



TSMC Arizona Corporation

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BY ELECTRONIC FILING

Stephen Astle
Director, Defense Industrial Base Division
Office of Strategic Industries and Economic Security
Bureau of Industry and Security
U.S. Department of Commerce
1401 Constitution Avenue, N.W.
Washington, DC 20230

Re: Comments of TSMC Arizona Corporation on the Section 232 Investigation of Imports of Semiconductors and Semiconductor Manufacturing Equipment, Docket No. BIS-2025-0021 (XRIN 0694-XC121).

Dear Mr. Astle,

TSMC Arizona Corporation (“TSMC Arizona”), headquartered in Phoenix, Arizona, and a wholly-owned subsidiary of Taiwan Semiconductor Manufacturing Company Limited (“TSMC”) appreciates the opportunity to offer our input on the U.S. Department of Commerce’s (the “Department”) Section 232 National Security Investigation of Imports of Semiconductors and Semiconductor Manufacturing Equipment.

1. A Short Introduction to TSMC and Our U.S. Production

TSMC pioneered the foundry business model when it was founded in 1987 and has been a leading semiconductor manufacturer ever since. The foundry model allows foundries and design companies to focus separately on the advancement of their distinct specialties. Foundries focus on the development of complex manufacturing process technologies that make it possible to squeeze billions of transistors into a finger-nail sized chip. Foundries also shoulder most of the capital investment risk to prepare substantial capacity that can be shared and leveraged by multiple design companies. Leading foundries typically have capital expenditures equal to a high percentage (e.g. 30% or more in recent years) of their annual revenue. This division of labor directly enables the thriving fabless semiconductor design industry. Design companies focus exclusively on creating new semiconductor designs, products and applications such as 5G, artificial intelligence (“AI”), and autonomous driving. Among the leading foundries, TSMC distinguishes itself as a pure-play service provider. TSMC does not design and sell its own semiconductor products and does not compete with its design company customers. This enables deep trust between TSMC and its customers and allows close collaboration to unleash innovation for the global semiconductor industry.

TSMC is a publicly traded company headquartered in Taiwan. TSMC first began to manufacture semiconductors in the United States in 1998 through investing and establishing WaferTech LLC, subsequently renamed TSMC Washington, LLC (“TSMC Washington”), in Camas, Washington. Since its founding as the largest foreign investment in Washington State history, TSMC Washington has continued to produce specialty chips in the 0.35um to 0.18um technology nodes, maintaining steady employment of between 900-1,000 employees over its 27-year history. Following increasing demand by its many U.S. customers, TSMC announced in 2020 initial plans to open an advanced semiconductor fabrication plant (fab) in Arizona, and soon thereafter our company TSMC Arizona was incorporated. This plan was later expanded to include the onshoring of three leading-edge fabs in Phoenix, Arizona, with a total investment of \$65 billion. This initiative aims to support our U.S. customers, such as AMD, Apple, Broadcom, NVIDIA, and Qualcomm, who have been pioneers in mobile, AI and high-performance computing (“HPC”), whether in chip design, hardware systems, or software, algorithms, or large language models.

In March 2025, TSMC announced further plans to scale up its advanced semiconductor technology investment in the United States by \$100 billion to address growing demand of its U.S. customers. The plans include building three more advanced logic fabs, along with two advanced packaging plants, and a major R&D center, in addition to the three fabs previously planned. Altogether these investments in Arizona, presently totaling \$165 billion, will enable TSMC Arizona to scale up to a GIGAFAB® cluster in the United States. TSMC Arizona is working in close cooperation with federal, state and local officials in the United States to realize these plans. See Section 2 below for further details.

TSMC’s plan for large-scale manufacturing of advanced node semiconductors at TSMC Arizona, and its continuous investments in TSMC Washington, reflect TSMC’s vision and long-term plans for semiconductor production in the United States in order to support increasing customers’ needs. These ongoing investments — built on the anticipated growing demand for TSMC’s manufacturing capacity and service onshore and the welcoming investment environment facilitated by the U.S. government — contribute to our resilient supply chain ecosystem. As integral parts of TSMC’s global manufacturing network, TSMC Arizona and TSMC Washington provide a secure and reliable supply chain to support U.S. national security objectives, especially in emergency situations such as natural disaster or pandemic.

Throughout the semiconductor industry’s history of relentless technology advancement, the United States has remained the industry leader in contributions to the global semiconductor value chain. This success is driven by a continuous stream of innovative ideas, a world-class talent pool, and a stable, pro-innovation and pro-business environment. Now, the United States is undergoing a historic expansion of the semiconductor manufacturing sector under the leadership of the Administration, driven by initiatives such as TSMC’s ambitious plan in Arizona. U.S. semiconductor production capacity is expected to expand significantly in the decade ahead.¹ As discussed in Section 3 below, it is crucial in this investigation to avoid imposing measures that may impede this onshoring momentum,

¹ SIA, *Emerging Resilience in The Semiconductor Supply Chain*, May 2024, <https://www.semiconductors.org/emerging-resilience-in-the-semiconductor-supply-chain/>.

particularly those that could create uncertainties for TSMC's substantial investments and plans for ramping up cutting-edge semiconductor production in the United States.

