ITI Promoting Innovation Worldwide

Written Testimony of

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Chairman Bilirakis, Ranking Member Schakowsky, and members of the Subcommittee, thank you for the opportunity to testify before you today. My name is Jason Oxman, and I am the President and CEO of the Information Technology Industry Council (ITI). ITI represents 80 of the world's leading information and communications technology companies. Our members are investing billions of dollars in the United States to manufacture and deploy the building blocks that power the AI and digital economy, including every facet of the semiconductor ecosystem. From tooling and design to expanded domestic capacity for advanced manufacturing, to data centers and consumer electronics, ITI's member companies are integral to securing and expanding American technology leadership in semiconductors and the products and services that rely on advanced and foundational chips.

My testimony will provide a brief overview of chips and their importance to the American economy, semiconductor supply chains from critical minerals to end products, and key policy considerations as the Committee examines semiconductors in the context of American competitiveness and economic security. We urge the Committee to continue to work together with the private sector to encourage future innovation and investment in American semiconductor leadership.

I. Semiconductors 101

Modern semiconductors are some of the most advanced products ever created. Chips – as semiconductors are often called - are the result of atomic-scale engineering with extreme precision. Innovations in materials science, chemistry, and physics integrate billions of transistors onto a device that can fit in the palm of your hand. Semiconductors underpin the global economy with a wide range of products benefiting from the performance and efficiency enabled by semiconductor innovation. Nearly all electronics, from the latest smartphones to washing machines, utilize semiconductors, and advanced semiconductors are powering the AI revolution. The U.S. semiconductor industry commands over 50% of the global market and generated $318 billion of revenue in 2025, making semiconductors critical to the U.S. economy.[1] The semiconductor industry is also growing rapidly, with semiconductor companies planning to invest about $1 trillion globally through 2030 in new fabrication plants.[2]

There are broadly two main types of semiconductors: logic chips and memory chips. Logic chips act like tiny electrical switches, turning off and on repeatedly to enable the flow of electricity, which computers then interpret.[3] The first logic chip was created in 1958, and since then, constant innovation has made them smaller, denser, more power-efficient, cheaper, and faster.[4] While logic chips work as the "brains" of an electronic device, performing calculations,

[1] "2025 State of the U.S. Semiconductor Industry," Semiconductor Industry Association, July 10, 2025, https://www.semiconductors.org/wp-content/uploads/2025/07/SIA-State-of-the-Industry-Report-2025.pdf.
[2] Bill Wiseman, Henry Marcil, and Marc de Jong, "Semiconductors have a big opportunity—but barriers to scale remain," McKinsey, April 21, 2025, https://www.mckinsey.com/industries/semiconductors/our-insights/semiconductors-have-a-big-opportunity-but-barriers-to-scale-remain.
[3] Mesh Flinders and Ian Smalley, "What Is a Semiconductor?," IBM Think, https://www.ibm.com/think/topics/semiconductors.
[4] "The Chip That Changed the World," Texas Instruments, September 15, 2020, https://www.ti.com/about-ti/newsroom/company-blog/the-chip-that-changed-the-world.html.

memory chips store data as electrical charges.[5] Memory chips include dynamic random access memory (DRAM) and NAND flash. DRAM handles shorter-term tasks that need to access data quickly, while NAND flash provides longer-term storage at slower speeds. There is currently a demand-driven shortage of DRAM, which could impact many different sectors of the economy that rely on microelectronics.

Modern semiconductors are the result of decades of this innovation and are manufactured in specialized fabrication facilities or fabs. Fabs utilize highly specialized equipment and processes to build semiconductors with extreme precision. This precision is necessary as modern semiconductors have features crafted at the atomic level. For scale, features on the latest semiconductors can be many thousands of times smaller than the width of a human hair.[6] The never-ending improvements to semiconductor design, manufacturing, equipment, and more have pushed the limits of physics and enabled countless new technologies, from GPS and the internet to the latest advancements in AI.

