

Translation



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EMERGING TECHNOLOGY

The following plan is one example of how local PRC governments are implementing China's "military-civil fusion" strategy, which encourages the Chinese military to tap into private-sector innovation and allows private companies to commercialize select military innovations. Like other PRC industrial policies, this local plan calls for the government to aid the expansion of leading private companies. Unlike many other military-civil fusion strategies, which focus on the high-tech sector, this one describes how local low-tech industries—such as firefighting equipment, agricultural produce, and traditional Chinese herbal cures—can support the military. Note that although the Communist Party in recent years has drastically cut back on its use of the term "military-civil fusion"—2021's 14th Five-Year Plan Outline omits the phrase entirely—this local plan continues to use this terminology.

Title

Xianning City Action Plan for In-Depth Development of Military-Civil Fusion (2021-2025) (Revised Draft)
咸宁市军民融合深度发展行动方案 (2021-2025) (修改稿)

Source

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The "14th Five-Year Plan" period [2021-2025] is the key five-year period during which military-civil fusion (军民融合) in Hubei will transform from preliminary fusion to deep fusion, thereby achieving leapfrog development. It is an important five-year period during which Hubei will move to the forefront of the country in transforming its economic development model, work hard to write a new chapter in high-quality development for the new era, and build socialist modernization in an all-round way. In order to further strengthen Xianning's core position in the development of military-civil fusion in Hubei and to open up a new era in the development of Xianning's military-civil fusion, we have formulated this action plan based on the *Opinions of the Hubei Provincial Party Committee on the Implementation of the "Outline of the Military-Civil Fusion Development Strategy"*, the Hubei Provincial "14th Five-Year

Plan" for the Development of Military-Civil Fusion, and the Xianning City National Economic and Social Development [Plan].

I. Overall Requirements

(i) Guiding Ideology

Guided by Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era and the spirit of the 19th Party Congress and the Second, Third, Fourth, and Fifth Plenums of the 19th Central Committee, we will fully implement the Military Strategic Directive for a New Era, Xi Jinping Thought on Building a Strong Military, the spirit of General Secretary Xi Jinping's important expositions on the development of military-civil fusion and of his important speech during his inspection of Hubei, grasp the new stage [of development], implement the new concept [of development], and build the new [development] pattern. Guided by improving the quality and efficiency of national defense and military modernization, promoting the simultaneous improvement of national defense strength and economic strength, and building an integrated national strategic system and capabilities, we will earnestly implement the provincial party committee and the provincial government's "post-epidemic revival" and high-quality development strategic deployments, accelerate the formation of a new pattern of in-depth development of military-civil fusion in Xianning, and help promote the construction of Xianning into a growth pole (增长极) for Hubei's characteristic industries (特色产业) and a transformative development demonstration zone.

(ii) Basic Principles

Give priority to the military, coordinate development. We adhere to "give priority to the military, put the military first" ("军事优先，军为首要"), strengthen demand guidance (需求牵引), raise the position of politics, improve top-level design, integrate resources and forces, serve the construction of an integrated national strategic system and capabilities, and promote the coordinated development of military-civil fusion.

Joint construction and shared benefits, overall development. We will adhere to the joint construction, shared benefits, and joint use of important infrastructure, major science and technology (S&T) infrastructure platforms, key talent teams, and key industrial parks and bases, military-local integration (军地一体) and the integration of peacetime and wartime mobilization,¹ and the promotion of the overall development of military-civil fusion.

Be the first to try things, make development innovative. We adhere to bold practice and exploration concerning "breaking down walls, breaking the ice, and removing barriers," courageously being the first to try things, deepening institutional and mechanism reform, strengthening policy and system innovation, innovating models

¹ Translator's note: Chinese media began using the term "integration of peacetime and wartime mobilization" (平战结合) during the COVID-19 pandemic. The phrase typically refers to the use of all-out military mobilization-style efforts to allow hospitals to respond effectively to surges in COVID-19 cases without neglecting their normal "peacetime" functions.

of military-local cooperation, and promoting the innovative development of military-civil fusion.

Two-way interaction, in-depth development. We adhere to military-local cross-cutting, cross-regional, cross-departmental, and cross-domain two-way alignment of supply and demand, two-way flow of talent, two-way pooling of funds, two-way conversion of S&T achievements into practical applications, and two-way industry linkages and the promotion of in-depth development of military-civil fusion.

(iii) Development Goals

We will strive to build a military-civil fusion development system with smooth demand alignment, complete institutions and mechanisms, and efficient work and operations by 2025 and create a "Hubei benchmark" ("湖北标杆") for the in-depth development of military-civil fusion featuring all factors of production (要素), multiple fields, and high efficiency. The specific goals are as follows:

Achieve a significant increase in the ranking of the province's comprehensive capabilities in military-civil fusion and form a Xianning Model of military-civil fusion. Make new breakthroughs in the innovation and development of key areas of military-civil fusion, achieve new progress in the development of emerging fields by leaps and bounds, and promote the upgrade of Xianning's comprehensive capabilities for military-civil fusion. Achieve a positive trend in the institutions, mechanisms, policies, and systems of military-civil fusion, continuously improve the level of governance modernization, and form a Xianning Model for the in-depth development of military-civil fusion.

Achieve a significant improvement in the ability to accumulate strategic potential (战略蓄势) and build up latent force (张力) in Xianning for military support. Build Xianning into a region that gathers factors of production and accumulates the strategic potential of the "Four Bases" ("四基地"): a base for the exertion of strategic force, a strategic rear support base, a national strategic channel hub base, and an essential guarantee (必保) base for strategic security; and highlight the latent force of Xianning in non-war military actions (非战争军事行动).

Achieve a significant improvement in end-to-end assurance capabilities for military logistics and consolidate a fulcrum of military logistics support in Xianning. Base ourselves in Xianning, orient to Hubei, and radiate [influence] to the entire territory and to distant areas and support the construction of Hubei's modern military logistics system. Rely on the construction of emergency equipment production functional areas (功能区) and military logistics scientific research innovation and talent training functional areas to create a comprehensive military logistics support chain that integrates scientific research, production, procurement, warehousing, delivery, and recycling and build a fulcrum for the construction of key areas for the development of national (Hubei) military logistics and military-civil fusion in Xianning.

Achieve significant improvements in military-civil collaborative innovation capabilities and build Xianning into a strategic bastion for the development of

emerging industries. Strive to double our capacity for national defense scientific research and equipment manufacturing in fields such as high-tech composite materials, emergency equipment, and military medicine, raise the R&D investment strength of key enterprises involved in military-to-civilian conversion (军转民) and private sector participation in the military sector (民参军) to 2.5%, and strive to cultivate 5-8 military-civilian dual-use S&T innovation platforms and 20 high-tech enterprises involved in military-civil fusion. Strive to raise the output value of the military-civil fusion industry above 20 billion [Chinese yuan Renminbi (RMB)], of which new materials for military use exceed 2 billion RMB, intelligent equipment for military use exceeds 3 billion RMB, and emergency response and safety exceeds 5 billion RMB. Create 1-2 new provincial-level military-civil fusion demonstration bases, create a reserve of 50 military-to-civilian conversion enterprises and private enterprises that participate in the military sector, cultivate 5-10 leading private enterprises that participate in the military sector with valuations over 500 million RMB, and create 5 new "hidden champion" enterprises in specific industry sectors. Establish the Hubei Provincial Military-Civil Fusion Emerging Industry Core Area (河北省军民融合新兴产业核心区).

(iv) Overall Layout

Following the general principles of seizing opportunities, relying on advantages, highlighting key points, taking the overall situation in hand, and performing in-depth integration, we will actively align with Hubei's "Led by One Master, Driven by Two Wings, and Coordination by All Regions" ("一主引领、两翼驱动、全域协同") regional development layout. Based on the development needs of military-civil fusion in Xianning City and the spatial distribution of existing industry resources, we will propose an overall layout for Xianning's military-civil fusion development characterized by "two bases, three clusters, and multiple points."

Two bases: First, we will strengthen and optimize the Military-Civil Fusion Industry Demonstration Base. Specially, we will rely on companies such as Haiwei (海威) and Bolima (波利玛) to support the development of the Hubei Provincial Military-Civil Fusion Composite Materials Industry Alliance, focusing on the development of new materials industries in the aviation and marine fields; we will rely on companies such as Jinli Hydraulics (金力液压), Tongfa Electromechanical (同发机电), and Huarui Electromechanical (华锐机电) to promote the integrated development of the intelligent equipment industry; and we will rely on companies such as Hope-Full Medical (厚福医疗), Kingstar Medical (金士达医疗), and AGCO Medical (爱科医疗) to lead the development of the life and health industry. Second, we will rely on the Chibi National Emergency Response Industry Demonstration Base. We will focus on emergency response equipment manufacturing, emergency services, emergency response technology innovation, and emergency response culture and tourism, and concentrate on building "three parks and one city" to promote the integrated development of the emergency response industry.

