



# CHIPS Act Update: Latest Insights on Innovation and Science

Center Forward Basics

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## Overview

The Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Science Act was signed into law in late 2022. The legislation was designed to boost domestic manufacturing of semiconductors, secure supply chains and American jobs, as well as foster research and development in critical scientific and technological fields. Thanks to bipartisan support in the House and Senate, the CHIPS and Science Act was expected to increase domestic manufacturing capacity of these critical technologies. Manufacturing chips is highly specialized, capital-intensive, and takes years of development. Over time, many on Capitol Hill came to believe that the United States was losing ground to economies around the world in semiconductor manufacturing capacity due to the lack of comparable incentives offered in the United States. The CHIPS Act addressed America's disadvantages as an investment destination for capital intensive semiconductor manufacturing by providing \$52 billion in grants and a related 25% investment tax credit that provides the medium-to-long-term certainty for companies considering these substantial investments. In this Basic, we take a look at recent updates to the CHIPS Act and discuss what is to come.

## CHIPS and Science Act Main Goals

Semiconductors are critical to a functioning modern society and economy because most electronics require their use, including smartphones, cars, and satellites. Recognizing this, the CHIPS Act was crafted to protect America's economy and national security, and ultimately designed to boost domestic manufacturing capacity of semiconductors – particularly the most advanced chips.

Attracting advanced chip manufacturing – effectively domestic production capabilities below 7nm – was the primary driver of the CHIPS and Science Act, and investments that tackled this critical national security imperative were prioritized in the Notice of Funding Opportunities issued by the Commerce Department following CHIPS passage. The rationale here was that the United States lacked any capacity to manufacture advanced semiconductors – those critical for things like powering AI systems, supercomputers, and data centers – and the erosion of that manufacturing base created an economic and national security vulnerability. The CHIPS Act was also designed to generate thousands of high-wage, high-tech manufacturing jobs that were accessible to a geographically diverse set of candidates at all levels of educational attainment. In August of 2024, the Biden Administration released a statement confirming companies had announced the creation of over 115,000 jobs since the legislation's enactment.

## Center Forward Basics

Center Forward brings together members of Congress, not-for profits, academic experts, trade associations, corporations and unions to find common ground. Our mission: to give centrist allies the information they need to craft common sense solutions, and provide those allies the support they need to turn those ideas into results.

In order to meet our challenges we need to put aside the partisan bickering that has gridlocked Washington and come together to find common sense solutions.

For more information, please visit [www.center-forward.org](http://www.center-forward.org)

## Key Definitions:

- **"CHIPS"** stands for Creating Helpful Incentives to Produce Semiconductors.
- **Chips** are tiny circuits made of semiconducting material that serve as building blocks for many everyday electronics including smartphones and cars.
- **Semiconductors** are materials (often silicon) that conduct electricity under certain conditions. They are

In addition to directly supporting the American economy, the act sought to allocate billions of dollars to research and development (R&D) initiatives related to semiconductor technology growth and innovation. For example, according to the White House, “The National Science Foundation (NSF) launched its Future of Semiconductors (FuSe) initiative, a \$45.6 million investment to conduct frontier research and develop the future microelectronics workforce.” Investments like this were intended to strengthen the U.S.’s competitive edge in an industry where rapid technological advancements are key.

the building blocks of chips, which power everything from computers to medical devices.

Finally, the act included provisions for collaboration between the private sector, research institutions, and universities to build a strong semiconductor ecosystem. One such alliance is the National Semiconductor Technology Center’s (NSTC) Workforce Center of Excellence, which collaborates “with industry, academia, labor unions, the Departments of Labor and Education, the National Science Foundation, and local government partners to address end-to-end workforce training needs from access to adoption,” according to the Biden Administration. This collaboration promotes innovation and ensures educational and training programs are in place to prepare a skilled workforce capable of sustaining the industry’s long-term growth.

The Biden administration’s commitment to diversifying the manufacturing workforce is exemplified by the U.S. Department of Commerce’s requirement that companies applying for \$150 million or more in CHIPS grants must submit plans to provide child care for their manufacturing and construction workers. The Child Care NOFO has proven to be a transformative catalyst in addressing the critical shortage of childcare supply across the United States, enabling states and communities to take meaningful steps toward expanding access and affordability for working families.

