

The CHIPS Act of 2022
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CHIPS for America Appropriations: Summary

Background: In December 2020, as part of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Congress passed into law funding programs from the bipartisan CHIPS for America Act, authorizing Department of Commerce (DOC), Department of Defense (DoD), and Department of State (DOS) activities to develop onshore domestic manufacturing of semiconductors critical to U.S. competitiveness and national security. Only 12% of chips are currently manufactured domestically, compared to 37% in the 1990s, and many foreign competitors, including China, are investing heavily to dominate the industry. The United States also lacks capabilities to produce the most advanced chips at volume. The CHIPS Act of 2022 would provide appropriations needed to implement the currently authorized programs from the bipartisan CHIPS for America Act. To ensure the Congressional goal of promoting domestic competitiveness, the Act also includes safeguards to ensure that recipients of Federal funds from these programs cannot build advanced semiconductor production facilities in countries that present a national security concern.

The CHIPS Act of 2022 also provides appropriations needed to implement the USA Telecom Act that was enacted in the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021. This program helps shore up the global telecommunications supply chain and limit the scope of involvement globally of telecommunication companies with close ties to the Communist Part of China, like Huawei. Funds will be used to capitalize on U.S. software advantages, accelerating development of an open-architecture model (known as OpenRAN) that would allow for alternative vendors to enter the market for specific network components, rather than having to compete with Huawei end-to-end.

\$54.2 Billion in Total Appropriations for CHIPS and Public Wireless Supply Chain Innovation (also known as ORAN):

- **CHIPS for America Fund:**
 - **DOC Manufacturing Incentives:** \$39 billion in financial assistance to build, expand, or modernize domestic facilities and equipment for semiconductor fabrication, assembly, testing, advanced packaging, or research and development, including \$2 billion specifically

for mature semiconductors. Within the incentive program, up to \$6 billion may be used for the cost of direct loans and loan guarantees.

- **DOC Research and Development (“R&D”):** \$11 billion for DOC research and development.
 - **DOC National Semiconductor Technology Center (“NSTC”):** A public-private partnership to conduct advanced semiconductor manufacturing R&D and prototyping; invest in new technologies; and expand workforce training and development opportunities.
 - **DOC National Advanced Packaging Manufacturing Program:** A Federal R&D program to strengthen advanced assembly, test, and packaging (“ATP”) capabilities, in coordination with the NSTC.
 - **DOC Manufacturing USA Semiconductor Institute:** A partnership between government, industry, and academia to research virtualization of semiconductor machinery, development of ATP capabilities, and the development and deployment of training.
 - **DOC Microelectronics Metrology R&D:** A National Institute of Standards and Technology (“NIST”) research program to advance measurement science, standards, material characterization, instrumentation, testing, and manufacturing capabilities.
- **CHIPS for America Workforce and Education Fund:** \$200 million to kick start development of the domestic semiconductor workforce, which faces near-term labor shortages, by leveraging activities of the National Science Foundation.
- **CHIPS for America Defense Fund:** \$2 billion for the DoD to implement the Microelectronics Commons, a national network for onshore, university-based prototyping, lab-to-fab transition of semiconductor technologies—including DoD-unique applications—and semiconductor workforce training.
- **CHIPS for America International Technology Security and Innovation Fund:** \$500 million to the DoS, in coordination with the U.S. Agency for International Development, the Export-Import Bank, and the U.S. International Development Finance Corporation, to support international information and communications technology security and semiconductor supply chain activities, including supporting the development and adoption of secure and trusted telecommunications technologies, semiconductors, and other emerging technologies.
- **Public Wireless Supply Chain Innovation Fund:** \$1.5 billion through DOC National Telecommunications and Information Administration (“NTIA”), in coordination with NIST, the Department of Homeland Security, and the Director of National Intelligence, among others, to spur movement towards open-architecture, software-based wireless technologies, funding innovative, ‘leap-ahead’ technologies in the U.S. mobile broadband market.

Sec.1. Short Title; Table of Contents

This Act may be cited as the “CHIPS Act of 2022”.

Sec.2. Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Fund

In order to support the rapid implementation of the semiconductor provisions included in the FY21 NDAA, this division would provide **\$52.7 billion** in emergency supplemental appropriations. The language would also re-affirm that the purchase of stocks and dividends are not an eligible use of CHIPS funds as determined by the eligible use of funds already required under the FY21 NDAA.

Funded activities include:

- **\$50.0 billion allocated over 5 years for a CHIPS for America Fund.** Funding must be used to implement the Commerce Department semiconductor incentive—to develop domestic manufacturing capability—and R&D and workforce development programs authorized by the FY21 NDAA (Sec. 9902 & 9906). Each fiscal year, up to 2 percent of funds are made available for salaries and expenses, administration, and oversight, of which \$5 million is available each year for the inspector general.