Three clusters: We will focus on building three industrial clusters of new materials, intelligent equipment, and biomedicine. We will rely on leading enterprises

such as Haiwei, Bolima, and Pamica Technology Corporation (平安电工) to form a distinctive regional new material industry cluster in the High-Tech Zone, Tongshan County, and Tongcheng County. We will rely on key enterprises such as Haiwei, CSSC Emergency Response (中船应急), Tongfa Electromechanical, Jinli Hydraulics, Ming Cheng Precision Machinery (铭程精密), Oulang Machinery (欧朗机械), and important platforms such as the Chibi National Emergency Response Industry Demonstration Base and Fragrant City Institute of Intelligent Electromechanical Industry and Technology (香城智能机电产业技术研究院), we will strive to build intelligent equipment industry clusters for marine and aviation equipment, electromechanical equipment, and emergency transportation equipment. Under the direction of Houfu Medical, Furen Jinshen Pharmaceutical (福人金身药业), Kingstar Medical, AGCO Medical, Winner Medical (稳健医疗), Zhongjian Medical (中健医疗), Guweiqing (古苇清), and other enterprises, we will rely on the High-Tech Zone, Xian'an, Tongcheng, Chongyang, and other biotech industry bases to build an integrated development cluster for biomedicine, traditional Chinese medicine (TCM), medical and sanitary materials, and other industries.

Multiple points: Facing the entire scope of Xianning's "one district, one city, and four counties" and combining the agricultural characteristics and advantages of each region, we will "proceed from multiple points" ("多点发力") to promote the integrated development of the production, processing, storage, and delivery of green vegetables, grain and oil non-staple food, cold chain food, and other products, and accelerate the construction of the Xianning Sub-Center of Centralized Non-Staple Food Cultivation.

II. Security Initiatives

(i) Promote the innovative development of military-civil fusion in key areas

Focusing on the key areas of military-civil fusion, such as infrastructure, national defense S&T industry, military-local S&T collaborative innovation, two-way training and exchange of military and local talents, joint logistics assurance capabilities, and national defense mobilization, we will concentrate on advantages, find the right directions, open up our thinking, and dare to innovate, we will improve fusion mechanisms, innovate fusion formats, and extend the scope of integration, and we will continuously improve the overall level of innovation and development.

1. Promote military-civil joint construction, shared benefits, and joint use

With the goals of implementing national defense requirements, realizing efficient multimodal transportation, and ensuring rapid transportation and delivery, we will make overall plans for the joint construction, shared benefits, and joint use of infrastructure, and focus on the promotion of transportation and logistics infrastructure construction.

——Uphold infrastructure construction to implement national defense needs. Build new ports, highways, civil airports, important strategic railways, and other transportation readiness infrastructure, strengthen construction project supervision in accordance with relevant regulations, implement joint military-local acceptance (验收),

strictly implement national defense requirements, and meet military-use standards. For infrastructure urgently needed by the military such as highways, railways, waterways, and oil and gas pipelines connecting internal military bases, strategic reserve bases, military industrial bases, and strategic transportation networks outside cities, for such infrastructure, we will use high-standard reconstruction, expansion, and upgrading to broaden and deepen comprehensive projection combat readiness support channels and strengthen their ability to support and provide assurance for military needs. Relying on the construction of "three horizontal and two vertical" three-dimensional comprehensive transportation channels, the "one river and three waterways" channel network, river terminals, and port railways, we will fully incorporate the construction of national defense transportation into the comprehensive transportation system of Xianning City and actively integrate this into Hubei Province's strategic and operational transportation network.

——Promote the construction of multimodal transport "node" projects. We will accelerate the construction of the Chibi Yangtze River Bridge, the Paizhouwan Yangtze River Bridge, and their connecting lines, break through the bottleneck of river transportation, and improve the bridge-road connection network; focus on promoting the planning and construction of the Tongjiang Wharf in Paizhouwan and construct a seamless transfer network for Xianning water transportation; accelerate the construction of Xianning Airport, actively seek cooperation with Wuhan Shanpo Airport, and jointly build an air transportation joint assurance system with "military for civilian use, civilian participation in military armaments, smooth coordination, and complementary advantages" ("军为民用、民为军备、协调顺畅、优势互补"); focus on promoting the construction of Jiayu Port's converging and dispersing railways and highways and improve the port's converging and dispersing transportation network; and rely on the Xianning Station Freight Yard Relocation Project to promote the construction of new railway logistics parks, port railways, and port connection projects and strengthen effective linkages with high-tech industrial parks, logistics parks, and docks.

——Vigorously promote the construction of a rapid transportation backbone network. We will focus on promoting the Wuhan-Xianning-Nanchang high-speed railway, the railway freight yard and port-linking railway project, the Changde-Yueyang-Wuchang (常岳昌) railway, the Xianning-Yichun-Ji'an (咸宜吉) high-speed railway, and super-high-speed railway experimental section construction, and plan and promote the construction of the Xianning-Yueyang intercity railway, Xianning-Huangshi railway, and other high-speed railway projects; actively promote the Wuhan-Xianning Tianzishan Bridge, the expressway of the east extension section of the Chibi Yangtze River Highway Bridge, the Xianning (Tongshan) to Jiujiang (Wuning) Expressway, and the South Outer Ring Expressway of Xianning City, improve the regional expressway network, and form a road network structure with smooth internal circulation and rapid connections. We will initiate the preliminary studies for the Tongcheng-Xiushui Expressway and the Paizhouwan Yangtze River Highway Bridge project, continue to strengthen the construction of expressway connection and

conversion networks, build intra-provincial and inter-provincial express passages, and ensure that the demands of national defense transportation capacity can be met.

—Promote the construction of two-way integration for measurement infrastructure. We will rely on the Xianning Public Testing and Inspection Center and the metrology technical institutions of various counties and cities to strengthen local metrology, standards, testing and inspection, and certification and accreditation work, further accelerate the construction of social public measurement standards, and meet the requirements on metrology technical assurance capabilities in the service of military-civil fusion. We will support qualified enterprises as they establish the highest enterprise measurement standards, satisfy enterprises' own needs for the verification of special measuring instruments, encourage all units to transfer and share metrology resources in an orderly manner, further optimize the planning and layout of existing metrology and quality management resources, strengthen technical communication between the military and localities, and form a military-civil integrated metrology system.

Box 1 Construction foci and layout in the infrastructure field	
Key units	Xianning Development and Reform Commission, Xianning Transportation Bureau, Xianning City Urban Development Group
Key projects	Promote the Wuhan-Xianning-Nanchang high-speed rail project, Xianning freight yard relocation and new railway logistics park project, Wuhan-Xianning-Yueyang project, Wuhan-Xianning-Jiujiang project, Huangshi-Xianning-Honghu project, Yangxin-Xianning-Yueyang project, Yangtze River Golden Waterway Comprehensive Transportation Belt project, Wuhan-Xianning Tianzishan Bridge project, Chibi Yangtze River Highway Bridge project, Paizhouwan Yangtze River Highway Bridge project, South Outer Ring Expressway in Xianning City, Xianning (Tongshan) to Jiujiang (Wuning) Expressway project, and Tongcheng to Xiushui Expressway project
Key regions	Tongshan County, Chongyang County, Xian'an District, Chibi City, Jiayu County, Tongcheng County

2. Promote breakthrough development in the national defense S&T industry

We will deepen the reform of institutions and mechanisms, enhance the development vitality of military industry enterprises, and increase the momentum for private enterprises that participate in the military sector. Based on the advantages of Xianning's national defense S&T industry, we will strengthen military industry capacity building and improve support and new material development capabilities. We will

promote industrial innovation and development and strengthen and expand traditional advantageous (优势) industries.

