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“Made in China 2025,” Notice of the State Council.

Annex to OFC Application Form

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The index number:	000014349 / 2015-00078	Topic	Industry, Transportation \ Machine Manufacturing and
Issuing authority:	State Council	classification:	Heavy Industry
title:	Notice of the State Council on Printing and Distributing "Made in China 2025"	Date of writing:	May 08, 2015
Send text number:	Guofa (2015) No. 28	Release date:	May 19, 2015
Key words:			

Notice of the State Council on Printing and Distributing "Made in China 2025"

Guofa [2015] No. 28

People's governments of provinces, autonomous regions, and municipalities directly under the

Central Government, ministries and commissions of the State Council, and directly affiliated organizations: The "Made in China 2025" is now issued to you. Please implement it carefully.

State Council
May 8, 2015

(This article has been deleted)

Made in China 2025

Manufacturing is the main body of the national economy, the foundation of building a country, the tool for rejuvenating the country, and the foundation for strengthening the country. Since the beginning of industrial civilization in the middle of the eighteenth century, the history of the rise and fall of world powers and the struggle of the Chinese nation have repeatedly proven that without a strong manufacturing industry, there would be no country or nation prosperity. Creating an internationally competitive manufacturing industry is the only way for China to improve its overall national strength , ensure national security, and build a world power.

Since the founding of New China, especially since the reform and opening up, China's manufacturing industry has continued to develop rapidly, and a complete and independent industrial system has been built. It has effectively promoted the process of industrialization and modernization, significantly enhanced the overall national strength, and supported our status as a world power. However, compared with the world's advanced level, China's manufacturing industry is still large but not strong. There are obvious gaps in terms of independent innovation capability, resource utilization efficiency, industrial structure level, informatization level, and quality benefits. The task of transformation and upgrading and leapfrog development is urgent And arduous.

At present, a new round of scientific and technological revolution and industrial transformation has formed a historical intersection with China's accelerated transformation of economic development mode, and the pattern of international industrial division of labor is being reshaped. We must firmly seize

this important historical opportunity, implement the strategy of manufacturing power in accordance with the requirements of the "four comprehensive" strategic layout, strengthen overall planning and forward-looking deployment, and strive to achieve a hundred years after the founding of New China through three decades of efforts To build China into a manufacturing power that leads the development of the world 's manufacturing industry, and lay a solid foundation for the realization of the Chinese dream of the great rejuvenation of the Chinese nation.

"Made in China 2025 "is the first ten-year program of action for China to implement the strategy of manufacturing power.

1.Development situation and environment

(1) The global manufacturing industry is facing major adjustments.

The deep integration of a new generation of information technology and manufacturing is triggering far-reaching industrial changes, forming new production methods, industrial forms, business models and economic growth points. Countries are stepping up their technological innovation efforts to promote new breakthroughs in 3D printing , mobile Internet, cloud computing, big data, bioengineering, new energy, new materials and other fields. Intelligent manufacturing based on cyber physical systems, smart factories and other intelligent manufacturing are leading the transformation of manufacturing methods; network crowdsourcing, collaborative design, large-scale personalized customization, precise supply chain management, full life cycle management, e-commerce, etc. are reshaping the industrial value Chain system; wearable smart products, smart home appliances, smart cars and other smart terminal products continue to expand new areas of manufacturing. China's manufacturing industry transformation and upgrading, innovation and development ushered in major opportunities.

The global industrial competition landscape is undergoing major adjustments, and China faces huge challenges in the new round of development.After the international financial crisis, developed countries have implemented the "re-industrialization" strategy to reshape the competitive advantages of the manufacturing industry and accelerate the new round of global trade and investment. Some developing countries are also speeding up planning and layout, actively participating in the global industrial re-division, undertaking industry and capital transfer, and expanding the international market space.China's manufacturing industry faces the severe challenge of "two-way squeeze" by developed countries and other developing countries. It must look at the world, step up strategic deployment, focus on building a strong manufacturing country, solidify the fundamentals, turn challenges into opportunities , and seize a new round of competition in manufacturing Commanding heights.

(2) Major changes have taken place in China's economic development environment.

With the simultaneous advancement of new industrialization, informatization, urbanization, and agricultural modernization, the potential for ultra-large-scale domestic demand has been continuously released, providing a broad space for the development of China's manufacturing industry.New equipment needs in various industries, new consumption needs of the people, new livelihood needs of social management and public services, and new security needs of national defense construction all require the manufacturing industry to make major technological equipment innovations, consumer quality and safety, and public service facilities and equipment The supply and defense equipment support have rapidly improved their level and capabilities. Comprehensively deepening reform and further opening up will continue to stimulate the vitality and creativity of the manufacturing industry, and promote the transformation and upgrading of the manufacturing industry.

China's economic development has entered a new normal, and the development of the manufacturing industry is facing new challenges.The resource and

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Graphic

Chart: "Made in China 2025" introduced a clear road map for manufacturing power

Graphic: Made in China 2025

Interpretation

Pushing Made in China from Big to Strong——Interview with Miao Wei, Minister of Industry and Information Technology

Made in China takes the first step of "from big to strong"-six keywords to understand the core intention of "Made in China 2025"

Ten industries will support the "China Dream" of manufacturing power

From the perspective of new energy vehicles to see the rise of Chinese manufacturing

comment

China's "manufacturing" reform opportunities

Lifting Made in China with Innovation

environmental constraints are constantly strengthened, the cost of production factors such as labor is rising, and the growth rate of investment and exports has slowed down significantly. The extensive development model that mainly depends on the input of resource elements and scale expansion is unsustainable. Structural adjustment, transformation and upgrading, and quality and efficiency improvement Urgently. Forming a new driving force for economic growth and shaping new advantages in international competition, the focus is on manufacturing, the difficulties are on manufacturing, and the way out is also on manufacturing.

(3) The task of building a strong country is arduous and urgent.

After decades of rapid development, China's manufacturing scale has ranked first in the world, and a complete and independent manufacturing system has been established, which has become an important cornerstone to support China's economic and social development and an important force to promote world economic development. Continuous technological innovation has greatly improved the overall competitiveness of China's manufacturing industry. Manned spaceflight, manned deep diving, large aircraft, Beidou satellite navigation, supercomputers, high-speed rail equipment, million-kilowatt-level power generation equipment, 10,000-meter deep-sea oil drilling equipment, and other major technical equipment have made breakthroughs and formed a number of international competitions. China's powerful superior industries and key enterprises already have the foundation and conditions for building a strong industrial country.

However, China is still in the process of industrialization, and there is still a big gap compared with advanced countries. The manufacturing industry is large but not strong, the independent innovation capability is weak, the key core technology and high-end equipment are highly dependent on foreign countries, and the enterprise-based manufacturing innovation system is imperfect; the product grade is not high and the world's famous brands are lacking; the resource and energy utilization efficiency is low. The environmental pollution problem is more prominent; the industrial structure is irrational, the development of high-end equipment manufacturing and productive service industries lags behind; the level of informatization is not high, and the depth of integration with industrialization is not enough; the degree of industrial internationalization is not high, and the enterprise's global management ability is insufficient. To promote the building of a strong manufacturing country, we must focus on solving the above problems.

To build a strong manufacturing country, we must firmly seize the current rare strategic opportunities, actively respond to challenges, strengthen overall planning, highlight innovation drivers, formulate special policies, take advantage of the system, mobilize all social forces to work hard, rely more on Chinese equipment and rely on China Brand, to achieve the transformation of Chinese manufacturing to Chinese creation, the transformation of Chinese speed to Chinese quality, and the transformation of Chinese products to Chinese brands, to complete the strategic task of making Chinese products bigger and stronger.