The U.S. invented the modern semiconductor, and U.S. firms continue to hold a majority share of the global semiconductor market.[7] [8] However, China is making major investments aimed at ensuring that its chip industry becomes competitive with U.S. and allied firms. As a part of this effort, China is planning to invest $142 billon in its semiconductor industry, $67 billion more than the total support provided to the U.S. industry by the CHIPS and Science Act.[9] While the U.S. is ahead of China today, China's investments are helping its semiconductor industry to be increasingly competitive. For example, in 2023, Huawei released a domestically built chip that used an advanced 7-nanometer (nm)-class process. This development has been described as shrinking the gap between the "peak technological level of China and that of the rest of the world."[10] Importantly, China is not just developing semiconductors for domestic use, but is also actively trying to export semiconductors and related products. For example, Huawei is trying to export AI chips to the Middle East and Southeast Asia and is finding success selling highly sensitive telecommunications systems to U.S. partners.[11] [12] China's goal is to make its

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[5] Alex Yoon, "Understanding Memory," Semiconductor Engineering, February 15, 2018, https://semiengineering.com/whats-really-happening-inside-memory/.

[6] National Nanotechnology Coordination Office, "Just How Small Is 'Nano'?," https://www.nano.gov/about-nanotechnology/just-how-small-is-nano/.

[7] "The Chip That Changed the World," Texas Instruments, September 15, 2020, https://www.ti.com/about-ti/newsroom/company-blog/the-chip-that-changed-the-world.html.

[8] "2025 State of the U.S. Semiconductor Industry," Semiconductor Industry Association, July 10, 2025, https://www.semiconductors.org/wp-content/uploads/2025/07/SIA-State-of-the-Industry-Report-2025.pdf.

[9] "China Prepares as Much as $70 Billion in Chip Sector Incentives," *Bloomberg*, December 12, 2025, https://www.bloomberg.com/news/articles/2025-12-12/china-prepares-as-much-as-70-billion-in-chip-sector-incentives.

[10] Gregory C. Allen, "In Chip Race, China Gives Huawei the Steering Wheel: Huawei's New Smartphone and the Future of Semiconductor Export Controls," Center for Strategic and International Studies, October 6, 2023, https://www.csis.org/analysis/chip-race-china-gives-huawei-steering-wheel-huaweis-new-smartphone-and-future.

[11] Mackenzie Hawkins and Gao Yuan, "Huawei Seeks AI Chip Clients in Middle East, Southeast Asia," Bloomberg, July 10, 2025, https://www.bloomberg.com/news/articles/2025-07-10/huawei-seeks-ai-chip-customers-in-middle-east-southeast-asia.

[12] "Spain Is Handing 'Crown Jewels' to Huawei, Lawmakers Warn," *Politico*, February 23, 2026, https://www.politico.eu/article/spain-is-handing-crown-jewels-to-huawei-lawmakers-warn/.

technology dominant around the world, and its technology stack is increasingly competitive, especially in developing markets. Given the increasing competitiveness of China's semiconductor industry and the major support that it is receiving, U.S. policymakers must enact the right polices to keep the U.S. industry ahead of China.

II. The Importance of Global Supply Chains to American Semiconductor Leadership

The semiconductor supply chain is vast, geographically complex, and interconnected, with the various inputs necessary to produce a single chip typically crossing over 70 international borders. This unique complexity makes semiconductors fundamentally global products. The modern semiconductor supply chain involves hundreds of process steps, even for less complex chips, which can generally be broken down into the following stages or layers: (1) R&D and design; (2) equipment and tooling; (3) fabrication; (4) assembly, testing, and packaging; (5) distribution and integration. Additionally, critical minerals and rare earth elements are foundational raw material inputs that enter the supply chain "upstream" during the front-end stages of semiconductor production. Semiconductor manufacturing is uniquely demanding, and because of this, chipmakers often have tens of thousands of suppliers distributed around the world. In some cases, certain suppliers are the only companies in the world that possess the capabilities necessary for chipmaking.[13]

A key part of the semiconductor supply chain is the highly specialized and extremely precise equipment and tools used in chip fabs. Like chips, semiconductor manufacturing equipment (SME) relies on global supply chains for many subcomponents, some of which are themselves highly complex, precision-manufactured products. For example, the mirrors used in advanced lithography are the world's most precise.[14] All of this means that while the U.S. holds approximately 41% of the $133 billion SME market, it still counts on allies and friends for the mirrors and magnets needed to build SME.[15] [16]

