Greater Phoenix Economic Council

TSMC Arizona, U.S. Department of Commerce announce up to $6.6B in proposed CHIPS Act direct funding; Company plans third leading-edge fab in Phoenix

Published: 04/08/2024

Third fab will produce the most advanced leading-edge semiconductors in the U.S., bringing TSMC's total investment in Arizona to over US$65 Billion

PHOENIX (Apr. 8, 2024) — TSMC (TWSE: 2330, NYSE: TSM) today announced that the U.S. Department of Commerce and TSMC Arizona have signed a non-binding preliminary memorandum of terms (PMT) for up to US$6.6 billion in direct funding under the CHIPS and Science Act. TSMC

CHAT WITH US

TSMC EXHIBIT 1140
TSMC v. Marlin Semiconductor Ltd.
IPR2025-00864

also announced plans to build a third fab at TSMC Arizona to meet strong customer demand leveraging the most advanced semiconductor process technology in the United States.

As the company makes progress in completing its first fab and continues construction of its second fab at its Arizona subsidiary, the third fab brings TSMC's total capital expenditure for the Phoenix, Arizona site to more than US$65 billion, making the site the largest foreign direct investment in Arizona history, and the largest foreign direct investments in a greenfield project in U.S. history.

"The CHIPS and Science Act provides TSMC the opportunity to make this unprecedented investment and to offer our foundry service of the most advanced manufacturing technologies in the United States," said TSMC Chairman Dr. Mark Liu. "Our U.S. operations allow us to better support our U.S. customers, which include several of the world's leading technology companies. Our U.S. operations will also expand our capability to trailblaze future advancements in semiconductor technology."

"We are honored to support our customers who have been pioneers in mobile, artificial intelligence and high-performance computing, whether in chip design, hardware systems or software, algorithms, and large language models," said TSMC CEO Dr. C.C. Wei. "They are the innovators driving demand for the most advanced silicon that TSMC can provide. As their foundry partner, we will help them unleash their innovations by increasing capacity for leading-edge technology through TSMC Arizona. We are thrilled by the progress of our Arizona site to date and are committed to its long-term success."

TSMC Arizona's three fabs are expected to create approximately 6,000 direct high-tech, high-wage jobs, building a workforce that will help to support a vibrant and competitive global semiconductor ecosystem that enables leading U.S. companies to gain access to domestically-manufactured, cutting-edge semiconductor products alongside a world-class semiconductor foundry. According to an analysis by the Greater Phoenix Economic Council, this increased investment in three fabs will create more than 20,000 accumulated unique construction jobs, and t of thousands of indirect supplier and consumer jobs.

TSMC Arizona's first fab is on track to begin production leveraging 4nm technology in first half of 2025. The second fab will produce the world's most advanced 2nm process technology with next-generation nanosheet transistors in addition to the previously announced 3nm technology, with production beginning in 2028. The third fab will produce chips using 2nm or more advanced processes, with production beginning by the end of the decade. Each of the three fabs, like all of TSMC's advanced fabs, will have cleanroom area approximately double the size of an industry standard logic fab.

TSMC practices green manufacturing and aims to serve as a global standard for eco-friendly corporations with constant innovations in energy efficiency, water conservation, waste management, and air pollution control. TSMC Arizona's fabs are designed and built with that same global vision and aims to achieve a 90% water recycling rate. The company has started the design phase of building an industrial water reclamation plant with a design goal of achieving "near zero liquid discharge", bringing nearly every drop of water back into the facility.

In addition to the proposed US$6.6 billion in direct funding, the PMT also proposes to provide TSMC with up to US$5 billion in loans. TSMC plans to apply for U.S. Treasury Department Investment Tax Credits of up to 25% of the qualified capital expenditure at TSMC Arizona. The company remains committed to its long-term financial goals, which are 15-20% revenue compound annual growth rate (CAGR) in USD terms, 53% and higher gross margin, and 25% and higher return on equity (ROE).

All TSMC overseas investment are subject to regulatory approvals in Taiwan as necessary.

Remarks from TSMC customers:

"Today's announcement highlights the strong commitment from Secretary Raimondo and the entire administration to ensure the U.S. plays a central role creating a more geographically diverse and resilient semiconductor supply chain," said AMD Chair and CEO Lisa Su. "TSMC has a long track record of providing the leading-edge manufacturing capabilities that have enabled AMD to focus on what we do best, designing high-performance chips that change the world. We are committed to our partnership with TSMC and look forward to building our most advanced chips in U.S."