2. Strategic guidelines and objectives

(1) Guiding ideology.

Fully implement the spirit of the Eighteenth National Congress of the Party and the Second, Third, and Fourth Plenary Sessions of the Eighteenth Congress, adhere to the path of new industrialization with Chinese characteristics, take the theme of promoting innovative development of the manufacturing industry, and focus on improving quality and efficiency to accelerate new The deep integration of the first generation of information technology and manufacturing is the main line, with the goal of advancing intelligent manufacturing to meet the needs of economic and social development and national defense construction for major technical equipment, strengthen industrial basic capabilities, improve comprehensive integration, and improve multiple levels and multiple levels Type

talent training system, promote industrial transformation and upgrading, cultivate a manufacturing culture with Chinese characteristics, and achieve a historical leap in manufacturing from big to strong. The basic policy is: -driven by innovation. Adhere to putting innovation at the core of the overall development of the manufacturing industry, improve the institutional environment that is conducive to innovation, promote cross-industry and cross-industry collaborative innovation, break through a batch of key common technologies in key areas, promote the digitalization and intelligentization of manufacturing, take the innovation drive Development path.

—Quality comes first. Adhere to quality as the lifeline of building a strong manufacturing country, strengthen the main responsibility of enterprise quality , strengthen quality and technical breakthroughs, and cultivate independent brands. Build regulations and standards system, quality supervision system, advanced quality culture, create a market environment of integrity management, and take the development path of winning by quality.

—ECO development. Adhere to sustainable development as an important focus of building a strong manufacturing country, strengthen the promotion and application of energy-saving and environmental protection technologies, processes, and equipment, and promote cleaner production in an all-round way. Develop a circular economy, improve the efficiency of resource recycling, build a green manufacturing system, and follow the path of ecological civilization.

—Structure optimization. Adhere to structural adjustment as a key link in building a strong manufacturing country, vigorously develop advanced manufacturing, transform and upgrade traditional industries, and promote the transformation of production-oriented manufacturing to service-oriented manufacturing. Optimize the layout of industrial space, cultivate a number of industrial clusters and enterprise groups with core competitiveness, and take the development path of improving quality and efficiency.

—Talent-oriented. Persist in taking talents as the foundation for building a strong manufacturing country, establish and improve a scientific and reasonable mechanism for selecting, employing, and educating people, and accelerate the cultivation of professional and technical personnel, management personnel, and skilled personnel in urgent need of manufacturing development. Create an atmosphere of mass entrepreneurship and innovation, build a team of manufacturing personnel with excellent quality and reasonable structure, and follow the development path led by talents.

(2) Basic principles.

Market-led and government-led.Comprehensively deepen reform, give full play to the decisive role of the market in the allocation of resources, strengthen the dominant position of enterprises, and stimulate the vitality and creativity of enterprises. Actively transform government functions, strengthen strategic research and planning guidance, improve relevant support policies, and create a good environment for enterprise development.

Based on the present, focus on the long-term. In view of the bottlenecks and weak links that restrict the development of the manufacturing industry, we will accelerate transformation and upgrading, improve quality and increase efficiency, and effectively improve the core competitiveness and sustainable development capacity of the manufacturing industry. Accurately grasp the new round of scientific and technological revolution and industrial transformation trends, strengthen strategic planning and forward-looking deployment, lay a solid foundation, and occupy the commanding heights in future competition.

Advance as a whole and focus on breakthroughs. Adhere to the combination of national chess and classified guidance for manufacturing development, overall planning, rational layout, clear innovation development direction, promote the in-depth development of military and civilian integration, and accelerate the overall

level of manufacturing. Focusing on economic and social development and major national security needs, we will integrate resources, highlight key points, implement a number of major projects, and achieve the first breakthrough.

Independent development and open cooperation. In the basic, strategic, and overall fields related to national economy, people’s livelihood, and industrial safety, we will focus on mastering key core technologies, improving the industrial chain, and forming an independent development capability. Continue to expand opening up, actively use global resources and markets, strengthen the global layout of the industry and international exchanges and cooperation, form a new comparative advantage, and improve the level of open development of the manufacturing industry.

(3) Strategic objectives.
Based on national conditions and reality, we strive to achieve the strategic goal of making a strong country through “three steps.”

The first step: Strive to enter the ranks of manufacturing powers in ten years.

By 2020, industrialization will be basically achieved, the status of a manufacturing country will be further consolidated, and the level of manufacturing informatization will be greatly improved. Master a batch of key core technologies in key areas, further enhance the competitiveness in superior areas, and greatly improve product quality. Significant progress has been made in the digitization, networking and intelligence of the manufacturing industry. The value-added energy consumption, material consumption and pollutant emission of industrial value added of key industries have decreased significantly.

By 2025, the overall quality of the manufacturing industry will be greatly improved, the innovation ability will be significantly enhanced, the labor productivity of all employees will be significantly improved, and the integration of the two industries (industrialization and informatization) will reach a new level. The value-added energy consumption, material consumption and pollutant emissions of industrial value-added units of key industries have reached world advanced levels. A group of multinational companies and industrial clusters with strong international competitiveness have been formed, and their status in the global industrial division of labor and value chain has been significantly improved.

The second step: By 2035, China’s manufacturing industry as a whole will reach the middle level of the world’s manufacturing power camp. The innovation capability has been greatly improved, major breakthroughs have been made in the development of key areas, the overall competitiveness has been Significantly enhanced, and advantageous industries have formed global innovation leadership capabilities, fully realizing industrialization.

The third step: One hundred years after the founding of New China, the status of a major manufacturing country was consolidated, and its comprehensive strength entered the forefront of the world’s manufacturing power. The main fields of manufacturing industry have the ability to lead innovation and obvious competitive advantages, and build a world-leading technology system and industrial system.

Main indicators of manufacturing industry in 2020 and 2025

category	index	year 2013	2015	2020	2025
Creativity	The proportion of R & D expenditure in the manufacturing industry above designated size as a percentage of main business income (%)	0.88	0.95	1.26	1.68

	The number of effective 100 invention patents per million yuan of main business income of the manufacturing industry above designated 1 size (piece)	0.36	0.44	0.70	1.10
Quality benefit	Manufacturing Quality 2 Competitiveness Index	83.1	83.5	84.5	85.5
	Increase in manufacturing value added rate	-	-	2 percentage points higher than 2015	4 percentage points higher than 2015
	Growth rate of labor productivity of all employees in manufacturing industry (%)	-	-	Around 7.5 (the average annual growth rate during the "13th Five-Year Plan" period)	Around 6.5 (the average annual growth rate during the "14th Five-Year Plan" period)
Integration of the two	Broadband penetration rate 3 (%)	37	50	70	82
	Popularization rate of 4 digital R & D design tools (%)	52	58	72	84
	Key process numerical control 5 rate (%)	27	33	50	64
ECO development	Decrease in energy consumption of industrial added value of units above designated size	-	-	18% lower than 2015	34% lower than 2015
	Decrease in carbon dioxide emissions per unit of industrial added value	-	-	Down 22% from 2015	40% lower than 2015
	The decline in water consumption per unit of industrial value added	-	-	Down 23% from 2015	41% lower than 2015
	Comprehensive utilization rate of industrial solid waste (%)	62	65	73	79

1 The number of effective invention patents per 100 million yuan of main business income of manufacturing enterprises above designated size = the number of effective invention patents of manufacturing enterprises above designated size / main business revenue of manufacturing enterprises above designated size

2 The Manufacturing Quality Competitiveness Index is a comprehensive economic and technological indicator reflecting the overall level of manufacturing quality in China. It is calculated from a total of 12 specific indicators in terms of quality level and development capability.