——Deepen the reform of institutions and mechanisms. We will promote the innovation of development mechanisms for military-civil fusion enterprises, explore suitable financing models for listing and financing, mutual equity participation, mergers and acquisitions, and asset reorganization based on the characteristics of industries and enterprises, encourage enterprises to develop funds, bonds, public-private partnership (PPP) models, and other methods, actively explore and innovate investment and financing platforms that support the development of military-civil fusion in the field of national defense S&T, accelerate the introduction of strategic investment and industrial investment and the implementation of innovative development models such as technology shares (技术入股) and employee shareholding, and sound governance structures, form a modern enterprise system that conforms to the market economy, and create an organizational structure and operation management system adapted to the comprehensive development of military-civil fusion. Focus on adjusting and improving the market access system centered on the principle of "competitive neutrality" and encourage more qualified enterprises, talents, technology, and capital to participate in the national defense S&T industry through internal matchmaking and external recommendation. We will strengthen access services such as security clearance (保密) qualification certification, scientific research and production license certification, and qualification directory certification for private enterprises, carry out policy consultation and business training, guide qualified private enterprises with advantages to actively participate in R&D and production in the military products market, effectively bring the benefits of government investment to bear, and vigorously guide financial institutions and social capital² to invest in national defense and military industries. We will innovate military-local cooperation models for defense scientific research and production, enhance the awareness of joint construction and shared benefits, accelerate the construction of military-local integration, and assist breakthrough development in the defense S&T industry.

——Strengthen military industry capacity building. Focusing on the fact that the development of military-civil fusion in Xianning's defense scientific research and production has a small scale, poor foundation, and few leading companies, we will focus on improving high-end parts and components in the naval and marine, aerospace, and arms industries as well as core capabilities in the development of new materials. With regard to naval and marine engineering, we will continue to improve R&D and manufacturing capabilities for high-performance and super-large composite materials for ships; with regard to aviation, we will continue to consolidate the advantages of computer numerical control (CNC) machining of aluminum alloy

² Translator's note: The Chinese term 社会资本, translated literally as "social capital," and its synonyms "social funding" (社会资金), "social investment" (社会投资), and "social financing" (社会融资), refer to any source of funding outside of government budget outlays. These terms encompass investment by private individuals and private institutions. However, investment from state-funded entities such as state-owned enterprises (SOEs), including state-run banks, also falls under the umbrella of "social capital."

components and focus on breaking through the bottlenecks of new materials R&D; with regard to armaments and equipment, with the support of the Tongfa Electromechanical high-performance ultra-quiet generator set production line project, we will maintain our leading position of military generator set technology in China; and, led by the Jinli Hydraulics hydraulic shock absorber production line construction project, we will support the steady improvement of armored vehicle power system supporting products and their technical levels. In the naval and marine, aviation, aerospace, and arms fields, we will actively meet the needs of national defense scientific research and production, fully exploit the military application potential of existing products and technologies from Xianning City, and cultivate a batch of enterprises with military industry reserve potential and stock up a batch of products and technologies.

——Promote industrial innovation and development. We will rely on the Military-Civil Fusion Industry Demonstration Base in the high-tech zone, base ourselves on the existing industrial foundation and ecosystem resource advantages of the Xianning High-Tech Zone, integrate existing resources and achieve development in groups, build a military-university-enterprise (军校企) exchange platform, increase the investment appeal of demonstration bases, achieve the coordinated development of upstream and downstream industries around defense scientific research and production, and form an industry cluster effect. According to the overall goal of strengthening and improving the Military-Civil Fusion Industry Demonstration Base, on the basis of the overall layout of military-civil fusion development in Xianning City that focuses on building "two bases, three clusters, and multiple points," and with a focus on supplementing, strengthening, solidifying, and stabilizing production chains, we will intensify the investment appeal of military-civil fusion enterprises and attract a number of major military-civil fusion projects to set up shop here.

We will guide and encourage enterprises to intensify their technological transformations, strengthen S&T R&D, and accelerate product upgrading and replacement, focus on supporting the technical upgrading and capacity expansion of Jinli Hydraulics and Tongfa Electromechanical, actively explore the dual-use path of products and technologies, and focus on the development of pilot projects for pillar industries centered on intelligent equipment manufacturing; focus on cultivating Haiwei, Huarui, Bolima, Huaning Anticorrosion (华宁防腐), and other companies, vigorously promote the development of the Hubei Provincial Military-Civil Fusion Composite Materials Industry Alliance, encourage in-depth cooperation with universities and scientific research institutes, support a group of advantageous private enterprises that participate in the military sector, build industrial clusters for the R&D and manufacturing of ships, aviation precision components, and new composite materials, and deepen military-civil fusion in the naval, marine, aviation, and aerospace fields; and concentrate on the shortcomings of the production chain, focusing on internal education and external recruitment by supporting enterprises in the heat treatment and electroplating process fields, use public technology R&D, inspection and testing, and the construction of a public service platform for pilot trials as supports, promote the construction of supporting projects for the development of military-civil

fusion in national defense scientific research and production in the high-tech zone and the demonstration bases, and supplement and then strengthen [production] chains.

Box 2 Construction foci and layout in the defense S&T industry field	
Key units	Wuhan Princo New Materials Co., Ltd. (武汉蒲瑞科新材料有限公司), Hubei Tongfa Electromechanical Co., Ltd., Xianning Haiwei Composite Material Co., Ltd., Xianning Huarui Electromechanical Co., Ltd., Hubei Jinli Hydraulic Co., Ltd., and the Xian'an Branch of Beijing Oulang Machinery Co., Ltd.
Key projects	High-performance environmentally friendly composite material product industrialization project, Phase II of the Tongfa construction project, the advanced technology production line project for marine super-large composite material structures, the manufacturing project for thin-walled high-strength aluminum alloy precision components for aviation and ships, the hydraulic shock absorber production line construction project, and weapon model mechanical parts production and processing
Key regions	Xianning High-Tech Zone, Chibi City, Xian'an Economic Development Zone

3. Establish a military-civil S&T collaborative innovation ecosystem

We will focus on the entire innovation chain covering R&D, protection, incubation, transformation, and promotion of military-civilian dual-use technologies, build a military-civil S&T collaborative innovation ecosystem featuring the integration of innovative elements, rich innovation advantages, intensive innovation activities, clusters of innovative enterprises, and deep participation of multiple actors from the military, government, industry, academia, research institutes, and users (军政产学研用), focus on breaking open "chokepoint" (卡脖子) technical bottlenecks, and open up a two-way channel for the conversion of S&T achievements into practical applications.

——Build a collaborative innovation platform. We will give full play to the leading role of a number of military-civil fusion key enterprises such as Xianning Haiwei, CSSC Emergency Response, Jinli Hydraulics, and Tongfa Electromechanical and enhance the joint R&D and innovation capabilities for military-civilian dual-use technologies. We will build a military-civil technology collaborative innovation platform centered on composite materials, emergency response equipment, automobiles, components, and other advantageous military-civil fusion industries, improve public services for the entire innovation chain covering R&D, pilot testing, and application of dual-use technologies, and effectively improve the innovation capabilities for core "chokepoint" technologies. We will use the Huarui Electromechanical Military Support Equipment R&D Center, the Intelligent Electromechanical Industry Technology R&D Platform, and other platforms as the vehicles for military-civil dual-use technology advantage

sharing and encourage universities, scientific research institutes, and large-scale enterprise technology centers to actively participate in the mutual conversion of military and civilian technologies and joint efforts. We will rely on the Xianning High-Tech Military-Civil Fusion Industrial Demonstration Park and the Chibi Economic Development Zone Emergency Response (Safety) Industrial Park, build a number of military-civil S&T collaborative innovation platforms, and comprehensively enhance military-civil S&T collaborative innovation capabilities.

——Promote the conversion of S&T achievements into practical applications. We will promote in-depth "industry-academia-research institute" ("产学研") integration in military industry enterprises and build a technological innovation system of "industry-academia-research institute" integration. We will encourage the coordinated innovation of the troops stationed in Xianning, military industrial enterprises, universities, and scientific research institutes and accelerate the engineering of new technologies. We will intensify cooperation between the troops stationed in Xianning and military industrial enterprises on the one hand and Naval University of Engineering, Hubei University of Science and Technology, and other universities and scientific research institutes on the other, promote cooperation with Huazhong University of Science and Technology, Wuhan University of Technology, and other universities, set our sights on the needs of the military industry market, and create an "industry-academia-research institute" model with local characteristics in Xianning. With the help of the National and Local Joint Engineering Laboratory of Material Radiation Modification Technology of Hubei University of Science and Technology, the National Experimental Training Center of General Medicine (全科医学国家级实验实训中心), and the National Drug Clinical Trial Base (国家药物临床实验基地), we will strengthen the S&T exchange mechanisms between multiple entities and achieve substantial and effective sharing of military and civilian technology supply and demand information.

