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Bureau of Industry and Security
Herbert C. Hoover Federal Building
1401 Constitution Avenue, NW
Washington, DC 20230

Re: Docket No. 250414-0066; XRIN 0694-XC121

To Whom It May Concern:

TechNet appreciates the opportunity to comment on the Bureau of Industry and Security's (BIS) investigation under section 232 of the Trade Expansion Act of 1962, regarding the national security effects of imports of semiconductors, semiconductor manufacturing equipment (SME), and semiconductor-related derivative products.

TechNet is the national, bipartisan network of technology CEOs and senior executives that promotes the growth of the innovation economy by advocating a targeted policy agenda at the federal and 50-state level. TechNet's diverse membership includes 100 dynamic American businesses ranging from startups to the most iconic companies on the planet and represents five million employees and countless customers in the fields of information technology, artificial intelligence (AI), e-commerce, the sharing and gig economies, advanced energy, transportation, cybersecurity, venture capital, and finance.

We strongly urge the administration to conduct a thorough assessment in this investigation and work with industry and other stakeholders to understand the full implications of additional tariffs on the extended semiconductor supply chain. Previous tariffs, like those under consideration in the proposed section 232 investigation on semiconductors and derivatives, have cost American companies at least $165 billion since 2018 and have caused tremendous uncertainty and turmoil for U.S. importers of all sizes. Overall, imposing additional tariffs would impede economic growth, job creation, and innovation and, by extension, our global competitiveness by limiting access to products that are essential for maintaining American technology leadership. Instead, the U.S. should double down on efforts to incentivize domestic semiconductor manufacturing and secure critical minerals needed for production while working to curb China's discriminatory practices by leveraging the support and engagement of our international partners and allies. All of this should be done with a view toward minimizing supply chain disruptions that could harm American innovation at a critical time in the race for AI leadership. These tariffs will ultimately make it more expensive for tech companies to build out the AI infrastructure needed to achieve President Trump's goal of global AI dominance and will undermine U.S. competitiveness and economic security.

Increasing Domestic Demand for Semiconductors and Domestic Production

The demand for semiconductors in the United States has grown significantly in recent years, and demand is projected to remain high for the foreseeable future. The U.S. semiconductor

market is currently valued at approximately $106.2 billion and is projected to grow at a compound annual rate of 5.6% through the next decade. This growth is driven by increasing demand across multiple downstream sectors including consumer electronics, automotives, data centers and cloud computing, and AI.

However, the United States currently has limited ability to meet its semiconductor demand through domestic production. While the United States has been intensifying efforts to strengthen its domestic semiconductor manufacturing capabilities, its share of the world's semiconductor fabrication capacity is currently just eight percent. This means that most semiconductor demand is currently met through imports, with import values reaching roughly $6 billion per month. Leading companies have committed to ambitious investments in increasing U.S. semiconductor manufacturing capacity, but building new fabrication plants typically requires at least 3-5 years from groundbreaking to production ready status and requires enormous capital requirements and ongoing investment. Industry is already seeing sizable increases in capital expenditures and operating expenses associated with fab construction – partly due to new tariffs – which have offset the critical incentives offered through tax credits and federal grants. While companies like TSMC and Samsung have already announced major U.S. manufacturing expansion, these facilities will require considerably more investment and will still only be able to come online in phases over the next few years. The inherent complexities of the industry make rapid expansion capable of meeting domestic demand virtually impossible. The current trajectory suggests that, while incremental expansion will begin in 2025 and 2026, meaningful capacity increases will take 5-7 years. In other words, for at least the next 5-7 years, the United States cannot meet its semiconductor needs domestically – making tariffs that restrict imports a direct threat to supply availability in the interim and our ability to sustain our competitive edge in AI.

There are additional challenges in expanding domestic semiconductor capacity, including specialized infrastructure requirements, equipment bottlenecks, workforce shortages, regulatory hurdles, and the fact that even with expanded production capacity complete, semiconductor supply chain independence would continue to remain elusive, as approximately 60 percent of raw materials required for semiconductor manufacturing must still be imported from foreign sources. Thus, while our members are committed to efforts to expand U.S. manufacturing capacity, the semiconductor industry's enormous capital requirements, specialized workforce needs, complex supply chains, and lengthy construction timelines mean that reaching these goals is a medium- to long-term proposition, even with vital government support and massive private investment.

Semiconductor manufacturers have carefully developed investment strategies and committed to significant U.S. buildouts. New import restrictions and their accompanying costs would undermine the ability of manufacturers to fully execute these ambitious onshoring plans and would inevitably slow the deployment of advanced semiconductor manufacturing in the United States, with industry estimates showing that the tariffs proposals would increase costs between 5-25 percent. Instead, any measures the administration adopts should facilitate the expeditious buildout of planned advanced semiconductor manufacturing investments by focusing on pro-growth policies that include increasing tax incentives, expediting permitting reform, removing regulatory barriers that throttle innovation, and addressing trade and export barriers to U.S.-made products around the world.

American Workforce Shortages

The United States faces a critical shortage of engineers skilled in the design of advanced semiconductor chips, which also has a significant impact on domestic manufacturing capacity. Approximately 1,500 engineers and technicians enter the U.S. semiconductor industry each year, despite an estimated demand of at least 88,000 by the end of the decade. As technology evolves towards smaller nodes and more complex architectures, the demand for specialized knowledge in areas such as circuit design, materials science, and process engineering has simply outpaced supply. Many existing workers lack the necessary training and sophisticated technical skills needed to handle advanced machinery and understand the complex testing and validation processes required for semiconductor components, which can lead to inefficiencies and production delays.