3 Broadband penetration rate is represented by fixed broadband household penetration rate, fixed broadband household penetration rate = number of fixed broadband household users / number of household households.

4 Popularization rate of digital R & D design tools = number of enterprises above

designated size using digital R & D design tools / total number of enterprises above designated size (relevant data comes from 30,000 sample enterprises, the same below).

5 The numerical control rate of key processes is the average value of the numerical control rate of key processes of industrial enterprises above designated size.

3. Strategic Tasks and Priorities To

achieve the strategic goals of a manufacturing powerhouse, we must adhere to problem orientation, make overall plans, and highlight key points; we must build consensus among the entire society, accelerate the transformation and upgrading of the manufacturing industry, and comprehensively improve development quality and core competitiveness.

(1) Improve the national manufacturing innovation capability.

Improve the manufacturing innovation system that takes the enterprise as the main body, the market as the guide, and a combination of government, industry, academia, and research. Deploy the innovation chain around the industry chain, configure the resource chain around the innovation chain, strengthen key core technology research, accelerate the industrialization of scientific and technological achievements, and improve innovation capabilities in key links and key areas.

Strengthen research and development of key core technologies. Strengthen the status of enterprises as the mainstay of technological innovation, support enterprises to enhance innovation capabilities, promote the construction of national technological innovation demonstration enterprises and enterprise technology centers, and fully involve enterprises in the decision-making and implementation of national science and technology plans. Aiming at the country's major strategic needs and the commanding heights of future industrial development, regularly study and formulate and issue a roadmap for technological innovation in key areas of manufacturing. Continue to implement national major science and technology projects, and support the development of key core technologies through national science and technology plans (special projects, funds, etc.). Give play to the leading role of industry backbone enterprises and the basic role of colleges and universities and scientific research institutes, establish a group of industrial innovation alliances, carry out collaborative innovation in government, industry, academia and research, and overcome a group of overall impacts and driving forces on the overall improvement of industrial competitiveness Strong key common technology to accelerate the transformation of results.

Improve innovative design capabilities. Carry out innovative design demonstrations in key areas such as traditional manufacturing, strategic emerging industries, and modern service industries, and comprehensively promote and apply advanced design technologies characterized by green, intelligence, and collaboration. Strengthen the research and development of common key technologies in the design field, overcome common technologies such as informatization design, process integration design, complex process and system design, develop a batch of key design tool software with independent intellectual property rights, and build and improve the innovative design ecosystem. Build a number of innovative design clusters with world influence, cultivate a batch of professional and open industrial design enterprises, and encourage foundry enterprises to establish research and design centers to transform to design and export independent brand products. Develop various innovative design education, establish the National Industrial Design Award, and stimulate the enthusiasm and initiative of innovative design in the whole society.

Promote the industrialization of scientific and technological achievements. Improve the operation mechanism for the transformation of scientific and technological achievements, study and formulate guidelines for promoting the transformation and industrialization of scientific and technological

achievements, establish and improve the platform for information release and sharing of scientific and technological achievements, and improve the technology transfer and industrialization service system with the technology trading market as the core. Improve the incentive mechanism for the transformation of scientific and technological achievements, promote the reform of the use, disposal and revenue management of scientific and technological achievements of public institutions, and improve the scientific evaluation and market pricing mechanism of scientific and technological achievements. Improve the coordinated promotion mechanism for the transformation of scientific and technological achievements, guide government, industry, academia, and research to strengthen cooperation in accordance with the laws of the market and innovation, and encourage enterprises and social capital to establish a number of pilot sites engaged in technology integration, maturation, and engineering. Speed up the transformation and industrialization of national defense scientific and technological achievements, and promote the two-way transfer of military and civilian technology.

Improve the national manufacturing innovation system. Strengthen the top-level design, accelerate the establishment of a manufacturing innovation network with the innovation center as the core carrier, and the public service platform and engineering data center as the important support, establish a market-oriented innovation direction selection mechanism, and encourage risk sharing and benefit sharing mechanisms for innovation. Make full use of existing scientific and technological resources, focus on major common needs of the manufacturing industry, adopt new mechanisms and new models such as government-society cooperation, industrial, industrial, research, and industrial innovation strategic alliances, and form a number of manufacturing innovation centers (industrial technology research bases). Common major technology research and industrial application demonstration. Build a group of public service platforms that promote collaborative innovation in the manufacturing industry, standardize service standards, carry out professional services such as technology research and development, inspection and testing, technology evaluation, technology trading, quality certification, and personnel training, and promote the transformation and promotion of scientific and technological achievements. Build manufacturing engineering data centers in key areas to provide enterprises with an open sharing service of innovative knowledge and engineering data. Facing the key common technology of manufacturing industry, build a batch of major scientific research and experiment facilities, improve the core enterprise system integration ability, and promote the extension to the high end of the value chain.

Box 1 Construction Project of Manufacturing Innovation Center (Industrial Technology Research Base)

Focusing on the transformation and upgrading of key industries and the major common needs of innovation and development in the fields of new generation information technology, intelligent manufacturing, additive manufacturing, new materials, biomedicine and other fields, a number of manufacturing innovation centers (industrial technology research bases) have been formed to focus on the industry foundation And common key technology research and development, industrialization of achievements, talent training and other work. Formulate and improve standards and procedures for the selection, assessment and management of manufacturing innovation centers.

By 2020, focus on forming about 15 manufacturing innovation centers (industrial technology research bases), and strive to form about 40 manufacturing innovation centers (industrial technology research bases) by 2025.

Strengthen the construction of standard system. Reform the standardization system and standardization management system, organize the implementation of the manufacturing standardization improvement plan, and carry out comprehensive

standardization work in key areas such as intelligent manufacturing. Give play to the important role of enterprises in standard formulation, support the formation of standards promotion alliances in key areas, build standards innovation research bases, and coordinate product development and standard formulation. Formulate corporate standards that meet market and innovation needs, and establish self-declaration disclosure and supervision systems for enterprise product and service standards. Encourage and support enterprises, scientific research institutes, industry organizations, etc. to participate in the formulation of international standards and speed up the process of internationalization of China's standards. Vigorously promote the adoption of advanced civil standards for defense equipment, and promote the transformation and application of military technical standards into the civilian field. Do a good job in publicizing and implementing the standards and vigorously promote the implementation of the standards.

Strengthen the use of intellectual property. Strengthen intellectual property reserves of key core technologies in key areas of manufacturing, and build an industrialization-oriented patent portfolio and strategic layout. Encourage and support enterprises to use intellectual property rights to participate in market competition, cultivate a number of advantageous enterprises with comprehensive strength in intellectual property rights, support the formation of intellectual property alliances, and promote market entities to carry out coordinated use of intellectual property rights. We will steadily promote the decryption and market application of national defense intellectual property rights. Establish and improve the intellectual property rights evaluation mechanism, encourage and support industry key enterprises and professional institutions to cooperate in key areas to carry out patent evaluation, acquisition, operation, risk warning and response. Construct a public service platform for comprehensive use of intellectual property. Encourage transnational intellectual property licensing. Study and formulate policies and measures to reduce the cost of intellectual property application, protection and rights protection for SMEs.

(2) Promote the deep integration of informatization and industrialization.

Accelerate the promotion of the integration of the new generation of information technology and manufacturing technology, and take intelligent manufacturing as the main direction of the deep integration of the two technologies; focus on the development of intelligent equipment and intelligent products, promote the intelligentization of the production process, cultivate new production methods, and comprehensively improve corporate research and Intelligent level of management and service.