——Optimize innovation incentive mechanisms. We will improve the systems of innovation achievement management, achievement application and commercialization, and rewards and compensation, establish a categorization and evaluation method guided by S&T innovation quality, contributions, and performance, explore incentive systems and mechanisms for independent innovation and the promotion and application of intellectual property rights (IPR), and stimulate innovation vitality and innovation potential. We will improve innovation coordination mechanisms such as military-civil fusion information sharing and comprehensive assurance support, focus on advancing the alignment of military industry new materials, intelligent equipment, the Internet, life and health, and other industries with military-local supply and demand, and speed up the commercialization of dual-use S&T achievements and new combat capabilities.

Box 3 Plans for the military-civil S&T collaborative innovation ecosystem

Incubation plan: We will promote the in-depth "industry-academia-research institute" integration of military-civil fusion enterprises and build a platform for military-civil collaborative innovation. We will encourage the coordinated innovation of the troops stationed in Xianning, military industrial enterprises, universities, and scientific research institutes, accelerate the development of new technology engineering, strengthen S&T exchange mechanisms, and achieve S&T resource sharing. We will support the joint construction of industrial innovation platforms by institutions of higher education and enterprises. We will give full play to the leading role of a number of military-civil fusion key enterprises and enhance the joint R&D and innovation capabilities for military-civilian dual-use technologies.

Incentive plan: We will improve the systems of innovation achievement management, achievement application and commercialization, and rewards and compensation, establish a categorization and evaluation method guided by S&T innovation quality, contributions, and performance, explore incentive systems and mechanisms for independent innovation and the promotion and application of IPR, and stimulate innovation vitality and innovation potential.

Leading plan: We will promote S&T innovation by enterprises. We will give full play to the leading role of a number of military-civil fusion key enterprises such as Xianning Haiwei, CSSC Emergency Response, Jinli Hydraulics, and Tongfa Electromechanical and enhance the joint R&D and innovation capabilities for military-civilian dual-use technologies. We will focus on the promotion of major S&T innovation projects and strive to make breakthroughs in a batch of core technologies and achieve a batch of original results in advantageous areas of military-civil fusion such as composite materials and emergency response equipment.

4. Promote two-way training and exchange of military and local talents

Focusing on military-local dual-use high-level managerial talents for the military industry, elite technical talents, and operational skill talents to supply the talent needs of troops stationed in the Xianning, military industry enterprises, and key private enterprises that participate in the military sector, we will establish mechanisms for selecting, retaining, and training military and local talents.

——Improve talent recruitment systems. We will establish a shared database of military-civil fusion talents, strengthen talent market allocation through project cooperation and two-way part-time work, actively promote market-oriented allocation methods such as open recruitment and external "headhunting," and accelerate the two-way flow of military and local dual-use talents. We will encourage university professors to take up positions in military industrial enterprises and we will re-employ relevant retired and discharged personnel in some high-tech and vital industries as needed.

——Establish talent training systems. We will enhance the training of young elite talents in military-civil fusion fields and focus on the cultivation of S&T innovation talents in key and core technologies (关键核心技术) and urgently needed talents in key areas. Relying on graduates from superior military logistics programs of universities

such as Hubei University of Science and Technology and Xianning Vocational and Technical College as well as the industrial bases of the Xianning High-Tech Zone, Xian'an, Tongcheng, Chibi, and Jiayu, we will optimize the two-way joint training model of military and local personnel, focus on training personnel in fields related to military logistics such as health and medical services, warehousing and delivery, and emergency response logistics, and continue to send university student non-commissioned officers (NCOs) to the Xianning garrison, the Central Theater Command, and various military services and units. We will support the continuing education of military personnel, promote the improvement and expansion of the professional capabilities of military and local dual-use talents, and provide short-term professional skills training for enlisted personnel to improve their professional qualities.

——Optimize talent assurance mechanisms. We will continue to improve the relevant supporting policies for the assurance of military and local dual-use talents, implement incentive and subsidy mechanisms for talent settlement, living subsidies, living expenses, house purchase subsidies, children's school enrollment, and scientific research project funding. Relying on the Xianning High-Tech Military-Civil Fusion Industrial Demonstration Park and Chibi Economic Development Zone Emergency Response (Safety) Industrial Park, we will build talent apartments, (post) doctoral studios, expert innovation stations, and corresponding living and amenities facilities. We will adhere to the principle of "not asking for everything, but only what we will use" and actively build a talent enclave.

Box 4 Plans for the promotion of two-way military and local talent training

Talent training plan: We will strengthen the cultivation of urgently needed and scarce military and local dual-use talents to build a team of talents. We will increase the training of young elite talents in the fields of military-civil fusion and cultivate and introduce S&T innovation talents who have mastered key and core technologies, and can drive the rapid development of the defense S&T industry and the emerging fields of military-civil fusion. We will focus on cultivating urgently needed emergency response, logistics, and health and medical services professional technical personnel and skilled personnel for military-civil fusion fields and create a team of military and local dual-use personnel with "one specialization and multiple abilities" (一专多能).

Talent concentration plan: We will implement more active, open, and effective military and local dual-use talent selection and incentive policies. We will integrate the selection and recommendation of dual-use talents into the city's outstanding talent selection and recommendation work for coordinated implementation and actively recommend and select outstanding talents to participate in national, provincial, and municipal talent selection and recommendation projects. We will give priority to scientific research projects undertaken by military-local dual-use talents for inclusion in enterprise independent innovation job plans, and high-level talent scientific research project merit-based funding application and favorable funding will be given in the project implementation process.

Talent care plan: We will optimize talent assurance mechanisms. We will continue to improve the relevant supporting policies for the assurance of military and local dual-use talents and implement incentive and subsidy mechanisms. We will issue green cards for outstanding military and local talents and allow high-level talents to enjoy relevant perks. We will adhere to the principle of "not asking for everything, but only what we will use" and actively build a talent enclave.

5. Accelerate the construction of key military logistics areas

Focusing on the military logistics industry system, strategic material reserves, logistics delivery networks, and other key areas, we will expand the functions of the Emergency Response Equipment Production Functional Area and the Scientific Research Talent Training Functional Area and optimize their layouts, plan the Xianning Sub-Center of Centralized Non-Staple Food Cultivation, and deeply integrate it into the construction of military-civil fusion key areas for military logistics in Hubei Province.

——Build a logistics industry system. Relying on the Chibi National Emergency Response Industry Demonstration Base and CSSC Emergency Response, and other specialized emergency equipment materials and service enterprises, we will focus on the three major sectors of water rescue equipment, emergency response traffic engineering equipment, and firefighting equipment, and accelerate the construction of projects such as the industrialization of intelligentized (智能化) emergency response equipment and the Chibi City Emergency Rescue Materials and Equipment Storage Warehouse. We will promote the concentration, agglomeration, and cluster

development of related and supporting industries and comprehensively build an emergency rescue assurance base and a national emergency response industry demonstration base in Hubei Province that focus on emergency equipment, emergency supplies, and emergency rescue services, and feature rapid response, timely rescue, safety and professionalism, and strong assurance. We will exploit the resource advantages of Xianning's green agriculture and byproducts, improve the supply chains of non-staple food providers such as Fude Vegetables (富德蔬菜) and Jia'an Holdings (嘉安控股), and encourage non-staple food suppliers to enter the non-staple food cultivation directory of the PLA garrison in Hubei.

——Strengthen the strategic reserve function. Relying on key units such as Division No. 775 (七七五处) [of the National Food and Strategic Reserves Administration], Jiayu Cold Chain Logistics (嘉鱼冷链物流), and Yili Technology Tongshan (易立科技通山), we will actively promote key projects such as the Division No. 775 National Defense and Military Industry Logistics Base, the Jia'an 150,000-ton cold storage agricultural product distribution center, and the Chibi City emergency rescue materials and equipment storage warehouse, and focus on the construction of Xianning grain and oil non-staple food, cold chain food, and emergency supplies strategic reserve bases. We will prepare emergency food reserves, plan to build regional food emergency security centers in cities and counties that integrate emergency storage, processing, logistics, transportation, and distribution, improve food emergency supply capabilities, and establish a complete system that integrates military-use grain production, marketing, processing, and services. We will strengthen the refurbishment and rationing of cold chain logistics equipment, improve the emergency reserve system of Xianning, and improve emergency response assurance functions such as grain storage, processing, and quality inspection.

