailang 郭开朗**
(Vice Minister)
Heads the Discipline Inspection and Supervision Team
- **Wang Jiangping 王江平**
(Vice Minister)
Responsible for Policy and Regulation, International Cooperation, Retired Cadres Department, Production Safety, and Department of Electronic Communications
- **Xin Guobin 辛国斌**
(Vice Minister)
Responsible for Department of Planning, Department of Operational Monitoring and Coordination, Department of Energy Conservation and Resource utilization, and the Manufacturing Industry Department.
- **Luo Wen 罗文**
(Vice Minister)
Department of Medium & Small Enterprises, Department of Raw Material Industry, Department of Industrial Policy, and Department of Consumer Goods Industry.
- **Zhang Jianmin 张建民**
(Director of State Tobacco Monopoly Administration)
Oversees State Tobacco Monopoly Administration
- **Zhang Feng 张峰**
(Chairman of the General Office)
Oversees General Office, Finance Department, and Radio Regulatory Bureau (State Radio Office)
- **Wang Xinzhe 王新哲**
(Chief Economist)

Department Responsibilities

- **General Office (办公厅)**
Lou Yuguang 楼宇光
Manages ministry dissemination of information, communications, security safeguards, confidential work, and letters of complaint; coordinates and supervises daily activities; and publicizes ministry news.
- **Policy and Law (政策法规司)**
Liang Zhifeng 梁志峰
Researches industrial strategy issues; offers policy suggestions for industry, communications, and information development; drafts industry policies, regulations, and other key documents; and reviews documents for standardization.
- **Planning (规划司)**
Gao Dongsheng 高东升
Formulates industry, communications, and information development strategy; oversees central finance construction capital allocation; and audits fixed-asset investments.
- **Finance (财务司)**
Jiang Zikun 姜子琨
Manages budget and expenses; organizes internal audits and performance examinations; offers finance, taxation, and pricing suggestions; and manages ministry finances and assets.
- **Industrial Policy (产业政策司)**
Xu Kemin 许科敏
Drafts and implements industrial and communications policies; recommends structural adjustment, development, and innovation management policies; participates in project audits; and determines market entry requirements.
- **Science and Technology (科技司)**
Hu Yan 胡燕
Drafts and implements policies and standards for biotechnology, new materials, aerospace, and the information industry; formulates technology standards and oversees quality control; coordinates technology research, major-industry model projects, and national special projects; and promotes innovation and research integration
- **Operational Monitoring and Coordination (运行监测协调局)**
Zheng Lixin 郑立新
Monitors and analyzes daily operations of foreign and domestic industrial and communications sectors; generates statistics; releases forecasts, early

warnings, and information guides; assists with problem solving related to industry development; handles emergency management, industrial security, and national defense mobilization.

- **Small and Medium-Sized Enterprises (中小企业局)**

Zheng Xi 郑昕

Guides small and medium-sized enterprise (SME) development; formulates policies for SMEs and private enterprises' economic development; facilitates foreign exchanges; and coordinates service system construction and improvement.

- **Energy Conservation and Resource Usage (节能与综合利用司)**

Gao Yunhu 高云虎

Formulates and implements policies related to energy saving, resource use, and clean production in industrial and communications sectors; assists with pollution control policy creation; coordinates major-model projects; and promotes new technology and materials development.

- **Production Safety (安全生产司)**

Jin Xin 金鑫

Oversees production safety in the industry and communications sectors; guides key industries in investigating safety concerns; investigates major product safety incidents; supervises the production and use of civilian-grade explosives.

- **Office of Raw Materials Industries (原材料工业司)**

Wang Wei 王伟

Manages the steel, non-ferrous metals, gold, rare metals, stone derivatives, natural chemicals, and other related industries; researches overseas market conditions and advises Chinese firms; and ensures China's compliance with the Chemical Weapons Convention.

- **Manufacturing Industry (装备工业司)**

Li Dong 李东

Oversees management of major manufacturing industries; oversees planning and policy for technology and new materials development; supports national engineering project implementation; and guides domestic technology innovation.

- **Consumer Products (消费品工业司)**

Gao Yanmin 高延敏

Manages consumer product industries, including textiles, food, medicine, and home appliances; formulates production plans for the tobacco, salt, and sugar industries; manages state salt and drug reserves; supports Chinese traditional medicine project management.