TSMC looks forward to continuing to work with U.S. customers and the U.S. government at the federal, state and local levels to devise innovative approaches to maximizing customers' global competitiveness, developing a skilled industry workforce, facilitating increased investment and addressing U.S. security needs.

2. TSMC's Investments in the United States Will Help Achieve the Administration's Goals for Onshoring Advanced Semiconductor Manufacturing at Scale

TSMC's intended historical \$165 billion investment includes plans for six advanced semiconductor fabs, two advanced packaging facilities and a major R&D center in Arizona, making it the largest single foreign direct investment in U.S. history. This ambitious initiative will play a crucial role in strengthening the U.S. semiconductor ecosystem by increasing American production of advanced semiconductor technology. It will also fill gaps in the domestic AI supply chain with TSMC's first U.S. advanced packaging investments.

The success of our first Arizona fab, which entered high-volume commercial production last year, demonstrates how our GIGAFAB® project will advance the U.S. Government's stated semiconductor production objectives, which are the focus of this Section 232 Investigation, including:

a. Onshoring U.S. production of semiconductors on a commercially massive scale

- i. Six state-of-the-art fabrication plants (GIGAFAB®).** TSMC expects the Arizona project to create hundreds of billions of dollars in semiconductor value for AI and other cutting-edge applications and generate over \$200 billion spillover economic output in Arizona and the U.S. After our Arizona plan is fully on-line, TSMC Arizona will have established an independent leading-edge manufacturing complex with over 100,000 wafers per month capacity, making it a GIGAFAB® cluster. The added capacity from Arizona will ultimately comprise around 30% of TSMC's total worldwide capacity for 2nm and more advanced technology nodes. This massive amount of locally produced semiconductors will be available to meet U.S. national and economic security needs.
- ii. Two advanced packaging facilities.** To solidify U.S. leadership in AI, TSMC will onshore its 3DFabric® technology through large-scale investments in advanced packaging. Advanced semiconductor packaging facilities have become increasingly important to meeting customers' computing power and performance requirements. These two facilities will utilize TSMC's state-of-the-art packaging technologies in the United States, further strengthening U.S. semiconductor supply chain resilience.
- iii. A major R&D center.** This Arizona R&D facility is projected to employ roughly 1,000 highly skilled research professionals in advanced semiconductor technology areas. It will support our manufacturing operations, enhance our process technologies and allow it to more fully operate independently, thereby contributing to U.S. innovation and industry leadership.

b. Onshoring semiconductor production at advanced technology levels for AI and other innovative applications

Our GIGAFAB® will support the needs of our leading-edge U.S. customers in areas such as smartphone, AI and HPC applications. To provide more detail on the progress of our investment in these leading-edge technology nodes:

- i.** Our first new fab in Arizona entered high-volume production in late 2024, using the 4nm process technology with initial yields comparable to those of the TSMC’s Taiwan fabs.
- ii.** Construction of the core and shell of the second fab, which will use 3nm process technology, is already complete. We are now fitting up the interior of the facility to meet the rapidly growing demand from AI customers.
- iii.** TSMC began construction on the third fab in 2025, which will initially use 2nm and later A16 process technology, featuring Super Power Rail, TSMC’s best-in-class backside power delivery solution.
- iv.** The construction and operational timelines of the fourth, fifth and sixth fabs will align with our strategic goals and market demands, and we are committed to moving as fast as possible to meet our U.S. customers’ needs.

Beyond the front-end fabs, as noted, TSMC Arizona plans to build two new advanced packaging facilities. Our strategy to onshore 3DFabric® via first-time advanced packaging investments further ensures that the most critical and innovative manufacturing processes occur on U.S. soil. This strengthens domestic technological capabilities and significantly enhances supply chain resilience.

c. Supporting the wider semiconductor industrial ecosystem, exports and jobs

We expect our Arizona project to foster and accelerate supply chain ecosystem development in the United States, driving over \$200 billion of indirect economic output in Arizona and nationwide in the next decade.

i. High-value long-term jobs

Our project will create tens of thousands of high-paying, high-tech jobs in advanced chip manufacturing and R&D. In the near term, the project is also expected to support 40,000 construction jobs over the next four years.

ii. Export growth to enhance U.S. economic security and help address trade imbalances

In addition to supporting our important U.S. customers with local production, our project is expected to support significant growth in export of U.S.-manufactured semiconductors and related products. This will enhance U.S. economic growth and security and will help address the trade in goods deficit that is a major priority of the Administration.