——Improve the strategic delivery network. Relying on the transportation function of the comprehensive transportation belt of the Yangtze River Golden Channel, we will integrate existing and planned arterial highways, railways, and other channel resources, accelerate the construction of a comprehensive transportation channel that integrates multiple transportation methods, improve the three-dimensional comprehensive transportation channel of "two verticals, two horizontals, and one belt," and create a three-dimensional strategic delivery hub. We will accelerate the construction of branch railways such as the Xianning Railway Freight Station, continue to promote the construction of Chibi Yangtze River Highway Bridge and Hanpai Yangtze River Bridge, further expand the development space of Paizhouwan Wharf Port Area, and open up the Xianning River Crossing Channel. Relying on the completion of the Ezhou-Xianning Expressway and its opening to traffic, we will actively connect with Ezhou SF Cargo (顺丰货运) Airport, plan an airport economic zone, compete for an SF Express (顺丰) distribution location in Xianning, and develop aviation logistics. We will accelerate the effective connection of Jiayu Port's converging and dispersing railways, highways, logistics channels, and nodes, further improve the port's convergence and dispersion network functions, and give full play to the convergence, dispersion, and radiation effects of integrated transportation.

Box 5 Construction focii and layout in the military logistics field	
Key units	Hubei Jia'an Holdings Jiayu Cold Chain Logistics Co., Ltd., Division No. 775 of the Hubei Bureau of the National Food and Strategic Reserves Administration, CSSC Emergency Response, Hubei University of Science and Technology, and the Tongcheng County Xinsanhui Green Produce Professional Cooperative (通城县新三汇绿色农产品专业合作社)
Key projects	Jia'an 150,000-ton Cold Storage Agricultural Product Distribution Center project, Division No. 775 National Defense and Military Industry Logistics Base, Chibi City Emergency Rescue Materials and Equipment Storage Warehouse, Hubei University of Science and Technology Talent Joint Training Strategic Cooperation Project, Xianning Sub-Center of Centralized Non-Staple Food Cultivation, and Tongcheng County Xinsanhui Agriculture and Byproducts Cold Chain Logistics Construction project
Key regions	Chibi City, Jiayu County, Xian'an District, Tongcheng County

6. Improve the construction of the national defense mobilization assurance system

Focusing on areas such as national defense mobilization information system construction, professional assurance team construction, and infrastructure construction, we will continuously improve national defense mobilization systems and mechanisms, enhance national defense mobilization assurance capabilities, and create a national defense mobilization assurance system with Xianning characteristics.

——Optimize the construction of professional assurance teams for national defense mobilization. We will align with the upper-level planning, use actual needs as the basis, and determine the requirements and bases for the construction of various professional assurance teams. Based on the "Eight Measures" for the preferential treatment for university students who join the army, we will continue to smooth out the "Four Priorities" green channels for university students who join the army. We will introduce professional talents in an orderly manner and improve the allocation, training, management, and use mechanisms for national defense mobilization professionals in counties, cities, and districts. We will deepen national defense education for the whole people, implement normalized national defense education, strengthen the awareness of combat readiness and national defense concepts of individuals and units, and fully mobilize the enthusiasm and initiative of the professional assurance teams of all units.

——Improve local national defense mobilization laws and regulations. On the basis of the *National Defense Mobilization Law of the People's Republic of China*, the *Comprehensive Plan for Mobilization of the Xianning City Information Industry*, and the *Emergency Plan for the Communication Assurance of Xianning City*, and taking the actual situation of Xianning City into account, we will issue supporting laws and policies, strengthen the responsibilities of relevant departments, further regulate the

responsibility of social teams (社会团队), business units, and citizens to participate in national defense construction, and strive to form a system of characteristic laws and regulations that is coordinated with economic and social development and unified with the requirements of national defense construction.

——Improve national defense mobilization mechanisms that span departments, regions, and fields. We will explore the establishment of a military-local joint mobilization command organization with the government as the main entity, the State Commission for National Defense Mobilization as the backbone, and the industry system as the support, and organize command relationships, standardize the command process, and enhance command capabilities. We will improve rapid linkage systems and mechanisms with transportation, communications, energy, logistics, medical, security, and other departments and optimize early warning and rapid response mechanisms. We will establish a normalized "emergency and war response mobilization frontline support" ("应急、应战动员支前") mechanism with the city's key potential units, improve the emergency linkage mechanisms with scientific research departments, promote infrastructure construction for national defense mobilization and the upgrading of element reserve capabilities, and continuously meet the needs of national defense modernization construction. We will continue to pay attention to the establishment of sound national defense mobilization organizations and institutions, satisfactorily implement full-time staffing of comprehensive offices and specialized offices at the city level, establish a "joint investigation, joint supervision, joint review, joint examination" mechanism for liaison and cooperation with local statistical, supervision, and other departments, and regularly supervise implementation and conduct follow-up evaluation.

(ii) Accelerate the leapfrog development of military-civil fusion in emerging fields

Based on Xianning's unique industrial resources, technological advantages, product features, and talent advantages, we will seize the strategic window of military-civil fusion and development opportunities in emerging fields, focus on cyberspace, biomedicine, new energy, new materials, artificial intelligence (AI), and other fields, and accelerate the leapfrog development of military-civil fusion in emerging fields.

1. Support the development of military-civil fusion in the marine field using the naval and marine engineering equipment industry

We will give full play to the unique advantages of Xianning's unique advantages in the field of naval and marine engineering equipment composite materials, take a specialized, in-depth, and refined approach in specific sectors, promote the development of military-civil fusion in the naval and marine field, and support the construction of a new green industry system in Xianning.

——Improve new technologies for naval composite materials. Aiming at a materials-first strategy, with Haiwei Composite Material Products Co., Ltd. (海威复合材料制品有限公司) as the leading enterprise, we will develop core technologies of naval

and marine engineering equipment materials and enhance assurance capabilities for key materials; we will speed up the R&D of composite armor, make breakthroughs in substituting domestically produced high-strength aramid fiber for imports, and establish a leading position in the development and application of domestic composite armor; relying on Wuhan Haiwei Naval and Marine High-Tech Research Institute (武汉市海威船舶与海洋高新技术研究院) and with high performance and light weight as the key directions, we will promote major breakthroughs in new technologies for composite naval materials; supported by the Hubei Provincial Military-Civil Fusion Composite Materials Industry Alliance, we will strengthen technical cooperation with research institutes such as Naval University of Engineering and China Shipbuilding Industry Corporation (CSIC) Research Institutes 702 and 708 and vigorously develop the R&D and application of high-strength, sound-transmitting, wave-transmitting, sound-absorbing, and other military composite materials; and we will promote the mutual conversion of new technologies for composite naval materials between the military and civilian fields and gradually realize the industrialization of composite naval materials.

——Promote the R&D of structural parts and components. Relying on Haiwei Composite Material Products Co., Ltd., we will promote major breakthroughs in the key technology of large-scale composite propeller structure design and molding and develop AI production processes for high-strength buoyancy materials, composite propellers, and other special-shaped structural products; we will actively carry out R&D on ship superstructures, including bulwarks, cabins, various radomes, antenna masts, foldable (disassemblable) plates, enclosures, and other ship surface structures, continuously improve the material performance and technical level of ship structural components and materials, and increase the application proportion and scope of composite naval materials; and led by Huarui Electromechanical Co., Ltd., we will focus on the development of thin-walled (薄壁) high-strength aluminum alloy precision components for ships and vigorously promote the technical upgrading and process improvement of high-end components of the infrared turrets of seagoing ships and photoelectric ship detection and tracking systems.

——Promote the construction of major platforms and projects. We will support the development of the "Wuhan Haiwei Naval and Marine High-Tech Research Institute" and guide, encourage, and support the construction of a new "R&D enclave" innovative technology platform; we will support the planning and construction of the Hairui Composite Materials Industrial Park and promote the construction of the Haiwei Naval Super-Large Composite Material Structure Advanced Technology Production Line Project; with Huarui Electromechanical Co., Ltd. as the main entity, we will promote the construction of thin-walled high-strength aluminum alloy precision components manufacturing projects for aviation and naval use; and relying on Haiwei Composite Material Products Co., Ltd., we will actively promote the construction of platforms such as the Hubei Provincial High-Performance Fiber Reinforced Composite Material Enterprise-University Joint Innovation Center (湖北省高性能纤维增强复合材料校企联合创新中心) and the provincial-level Composite Material Propeller Technology Research and Testing Center.

2. Promote the development of cyberspace military-civil fusion using the new-generation IT industry

We will accelerate the cultivation of a new-generation information technology (IT) industry, focus on advantageous enterprises in order to vigorously promote the development of optoelectronic information industry clusters, promote the large-scale demonstration application of 5G technology in military-civil fusion, coordinate the construction of a military-civil joint defense and control system in cyberspace, and empower military-civil fusion with intelligence and capabilities.