From sand to samarium, semiconductors require a wide range of minerals, materials, and gases. The market for materials used in chip fabrication exceeded $67.5 billion in 2024 and is concentrated in the U.S. and key allies but relies on other countries for certain inputs that

[13] Akhil Thadani and Gregory C. Allen, "Mapping the Semiconductor Supply Chain:," Center for Strategic and International Studies, May 30, 2023, https://www.csis.org/analysis/mapping-semiconductor-supply-chain-critical-role-indo-pacific-region.
[14] "EUV Lithography and Technology," Semiconductor Manufacturing Technology, https://www.zeiss.com/semiconductor-manufacturing-technology/inspiring-technology/euv-lithography.html.
[15] "2025 State of the U.S. Semiconductor Industry," Semiconductor Industry Association, July 10, 2025, https://www.semiconductors.org/wp-content/uploads/2025/07/SIA-State-of-the-Industry-Report-2025.pdf.
[16] "Global Semiconductor Equipment Sales Projected to Reach a Record of $156 Billion in 2027, SEMI Reports," SEMI, December 16, 2025, https://www.semi.org/en/semi-press-release/global-semiconductor-equipment-sales-projected-to-reach-a-record-of-156-billion-dollars-in-2027-semi-reports.

cannot be sourced elsewhere.[17] [18] Due to the highly demanding nature of chipmaking, the inputs must be of the highest quality and purity, limiting sourcing. For example, 70% of the quartz sand used in chipmaking comes from a highly pure deposit in North Carolina.[19] An example of a gas that is indispensable to the semiconductor manufacturing process is helium due to its unique properties of being completely chemically inert and the best thermal conductor among gases. Currently, U.S. ally Qatar is home to one of only two plants in the world that produce semiconductor-grade helium, further illustrating the global interdependence and complexity of the semiconductor supply chain. The chipmaking industry also relies on a number of critical minerals, some of which are only produced and refined by a few countries. However, the U.S.'s increasing investments in domestic and allied critical minerals refining and production will help create new sources for chipmakers. ITI also supports the many ongoing efforts by Congress and the administration to further invest in domestic and allied critical minerals supply chains.

The diversified nature of semiconductor supply chains can be viewed as a strength, as it reduces the impact of any single supply chain disruption. Without the economies of scale and unique capabilities created by global supply chains, the never-ending advancements in semiconductors would not be possible.

III. Economic Security and American Competitiveness

Semiconductors are foundational to U.S. economic and national security, and Congress has done important bipartisan work over the last several years that recognizes this reality. Policymakers must continue to be mindful that the U.S. technology stack, in which semiconductors play a key role, is facing increasing scrutiny across the world. We are seeing allies and partners increasingly expressing concerns – albeit unfounded ones – about the security, privacy, and reliability of U.S. technology. With this in mind, economic security policies such as export controls must avoid fueling these questions about U.S. technology and pushing the very countries that should be core customers of U.S. providers toward alternatives. Instead, policymakers must focus on crafting targeted, risk-based frameworks to address economic and national security challenges.

In addition to developing risk-based approaches to address economic and national security challenges, Congress must work to enable more effective implementation of existing economic security policies. To do so, Congress must give the agencies tasked with implementing economic security policies the staff, resources, and mission clarity they need to protect U.S. economic security. One such agency is the Department of Commerce's Bureau of Industry and

[17] "2024 Global Semiconductor Materials Market Posts $67.5 Billion in Revenue," SEMI, April 28, 2025, https://www.semi.org/en/semi-press-releases/2024-global-semiconductor-materials-market-posts-67.5-billion-dollars-in-revenue-semi-reports.

[18] Akhil Thadani and Gregory C. Allen, "Mapping the Semiconductor Supply Chain:," Center for Strategic and International Studies, May 30, 2023, https://www.csis.org/analysis/mapping-semiconductor-supply-chain-critical-role-indo-pacific-region.

[19] Swapnil Chavan, "High Purity Quartz Market Size, Share, and Growth Forecast, 2026 - 2033," Persistence Market Research, February 2026, https://www.persistencemarketresearch.com/market-research/high-purity-quartz-market.asp.