- **Office of Civilian-Military Integration Promotion (军民结合推进司)**
He Qiong 何琼
Proposes, formulates, and implements policies related to civilian-military integration, including the two-way transfer of civilian-military dual-use technologies and the establishment of civilian-military general standards.
- **Electronic Information (电子信息司)**
Xi Shijing 刁石京
Manages the electronic information product manufacturing industry; assists with development and domestic production of microelectronic and general electronic information products; and promotes the use of electronic information technologies.
- **Software Services (信息化和软件服务业司)**
Chen Wei 陈伟
Guides software industry development; formulates technical standards; and manages information security technology development.
- **Communications Development (信息通信发展司)**
We Ku 闻库
Coordinates the development of public and special-use communication networks and the internet; drafts network-technology development policies; and drafts rules and oversees telecom service fees.
- **Info-communication Management Bureau (信息通信管理局)**
Han Xia 韩夏
Supervises telecom services and promotes open markets and high-quality services; develops telecom network exchanges and fee structures; protects network codes, domains, and internet addresses; and coordinates emergency communications services.
- **Network Security Bureau (网络安全管理局)**
Zhao Zhiguo 赵志国
Researches national communications network safety issues; oversees communications security policy; assists with telecom network management; drafts network safety precaution protocols; manages network emergencies and CCP and central government special communications needs.
- **Radio Regulatory Bureau (State Radio Office) (无线电管理局) (国家无线电办公室)**
Xia Yuansheng 谢远生
Divides, distributes, and assigns radio frequencies; oversees radio station operations; coordinates and manages civilian satellite positioning;

coordinates with the military on radio management issues; and manages issues related to foreign radio.

- **International Cooperation (Hong Kong, Macao, and Taiwan Office) (国际合作司) (港澳台办公室)**

Zhao Yonghong 赵永红

Coordinates international cooperation and communications and manages matters related to Hong Kong, Taiwan, and Macao.

- **Personnel and Education (人事教育司)**

Han Zhanwu 韩占武

Manages personnel, training programs, and team building

- **Party Committee (机关党委)**

Zhang Li 张立

Responsible for MIIT's CCP relations

- **Retired Officials Bureau (离退休干部局)**

Wu Yajun 吴亚军

Handles MIIT cadre affairs

China Daily News item updated on **February 21, 2017** titled “**Electronics information industry called to capitalize on progress**” reported that China's electronics information industry should deeply integrate with real economy and strengthen its breakthrough in the core technology sector, an official from the Ministry of Industry and Information Technology said.

Chen Zhaoxiong, vice minister of industry and information technology, pointed out China's electronics information industry is in a crucial period of transformation and upgrading, and there is still a shortage of core technologies.

The revenue from electronics manufacturing industry and software industry surpassed 17 trillion Yuan (\$2.5 trillion) in 2016, an increase of 10.8 percent from the previous year. The revenue of electronics manufacturing industry reached 12.2 trillion Yuan, seeing an increase of 9.3 percent year-on-year.¹³⁷⁶

Xinhua Net report dated October 18, 2017 mentioned details as follow:

Xi Jinping announced a report on delivered to the **19th CPC National Congress** at the Great Hall of the People in central Beijing in which Xi unveiled a two-stage plan of the Communist Party of China (CPC) to make China a “**great modern socialist country**” by **mid-21st century**.

According to the new plan, the CPC will basically realize socialist modernization in the first stage from 2020 to 2035, before developing China into a "great modern socialist

¹³⁷⁶ Excerpts from China Daily News item updated on February 21, 2017 titled “Electronics information industry called to capitalize on progress” edited by Fan Feifei, available online at URL: https://www.chinadaily.com.cn/business/2017-02/21/content_28291983.htm

country" that is "prosperous, strong, democratic, culturally advanced, harmonious and beautiful" after another 15 years. The two-stage development plan is the CPC's "strategic vision for developing socialism with Chinese characteristics in the new era," Xi said.