Study and formulate development strategies for smart manufacturing. Compile the intelligent manufacturing development plan, clarify the development goals, key tasks and major layout. Accelerate the formulation of intelligent manufacturing technology standards, and establish and improve the intelligent manufacturing and integrated management standard system. Strengthen application traction, establish an intelligent manufacturing industry alliance, and collaboratively promote intelligent equipment and product research and development, system integration innovation and industrialization. Promote the comprehensive integration of industrial Internet, cloud computing, and big data in the entire process of the enterprise's R & D, design, manufacturing, management, and sales services, as well as the entire industrial chain. Strengthen the network security assurance capability of the intelligent manufacturing industry control system, and improve the comprehensive security system.

Accelerate the development of intelligent manufacturing equipment and products. Organize research and development of high-end CNC machine tools, industrial robots, additive manufacturing equipment and other intelligent

manufacturing equipment and intelligent production lines with deep perception, intelligent decision-making, and automatic execution functions, and break through new sensors, intelligent measuring instruments, industrial control systems, servo motors and drives and Intelligent core devices such as reducers are promoted for engineering and industrialization. Accelerate the intelligent transformation of production equipment in industries such as machinery, aviation, shipping, automobiles, light industry, textiles, food, electronics, etc., and improve precision manufacturing and agile manufacturing capabilities. Overall planning and promotion of the research and development and industrialization of smart vehicles, smart construction machinery, service robots, smart home appliances, smart lighting appliances, wearable devices and other products.

Promote intelligent manufacturing processes. Pilot construction of smart factories / digital workshops in key areas, speed up the application of technologies and equipment such as human-machine intelligent interaction, industrial robots, intelligent logistics management, and additive manufacturing in the production process, promote simulation optimization, digital control, and status information of manufacturing processes Real-time monitoring and adaptive control. Accelerate the promotion and application of product life cycle management, customer relationship management, and supply chain management systems, promote the integration of key links such as group management and control, design and manufacturing, integration of production, supply and marketing, business and financial integration, and achieve intelligent management and control. Accelerate the construction of intelligent detection and supervision systems for key industries such as civilian explosives, hazardous chemicals, food, printing and dyeing, rare earths, and pesticides, and increase the level of intelligence.

Deepen the application of the Internet in the manufacturing field. Formulate a roadmap for the integrated development of the Internet and the manufacturing industry, and clarify the development direction, goals and paths. Develop new manufacturing modes such as personalized customization based on the Internet, crowdsourcing design, and cloud manufacturing, and promote the formation of R & D, manufacturing, and industrial organization based on dynamic perception of consumer demand. Establish an open industrial ecosystem with complementary advantages and win-win cooperation. Accelerate the R & D and application demonstration of Internet of Things technology, and cultivate new industrial Internet applications such as intelligent monitoring, remote diagnosis management, and traceability of the entire industry chain. Implement industrial cloud and industrial big data innovation application pilots, build a batch of high-quality industrial cloud services and industrial big data platforms, and promote the open sharing of software and services, design and manufacturing resources, key technologies and standards.

Strengthen the construction of Internet infrastructure. Strengthen the planning and layout of industrial Internet infrastructure construction, and build an industrial Internet with low latency, high reliability, and wide coverage. Accelerate the deployment and construction of optical fiber network, mobile communication network and wireless local area network in the manufacturing agglomeration area, realize the broadband upgrade of information network, and improve the broadband access capability of enterprises. In response to the research and application requirements of cyber-physical system networks, we organized the development of intelligent control systems, industrial application software, fault diagnosis software and related tools, sensing and communication system protocols to achieve real-time communication, accurate identification, and effective interaction between people, equipment, and products intelligent control.

Focusing closely on the key links in key manufacturing areas, we will carry out integrated innovation and engineering applications for the integration of next-generation information technology and manufacturing equipment. Support joint research in government, industry, academia and research, develop smart products and self-controllable smart devices and realize industrialization. Relying on advantageous enterprises, closely follow the key process intelligence, the replacement of key post robots, the production process intelligent optimization control, supply chain optimization, and build key areas of intelligent factories / digital workshops. Pilot demonstrations and application promotion of process manufacturing, discrete manufacturing, smart equipment and products, new formats and models, intelligent management, and intelligent services are implemented in key regions, industries, and enterprises with good basic conditions and urgent needs. Establish an intelligent manufacturing standard system and information security system, and build an intelligent manufacturing network system platform.

By 2020, the level of intelligence in key manufacturing industries will be significantly improved, the operating costs of pilot demonstration projects will be reduced by 30%, the production cycle of products will be shortened by 30%, and the defective product rate will be reduced by 30%. By 2025, key areas of the manufacturing industry will be fully intelligent, operating costs of pilot demonstration projects will be reduced by 50%, product production cycle will be shortened by 50%, and defective product rate will be reduced by 50%.

（三）强化工业基础能力。

核心基础零部件（元器件）、先进基础工艺、关键基础材料和产业技术基础（以下统称“四基”）等工业基础能力薄弱，是制约我国制造业创新发展和质量提升的症结所在。要坚持问题导向、产需结合、协同创新、重点突破的原则，着力破解制约重点产业发展的瓶颈。

统筹推进“四基”发展。制定工业强基实施方案，明确重点方向、主要目标和实施路径。制定工业“四基”发展指导目录，发布工业强基发展报告，组织实施工业强基工程。统筹军民两方面资源，开展军民两用技术联合攻关，支持军民技术相互有效利用，促进基础领域融合发展。强化基础领域标准、计量体系建设，加快实施对标达标，提升基础产品的质量、可靠性和寿命。建立多部门协调推进机制，引导各类要素向基础领域集聚。

加强“四基”创新能力建设。强化前瞻性基础研究，着力解决影响核心基础零部件（元器件）产品性能和稳定性的关键共性技术。建立基础工艺创新体系，利用现有资源建立关键共性基础工艺研究机构，开展先进成型、加工等关键制造工艺联合攻关；支持企业开展工艺创新，培养工艺专业人才。加大基础专用材料研发力度，提高专用材料自给保障能力和制备技术水平。建立国家工业基础数据库，加强企业试验检测数据和计量数据的采集、管理、应用和积累。加大对“四基”领域技术研发的支持力度，引导产业投资基金和创业投资基金投向“四基”领域重点项目。

推动整机企业和“四基”企业协同发展。注重需求侧激励，产用结合，协同攻关。依托国家科技计划（专项、基金等）和相关工程等，在数控机床、轨道交通装备、航空航天、发电设备等重点领域，引导整机企业和“四基”企业、高校、科研院所产需对接，建立产业联盟，形成协同创新、产用结合、以市场促基础产业发展的新模式，提升重大装备自主可控水平。开展工业强基示范应用，完善首台（套）、首批次政策，支持核心基础零部件（元器件）、先进基础工艺、关键基础材料推广应用。

专栏3 工业强基工程
<p>开展示范应用，建立奖励和风险补偿机制，支持核心基础零部件（元器件）、先进基础工艺、关键基础材料的首批次或跨领域应用。组织重点突破，针对重大工程和重点装备的关键技术和产品急需，支持优势企业开展政产学研用联合攻关，突破关键基础材料、核心基础零部件的工程化、产业化瓶颈。强化平台支撑，布局 and 组建一批“四基”研究中心，创建一批公共服务平台，完善重点产业技术基础体系。</p> <p>到2020年，40%的核心基础零部件、关键基础材料实现自主保障，受制于人的局面逐步缓解，航天装备、通信装备、发电与输变电设备、工程机械、轨道交通装备、家用电器等产业急需的核心基础零部件（元器件）和关键基础材料的先进制造工艺得到推广应用。到2025年，70%的核心基础零部件、关键基础材料实现自主保障，80种标志性先进工艺得到推广应用，部分达到国际领先水平，建成较为完善的产业技术基础服务体系，逐步形成整机牵引和基础支撑协调互动的产业创新发展格局。</p>