Security (BIS), which implements and enforces U.S. export controls. ITI appreciates the $44 million increase in the BIS budget that Congress enacted last year, and we strongly support the administration's proposed $215 million budget increase for BIS, which would provide additional necessary funding to administer and enforce existing U.S. export controls effectively.2021 ITI also supports efforts to improve the effectiveness of BIS's enforcement efforts, such as driving collaboration between BIS and the U.S. intelligence community, codifying key BIS programs, and BIS staffing levels.[22] By addressing BIS resourcing, Congress has a unique opportunity to strengthen U.S. national security through enhanced administration and enforcement of export controls and ensure that U.S. companies remain the global leaders in semiconductors and other critical technologies.

Because the semiconductor supply chain is both foundational to and interconnected with the broader information and communications technology (ICT) supply chain, Congress and the administration must also consider the complex global supply chains for products that rely on semiconductors when advancing policies that impact U.S. economic security. The recent Federal Communications Commission decision to effectively ban the import of foreign-made consumer routers, including those from allied countries, fails to take into account the realities of technology component manufacturing, assembling, packing, and testing. [23] As a recent report from the Global Electronics Association notes, "virtually no consumer router is manufactured entirely within the United States," and China's share of U.S. router imports has "collapsed from 20.5% to 1.1%" since 2019, as production has moved to trusted American trading partners like Vietnam.[24]

Consumers, schools, libraries, and businesses of all sizes rely on WiFi connectivity enabled by routers with materials and components from around the globe. Cybersecurity and supply chain risk management are shared responsibilities requiring industry and government to collaborate based on common understandings of risk and vulnerability, which are more complex than blacklisting common consumer products. If the administration's policy goal is to increase production of telecommunications hardware and other equipment in the U.S., it should rely upon industrial and domestic policy tools to make the U.S. a stronger environment for incentivizing such investments.

ITI supports Congress and the focus across recent administrations on advancing U.S. competitiveness in semiconductors, semiconductor manufacturing equipment (SME), and related products. We believe government and industry must collaborate to promote trusted,

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[20] Nathan James, "Overview of FY2026 Appropriations for Commerce, Justice, Science, and Related Agencies (CJS)," Congressional Research Service, https://www.congress.gov/crs-product/R48643.
[21] U.S. Department of Commerce, "FY 2027 President's Budget Request," https://www.commerce.gov/sites/default/files/2026-04/FY2027-Presidents-Budget-Request.pdf.
[22] "Letter to Chairman Bill Huizenga and Ranking Member Sydney Kamlager-Dove in support of H.R. 4505, Export Controls Enforcement Act," Information Technology Industry Council, https://www.itic.org/documents/trade/ITI_ExportControlsEnforcementActLetter.pdf.
[23] "FCC Updates Covered List to Include Foreign-Made Consumer Routers," Federal Communications Commission, https://www.fcc.gov/document/fcc-updates-covered-list-include-foreign-made-consumer-routers.
[24]"Routers, Restrictions, and Reality: The FCC's Latest Supply Chain Curveball," Global Electronics Association, April 9, 2026, https://emails.ipc.org/links/Global-Electronics-Association-routers-report26.pdf

secure, and reliable supply chains that underpin U.S. national and economic security and drive U.S. technological leadership. It is also important to collaborate with allies to address unfair trading practices in the semiconductor value chain and geographic diversification within supply chains, which supports resiliency and mitigates risks. Policymakers must ensure that any trade actions related to semiconductors are narrowly targeted, employed strategically only to the extent necessary, and tailored to avoid damaging U.S. competitiveness. Many of the impediments to expanding semiconductor capacity in the United States more quickly are domestic in nature. To this end, ITI recommends several policies that would bolster the full U.S. semiconductor and advanced technology ecosystem.

IV. Policy Recommendations

Pro-Investment Tax Policies

Tax policy not only helps drive competitiveness but is an effective tool to support economic growth, promote job creation, and encourage innovation. Congress has already taken a meaningful step through its efforts to improve the U.S. tax environment for manufacturing, research and development, and other activities that contribute to the semiconductor value chain. The One Big Beautiful Bill Act included several key provisions to advance innovation, including restoring immediate expensing for all R&D expenses in the United States, making permanent 100% depreciation for qualifying property, and increasing the advanced manufacturing investment credit for semiconductor manufacturing (AMIC, Internal Revenue Code (IRC) Section 48D) to 35 percent.

