

# Building a Taiwan that Possesses both Technological Innovation and Resilience with the Five Trusted Industry Sectors

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## I. Preface

Today's international situation is ever-changing and we face challenges that are always changing. In the process of responding to these challenges, national industrial development strategy will create new momentum for economic growth, help industry respond to the rapidly changing environment, and enhance Taiwan's overall industrial international competitiveness. The government has promoted industrial policies such as the "5+2 Industries Innovation Plan" and "Six Core Strategic Industries" in the past, which not only successfully drove the upgrading and transformation of domestic industries, but also made Taiwan a critical force in the future global economy, laying a solid foundation for Taiwan's industrial development.

Taiwan is still facing environmental challenges such as global geopolitical changes and the accelerated restructuring of supply chains. It must continuously increase overall national power continue to maintain its key position in the global industrial supply chain and seize the business opportunities brought by geopolitical changes. At the inauguration ceremony on May 20, 2024, President Lai Ching-te announced the promotion of the development of "five trusted industry sectors" namely semiconductors, artificial intelligence (AI), military, security and surveillance, and next-generation communications, to seize the opportunities and continue to strengthen Taiwan's technology and economy.

## II. The Importance of and Opportunities for Taiwan's Strengthening of National Security and Resilience

The government's strategic purpose of promoting the five trusted industry sectors is not only to position Taiwan as an indispensable and trusted partner in the global democratic technology alliance and to drive the development of various industries through innovation, but more importantly, in the face of geopolitical influences and current global industrial trends, Taiwan's industrial development prioritizes enhancing national security and resilience.

### 1. International Geopolitical Turmoil Highlights the Importance of National Security and Resilience

The wars between Ukraine and Russia and Israel and Hamas are military conflicts that have triggered huge changes in international geopolitics in recent years. The conflicts have not stopped, and their effects are widening. Taiwan is located in a geopolitically sensitive area and is the core of the global high-tech industry. It should be vigilant and take precautions against geopolitical instability, crises and conflicts. In addition, new war types have also subverted traditional war models in these two international wars, such as unmanned vehicles, artificial intelligence and other technologies, which have been widely used for military purposes; attack types are often surprising, testing the ability of national defenses to respond. Therefore, gaining insight into the international situation is crucial to enhancing national security; taking advantage of the trends to strengthen the development of key core strategic industries and deepen national security awareness are top priorities for improving Taiwan's overall national security response capabilities.

In recent years, Taiwan's pivotal role in geostrategy and global high-tech supply chains has attracted significant international attention. In the face of "red supply chain" competition and low-price dumping, the importance of national security and resilience has become even more underlined. The government must carefully formulate plans for industrial autonomy. In terms of development strategy, in addition to having autonomous national defense capabilities, Taiwan must also enhance the autonomy of its core industry supply chains and ensure the secure

and stable development of the information and communications technology sector.

## **2. In Response to Global Industrial Trends, Build Taiwan's Resilient Industries and National Security**

### **(1) Scientific and Technological Needs Drive the Development of the Semiconductor Market**

With the widespread and rapidly growing application demands of emerging technologies such as the Internet of Things (IoT), artificial intelligence (AI), and quantum computing, the semiconductor industry is undergoing an unprecedented transformation, driving the rapid growth of global semiconductor-related industries. According to a forecast by the global semiconductor industry association (SEMI) in the fourth quarter of 2023, the global semiconductor market is expected to surpass US\$1 trillion by 2030, with a compound annual growth rate (CAGR) of 10% from 2023 to 2030. This will also propel growth in the semiconductor equipment market, which is projected to exceed US\$127 billion.

In the new wave of global emerging technology applications, Taiwan's semiconductor ecosystem has become the key to victory. Taiwan occupies an important position in the world in wafer foundry, packaging and testing. In the future, in addition to consolidating its existing leading advantages, it must continue to improve advanced technologies, and grasp the development potential business opportunities of IC design, equipment, and materials, and closely integrate with the global supply chain to deepen the trust relationship with partners.

### **(2) Artificial Intelligence is Widely Applied**

OpenAI launched ChatGPT in 2022, and marking the dawn of a new era for AI technology and becoming the mainstream of global digitalization; it has also driven software, hardware and cross-industry applications, from key components, smart mobile devices to software application services, etc. The artificial intelligence industry ecology is taking shape. As AI technology

continues to evolve, integrating with the IoT, cloud computing, and big data, it has paved the way for new Artificial Intelligence of Things (AIoT) applications. AI has become an important force in industrial change, leading human life into a new stage and new industrial innovation trends.

According to a 2024 forecast by research firm Gartner, by 2026, more than 80% of enterprises will use generative AI APIs (Application Programming Interface, application programming interface) or models. AI is not only an innovation in science and technology, it will also comprehensively change human life and industry, and have a profound impact on the application of technology in various industries. Breakthroughs in AI technology have led to the vigorous development of related industries, especially in the fields of semiconductor chips and servers. Taiwan, with its strong advantage in hardware manufacturing, aims to use policy tools to accelerate the connection between application demands and industry, fostering collaboration and enhancing the resilience of AI-related industries.

### (3) China Shock 2.0

After the COVID-19 pandemic, the international market has become the best outlet for China's surplus products. In order to improve its economic prospects, China has vigorously promoted exports to revive the economy, dumping solar panels, lithium batteries, electric vehicles and other products at low prices and increasing exports. Countries around the world are worried about the impact of "China shock 2.0" .