## CHIPS and Science Act Successes and Shortcomings

The CHIPS and Science Act represents a significant investment in U.S. semiconductor manufacturing, research, and technology leadership. The CHIPS Act’s manufacturing incentives (both grants and the 25% investment tax credit) have sparked \$450 billion in private sector investments to revitalize the U.S. chip ecosystem, tripling U.S. chipmaking capacity while creating over 50,000 manufacturing jobs and 80,000 construction jobs across 23 states, which will support hundreds of thousands of additional jobs throughout the economy. Importantly, the CHIPS Act’s primary goal of attracting advanced manufacturing capacity has largely been met. The Commerce Department has announced awards for advanced manufacturing projects with TSMC in Arizona, Intel in Ohio and Oregon, and Samsung in Texas; with some coming into commercial production in the first half of 2025. Other critical investments in mature semiconductor manufacturing, advanced packaging, memory chip production, and across important segments of the supply chain are also starting to bear fruit.

The legislation has also taken important strides toward securing America’s technological future by allocating billions of dollars to support domestic production, R&D, and workforce development. However, many of the CHIPS grants and research dollars will still take years to bear fruit, and their ultimate success will require greater efforts on up-skilling the high-tech manufacturing workforce, creating additional pathways for chip companies to access qualified global talent, and targeted permitting reform. These areas have been noted as priorities by both parties in Congress, but were largely unaddressed in the initial CHIPS Act.

According to Senator Maria Cantwell (D-WA), one problem is the lack of skilled workers to meet the demand for new jobs

created by the bill. The workforce dried up when the U.S. started to outsource its semiconductor production. Efforts to scale up training programs and attract skilled labor to this industry are ongoing, but meeting the industry's workforce needs remains complex and time-consuming.

Still, the legislation is revered by many as a job-creating, economy-building, and national security-strengthening piece of legislation. Many praise it as a significant step forward, potentially creating thousands of high-skilled manufacturing positions across the country. Economically, the act is expected to stimulate local economies where semiconductor plants are built, driving growth in industries that rely on advanced technologies. Nationally, it strengthens security by bringing a critical component of technology manufacturing back within U.S. borders, reducing vulnerabilities to supply chain disruptions or geopolitical tensions abroad.

## Looking Forward

Many of the research, development, and manufacturing initiatives that the CHIPS and Science Act spurred are still in their early phases and judgement on them is premature. Observers do not yet know the full extent of the CHIPS Act's impact, however it is clear the legislation has already spurred billions of dollars in private sector investments, led to the creation of new manufacturing facilities, and generated thousands of American jobs. The success of these investments and facilities is critical for the long-term success of the legislation as the U.S. continues to try to increase domestic chip production and reduce reliance on foreign manufacturers. According to President Biden, the U.S. will produce nearly 30% of the global supply of leading-edge chips by 2032. However, success depends on how the U.S. reacts to new key challenges, such as the shortage of skilled workers or technological growth. While President-elect Donald Trump attacked the legislation during his campaign, experts say he will likely uphold the policy's goals and intentions. Nevertheless, the current Administration and its partners are expected to rush to finalize as many deals as possible before President-elect Trump's January inauguration.

One additional area to watch is what happens in the tax space. While much focus has been placed on the CHIPS Act's \$52 billion grant program, the 25% investment tax credit is seen by many as a critical driver of these large-scale investments. Extending the credit beyond 2026 will likely give chip companies greater certainty in their investment decisions and will ensure that the investment activity already realized from the CHIPS Act can be sustained over the long-term.

## Links to Other Resources

- Citigroup - [The U.S.-China Chip War: Who Dares to Win?](#)
- NBC LA - [Trump likely to uphold CHIPS Act despite his campaign rhetoric, policy experts say](#)
- NPR - [The new CHIPS and Science Act will bring semiconductor chip manufacturing to the U.S.](#)
- Politico - [Biden breaks with environmentalists, House Dems on chip bill](#)
- Representative Michael McCaul - [McCaul, Matsui Statement on Key Milestone for CHIPS Act Implementation](#)
- U.S. Department of Commerce - [Two Years Later: Funding from CHIPS and Science Act Creating Quality Jobs, Growing Local Economies, and Bringing Semiconductor Manufacturing Back to America](#)
- The White House: [President Biden Announces Up To \\$8.5 Billion Preliminary Agreement with Intel under the CHIPS & Science Act](#)

- The White House - [Two Years after the CHIPS and Science Act, Biden-Harris Administration Celebrates Historic Achievements in Bringing Semiconductor Supply Chains Home, Creating Jobs, Supporting Innovation, and Protecting National Security](#)