To enhance the AMIC's effectiveness, ITI encourages Congress to extend the December 31, 2026, deadline for qualified investments in facilities that manufacture semiconductors or SME. Because it takes many years and tens of billions of dollars to build a fab, companies need certainty as they contemplate and plan such large investments. Extending the "commence construction" deadline would recognize the time-consuming and costly challenges companies can face – including, but not limited to, review and permitting processes, workforce shortages, etc. – when making large-scale investments a reality.

To keep the U.S. on the leading edge of innovation, Congress should expand the AMIC to include research and design and manufacturing of essential semiconductor materials. Chip design is one of the most crucial R&D activities as it determines the value and function of a semiconductor device, enabling chips to receive, transmit, process, and store ever-increasing amounts of data. U.S.-headquartered firms are global leaders in chip design. This highly complex, interdisciplinary process involves years of R&D and hundreds of millions of dollars.

Incentivizing and Investing in Research & Development

In aggregate, the U.S. chip industry invests an average of 20 percent of its revenue back into R&D, and the high reinvestment in R&D and design has directly contributed to U.S. industry innovation and market share leadership.[25] ITI recommends that the administration continue

[25] "State of the U.S. Semiconductor Industry 2024," Semiconductor Industry Association, https://www.semiconductors.org/2024-state-of-the-u-s-semiconductor-industry/.

supporting public-private semiconductor R&D research programs to strengthen U.S. technological competitiveness and leadership, such as the National Advanced Packaging Manufacturing Program (NAPMP).

The Department of Commerce's CHIPS Research and Development Office (CRDO) was tasked with investing $11 billion from the bipartisan CHIPS and Science Act to develop a robust domestic R&D ecosystem. We urge the CRDO to work closely with industry on implementation of the recent Broad Agency Announcement (BAA), designed to fund large-scale, industry-led projects that move beyond basic research into applied R&D, prototyping, and commercial demonstration.[26] Specifically, the BAA seeks to accelerate the commercialization of microelectronics innovations and close gaps in the domestic R&D ecosystem. ITI members are actively engaging in this program through participation in consortia, pilot projects, and demonstration initiatives across areas such as advanced packaging and AI-enabled design and production systems.

Expanding U.S. trade opportunities

To advance the innovation that underpins U.S. national and economic security, U.S. companies in the semiconductor ecosystem must remain partners of choice in the global marketplace. Congress and the administration should strengthen existing bilateral and plurilateral trade agreements and continue to negotiate new agreements to promote U.S. goods and services in markets abroad. International market access continues to be a primary driver of U.S. industry success and innovation, as the vast majority of demand for U.S. semiconductors is outside the United States. In addition to expanding customer bases, market access provides businesses with insights into competition, the state of technological development, and global talent. Sales abroad help U.S. companies invest in R&D and manufacturing in the United States to spur U.S. job growth and next-generation technologies.

The numbers demonstrate the importance of overseas sales for U.S. semiconductor producers: "in 2023, sales outside the U.S. comprised about three- quarters of total U.S. semiconductor industry sales," and significant revenue from those sales is invested back into the United States.[27] ITI encourages Congress to work with the administration to reduce foreign tariff and non-tariff barriers, eliminate duplicative certification and conformity assessment requirements by foreign governments in areas where international certifications exist, promote strong protection and enforcement of intellectual property rights in foreign markets, and seek commitments from foreign partners that enable digital trade and the deployment of technologies such as AI across all sectors of the economy.

[26]"CRDO Broad Agency Announcement (BAA)," National Institute of Standards and Technology, September 19, 2025, https://www.nist.gov/chips/r%2526d-funding-opportunities/crdo-broad-agency-announcement-baa.
[27] "State of the U.S. Semiconductor Industry 2024," Semiconductor Industry Association, https://www.semiconductors.org/2024-state-of-the-u-s-semiconductor-industry/.