Within the fund, the following appropriations are available:

- **Incentive Program:** \$39 billion allocated over 5 years to implement the programs **authorized in Sec. 9902**, of which \$2 billion is explicitly provided to solely focus on legacy chip production to advance economic and national security interests, as these chips are essential to the auto industry, the military, and other critical industries. Within the incentive program, up to \$6 billion may be used for the cost of direct loans and loan guarantees.
 - \$19 billion in FY22, including the \$2 billion legacy chip production funding
 - \$5 billion each year, FY23 through FY26
- **Commerce R&D and workforce development programs:** \$11 billion appropriated over 5 years to implement programs **authorized in Sec. 9906**, including the National Semiconductor Technology Center (NSTC), National Advanced Packaging Manufacturing Program, and other R&D and workforce development programs **authorized in Sec. 9906**.
 - \$5 billion in FY22
 - \$2 billion for NSTC
 - \$2.5 billion for advanced packaging
 - \$500 million for other related R&D programs
 - For use across the NSTC, advanced packaging, and other related R&D programs, the following would be provided:
 - \$2 billion in FY23
 - \$1.3 billion in FY24
 - \$1.1 billion in FY25
 - \$1.6 billion in FY26
- **\$2 billion for a CHIPS for America Defense Fund:** Funding would be appropriated for the Microelectronics Commons, a national network for onshore, university-based prototyping, lab-to-fab transition of semiconductor technologies—including DoD-unique applications—and semiconductor workforce training.
- **\$500 million for a CHIPS for America International Technology Security and Innovation Fund:** Funding would be allocated over 5 years to the Department of State, in coordination with the U.S. Agency for International Development, the Export-Import Bank, and the U.S.

International Development Finance Corporation, for the purposes of coordinating with foreign government partners to support international information and communications technology security and semiconductor supply chain activities, including supporting the development and adoption of secure and trusted telecommunications technologies, semiconductors, and other emerging technologies.

- **\$200 million for a Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Workforce and Education Fund:** \$200 million is over five years for the National Science Foundation to promote growth of the semiconductor workforce, which faces the need to add 90,000 workers by 2025.

Sec.3. Semiconductor Incentives

This section would amend the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (Public Law 116-283) to—

- (1) Clarify the eligibility of upstream suppliers, essential to building strong domestic semiconductor manufacturing ecosystems, to receive CHIPS funding.
- (2) Ensure, in the provision of incentives for semiconductor manufacturing, consideration of a broad range of semiconductors and the relevance of the technology to supply chain vulnerabilities.
- (3) Authorize \$2 billion in additional financial incentives for manufacturing of mature technology nodes, with priority for critical manufacturing industries, such as the automotive industry.
- (4) Provide the Department of Commerce with other transaction authority, to enable efficient execution of CHIPS awards.
- (5) Require that construction projects funded under the CHIPS Act are subject to Section 602 of the Public Works and Economic Development Act of 1965 (42 U.S.C. 3212).

Finally, this section would prohibit the recipients of Federal incentive funds from expanding or building new manufacturing capacity for certain advanced semiconductors in specific countries that present a national security threat to the United States. To ensure that these restrictions remain current with the status of semiconductor technology and with U.S. export control regulation, the Secretary of Commerce in coordination with the Secretary of Defense and the Director of National Intelligence, would be required to regularly reconsider, with industry input, which technologies are subject to this prohibition.

Sec.4. Opportunity and Inclusion

This section would require the Department of Commerce to establish activities and assign personnel to ensure that the recipients of CHIPS manufacturing incentives meet their commitments to increase the participation of economically disadvantaged individuals in the semiconductor workforce. Such personnel would also serve as a resource to support the participation of minority-owned businesses, veteran-owned businesses, and women-owned businesses, in CHIPS-funded projects.

Sec.5. Additional GAO Reporting

This section would expand the scope of the Government Accountability Office report already required under the FY21 NDAA to include an evaluation of potential Government steps to avoid semiconductor shortages; to describe efforts taken to hire individuals from disadvantaged populations into the semiconductor workforce; and to detail how funded projects support the needs of critical infrastructure industries.

Sec.6. Appropriations for Wireless Supply Chain Innovation

This section would appropriate \$1.5 billion for the Public Wireless Supply Chain Innovation Fund, to spur movement towards open-architecture, software-based wireless technologies, funding innovative,

'leap-ahead' technologies in the U.S. mobile broadband market. The fund would be managed by the National Telecommunications and Information Administration (NTIA), with input from the National Institute of Standards and Technology, Department of Homeland Security, and the Intelligence Advanced Research Projects Activity, among others.

Sec.7. Advanced Manufacturing Investment Credit

The provision creates a 25 percent investment tax credit for investments in semiconductor manufacturing and includes incentives for the manufacturing of semiconductors, as well as for the manufacturing of the specialized tooling equipment required in the semiconductor manufacturing process. Taxpayers may elect to treat the credit as a payment against tax ("direct pay").

The credit is provided for property which is placed in service after December 31, 2022, and for which construction begins before January 1, 2027.