—— Promote the development of an optoelectronic information industry cluster. Guided by the needs of the instrumentation manufacturing industry, we will give full play to the driving role of leading enterprises such as Pamica Electric Material, Yingtong Electronics (瀛通电子), and SunWin Electronics (三赢兴电子) and key enterprises such as Vitalink Electronics (维达力电子) and LiteOn Technology (光宝科技), accelerate the development of high-end products such as basic electronic modules, new displays, smart terminals, and Internet of Things (IoT)-related hardware, build an electronic information basic material base and an optoelectronic information industry base, and promote the in-depth integration of optoelectronic information and military-civil fusion industries. Using China Optical Valley (Xianning) Optoelectronic Information Industrial Park, Tongcheng Economic Development Zone, and Chibi Electronic Information Industrial Park as vehicles, we will clarify the focus of industrial development in the parks, focus on the introduction of electronic information projects such as electronic components, light-emitting diode (LED) energy-saving lighting, large-scale integrated circuits, new electronic materials, modern communication equipment, instrumentation, and optoelectronic technology, promote the clustering of the electronic information industry in the parks, vigorously promote breakthroughs in key technologies, and create a new growth pole for the development of the province's electronic information industry.

——Accelerate the large-scale demonstration and application of 5G technology. We will accelerate the construction of 5G infrastructure, raise the level of informatization infrastructure, and improve the corporate cloud pace and strategy layout. Relying mainly on a batch of informatization (信息化) infrastructure projects, we will successively achieve the continuous coverage of the city's traffic arteries, transportation hubs, and important infrastructure by 5G networks and build an IT support network. Relying on the Military-Civil Fusion Industry Demonstration Base in the high-tech zone and the Chibi Emergency Rescue Equipment Production Functional Area, we will promote 5G applications in smart parks, smart emergency response, and other fields, promote the construction and demonstration application of 5G + Industrial Internet, and empower the high-quality integration of the military-civil fusion industry.

——Build a cybersecurity joint defense system. We will deeply implement the "5G National Strategy" and "Broadband Hubei Strategy," focus on the deployment of military-civil fusion industry projects such as AI, cybersecurity and telecoms security, intelligent radar, big data applications, and data centers, and on exploring and advancing the development systems of military and local joint cybersecurity prevention

and control. We will focus on cybersecurity risk identification, response, disposal, prevention, and other stages and strengthen proactive cybersecurity defense vulnerability discovery, identity management, data security, and other technical efforts. Facing the Industrial Internet, IoT, cloud computing, and other emerging fields and the development of major needs in the national information security field and with respect to existing software and hardware security issues and the chokepoint problem, we will build a core technology support platform and concentrate our efforts on the development of basic cybersecurity software and hardware products, high-performance domestic processors, and key cybersecurity equipment.

Box 6 IT industry focuses and layout	
Key units	Hubei Yingxin Precision Electronics Co., Ltd. (湖北瀛新精密电子有限公司), Lanju Xingye (Chibi) Technology Co., Ltd. (蓝炬兴业(赤壁)科技有限公司), Tongli Fiberglass (Tongcheng) Co., Ltd. (通城县同力玻纤有限公司), and Hubei SunWin Electronic Technology Co., Ltd.
Key projects	Smart Radio Acoustic Product Technological Upgrading Project, Special Computer Project, Electronic Grade Ultra-Thin/Fine Alkali-Free Glass Fiber Mesh/Cable Project for 5G/6G, and Photoelectric Camera Module Digital Intelligent Production Construction Project
Key regions	Tongcheng County and Chibi City

3. Promote the development of military-civil fusion in the biological field using the characteristics of the biomedical industry

Guided by military needs and medical needs, we will rely on Xianning's biotechnology and industrial advantages, promote the development of the biomedicine industry and the TCM industry, focus on breakthroughs in biotechnology with independent IPR, and improve military and civilian health assurance capabilities.

——Actively meet the demand for military-use drugs and focus on the development of the biomedical industry. Focusing on the demand for military drugs, led by Houfu Medical, Furen Jinshen Pharmaceutical, Scimyth Honeysuckle (真奥金银花), Jianxiang Biological (健翔生物), Kelaiwei (科莱维), and Huashixin Protective Products (华仕欣防护用品), and relying on Xianning High-Tech Zone, Xian'an, Tongcheng, and other biological industry bases, we will focus on breakthroughs in a batch of biotechnologies with independent IPR, expand and strengthen a group of leading enterprises and key products, accelerate the development of industries such as biotech, pharmaceuticals, and vaccines, chemical innovative drugs, new pharmaceutical R&D, and service outsourcing, meet the needs and technical standards of military-use drugs, and strive to be included in the list of military-use drug supply assurance companies; we will actively connect with the Wuhan National Bioindustry Base and build a biomedical industry cluster through the implementation of major special projects.

——Highlight advantages in military beverages and vigorously develop the TCM industry. Taking Hubei Guweiqing Biological Technology's (湖北古苇清生物科技股份有限公司) "Guweiqing (moist tea)" ("古苇清 (润茶)") products as our starting point, we will focus on the needs of military-use drugs, medicines, beverages, and health products and complete and optimize the TCM production chain. Relying on the three southern counties, Xian'an, and Chibi, and viewing *Polygonatum sibiricum*, *Bletilla striata*, *Paris polyphylla*, *Uncaria rhynchophylla*, *Eucommia ulmoides*, and other precious TCM materials as the core, we will accelerate the construction of traditional Chinese herbal medicine planting bases. We will support Xian'an District in its creation of a pilot demonstration zone for "TCM Agriculture" in the Yangtze River Economic Zone. We will introduce high-quality brand enterprises, cooperate to build a digital agriculture standardization demonstration base, introduce new technologies and new facilities such as agricultural sensors, intelligent irrigation, and aerial pesticide application, implement end-to-end blockchain traceability, improve the quality of traditional Chinese medicine products from the source, and drive the digital upgrading of the TCM industry. Accelerate the construction of a high-performance new drug R&D platform, make use of cloud computing, high-performance computing, and AI technology, minimize the length of the drug development cycle, and accelerate the availability of effective drugs.

Box 7 Construction focuses and layout in the biological field	
Key units	Yili Technology Tongshan Co., Ltd. and Hubei Guweiqing Biological Technology Co., Ltd.
Key projects	Yili Technology project for the annual output of 400,000 tons of high-permeability light medical protection special paper, TCM production chain
Key regions	Tongshan County and Tongcheng County

- Promote the development of military-civil fusion in the field of new energy using the advantages of new energy innovation

We will actively implement the concepts of green development and innovation-driven development, give full play to the innovative advantages of military enterprises in the field of new energy, promote research on key and core technologies for military-use new energy and the dual-use development of clean energy, and actively seize the strategic high ground in new energy development at home and abroad.

——Promote R&D on key technologies for military-use new energy. With military power supply as the core and relying on the technical advantages of Tongfa Electromechanical in military vehicle power supply and mobile power supply, we will strongly support the implementation of the "Tongfa Electromechanical High-Performance Ultra-Quiet Generator Set Production Line" project, continue to consolidate the technical advantages of harmonic excitation, phase compound excitation (相复励), capacitor excitation, reactance shunting (电抗分流), and rare earth

permanent magnets, accelerate breakthroughs and applications of parking and driving self-generation system technology, promote the energy innovation and integration of electric energy with aerodynamics and hydraulics, aiming at the strong demand for stable output in the military-use new energy field, actively promote the integration of vehicle power generation technology and special power equipment, and actively explore the promotion and application of key technologies and products from military-use new energy in the civilian market.

——Promote the dual-use development of clean energy. We will focus on the optimization of the city-side energy structure, promote the development of new energy and renewable energy, and actively strive for major breakthroughs in the construction of nuclear power projects. We will actively introduce new energy technologies such as hydrogen energy, complementary wind, solar, and hydropower storage and high-efficiency energy storage, promote the cultivation and development of hydropower, wind power, and solar power generation and comprehensive utilization of biomass energy in the Mufu Mountain Area, cultivate and develop energy equipment manufacturing industries along the Jiayu and Chibi Yangtze River Economic Demonstration Belt, promote the construction of a number of key projects in the clean energy industry such as photovoltaic power generation and biomass energy, and use reliable, abundant, and clean energy to ensure national economic construction and national defense industry construction.