The Commerce Department's development of the American AI Exports Program is a welcome recognition of these imperatives.[28] This initiative is an opportunity to take a whole-of-government approach to incentivize both U.S. and foreign direct investment in the United States, support U.S. technology competitiveness, facilitate additional U.S. exports to the $254.5 billion global AI market, and address issues companies face doing business in other countries. This work can also support the investment and critical role of manufacturers in the U.S. involved in the AI tech stack.

Imposing overly broad tariffs, however, would undermine certainty and increase the costs of manufacturing in the United States throughout the entire technology ecosystem. Not only would this approach potentially make certain investments economically non-viable, but it may also hinder industry's ability to bolster domestic supply and fulfill opportunities to sell into markets abroad. Uncertainty means that companies (and their investors and customers) have less confidence in their decision-making and will be less likely to commit to and/or follow through on the large-scale investments that define manufacturing advances in the semiconductor value chain. Imposing tariffs on SME and inputs would significantly increase the costs of manufacturing in the United States and hurt the competitiveness of U.S. manufacturing operations vis-à-vis those operations without a U.S. nexus. ITI strongly encourages Congress to engage closely with the administration and industry on the various actions and investigations that may affect companies throughout the semiconductor value chain.[29] Such engagement will help to ensure that any proposed trade actions are appropriately scoped and administered to reduce the likelihood of unintended consequences for ongoing efforts to bolster domestic capacity and support secure and resilient supply chains.

Work with like-minded partners to achieve shared semiconductor supply chain resiliency goals

The United States must cooperate with allies and partners to secure and diversify semiconductor supply chains. Given the complexity, interconnectedness, and significant investment required to operate semiconductor supply chains, the United States needs to enable industry to carefully calibrate its supply chains, accelerate time-to-market, and account for other considerations to enable it to remain globally competitive. There is also an opportunity for the United States to build upon existing workstreams to address expansive Chinese government subsidies and advocate for the acceptance of updated international trade rules capable of disciplining unfair subsidization practices that contribute to overcapacity. The United States has already undertaken work through trilateral engagement with the European Union and Japan to facilitate agreement on necessary updates to international trade rules

[28] "Department of Commerce Announces New American AI Exports Program Phase," International Trade Administration, March 16, 2026, https://www.trade.gov/press-release/department-commerce-announces-new-american-ai-exports-program-phase.

[29] Investigations of note include the Section 232 National Security Investigation of Imports of Semiconductors and Semiconductor Manufacturing Equipment; Section 232 National Security Investigation of Imports of Processed Critical Minerals and Derivative Products; Section 232 National Security Investigation of Imports of Polysilicon and its Derivatives; Section 232 National Security Investigation of Imports of Robotics and Industrial Machinery; and Section 301 Investigation on China's Acts, Policies, and Practices Related to Targeting of the Semiconductor Industry of Dominance.

governing industrial subsidies and state-owned enterprises (SOEs), and this work can and should be built upon.

Enact common sense permitting reforms

Streamlining permitting reform at the federal, state, and local levels is essential for continued American semiconductor and technology leadership. The convoluted and duplicative permitting and review processes across jurisdictions at all levels mean that "the United States builds fewer fabs at a much slower rate than other countries, and at greater cost to companies."[30] The administration is prioritizing permitting reform, and Congressional action on this bipartisan priority is also needed.

ITI welcomes the President's introduction of the United States Investment Accelerator, which intends to facilitate and expedite investments exceeding $1 billion, as well as manage the CHIPS Program Office, and Executive Order 14318, Accelerating Federal Permitting of Data Center Infrastructure, to prioritize critical manufacturing and large-scale infrastructure in the United States.[31] [32] The April 15, 2025, presidential memorandum titled "Updating Permitting Technology for the 21st Century" identifies several workstreams for the purpose of better facilitating review and permitting processes for important infrastructure projects, including factories. In addition to these improvements in the federal permitting process, ITI supports the Permitting Council MOUs with states to better coordinate and streamline the state permitting process.