According to the plan, the following goals will have been met by 2035:

- China's economic and technological strength has increased significantly. China has become a global leader in innovation.
- The rights of the people to participate and to develop as equals are adequately protected. The rule of law for the country, the government, and society is basically in place. Institutions in all fields are further improved; the modernization of China's system and capacity for governance is basically achieved.
- Social etiquette and civility are significantly enhanced. China's cultural soft power has grown much stronger; Chinese culture has greater appeal.
- People are leading more comfortable lives, and the size of the middle-income group has grown considerably. Disparities in urban-rural development, in development between regions, and in living standards are significantly reduced; equitable access to basic public services is basically ensured; and solid progress has been made toward prosperity for everyone.
- A modern social governance system has basically taken shape, and society is full of vitality, harmonious, and orderly.
- There is a fundamental improvement in the environment; the goal of building a Beautiful China is basically attained.

By the middle of the 21st century, the following goals will have been met:

- New heights are reached in every dimension of material, political, cultural and ethical, social, and ecological advancement.
- Modernization of China's system and capacity for governance is achieved.
- China has become a global leader in terms of composite national strength and international influence.
- Common prosperity for everyone is basically achieved.
- The Chinese people enjoy happier, safer, and healthier lives.¹³⁷⁷

Xinhua Net Report dated **May 12, 2019** titled "**Revenue of China's electronic information manufacturing industry up in Q1**" mentioned that revenue of China's electronic information manufacturing industry rose 6.3 percent year on year in the first quarter of 2019, official data showed. The sector registered a 7-percent slump in profits as the operating costs gained 6.2 percent year on year during the period, according to the **Ministry of Industry and Information Technology (MIIT)**.¹³⁷⁸

Xinhua Net News Item dated **June 14, 2019** titled "**China launches blue books on electronic information engineering**" mentioned that China has released a series of blue books on the country's electronic information engineering development and research,

¹³⁷⁷ Excerpts from Xinhua Net report dated October 14, 2017 titled "China Focus: Xi unveils plan to make China "great modern socialist country" by mid-21st century" edited by Liangyu, Available online at URL: http://www.xinhuanet.com/english/2017-10/18/c_136688933.htm

¹³⁷⁸ Excerpts from Xinhua Net Report dated May 12, 2019 titled "Revenue of China's electronic information manufacturing industry up in Q1", edited by Liangyu, available online at URL: http://www.xinhuanet.com/english/2019-05/12/c_138052827.htm

according to China Science Daily. The books include four volumes concerning integrated circuits, deep learning, industrial Internet and Internet Protocol version 6 (IPv6), said the newspaper. The writing process began in 2015, with an aim to analyse the annual science and technology development of electronic information and relay news about domestic and overseas annual breakthroughs and remarkable achievements in electronic information.¹³⁷⁹

Xinhua Net News Item dated August 21, 2019 titled “Robotics industry sees booming growth in China” mentioned that industrial robot production in China reached 148,000 pieces in 2018, accounting for more than 38 percent of the world's total, according to a Chinese official at the 2019 World Robot Conference. The power of robots is on full display at the conference held in Beijing where more than 700 exhibits of the latest robot technologies and products are on display. There are expected to be more than 130 robots per 10,000 people in China by 2021, according to the International Federation of Robotics.¹³⁸⁰

Xinhua Net News report dated October 14, 2019 titled “China's electronic information manufacturing sees revenue growth in Jan.-Aug” has mentioned that revenue of China's electronic information manufacturing industry rose 5 percent year on year in the first eight months of 2019. The sector registered a 2.7-percent slump in profits as operating costs gained 4.9 percent year on year during the period, according to the Ministry of Industry and Information Technology (MIIT). Fixed asset investment of the industry grew 11.1 percent year on year, 0.6 percentage points higher than the period of Jan.-July, MIIT data showed.¹³⁸¹

Xinhua Net News Item dated November 21, 2019 titled “China has 113,000 5G base stations: MIIT minister” mentioned that China has built 113,000 5G base stations and the number is expected to reach 130,000 by the end of the year, according to Miao Wei, minister of industry and information technology at the ongoing 2019 World 5G Convention in Beijing. "There have been 870,000 subscribers to the 5G packages, and the development momentum is good," said Miao, who added that 5G is of great significance to promote the development of the digital economy and its deep integration with the real economy. Themed "5G changes the world, 5G creates the future," the 2019 World 5G Convention lasted till November 23, 2019.¹³⁸²