——Promote the integrated development of the new energy vehicle industry. We will promote the introduction of the Wuhan hydrogen fuel cell vehicle power system, rely on Hejia New Energy (合家新能源), Himalaya Hydrogen Fuel Cell (喜马拉雅氢燃料电池), and other new energy vehicle companies, strengthen the R&D of key components such as batteries, motors, and electronic control systems for new energy vehicles, and accelerate the R&D and industrialization of new types of starter batteries (动力电池) and fuel cells. Focusing on new energy vehicle parts and accessories, we will promote the R&D of and technological transformation investment in Tri-Ring Steering Gear (三环方向机), Sansheng Machinery (三胜机械), Pamica Electric Material, Beichen Transmission (北辰传动), and Minth Auto Parts (敏实汽车零部件) and support the entry of Xianning's automobile support industry into the field of new energy vehicles. We will jointly promote new energy vehicle application demonstration projects in the dual-use market and build Xianning into a provincial-level new energy transportation technology R&D and industrialization base.

5. Drive the development of military-civil fusion in the field of AI using the intelligent equipment industry

With the goal of pooling intelligence for efforts on key and core technologies in the intelligent equipment manufacturing industry, we will strengthen cooperation on the R&D of AI between the military and localities and focus on promoting the in-depth application of AI technology in military-civil fusion scenarios such as the intelligent equipment industry.

——Strengthen military-local R&D cooperation in AI technology. Drawing on the successful experience of the Fragrant City Institute of Intelligent Electromechanical

Industry and Technology of Hubei Province, we will promote technological R&D cooperation among enterprises, the military industry, universities, and scientific research institutes and pool intelligence to tackle issues related to the basic theories of AI and the key and core technologies of the intelligent equipment manufacturing industry. We will give full play to our advantageous location close to Wuhan, make use of the specialized academic curricula and innovation foundation of Wuhan universities and research institutes, establish an expert committee on AI technology innovation, and carry out military-local collaboration in innovative theoretical research and project implementation. Guided by military needs in the field of AI and with intelligent equipment and intelligent electromechanics as the key industries, we will use Xianning Weihai and CSG Optoelectronics (南玻广电) as demonstration enterprises and steadily promote military-civil collaborative innovation in AI technology. We will promote coordinated military and local efforts on technologies in key areas such as smart materials, intelligent equipment, and smart power and strengthen the robust support that the new generation of AI technology provides for the development of intelligent equipment, military command, and military-local joint initiatives.

——Strengthen the application of AI technology in the intelligent equipment industry. We will use the opportunity provided by the implementation of the "new round of technological transformation projects" to strengthen the in-depth application of AI technology in the intelligent equipment industry; relying on Haiwei, CSSC Emergency Response, Tongfa Electromechanical, Jinli Hydraulics, Ming Cheng Precision Machinery, Oulang Machinery, Sanliu Heavy Industry (三六重工), Huabo Sunny (华博阳光), Zhichuangxin (智创新), and other companies, we will promote the construction of a number of digital workshops and intelligent chemical factories, focus on the development of precision, high-speed, high-efficiency, and flexible CNC special machining tools, and support the development of core and key components such as new industrial sensors and intelligent industrial control systems. Accelerate the construction of a smart manufacturing industrial park in the Xianning High-Tech Zone and build an intelligent equipment industry development cluster centering on AI application scenarios such as electronic information, new energy vehicles, and high-end equipment manufacturing. We will accelerate the implementation of innovation-driven development, explore the integrated development path of the "laser + robot + automated control" trinity, and build core competitiveness in the "laser + smart manufacturing" technology and market.

6. Promote the development of military-civil fusion in the emergency response field uses our advantages in the emergency response industry

Relying on our advantages in the emergency rescue equipment industry and practical experience in emergency management, we will accelerate the advancement of coordinated military-local innovation in the emergency response industry and focus on promoting the development of the entire production chain for emergency rescue equipment. We will comprehensively coordinate the emergency response resources and forces of military and civilian organizations, build an emergency response strategic

reserve base, and establish comprehensive, multi-field, and in-depth military-civil fusion assurance mechanisms.

——Promote military-local and military-civil collaborative innovation in the emergency response industry. We will accelerate the establishment of the Chibi City Emergency Response Industry Development Research Institute, strengthen cooperation with Wuhan University, Huazhong University of Science and Technology, Shanghai Jiao Tong University, 412 Institute of Aerospace and Aviation (航天航空四一二所), CSIC 719 Institute, the Institute of the Electronics Industry (电子产业研究院) of the Ministry of Industry and Information Technology (MIIT), and other local universities and military research institutes, focus on key technologies and general purpose technologies that restrict the optimization and upgrading of the emergency equipment industry, organize scientific research and exchange activities such as technological research, consultation, and services, and promote R&D on new technologies and ownership transfer of S&T achievements (科技成果转让). Relying on the Military-Civil Fusion Industry Demonstration Zone in the High-Tech Zone, the CSSC Emergency Response Industrial Park, and the Chibi Emergency Rescue Equipment Production Functional Area, we will strengthen the joint planning of military and civilian enterprises and joint promotion of S&T research and projects, support the declaration, introduction, and construction of national and Hubei Provincial emergency rescue equipment key laboratories, engineering research centers, enterprise technology innovation centers, and bases for the conversion of safety S&T achievements into practical applications, and build a technology R&D platform for the emergency rescue equipment industry. We will promote the collaborative innovation of emergency equipment military industry enterprises and civilian enterprises (民口企业), leading enterprises, and supporting enterprises, promote the improvement of public service systems such as skill training, standards consultation, and inspection and testing for the entire production chain, and support major breakthroughs and application promotion for key and general purpose technologies from the product chain perspective and with an industry orientation.

——Promote the development of the entire emergency rescue equipment production chain. Focusing on the three major sectors of water rescue equipment, emergency traffic engineering equipment, and firefighting equipment, we will strive to create a production functional area for emergency rescue equipment and focus on the development of intelligent flood barriers, dam protection, waterlogged large-capacity drainage equipment, community emergency power support equipment, community large-scale vehicle-mounted water purification equipment, all-weather and all-water life-saving equipment, and water rescue equipment; relying on CSSC Emergency Response's advantages in emergency traffic engineering equipment manufacturing, we will focus on the development of emergency pontoon bridges, emergency mechanized bridges, emergency railway platforms, and other military equipment as well as emergency docks, emergency steel truss bridges, and railway emergency repair steel beams, and other dual-use equipment; and giving full play to the advantages of Zhongke Junrong (中科军融) in firefighting equipment manufacturing, we will focus on the development of high-rise firefighting water supply equipment, technologies and

products related to caterpillar-track firefighting vehicles, foam sprayers, dry powder sprayers, fixed sprayers, mobile sprayers, remote-control sprayers, and other firefighting sprayers, various fire hydrant boxes, water surface fire extinguishing technology and equipment, and amphibious fire extinguishing equipment. Setting our sights on support for hoisting machinery, support for mechanical parts, support for emergency bridges, support for painting, support for precision machinery manufacturing, support for special cables, support for transportation equipment, and support for firefighting equipment, we will view enterprises such as Enan Crane (鄂南起重), Jiuda (九达), Sanhe (三和), Weihan (卫汉), Handu Precision (汉都精密), Gold Medal Electrical (金牌电工), Yinlun (银轮), and Zhongke Junrong as the main entities, continue to promote the development of supporting enterprises, and constantly supplement and strengthen the emergency rescue equipment production chain.

——Promote the development of emergency rescue reserves and emergency rescue services. With Division No. 775, Jiayu Cold Chain Logistics, and Yili Technology Tongshan as key units, we will coordinate resources such as Xianning's transportation and logistics facilities, emergency supplies, and industrial park platforms and focus on promoting the construction of a strategic reserve base for grain and oil non-staple foods, cold chain food, and emergency supplies in Hubei Province. With CSSC Emergency Response as the leading enterprise and lead by the Chibi Emergency Management Bureau, we will jointly promote the construction of the emergency rescue materials and equipment storage warehouse in Chibi City; relying on key medical and sanitary materials enterprises such as Houfu Medical, Kingstar Medical, AGCO Medical, Winner Medical, Zhongjian Medical, and Evergrande Health Valley (恒大养生谷), we will plan the construction of a production base for emergency medical supplies; and relying on Tongfa Electromechanical and its power generation equipment emergency support mobilization center, we will focus on supporting the construction of a public emergency reserve concentration area and capacity mobilization service platform in the high-tech zone. At the same time, we will accelerate the construction of the Hubei Grassroots Emergency Response Training Center, carry out short-term emergency training for administrative agencies, enterprise and public institution³ personnel, and primary and secondary schools for the whole province and cities in the Yangtze River Economic Belt, and improve the disaster prevention and mitigation awareness and capabilities of the whole people. Relying on the construction of the International Disaster Experience City (国际灾害体验城) project, we will integrate our characteristic emergency industry with the tourism industry, form a comprehensive base for emergency traffic professional training and exercise bases, disaster emergency escape experience halls, and other comprehensive bases that integrate emergency drills and disaster escape experiences, and promote the development of emergency services.