China's solar panels, lithium batteries, electric vehicles and other products are regarded as undermining national security and harming domestic industries in many European and North American countries. The impact of "China Shock 2.0" has garnered global attention and prompted the adoption of different measures; for example, the United States resists with trade protectionism, while other countries have adopted de-Sinicization policies in strategic industrial supply chains. Therefore, facing the current

"China Shock 2.0", Taiwan must respond accordingly in order to maintain its autonomy and resilience in the face of industrial shocks and national security threats.

### III. Promote the Five Trusted Industry Sectors

Taking into account factors such as global industrial trends and geopolitical influences, in order to further enhance the overall industrial power of Taiwan, the government is promoting the "Five Trusted Industry Sectors", including semiconductors, artificial intelligence, military, security and surveillance, and next-generation communications, based on Taiwan's industrial development outlook. The development direction is explained as follows:

#### 1. Semiconductor Industry

Taiwan's semiconductor industry plays a pivotal role internationally. The global market share of wafer foundry and packaging and testing reached 65% and 53%, respectively, in 2023, both ranking first in the world. Taiwan's IC design industry also ranks second globally, with a 19% market share. As major countries around the world are promoting the localization of semiconductor supply chains, Taiwan's mature manufacturing processes are facing threats. In response to the challenge, the government will enhance the national-level semiconductor industry strategy to maintain Taiwan's position as the dominant player in the global supply chain, and continue to expand its competitive advantages.

Therefore, in addition to continuing to strengthen domestic IC design and R&D capabilities and building an advanced semiconductor R&D and trial mass production base, we also commit to assisting manufacturers in developing advanced processes and packaging to consolidate Taiwan's leading position. Additionally, Taiwan is committed to the development of semiconductor materials and equipment, with the goal of cementing its role as a global leader in the semiconductor industry.

#### 2. Artificial Intelligence Industry

Taiwan has advantages in hardware manufacturing; servers and motherboards are globally competitive. Upstream supply chains such as IC design, wafer foundry, electronic components and other industries are also powerful and competitive

internationally. Taiwan will continue industry, academia and research cooperation to strengthen forward-looking technological innovation and research and development to ensure its competitive advantage.

In the future, the focus will be on high-value development of AI smart applications. The Ministry of Digital Affairs has combined with the National Development Fund to establish a NT\$10 billion fund to invest in the AI digital industry. In addition, the government will also actively increase Taiwan's global AI influence by building new smart energy-saving data centers and seeking international cooperation to expand computing power and introduce low-energy solutions.

### **3. Military Industry**

With drones playing a key role in asymmetric warfare in international geopolitical military conflicts such as the Ukraine-Russia war, the international demand for non-Chinese made drones (UAV) is increasing, and the global commercial drone market has great development potential. Taiwan will continue to use the approach of "military leading the private sector" to strengthen national defense autonomy, to achieve military and civilian joint use synergy and promote the development of the military industry.

Therefore, in addition to continuing to promote the autonomous capability for production of indigenous aircraft and ships, we will also respond to the future military and commercial development needs of drones. This will involve actively leveraging domestic market and addressing technological gaps to establish Taiwan as a central hub in the democratic supply chain for drones.

### **4. Security and Surveillance Industry**

Affected by the U.S.-China trade war, the global security and surveillance industry has taken on a new look, accelerating the "de-Sinicization" of security and surveillance products in European and North America. After the "red supply chain" has been suppressed, it will provide Taiwan with a really good opportunity to join the supply chain. Facing core sensitive industries such as the security and surveillance industry and cyber security, Taiwan can seize development opportunities and become a trustworthy partner in the security and surveillance industry supply chain.

In addition to actively assisting the domestic security and surveillance industry in developing reliable security and surveillance products and solutions, we will also actively develop cyber security, mastering forward-looking technologies and introducing them into core industries such as the semiconductors and military industries to strengthen the resilience of industrial information security and allow Taiwan to become a trusted security and surveillance and cyber security power.

### **5. Next-generation Communications Industry**

As 5G communication technology matures and its applications become more universal, countries are gradually investing in the next generation of communications technology. The international standard for 6G systems is currently under development, and the satellite system communication network plays an important role in the Ukraine-Russia war, providing flexible adaptability for national security in modern new war forms.

The government will develop the next-generation communications industry to strengthen the resilience of Taiwan's future global communications network. In addition to the strategy of autonomous key 6G technologies in response to future 6G development, it will also integrate terrestrial and satellite networks to develop various application fields and solutions.

## **IV. Conclusion**

The five trusted industry sectors are an important political statement of President Lai and a key project of the National Project of Hope and they are of high strategic significance. These sectors will bolster Taiwan's central role in the global supply chain, strengthen ties with the democratic camp, and enhance the competitiveness of various industries. This, in turn, will create high-salary jobs, and improve the overall national security and resilience. In addition, the government will also build a complete ecosystem of the five trusted industry sectors, continue to optimize the investment environment from the aspects of talent, capital, research and development, international cooperation, innovation and entrepreneurship. By implementing internationally competitive talent policies and enhancing industrial power and influence, Taiwan will enjoy strong economic growth and further strengthening and upgrading of its economy, making it a place where the sun never sets on its economy. 🌅