（四）加强质量品牌建设。

提升质量控制技术，完善质量管理机制，夯实质量发展基础，优化质量发展环境，努力实现制造业质量大幅提升。鼓励企业追求卓越品质，形成具有自主知识产权的名牌产品，不断提升企业品牌价值和中国制造整体形象。

推广先进质量管理技术和方法。建设重点产品标准符合性认定平台，推动重点产品技术、安全标准全面达到国际先进水平。开展质量标杆和领先企业示范活动，普及卓越绩效、六西格玛、精益生产、质量诊断、质量持续改进等先进生产管理模式和方法。支持企业提高质量在线监测、在线控制和产品全生命周期质量追溯能力。组织开展重点行业工艺优化行动，提升关键工艺过程控制水平。开展质量管理小组、现场改进等群众性质量管理活动示范推广。加强中小企业质量管理，开展质量安全培训、诊断和辅导活动。

加快提升产品质量。实施工业产品质量提升行动计划，针对汽车、高档数控机床、轨道交通装备、大型成套技术装备、工程机械、特种设备、关键原材料、基础零部件、电子元器件等重点行业，组织攻克一批长期困扰产品质量提升的关键共性质量技术，加强可靠性设计、试验与验证技术开发应用，推广采用先进成型和加工方法、在线检测装置、智能化生产和物流系统及检测设备等，使重点实物产品的性能稳定性、质量可靠性、环境适应性、使用寿命等指标达到国际同类产品先进水平。在食品、药品、婴童用品、家电等领域实施覆盖产品全生命周期的质量管理、质量自我声明和质量追溯制度，保障重点消费品质量安全。大力提高国防装备质量可靠性，增强国防装备实战能力。

完善质量监管体系。健全产品质量标准体系、政策规划体系和质量管理体系法律法规。加强关系民生和安全等重点领域的行业准入与市场退出管理。建立消费品生产经营企业产品事故强制报告制度，健全质量信用信息收集和发布制度，强化企业质量主体责任。将质量违法违规记录作为企业诚信评级的重要内容，建立质量黑名单制度，加大对质量违法和假冒品牌行为的打击和惩处力度。建立区域和行业质量安全预警制度，防范化解产品质量安全风险。严格实施产品“三包”、产品召回等制度。强化监管检查和责任追究，切实保护消费者权益。

夯实质量发展基础。制定和实施与国际先进水平接轨的制造业质量、安全、卫生、环保及节能标准。加强计量科技基础及前沿技术研究，建立一批制造业发展急需的高准确度、高稳定性计量基标准，提升与制造业相关的国家量传溯源能力。加强国家产业计量测试中心建设，构建国家计量科技创新体系。完善检验检测技术保障体系，建设一批高水平的工业产品质量控制和技术评价实验室、产品质量监督检验中心，鼓励建立专业检测技术联盟。完善认证认可管理模式，提高强制性产品认证的有效性，推动自愿性产品认证健康发展，提升管理体系认证水平，稳步推进国际互认。支持行业组织发布自律规范或公约，开展质量信誉承诺活动。

推进制造业品牌建设。引导企业制定品牌管理体系，围绕研发创新、生产制造、质量管理和营销服务全过程，提升内在素质，夯实品牌发展基础。扶持一批品牌培育和运营专业服务机构，开展品牌管理咨询、市场推广等服务。健全集体商标、证明商标注册管理制度。打造一批特色鲜明、竞争力强、市场信誉好的产业集群区域品牌。建设品牌文化，引导企业增强以质量和信誉为核心的品牌意识，树立品牌消费理念，提升品牌附加值和软实力。加速我国品牌价值评价国际化进程，充分发挥各类媒体作用，加大中国品牌宣传推广力度，树立中国制造品牌良好形象。

（五）全面推行绿色制造。

加大先进节能环保技术、工艺和装备的研发力度，加快制造业绿色改造升级；积极推行低碳化、循环化和集约化，提高制造业资源利用效率；强化产品全生命周期绿色管理，努力构建高效、清洁、低碳、循环的绿色制造体系。

加快制造业绿色改造升级。全面推进钢铁、有色、化工、建材、轻工、印染等传统制造业绿色改造，大力研发推广余热余压回收、水循环利用、重金属污染减量化、有毒有害原料替代、废渣资源化、脱硫脱硝除尘等绿色工艺技术装备，加快应用清洁高效铸造、锻压、焊接、表面处理、切削等加工工艺，实现绿色生产。加强绿色产品研发应用，推广轻量化、低功耗、易回收等技术工艺，持续提升电机、锅炉、内燃机及电器等终端用能产品能效水平，加快淘汰落后机电产品和技术。积极引领新兴产业高起点绿色发展，大幅降低电子信息产品生产、使用能耗及限用物质含量，建设绿色数据中心和绿色基站，大力促进新材料、新能源、高端装备、生物产业绿色低碳发展。

推进资源高效循环利用。支持企业强化技术创新和管理，增强绿色精益制造能力，大幅降低能耗、物耗和水耗水平。持续提高绿色低碳能源使用比率，开展工业园区和企业分布式绿色智能微电网建设，控制和削减化石能源消费量。全面推行循环生产方式，促进企业、园区、行业间链接共生、原料互供、资源共享。推进资源再生利用产业规范化、规模化发展，

强化技术装备支撑，提高大宗工业固体废弃物、废旧金属、废弃电器电子产品等综合利用水平。大力发展再制造产业，实施高端再制造、智能再制造、在役再制造，推进产品认定，促进再制造产业持续健康发展。

积极构建绿色制造体系。支持企业开发绿色产品，推行生态设计，显著提升产品节能环保低碳水平，引导绿色生产和绿色消费。建设绿色工厂，实现厂房集约化、原料无害化、生产洁净化、废物资源化、能源低碳化。发展绿色园区，推进工业园区产业耦合，实现近零排放。打造绿色供应链，加快建立以资源节约、环境友好为导向的采购、生产、营销、回收及物流体系，落实生产者责任延伸制度。壮大绿色企业，支持企业实施绿色战略、绿色标准、绿色管理和绿色生产。强化绿色监管，健全节能环保法规、标准体系，加强节能环保监察，推行企业社会责任报告制度，开展绿色评价。

专栏4 绿色制造工程
组织实施传统制造业能效提升、清洁生产、节水治污、循环利用等专项技术改造。开展重大节能环保、资源综合利用、再制造、低碳技术产业化示范。实施重点区域、流域、行业清洁生产水平提升计划，扎实推进大气、水、土壤污染防治专项。制定绿色产品、绿色工厂、绿色园区、绿色企业标准体系，开展绿色评价。 到2020年，建成千家绿色示范工厂和百家绿色示范园区，部分重化工业能源资源消耗出现拐点，重点行业主要污染物排放强度下降20%。到2025年，制造业绿色发展和主要产品单耗达到世界先进水平，绿色制造体系基本建立。

（六）大力推动重点领域突破发展。

瞄准新一代信息技术、高端装备、新材料、生物医药等战略重点，引导社会各类资源集聚，推动优势和战略产业快速发展。

1. 新一代信息技术产业。

集成电路及专用装备。着力提升集成电路设计水平，不断丰富知识产权（IP）核和设计工具，突破关系国家信息与网络安全及电子整机产业发展的核心通用芯片，提升国产芯片的应用适配能力。掌握高密度封装及三维（3D）微组装技术，提升封装产业和测试的自主发展能力。形成关键制造装备供货能力。