iii. Supporting U.S. input suppliers in semiconductor manufacturing equipment (“SME”) and critical materials

TSMC Arizona will be a high-volume and long-term customer for important domestic upstream suppliers, including leading U.S. SME and semiconductor materials suppliers. These companies have locations across the United States, meaning the economic benefits will not only be concentrated in Arizona. Additionally, industry confidence in TSMC Arizona's long-term presence in Arizona is bringing onshore other critical materials suppliers from abroad, creating additional construction, engineering and technician jobs, and thereby further enhancing the U.S.-based semiconductor manufacturing supply chain.

iv. Training future high-skill U.S. workers in collaboration with U.S. universities

Our decision to locate our only leading-edge manufacturing cluster outside of Taiwan in the United States was also influenced by the availability of engineering talent and skilled workforce. The United States has excellent universities with large engineering schools that develop great talent, along with community colleges and technical education programs to feed our technician pipeline. It is in our vital interest to help foster and train a skilled U.S. workforce.

TSMC is partnering with local educational institutions to develop training programs and initiatives to equip the workforce with the necessary skills for semiconductor manufacturing. We have active and ongoing engagement in state with Arizona State University, University of Arizona, Northern Arizona University, and several local Arizona community colleges. TSMC also has ongoing engagement with other U.S. institutions, such as Georgia Institute of Technology, Massachusetts Institute of Technology, Purdue University, Stanford University, University of California, Berkeley, University of California, Los Angeles, and University of Illinois.

Helping to develop and grow the skilled workforce in the United States will, in turn, attract more technology investment as the pool of available talent is an important factor in manufacturers' investment decisions.

3. TSMC Respectfully Requests the Administration to Take Actions in this Proceeding That Will Allow TSMC Arizona to Proceed Expeditiously to Realize Its Plans for an Advanced Semiconductor GIGAFAB® Cluster in Arizona

a. Any Measures the Administration Adopts Should “Do No Harm” to U.S. Government Security Policy Goals, which Include TSMC Arizona’s Advanced Semiconductor Production

i. Any Import Measures Should Not Create Uncertainties for Existing Semiconductor Investments

Onshoring advanced semiconductor production is extremely complex and requires significant advance planning, including management of manifold inputs from numerous supply chain companies around the world. TSMC Arizona, like other manufacturers in highly complex industries, has carefully developed long-term investment strategies and committed to extensive construction projects based on existing policy frameworks. To allow investments such as TSMC Arizona to proceed expeditiously, the Administration should exempt TSMC Arizona and other companies that have already committed to

semiconductor manufacturing projects in the United States from tariffs or other import restrictions.

In its invitation for comments, the Department asked about “the feasibility of increasing domestic semiconductor capacity,” and as detailed above, the answer for advanced semiconductors is a resounding “yes.” The Department also asked “whether ... tariffs or quotas are necessary to protect national security,” and the answer is that imports that are critical to the construction and operation of advanced manufacturing facilities should be viewed as enhancing, not threatening, U.S. security. Simply put, U.S. security interests are served by measures that facilitate the speedy advancement of semiconductor manufacturing projects already underway and are diminished by measures that delay, impede, or impair such projects. For example, imposing tariffs on SME imports will result in higher project costs and could delay progress, or in some instances endanger the commercial viability of many announced projects and those still under consideration. Many of the imported SME and semiconductor materials are not currently available in the United States, whether in terms of quality or quantity. Programs to help accelerate the develop of semiconductor manufacturing clusters in the United States, such as our Arizona project, will be critical to creating the demand necessary to motivate further supply chain investments to produce such SME and semiconductor materials domestically.

At a minimum, any tariffs or other import restrictions should be imposed with realistic adjustment times for TSMC Arizona and other U.S. businesses and investors who have already committed to substantial U.S. semiconductor production. This would include ensuring continued tariff-free access to inputs where local sourcing is unavailable or unfeasible or will take time to onshore, particularly from longstanding suppliers within the ecosystem. To this end, we applaud the Administration’s decision to exempt several critically import SME inputs from the proposed reciprocal tariffs, and we believe preservation of this exemption is vital to the success and sustainability of efforts to reshore advanced semiconductor manufacturing in the United States.

ii. TSMC’s Global Manufacturing Network Supports U.S. Customers’ Innovation, and Any Import Measures Should Not Impede This Access

New import restrictions could jeopardize current U.S. leadership in the competitive technology industry and create uncertainties for many committed semiconductor capital projects in the U.S., including TSMC Arizona’s significant investment plan in Phoenix. It is important to note that cutting-edge semiconductors, such as those produced at TSMC Arizona, cannot function alone; they need to work in tandem with other semiconductor components, including varied legacy chips, to unleash their full power and functionality. TSMC’s global network of fabs ensures our leading U.S. customers’ needs for both advanced and mature-node semiconductors can be met seamlessly to maximize their market competitiveness. TSMC’s global manufacturing footprint also provides essential redundancy and offers reliable alternatives to avoid supply chain disruption. Additional tariffs or other restrictive measures on semiconductors could reduce the profitability of leading U.S. companies by limiting sourcing options, driving up production costs, and

reducing product demand. This, in turn, would affect their ability to fund future R&D, which is essential for sustaining or advancing their market and technology leadership.