Many educational institutions do not yet offer programs tailored to semiconductor manufacturing or the associated technical skills. This gap in educational offerings contributes to the overall talent shortage in the industry. There is a need for targeted training programs to upskill existing workers and attract new talent into the semiconductor field. Collaboration between industry, educational institutions, and government initiatives is essential to address these gaps. Addressing the U.S. workforce shortage will require time and a concerted effort involving educational reform, targeted training programs, and industry partnerships to ensure a skilled workforce capable of meeting the demands of the evolving semiconductor landscape.

Foreign Fabrication and Supply Chains

The American tech industry relies heavily on foreign fabrication, assembly, test, and packaging (ATP) facilities to meet its semiconductor demand and maintain the supply chain for various technologies, including AI, telecommunications, consumer electronics, and automotive applications. Many leading semiconductor manufacturers operate large-scale fabs that produce chips at a volume and efficiency that U.S. companies often cannot match domestically. They often lead in producing smaller, more efficient chips (e.g., 5nm and below), whereas U.S. companies tend to focus on designing the most advanced computing chips and deploy resources accordingly. In this way, foreign fabrication allows for U.S. companies to remain competitive in the global market by allowing them to focus on the design and innovation of advanced chip manufacturing.

Additionally, many ATP facilities are in countries with lower labor costs, allowing companies to reduce overall production costs. This is particularly important for industries in which price sensitivity is high and market share is fiercely contested as is the case in consumer electronics. Efficient ATP processes in foreign countries also enable quicker turnaround times for new products, allowing U.S. companies to respond rapidly to market demands.

Efforts intended to boost domestic semiconductor manufacturing have not fully included support for the related mineral inputs or incentives for the diversification of critical mineral supply chains for semiconductors. Domestic mining and processing of critical minerals continues to face significant challenges, including regulatory hurdles, lengthy permitting processes, and environmental concerns. Additionally, the high costs associated with establishing and maintaining mining operations have complicated efforts to develop a robust domestic supply chain. Without alternative sourcing, the semiconductor supply chain remains highly dependent on imports of raw materials even for increased domestic manufacturing. We strongly encourage the administration to address supply chain vulnerabilities by creating an investment tax credit for processing and refining projects, opening national laboratories

focused on semiconductor mineral research and development, and expanding eligibility for DPA Title III grants. However, even with such tax incentives in place, it will take years or even decades to build up the required mining infrastructure to achieve full supply chain independence.

Economic Impact

Without adequate domestic manufacturing capacity to meet domestic demand, imposing tariffs on semiconductor imports will increase the cost of doing business in the United States and place a huge financial burden on American businesses, significantly impacting their ability to invest in their companies, hire more American workers, and remain competitive globally. Reports indicate that tariffs already in place have led to acquisition cost increases ranging from 15-25 percent, which translates to millions of dollars in additional expenses for companies heavily reliant on advanced computing infrastructure. On top of this, key American chip companies estimate that additional tariffs on semiconductors could cost them over $1 billion annually. This will make it more expensive and more difficult to produce the very hardware the United States needs to sustain its global technological leadership, and it is particularly dangerous for American AI companies as increased costs are not only burdensome but also threaten the competitive edge of American AI companies in a rapidly evolving global market. As companies face higher operational costs, many are forced to reevaluate their investment strategies, potentially reallocating funds from research and development to cover these costs and thus delaying innovation and the development of new AI applications.

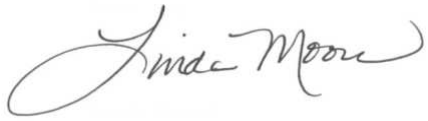
Higher component costs lead to squeezed profit margins, particularly for smaller AI startups that may lack the financial flexibility to absorb these costs. This financial strain may hinder their ability to invest in research and development or scale operations effectively. Companies that can't absorb higher costs may shift their focus toward developing AI solutions that require less computational power, potentially limiting the exploration of cutting-edge technologies. American AI companies may also find themselves at a competitive disadvantage compared to international firms that are not subject to similar tariff regimes. This could lead to a loss of market share in the global AI landscape, particularly in sectors with high price sensitivity. Some U.S. companies may also decide to build data centers outside America, where costs and regulatory hurdles may be significantly lower. Geographic constraints are much lower for AI applications, which often require more processing time and are thus less hindered by the additional time needed to send data from distant data centers. There is also a significant risk of retaliation or diversion as allies whose semiconductor exports are hit by U.S. tariffs may impose counter measures or simply look to other markets, including deepening ties with Chinese firms that offer more favorable trading terms.

Conclusion

Semiconductors play a critical role in enabling the products and services that fuel our economy, contribute to American innovation, and enhance our national security. Given the central role of semiconductors, strengthening domestic manufacturing of semiconductors should be a national priority. However, imposing tariffs on semiconductors or derivative products would harm U.S. companies, disrupt global supply chains, and undermine American innovation at the expense of our competitive edge against China. Instead, we encourage the administration to adopt a more effective, comprehensive approach that involves increased incentives for domestic production, permitting reform, investment in R&D and workforce development, collaboration with industry, reducing regulatory barriers, and promoting a level playing field for U.S. businesses in the global market. While protecting national security is

paramount, a balanced approach that includes robust support for domestic manufacturing and innovation and protects the semiconductor supply chain is critical to ensuring the United States remains the leader in the development and deployment of AI.

Sincerely,



Linda Moore
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