信息通信设备。掌握新型计算、高速互联、先进存储、体系化安全保障等核心技术，全面突破第五代移动通信（5G）技术、核心路由交换技术、超高速大容量智能光传输技术、“未来网络”核心技术和体系架构，积极推动量子计算、神经网络等发展。研发高端服务器、大容量存储、新型路由交换、新型智能终端、新一代基站、网络安全等设备，推动核心信息通信设备体系化发展与规模化应用。

操作系统及工业软件。开发安全领域操作系统等工业基础软件。突破智能设计与仿真及其工具、制造物联与服务、工业大数据处理等高端工业软件核心技术，开发自主可控的高端工业平台软件和重点领域应用软件，建立完善工业软件集成标准与安全测评体系。推进自主工业软件体系化发展和产业化应用。

2. 高档数控机床和机器人。

高档数控机床。开发一批精密、高速、高效、柔性数控机床与基础制造装备及集成制造系统。加快高档数控机床、增材制造等前沿技术和装备的研发。以提升可靠性、精度保持性为重点，开发高档数控系统、伺服电机、轴承、光栅等主要功能部件及关键应用软件，加快实现产业化。加强用户工艺验证能力建设。

机器人。围绕汽车、机械、电子、危险品制造、国防军工、化工、轻工等工业机器人、特种机器人，以及医疗健康、家庭服务、教育娱乐等服务机器人应用需求，积极研发新产品，促进机器人标准化、模块化发展，扩大市场应用。突破机器人本体、减速器、伺服电机、控制器、传感器与驱动器等关键零部件及系统集成设计制造等技术瓶颈。

3. 航空航天装备。

航空装备。加快大型飞机研制，适时启动宽体客机研制，鼓励国际合作研制重型直升机；推进干线飞机、直升机、无人机和通用飞机产业化。突破高推重比、先进涡桨（轴）发动机及大涵道比涡扇发动机技术，建立发动机自主发展工业体系。开发先进机载设备及系统，形成自主完整的航空产业链。

航天装备。发展新一代运载火箭、重型运载器，提升进入空间能力。加快推进国家民用空间基础设施建设，发展新型卫星等空间平台与有效载荷、空天地宽带互联网系统，形成长期持续稳定的卫星遥感、通信、导航等空间信息服务能力。推动载人航天、月球探测工程，适度发展深空探测。推进航天技术转化与空间技术应用。

4. 海洋工程装备及高技术船舶。大力发展深海探测、资源开发利用、海上作业保障装备及其关键系统和专用设备。推动深海空间站、大型浮式结构物的开发和工程化。形成海洋工

程装备综合试验、检测与鉴定能力，提高海洋开发利用水平。突破豪华邮轮设计建造技术，全面提升液化天然气船等高技术船舶国际竞争力，掌握重点配套设备集成化、智能化、模块化设计制造核心技术。

5. 先进轨道交通装备。加快新材料、新技术和新工艺的应用，重点突破体系化安全保障、节能环保、数字化智能化网络化技术，研制先进可靠适用的产品和轻量化、模块化、谱系化产品。研发新一代绿色智能、高速重载轨道交通装备系统，围绕系统全寿命周期，向用户提供整体解决方案，建立世界领先的现代轨道交通产业体系。

6. 节能与新能源汽车。继续支持电动汽车、燃料电池汽车发展，掌握汽车低碳化、信息化、智能化核心技术，提升动力电池、驱动电机、高效内燃机、先进变速器、轻量化材料、智能控制等核心技术的工程化和产业化能力，形成从关键零部件到整车的完整工业体系和创新体系，推动自主品牌节能与新能源汽车同国际先进水平接轨。

7. 电力装备。推动大型高效超净排放煤电机组产业化和示范应用，进一步提高超大容量水电机组、核电机组、重型燃气轮机制造水平。推进新能源和可再生能源装备、先进储能装置、智能电网用输变电及用户端设备发展。突破大功率电力电子器件、高温超导材料等关键元器件和材料的制造及应用技术，形成产业化能力。

8. 农机装备。重点发展粮、棉、油、糖等大宗粮食和战略性经济作物育、耕、种、管、收、运、贮等主要生产过程使用的先进农机装备，加快发展大型拖拉机及其复式作业机具、大型高效联合收割机等高端农业装备及关键核心零部件。提高农机装备信息收集、智能决策和精准作业能力，推进形成面向农业生产的信息化整体解决方案。

9. 新材料。以特种金属功能材料、高性能结构材料、功能性高分子材料、特种无机非金属材料 and 先进复合材料为发展重点，加快研发先进熔炼、凝固成型、气相沉积、型材加工、高效合成等新材料制备关键技术和装备，加强基础研究和体系建设，突破产业化制备瓶颈。积极发展军民共用特种新材料，加快技术双向转移转化，促进新材料产业军民融合发展。高度关注颠覆性新材料对传统材料的影响，做好超导材料、纳米材料、石墨烯、生物基材料等战略前沿材料提前布局和研制。加快基础材料升级换代。

10. 生物医药及高性能医疗器械。发展针对重大疾病的化学药、中药、生物技术药物新产品，重点包括新机制和新靶点化学药、抗体药物、抗体偶联药物、全新结构蛋白及多肽药物、新型疫苗、临床优势突出的创新中药及个性化治疗药物。提高医疗器械的创新能力和产业化水平，重点发展影像设备、医用机器人等高性能诊疗设备，全降解血管支架等高值医用耗材，可穿戴、远程诊疗等移动医疗产品。实现生物3D打印、诱导多能干细胞等新技术的突破和应用。

专栏5 高端装备创新工程
组织实施大型飞机、航空发动机及燃气轮机、民用航天、智能绿色列车、节能与新能源汽车、海洋工程装备及高技术船舶、智能电网成套装备、高档数控机床、核电装备、高端诊疗设备等一批创新和产业化专项、重大工程。开发一批标志性、带动性强的重点产品和重大装备，提升自主设计水平和系统集成能力，突破共性关键技术与工程化、产业化瓶颈，组织开展应用试点和示范，提高创新发展能力和国际竞争力，抢占竞争制高点。
到2020年，上述领域实现自主研制及应用。到2025年，自主知识产权高端装备市场占有率大幅提升，核心技术对外依存度明显下降，基础配套能力显著增强，重要领域装备达到国际领先水平。

（七）深入推进制造业结构调整。

推动传统产业向中高端迈进，逐步化解过剩产能，促进大企业与中小企业协调发展，进一步优化制造业布局。

持续推进企业技术改造。明确支持战略性重大项目和高端装备实施技术改造的政策方向，稳定中央技术改造引导资金规模，通过贴息等方式，建立支持企业技术改造的长效机制。推动技术改造相关立法，强化激励约束机制，完善促进企业技术改造的政策体系。支持重点行业、高端产品、关键环节进行技术改造，引导企业采用先进适用技术，优化产品结构，全面提升设计、制造、工艺、管理水平，促进钢铁、石化、工程机械、轻工、纺织等产业向价值链高端发展。研究制定重点产业技术改造投资指南和重点项目导向计划，吸引社会资金参与，优化工业投资结构。围绕两化融合、节能降耗、质量提升、安全生产等传统领域改造，推广应用新技术、新工艺、新装备、新材料，提高企业生产技术和效益。

稳步化解产能过剩矛盾。加强和改善宏观调控，按照“消化一批、转移一批、整合一批、淘汰一批”的原则，分业分类施策，有效化解产能过剩矛盾。加强行业规范和准入管理，推动企业提升技术装备水平，优化存量产能。加强对产能严重过剩行业的动态监测分析，建立完善预警机制，引导企业主动退出过剩行业。切实发挥市场机制作用，综合运用法