Congress has done important bipartisan work to remove barriers to building digital infrastructure, and we urge Congress to act on bipartisan permitting reform solutions. From accelerating the review and litigation process in the National Environmental Policy Act to clarifying section 401 of the Clean Water Act to streamlining the Clean Air Act and updating the Endangered Species Act, we appreciate that Congress is working to modernize regulations that create delays and bottlenecks affecting not only the tech industry but every part of the American economy. [33]

Increase electrical power grid capacity and stability

Onshoring and expanding manufacturing capacity, digitization of the American economy, and accelerating adoption of AI are among the factors contributing to increased demand for dependable and reliable energy. In addition to increasing power generation using an all of the

[30] John VerWey, "No Permits, No Fabs: The Importance of Regulatory Reform for Semiconductor Manufacturing," Center for Security and Emerging Technology, October 2021, https://cset.georgetown.edu/publication/no-permits-no-fabs/.
[31] "Establishing the United States Investment Accelerator," The White House, March 31, 2025, https://www.whitehouse.gov/presidential-actions/2025/03/establishing-the-united-states-investment-accelerator/.
[32] "Accelerating Federal Permitting of Data Center Infrastructure," Executive Order 14318, 90 Fed. Reg. 35385 (July 28, 2025), https://www.federalregister.gov/documents/2025/07/28/2025-14212/accelerating-federal-permitting-of-data-center-infrastructure.
[33] "S.2228 - 118th Congress (2023-2024): Building Chips in America Act of 2023," Congress.gov, https://www.congress.gov/bill/118th-congress/senate-bill/2228.

above energy approach, increasing transmission capacity across the country, and reducing interconnection timelines, Congress should prioritize grid modernization and affordability to ensure reliable access to energy for consumers and economic growth. Grid-enhancing technologies and implementing power supply arrangements for large loads to secure energy can provide near-term solutions. Longer term, policymakers need to work with private industry to align grid investment incentives with cost-effective solutions and establish clear regulatory pathways and mechanisms that ensure that large loads can be connected to the grid. ITI supports efforts to ensure the grid is using the most advanced equipment, like H.R. 6633, the High-Capacity Grid Act, and to study new technologies that will increase efficiency in large load infrastructure, like H.R. 5332, the Liquid Cooling Act.

Build a 21st-century workforce

A successful technology ecosystem relies on a highly trained workforce. Even once a semiconductor manufacturing facility comes online, companies often face challenges in securing enough workers to operate the facility, let alone hiring enough scientists and engineers to conduct the R&D underpinning final products. For SME suppliers, the talent gap primarily lies in technicians, field service engineers, process engineers, and other engineering positions. BIS found in December 2023 that the United States was "comparatively weak" in relation to other microelectronics markets when it comes to labor availability, which was identified as one of the top two most important factors driving investment decisions.[34]

ITI member companies are making major investments in workforce development. For example, TSMC is investing over $5 million in an apprenticeship program, while ITI members OpenAI, Google, Intel, and Microsoft are partnering with community colleges on workforce development.[35] [36] However, federal funding for science, technology, engineering, and mathematics (STEM) and computer science education is still vital to help build the talent pipeline to meet the growing demand for semiconductor manufacturing and design expertise. Educating, training, and re-skilling Americans so they can participate in the semiconductor and broader electronics value chain is a shared public and private responsibility. These programs span the gamut of industry needs, including new and expanded technician training programs that do not require advanced degrees. Greater collaboration is needed between government, academia, and industry to increase the number of domestic students choosing to enter advanced degree programs, which remains a major challenge in the race for global talent.

[34] "Assessment of the Status of the Microelectronics Industrial Base in the United States," Bureau of Industry and Security, https://www.bis.gov/media/documents/section-9904-report-final-20231221.pdf.
[35] "Governor Katie Hobbs, Joined by TSMC Arizona and Mayor Kate Gallego, Announce New Semiconductor Career Pathways with Expansion of Registered Technician Apprenticeship Program," Office of the Arizona Governor, November 19, 2024, https://azgovernor.gov/office-arizona-governor/news/2024/11/governor-katie-hobbs-joined-tsmc-arizona-and-mayor-kate-gallego.
[36] Shalin Jyotishi, "OpenAI, Google, Microsoft, Intel Bet On Community Colleges For AI Talent," Forbes, February 25, 2026, https://www.forbes.com/sites/shalinjyotishi/2026/02/25/openai-google-microsoft-intel-bet-on-community-colleges-for-ai-talent/.