Xinhua Net News updated on February 15, 2020 titled “China's electronic information manufacturing expands in 2019” mentioned that China's electronic information manufacturing sector saw steady expansion in 2019. In 2019, China's electronic information manufacturing industry's designated scale increased 9.3 percent in added value year on year, down 3.8 percentage points from a year ago, according to the Ministry of Industry and Information Technology (MIIT). Companies above

¹³⁷⁹ Excerpts from Xinhua Net News Item dated June 14, 2019 titled “China launches blue books on electronic information engineering” edited by Yang Yi , available online at URL:

http://www.xinhuanet.com/english/2019-06/14/c_138143387.htm

¹³⁸⁰ Excerpts from Xinhua Net News Item dated August 21, 2019 titled “Robotics industry sees booming growth in China”, available online at URL: http://www.xinhuanet.com/english/2019-08/21/c_138325955.htm

¹³⁸¹ Excerpts from Xinhua Net News report dated October 14, 2019 titled “China's electronic information manufacturing sees revenue growth in Jan.-Aug”, available online at URL:

http://www.xinhuanet.com/english/2019-10/14/c_138469003.htm

¹³⁸² Excerpts from Xinhua Net News Item dated November 21, 2019 titled “China has 113,000 5G base stations: MIIT minister”, available online at URL: http://www.xinhuanet.com/english/2019-11/21/c_138572698.htm

designated size in 2019 saw their revenue expand 4.5 percent year on year, MIIT data showed. Profits in the sector went up 3.1 percent while the operating costs rose 4.2 percent compared with the same period a year ago.¹³⁸³

Xinhua News Item dated **April 27, 2020** titled “**China's electronic information engineering sector faces 16 key tasks**” reported that sensing, cyber security, new generation infrastructure are among a total of 16 fields that have been listed as key tech-challenges to China's electronic information engineering sector, said in the report released by China Academy of Engineering (CAE). The 16 fields are micro-electronics and optoelectronics, optical engineering, sensing, measurement and instrument, electromagnetic space, network and communication, cyber security, hydro-acoustic engineering, electromagnetic field and electromagnetic environment effects, control, cognition, computer system and software, computer application, industrial software system, significant emergency response and new generation infrastructure.

The corona virus pandemic is profoundly shifting the global political economy and social structure. The information technology sector should move faster as the strategic, foundational and leading industry which concerns a country's economy and people's livelihoods, said Chen Zuoning, academician and deputy director with the CAE.¹³⁸⁴

8.7.6 Energy

*China's Information Office of the State Council issued two White Papers on Energy in 2007 and 2012; the relevant texts have been highlighted under the sub-heading Energy 8.7.6 to understand the China's Energy policies and initiatives. Further, **China Energy Storage Alliance (CNESA)** report on “**Energy Storage Industry White Paper 2019: Summary Version**” gives out highlights the China's energy prospects.*

8.7.6.1 White Paper on China's Energy Conditions and Policies, 2007

*China's Information Office of the State Council issued the country's first ever white paper entitled “**China's Energy Conditions and Policies**” in December 26, 2007. The document, composed of eight chapters, points out that China, as an irreplaceable component of the world energy market, plays an increasingly important role in maintaining global energy security. The excerpts of the white paper are given below:*

Preface

- I. **Current Situation of Energy Development**
- II. **Strategy and Goals of Energy Development**
- III. **All-round Promotion of Energy Conservation**
- IV. **Improving the Energy Supply Capacity**
- V. **Accelerating the Progress of Energy Technologies**
- VI. **Coordinating Energy and Environment Development**
- VII. **Deepening Energy System Reform**
- VIII. **Strengthening International Cooperation in the Field of Energy**

¹³⁸³ Excerpts from Xinhua Net News updated on February 15 2020 titled “China's electronic information manufacturing expands in 2019”, available online at URL: http://www.xinhuanet.com/english/2020-02/15/c_138786358.htm

¹³⁸⁴ Excerpts from Xinhua News Item dated April 27, 2020 titled “China's electronic information engineering sector faces 16 key tasks” edited by Huaxia , available online at URL: http://www.xinhuanet.com/english/2020-04/27/c_139012387.htm