律、经济、技术及必要的行政手段，加快淘汰落后产能。

促进大中小企业协调发展。强化企业市场主体地位，支持企业间战略合作和跨行业、跨区域兼并重组，提高规模化、集约化经营水平，培育一批核心竞争力强的企业集团。激发中小企业创业创新活力，发展一批主营业务突出、竞争力强、成长性好、专注于细分市场的专业化“小巨人”企业。发挥中外中小企业合作园区示范作用，利用双边、多边中小企业合作机制，支持中小企业走出去和引进来。引导大企业 with 中小企业通过专业分工、服务外包、订单生产等多种方式，建立协同创新、合作共赢的协作关系。推动建设一批高水平的中小企业集群。

优化制造业发展布局。落实国家区域发展总体战略和主体功能区规划，综合考虑资源能源、环境容量、市场空间等因素，制定和实施重点行业布局规划，调整优化重大生产力布局。完善产业转移指导目录，建设国家产业转移信息服务平台，创建一批承接产业转移示范园区，引导产业合理有序转移，推动东中西部制造业协调发展。积极推动京津冀和长江经济带产业协同发展。按照新型工业化的要求，改造提升现有制造业集聚区，推动产业集聚向产业集群转型升级。建设一批特色和优势突出、产业链协同高效、核心竞争力强、公共服务体系健全的新型工业化示范基地。

（八）积极发展服务型制造和生产性服务业。

加快制造与服务的协同发展，推动商业模式创新和业态创新，促进生产型制造向服务型制造转变。大力发展与制造业紧密相关的生产性服务业，推动服务功能区和服务平台建设。

推动发展服务型制造。研究制定促进服务型制造发展的指导意见，实施服务型制造行动计划。开展试点示范，引导和支持制造业企业延伸服务链条，从主要提供产品制造向提供产品和服务转变。鼓励制造业企业增加服务环节投入，发展个性化定制服务、全生命周期管理、网络精准营销和在线支持服务等。支持有条件的企业由提供设备向提供系统集成总承包服务转变，由提供产品向提供整体解决方案转变。鼓励优势制造业企业“裂变”专业优势，通过业务流程再造，面向行业提供社会化、专业化服务。支持符合条件的制造业企业建立企业财务公司、金融租赁公司等金融机构，推广大型制造设备、生产线等融资租赁服务。

加快生产性服务业发展。大力发展面向制造业的信息技术服务，提高重点行业信息应用系统的方案设计、开发、系统集成能力。鼓励互联网等企业发展移动电子商务、在线定制、线上到线下等创新模式，积极发展对产品、市场的动态监控和预测预警等业务，实现与制造业企业的无缝对接，创新业务协作流程和价值创造模式。加快发展研发设计、技术转移、创业孵化、知识产权、科技咨询等科技服务业，发展壮大第三方物流、节能环保、检验检测认证、电子商务、服务外包、融资租赁、人力资源服务、售后服务、品牌建设等生产性服务业，提高对制造业转型升级的支撑能力。

强化服务功能区和公共服务平台建设。建设和提升生产性服务业功能区，重点发展研发设计、信息、物流、商务、金融等现代服务业，增强辐射能力。依托制造业集聚区，建设一批生产性服务业公共服务平台。鼓励东部地区企业加快制造业服务化转型，建立生产服务基地。支持中西部地区发展具有特色和竞争力的生产性服务业，加快产业转移承接地服务配套设施和能力建设，实现制造业和服务业协同发展。

（九）提高制造业国际化发展水平。

统筹利用两种资源、两个市场，实行更加积极的开放战略，将引进来与走出去更好结合，拓展新的开放领域和空间，提升国际合作的水平和层次，推动重点产业国际化布局，引导企业提高国际竞争力。

提高利用外资与国际合作水平。进一步放开一般制造业，优化开放结构，提高开放水平。引导外资投向新一代信息技术、高端装备、新材料、生物医药等高端制造领域，鼓励境外企业和科研机构在我国设立全球研发机构。支持符合条件的企业在境外发行股票、债券，鼓励与境外企业开展多种形式的技术合作。

提升跨国经营能力和国际竞争力。支持发展一批跨国公司，通过全球资源利用、业务流程再造、产业链整合、资本市场运作等方式，加快提升核心竞争力。支持企业在境外开展并购和股权投资、创业投资，建立研发中心、实验基地和全球营销及服务体系；依托互联网开展网络协同设计、精准营销、增值服务创新、媒体品牌推广等，建立全球产业链体系，提高国际化经营能力和服务水平。鼓励优势企业加快发展国际总承包、总集成。引导企业融入当地文化，增强社会责任意识，加强投资和经营风险管控，提高企业境外本土化能力。

深化产业国际合作，加快企业走出去。加强顶层设计，制定制造业走出去发展总体战略，建立完善统筹协调机制。积极参与和推动国际产业合作，贯彻落实丝绸之路经济带和21世纪海上丝绸之路等重大战略部署，加快推进与周边国家互联互通基础设施建设，深化产业合作。发挥沿边开放优势，在有条件的国家和地区建设一批境外制造业合作园区。坚持政府

推动、企业主导，创新商业模式，鼓励高端装备、先进技术、优势产能向境外转移。加强政策引导，推动产业合作由加工制造环节为主向合作研发、联合设计、市场营销、品牌培育等高端环节延伸，提高国际合作水平。创新加工贸易模式，延长加工贸易国内增值链条，推动加工贸易转型升级。

四、战略支撑与保障

建设制造强国，必须发挥制度优势，动员各方面力量，进一步深化改革，完善政策措施，建立灵活高效的实施机制，营造良好环境；必须培育创新文化和中国特色制造文化，推动制造业由大变强。

（一）深化体制机制改革。

全面推进依法行政，加快转变政府职能，创新政府管理方式，加强制造业发展战略、规划、政策、标准等制定和实施，强化行业自律和公共服务能力建设，提高产业治理水平。简政放权，深化行政审批制度改革，规范审批事项，简化程序，明确时限；适时修订政府核准的投资项目目录，落实企业投资主体地位。完善政产学研用协同创新机制，改革技术创新管理体制和经费分配、成果评价和转化机制，促进科技成果资本化、产业化，激发制造业创新活力。加快生产要素价格市场化改革，完善主要由市场决定价格的机制，合理配置公共资源；推行节能量、碳排放权、排污权、水权交易制度改革，加快资源税从价计征，推动环境保护费改税。深化国有企业改革，完善公司治理结构，有序发展混合所有制经济，进一步破除各种形式的行业垄断，取消对非公有制经济的不合理限制。稳步推进国防科技工业改革，推动军民融合深度发展。健全产业安全审查机制和法规体系，加强关系国民经济命脉和国家安全的重要领域投融资、并购重组、招标采购等方面的安全审查。

（二）营造公平竞争市场环境。

深化市场准入制度改革，实施负面清单管理，加强事中事后监管，全面清理和废止不利于全国统一市场建设的政策措施。实施科学规范的行业准入制度，制定和完善制造业节能环保、节水、环保、技术、安全等准入标准，加强对国家强制性标准实施的监督检查，统一执法，以市场化手段引导企业进行结构调整和转型升级。切实加强监管，打击制售假冒伪劣行为，严厉惩处市场垄断和不正当竞争行为，为企业创造良好生产经营环境。加快发展技术市场，健全知识产权创造、运用、管理、保护机制。完善淘汰落后产能工作涉及的职工安置、债务清偿、企业转产等政策措施，健全市场退出机制。进一步减轻企业负担，实施涉企收费清单制度，建立全国涉企收费项目库，取缔各种不合理收费和摊派，加强监督检查和问责。推进制造业企业信用体系建设，建设中国制造信用数据库，建立健全企业信用动态评价、守信激励和失信惩戒机制。强化企业社会责任建设，推行企业产品标准、质量、安全自我声明和监督制度。