³ Translator's note: "Public institutions" (事业单位) are organizations created and led by PRC government departments that provide social services. Unlike state-owned enterprises (SOEs), public institutions do not create material products and do not generate income. Public institutions are not considered government agencies, and their employees are not civil servants. Most public institutions are fully or partially government-funded, but some fully privately funded (but still government-led) public institutions exist. Public institutions typically provide services in areas such as education, science and technology, culture, health, and sanitation.

Relying on different emergency medical and treatment teams organized by the Municipal Health Commission, such as teams for infectious diseases, food and occupational poisons, major trauma accidents, biochemical events, and unknown causes, we will strengthen emergency medical treatment drills and improve regional emergency treatment and support capabilities. We will strengthen military-local cooperation in medical rescue, medical and protective material production, logistics and transportation, biosecurity, and other areas and form an efficient emergency reserve and assurance coordination mechanism for resource coordination, information sharing, and unified command.

Box 8 Construction foci and layout in the emergency response field	
Key units	Chibi City Government and Chibi City Emergency Management Bureau
Key projects	Chibi City Emergency Rescue Equipment Production Functional Area Project, Chibi City Emergency Rescue Materials and Equipment Storage Warehouse Project, Chibi City Experiential Safety Education and Emergency Drill Base (Disaster Experience City) Project, "Three Parks and One City" Emergency Industry Demonstration Zone Project
Key regions	Chibi City

III. Assurance Measures

(i) Strengthen Organizational Coordination

All counties and districts must unify their thinking, concentrate their efforts, strengthen coordination, and make overall plans to promote the in-depth development of military-civil fusion. Relevant units in all counties, cities, and districts must put the promotion of the in-depth development of military-civil fusion in an important position, establish a responsibility system for main leaders, study and formulate supporting measures, refine promotion plans, and creatively grasp the implementation of the work.

In accordance with the requirements of putting “institutions in place, responsibilities in place, personnel in place, and work in place,” establish, improve, and continuously perfect the three systems of organization management, work performance, and policy mechanisms for military-civil fusion development. Break the status quo of the division between the military and localities, establish a regular consultation mechanism for military-local coordination and a normalized supply-demand alignment mechanism, and jointly promote the in-depth development of military-civil fusion.

Improve the long-term incentive mechanisms and supervision and evaluation mechanisms for military-civil fusion and promote regular joint inspections, evaluations,

and follow-up feedback between relevant military and local departments and third-party agencies.

(ii) Strengthen Reform and Innovation

Improve the responsibility checklist, authority checklist, and negative checklist for the innovative development of military-civil fusion and strive to improve the level of governance for military-civil fusion. Further simplify administrative procedures and delegation of authority, shifting the focus downward, break through "blockage points," solve "difficult points," and eliminate "pain points," and gradually break down the market barriers, information barriers, policy barriers, and standards barriers that obstruct military-civil fusion.

Explore a variety of military-civil fusion innovation models such as "military, locality, government, industry, academia, research institute, and user cooperation" and "pioneering local construction + military service procurement" that combine information sharing to align with demand, supply-side reforms to create demand, and expert think tanks to guide demand.

Actively explore national defense mobilization under the normalized conditions of epidemic prevention and control, national defense mobilization information sharing, and multi-party linkage with military-to-civilian conversion, transportation, emergency response, military logistics, and other fields, and actively explore registration and review systems for military-to-civilian conversion projects and projects for private sector participation in the military sector, and form a batch of experiences that can be replicated, promoted, and used for reference.

Focusing on the key areas of military-civil fusion such as new military materials, military emergency response equipment, and emergency safety, formulate special plans and draw investment appeal maps, talent maps, and technical roadmaps. For private enterprises that participate in the military sector such as gazelle enterprises (瞪羚企业), little giant enterprises (小巨人企业), and hidden champion enterprises, open up green channels, actively build linkage platforms, and formulate assistance policies.

Intensify policy propaganda, strengthen guidance and training, implement precise policies for qualification applications, standards exchanges, IPR, and resource sharing of basic S&T prerequisites, and create a group of powerful and promising private enterprises that participate in the military sector as a reserve. Give private enterprises that participate in the military sector preference in tax rebates and tax reductions, administrative examination and approval, land use applications, and project applications.

(iii) Strengthen Project Drivers

Take major projects as the starting point to promote increased industrial park efficiency, improved industry quality, and the multiplication of leaders. Concentrating on the innovation and development of key areas of military-civil fusion and the leapfrog development of emerging areas, focus on the cultivation and growth of

technology-based and growing civil-to-military small and micro enterprises as well as R&D on key technologies and "chokepoint" technologies in the fields of military intelligent equipment, military new materials, and emergency safety, and plan a number of major military-civil fusion projects that lead by example and drive by influence.

Strengthen departmental cooperation, strengthen cooperation and collaboration with various functional departments, and promptly resolve major issues in the advancement of military-civil fusion projects. Establish a contact system and strengthen communication and coordination with project construction units, management units, and use units. Keep an eye on the key points, clarify the timetable, determine the roadmap, and ensure that policies, projects, and funds are implemented as soon as possible.

Improve the system of preliminary demonstration, mid-term assessment, and post-evaluation for major military-civil fusion projects. With a focus on overall goals and phased goals, clarify responsibilities, assign specific tasks to posts and implementation to specific people (具体到岗 , 落实到人), and promote the construction of major military-civil fusion projects in an orderly manner.

(iv) Strengthen Platform Construction

Support the connection of key military-to-civilian conversion enterprises and private enterprises that participate in the military sector with leading enterprises, venture capital companies, basic S&T prerequisite platforms, and universities and scientific research institutes, jointly build an end-to-end incubation platform integrating makerspaces, incubators, accelerators, and industrial parks, and promote the integrated development of large, medium, and small military-civil fusion enterprises.

Connect with Hubei laboratories and the Optics Valley Science and Technology Innovation Corridor and support the establishment of an "enclave R&D center" by powerful, promising military-to-civilian conversion enterprises and private enterprises that participate in the military sector. Support the settlement of new R&D institutions in Xianning, increase the construction of military-local S&T collaborative innovation platforms such as for new military materials, new military equipment, emergency safety technology centers, engineering laboratories, and product testing and inspection centers, and break the bottleneck of insufficient R&D stamina.

For pilot services for the two-way conversion of military and local technology, intermediary services for the two-way flow of talents, financial services for the two-way collection of funds, and consulting services for two-way alignment of demand, build a public service platform to provide one-stop service and system solutions.

(v) Strengthen Factor of Production Assurance

Focusing on factor of production needs such as capital, talents, and markets for military-to-civil and private enterprises that participate in the military sector, establish

an all-factor assurance system that integrates self-help, mutual assistance, and assistance of others.

Connect with the National Military-Civil Fusion Industry Investment Fund and its special fund established in Hubei and strive to obtain special transfer payment funds for national military-civil fusion development and special funds for provincial-level military-civil fusion development. Entice social capital to participate in the establishment of a military-civil fusion industry investment fund. Support private enterprises that participate in the military sector and military-to-civilian conversion enterprises in obtaining financing in various ways such as intellectual property (IP) mortgage financing and supply chain finance, and actively explore various credit models such as military industry qualification loans, military industry order loans, and military research loans.

Develop a plan for the "recruitment, employment, training, and retention" of military-civil fusion high-level leading talents and high-skilled operational talents and build an ecosystem with two-way training and circulation of military and local talents. Promote the building of Chibi Vocational School into an emergency response technical vocational college, rely on Hubei University of Science and Technology, Xianning Vocational and Technical College, and other universities to set up emergency management majors and cultivate emergency response industry talents, and speed up the construction of functional areas for training military logistics scientific research talents.

Promote the transformation of key military logistics areas from a dot layout (点状布局) to a block layout (块状布局), adopt high standards and high starting points, and actively plan the construction of the Xianning Sub-Center of Centralized Non-Staple Food Cultivation for Hubei Province. Give full play to the brand and platform advantages of the Hubei Provincial Military-Civil Fusion Composite Materials Industry Alliance and create a regional market for military composite materials that integrates product promotion, exhibitions, sales, and trade.