Lower market demand for our leading U.S. customers' products may consequently reduce demand for TSMC's manufacturing capacity and service onshore. As referenced above, our expansion plans in Arizona are to support our U.S. customers' demand. Diminished demand could create uncertainty around the timeline for the construction and operation of our Arizona fabs. It could also undermine TSMC's financial capacity to timely execute its ambitious Arizona project. Therefore, we respectfully request that the Administration avoids imposing tariffs or other restrictive measures on semiconductors made outside of the United States.

iii. Tariffs on Imports of End Products and Semi-Finished Products Would Reduce Demand for Semiconductors

As outlined earlier, the successful and timely completion of the planned TSMC Arizona project depends on our expectation of growing demand for TSMC's manufacturing capacity and service from our leading U.S. customers. Tariffs that raise the cost of end-consumer products will lower demand for such products and the semiconductor components they contain. Therefore, TSMC respectfully requests that any remedial import measures imposed resulting from this investigation not extend to downstream end products and semi-finished products containing semiconductors.

b. Any Measures the Administration Adopts Should Be Pro-Growth and Facilitate the Expedited Advancement of TSMC Arizona's Planned Advanced Semiconductor Cluster

Under Section 232, the Department has broad remit to recommend import adjustments and non-trade related actions to the President of the United States, including pro-growth measures that would facilitate planned investments in advanced U.S. semiconductor manufacturing. If the Administration decides it is necessary to implement further measures to encourage onshoring initiatives in the interest of U.S. national security, TSMC encourages the Administration to adopt pro-growth measures. Investment incentives and further reductions to regulatory impediments that facilitate the speedy construction of new production facilities would be more constructive towards advancing the Administration's national security objectives than import restrictions. This would better serve the U.S. security interests at issue in this investigation by allowing the investments to continue uninterrupted.

Such remedial recommendations could entail programs to incentivize domestic production and improve U.S. business competitiveness, including:

- i.** Leveraging the tax code to enhance the competitiveness of semiconductor manufacturing in the United States. The Administration should pursue extension of the advanced manufacturing investment credit (IRC §48D), which currently expires on December 31, 2026. Extension of the credit will be a critical support for our ability to continue building out our GIGAFAB® cluster. TSMC supports legislation recently introduced by Representative Claudia Tenney (R-NY), the Building Advanced Semiconductors

Investment Credit (BASIC) Act, to seek this extension. The bill would increase the §48D credit from 25% to 35% and extend the duration through 2030.

- ii. Expediting permitting for new facilities and supporting infrastructure, such as air permitting, water infrastructure, and energy transmission and generation infrastructure, that are needed for facility operations. U.S. customers and government officials have encouraged TSMC Arizona to expedite its planned roll out and ramp up of its project, and TSMC is making significant progress towards achieving that aim. Pro-growth measures, like expediting federal and state permitting and providing assistance to navigate regulatory requirements that would otherwise delay expeditious planning, start-up, construction and manufacturing activities, would help achieve this aim. President Trump's March 31 executive order to establish a U.S. investment accelerator indicates how the Administration can use its resources to help companies navigate regulatory processes efficiently and reduce burdens.²
- iii. Enhancing partnerships with the semiconductor industry and educational institutions to build the technology workforce of the future. With the rapid expansion of U.S. semiconductor manufacturing underway, the Semiconductor Industry Association estimates that 58% of new jobs in the industry risk going unfilled at current degree completion rates.³ Increasing support for R&D programs to build a pipeline of scientists and engineers, along with expanding support for apprenticeships and university training programs, can contribute significantly to addressing the emerging skills gap.

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TSMC Arizona appreciates the opportunity to provide its perspective on the Administration's efforts to promote the U.S. semiconductor industry. We look forward to continued discussion with the Administration of these critical issues.

Sincerely,

T.C. Morris Cheng
Secretary
TSMC Arizona Corporation

² Executive Order 14255 of March 31, 2025: Establishing the United States Investment Accelerator (90 FR 14701).

³ SIA & Oxford Economics, *Chipping Away: Assessing and Addressing the Labor Market Gap Facing the U.S. Semiconductor Industry*, July 2023, <https://www.semiconductors.org/chipping-away-assessing-and-addressing-the-labor-market-gap-facing-the-u-s-semiconductor-industry/>.