（三）完善金融扶持政策。

深化金融领域改革，拓宽制造业融资渠道，降低融资成本。积极发挥政策性金融、开发性金融和商业金融的优势，加大对新一代信息技术、高端装备、新材料等重点领域的支持力度。支持中国进出口银行在业务范围内加大对制造业走出去的服务力度，鼓励国家开发银行增加对制造业企业的贷款投放，引导金融机构创新符合制造业企业特点的产品和业务。健全多层次资本市场，推动区域性股权市场规范发展，支持符合条件的制造业企业在境内外上市融资、发行各类债务融资工具。引导风险投资、私募股权投资等支持制造业企业创新发展。鼓励符合条件的制造业贷款和租赁资产开展证券化试点。支持重点领域大型制造业企业集团开展产融结合试点，通过融资租赁方式促进制造业转型升级。探索开发适合制造业发展的保险产品和服务，鼓励发展贷款保证保险和信用保险业务。在风险可控和商业可持续的前提下，通过内保外贷、外汇及人民币贷款、债权融资、股权融资等方式，加大对制造业企业在境外开展资源勘探开发、设立研发中心和高新技术企业以及收购兼并等的支持力度。

（四）加大财税政策支持力度。

充分利用现有渠道，加强财政资金对制造业的支持，重点投向智能制造、“四基”发展、高端装备等制造业转型升级的关键领域，为制造业发展创造良好政策环境。运用政府和社会资本合作（PPP）模式，引导社会资本参与制造业重大项目建设、企业技术改造和关键基础设施建设。创新财政资金支持方式，逐步从“补建设”向“补运营”转变，提高财政资金使用效益。深化科技计划（专项、基金等）管理改革，支持制造业重点领域科技研发和示范应用，促进制造业技术创新、转型升级和结构布局调整。完善和落实支持创新的政府采购政策，推动制造业创新产品的研发和规模化应用。落实和完善使用首台（套）重大技术装备等鼓励政策，健全研制、使用单位在产品创新、增值服务和示范应用等环节的激励约束机制。实施有利于制造业转型升级的税收政策，推进增值税改革，完善企业研发费用计核方法，切实减轻制造业企业税收负担。

（五）健全多层次人才培养体系。

加强制造业人才发展统筹规划和分类指导，组织实施制造业人才培养计划，加大专业技术人才、经营管理人才和技能人才的培养力度，完善从研发、转化、生产到管理的人才培养体系。以提高现代经营管理水平和企业竞争力为核心，实施企业经营管理人才素质提升工程和国家中小企业银河培训工程，培养造就一批优秀企业家和高水平经营管理人才。以高层次、急需紧缺专业技术人才和创新型人才为重点，实施专业技术人才知识更新工程和先进制造卓越工程师培养计划，在高等学校建设一批工程创新训练中心，打造高素质专业技术人才队伍。强化职业教育和技能培训，引导一批普通本科高等学校向应用技术类高等学校转型，建立一批实训基地，开展现代学徒制试点示范，形成一支门类齐全、技艺精湛的技术技能人才队伍。鼓励企业与合作，培养制造业急需的科研人员、技术技能人才与复合型人才，深化相关领域工程博士、硕士专业学位研究生招生和培养模式改革，积极推进产学研结合。加强产业人才需求预测，完善各类人才信息库，构建产业人才水平评价制度和信息发布平台。建立人才激励机制，加大对优秀人才的表彰和奖励力度。建立完善制造业人才服务机构，健全人才流动和使用的体制机制。采取多种形式选拔各类优秀人才重点是专业技术人才到国外学习培训，探索建立国际培训基地。加大制造业引智力度，引进领军人才和紧缺人才。

（六）完善中小微企业政策。

落实和完善支持小微企业发展的财税优惠政策，优化中小企业发展专项资金使用重点和方式。发挥财政资金杠杆撬动作用，吸引社会资本，加快设立国家中小企业发展基金。支持符合条件的民营资本依法设立中小型银行等金融机构，鼓励商业银行加大小微企业金融服务专营机构建设力度，建立完善小微企业融资担保体系，创新产品和服务。加快构建中小微企业征信体系，积极发展面向小微企业的融资租赁、知识产权质押贷款、信用保险保单质押贷款等。建设完善中小企业创业基地，引导各类创业投资基金投资小微企业。鼓励大学、科研院所、工程中心等对中小企业开放共享各种实（试）验设施。加强中小微企业综合服务体系建设，完善中小微企业公共服务平台网络，建立信息互联互通机制，为中小微企业提供创业、创新、融资、咨询、培训、人才等专业化服务。

（七）进一步扩大制造业对外开放。

深化外商投资管理体制的改革，建立外商投资准入前国民待遇加负面清单管理机制，落实备案为主、核准为辅的管理模式，营造稳定、透明、可预期的营商环境。全面深化外汇管理、海关监管、检验检疫管理改革，提高贸易投资便利化水平。进一步放宽市场准入，修订钢铁、化工、船舶等产业政策，支持制造业企业通过委托开发、专利授权、众包众创等方式引进先进技术和高端人才，推动利用外资由重点引进技术、资金、设备向合资合作开发、对外并购及引进领军人才转变。加强对外投资立法，强化制造业企业走出去法律保障，规范企业境外经营行为，维护企业合法权益。探索利用产业基金、国有资本收益等渠道支持高铁、电力装备、汽车、工程施工等装备和优势产能走出去，实施海外投资并购。加快制造业走出去支撑服务机构建设和水平提升，建立制造业对外投资公共服务平台和出口产品技术性贸易服务平台，完善应对贸易摩擦和境外投资重大事项预警协调机制。

（八）健全组织实施机制。

The leading group for national manufacturing and building a strong country was established, with leading comrades from the State Council as the team leader, and members from the responsible comrades of relevant departments and units of the State Council. The main responsibilities of the leading group are: overall planning and coordination of the overall work of building a strong country, deliberation of major plans, major policies, major projects, major issues and important work arrangements, strengthening strategic planning, and guiding departments and localities to carry out work. The office of the leading group is located in the Ministry of Industry and Information Technology and is responsible for the daily work of the leading group. Establish a strategic consulting committee for the construction of a strong manufacturing country to study forward-looking and strategic major issues in the development of the manufacturing industry, and provide consultation and evaluation on major manufacturing decisions. Support the construction of multi-level, multi-domain, and multi-modal new think tanks with Chinese characteristics, including social think tanks and enterprise think tanks, and provide strong intellectual support for the construction of a strong manufacturing country. Establish a supervision

and inspection mechanism and a third-party evaluation mechanism for the implementation of "Made in China 2025", and improve statistical monitoring, performance evaluation, dynamic adjustment, and supervision and evaluation mechanisms. Establish the "Made in China 2025" mid-term evaluation mechanism, and make necessary adjustments to target tasks in due course.

All regions and departments should fully understand the significance of building a strong manufacturing country, strengthen organizational leadership, improve working mechanisms, and strengthen coordination and linkage between departments. All regions should study and formulate specific implementation plans based on local reality, refine policy measures, and ensure that all tasks are put into place. The Ministry of Industry and Information Technology should strengthen follow-up analysis and supervision and guidance with relevant departments, and report major issues to the State Council in a timely manner.

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