"TSMC is at the leading edge of advanced semiconductor technology — and when that expertise is paired with the ingenuity of American workers, incredible things are possible," said Apple CEO Tim Cook. "We are proud to play a key part in the expansion of TSMC's U.S. production, and we'll continue to invest in America and support a new era of American advanced manufacturing."

"We congratulate TSMC for its historic investment and applaud the Commerce Department for its support. TSMC has been a long-standing partner of NVIDIA since we invented the GPU and accelerated computing, and our ongoing innovation in Artificial Intelligence (AI) would not have been possible without them. We are excited to continue our partnership with TSMC as it brings cutting-edge facilities to Arizona," said Jensen Huang, founder and CEO of NVIDIA.

Quote Sheet

White House Administration

U.S. President Joe Biden

"Semiconductors – those tiny chips smaller than the tip of your finger – power everything from smartphones to cars to satellites and weapons systems. America invented these chips, but over time, we went from producing nearly 40% of the world's capacity to close to 10%, and none of the most advanced chips, exposing us to significant economic and national security vulnerabilities. I was determined to turn that around, and thanks to my CHIPS and Science Act – a key part of my Investing in America agenda – semiconductor manufacturing and jobs are making a comeback," said President Joe Biden. "TSMC's renewed commitment to the United States, and its investment in Arizona represent a broader story for semiconductor manufacturing that's made in America and with the strong support of America's leading technology firms to build the products we rely on every day."

Laurie E. Locascio, Under Secretary of Commerce for Standards and Technology and National Institute of Standards and Technology Director

"America's ability to maintain our competitive edge in advanced technologies like artificial intelligence is essential to igniting the next generation of research, innovation, development, and production," said Under Secretary of Commerce for Standards and Technology and National Institute of Standards and Technology Director Laurie E. Locascio. "Our proposed support for TSMC Arizona represents an inflection point for America's innovative capacity that would restore our nation's leadership in an industry that is foundational to the U.S. and global digital economy."

Secretary of Commerce Gina Raimondo

"One of the key goals of President Biden's CHIPS and Science Act was to bring the most advanced chip manufacturing in the world to the U.S., and with this announcement and TSMC's increased investment in their Arizona campus, we are working to achieve that goal," said U.S. Secretary of Commerce Gina Raimondo. "The leading-edge semiconductors that will be made here in Arizona are foundational to the technology that will define global economic and national security in the 21st century, including AI and high-performance computing. Thanks to President Biden's

leadership and TSMC's continued investments in U.S. semiconductor manufacturing, this proposed funding would help make our supply chains more secure and create thousands of good-quality construction and manufacturing jobs for Arizonans."

Members of U.S. Congress

Senator Mark Kelly, U.S. Congress, Arizona

"It's an exciting day for Arizona, where we are leading the way in bringing the most advanced microchip manufacturing back to America. This grant and TSMC's commitment to increase their presence in our state are going to create thousands of great-paying jobs, many of which don't require a four-year degree, and get more workers the skills they need to start these careers. This will also strengthen our national security by bringing critical technology supply chains back from overseas and reinforcing ties between the United States and Taiwan. Today's exciting steps forward are the product of the hard work we did to pass the CHIPS Act and the hard work that Mayor Gallego and our state and local economic development leaders did to bring TSMC to Phoenix," said Senator Kelly, a chief negotiator of the CHIPS and Science Act.

Congresswoman Debbie Lesko, U.S. Congress, Arizona

"Over the past decade, the efforts to install the Taiwan Semiconductor Manufacturing Company (TSMC) in the Arizona desert have resulted in tremendous progress as this dream nears its reality. I am proud of the partnership of all involved with this project, and I am excited to see the economic boom this new manufacturing is certain to create in the northwest valley. This union between Arizona and TSMC will lead to a brighter future for our state and nation!"

Senator Kyrsten Sinema, U.S. Congress, Arizona

"Today's TSMC investment – fueled by our bipartisan CHIPS and Science law – is making transformational investments in our state, creating strong Arizona careers, protecting our national security, and strengthening Arizona's leadership in semiconductor manufacturing," said Sinem chief negotiator of the CHIPS and Science law and co-author of the bipartisan CHIPS for America Act.

State of Arizona Government Leaders

Mayor Kate Gallego, City of Phoenix

"Today's announcement is yet another important milestone for Phoenix as we fast become the hub of the nation's semiconductor industry. TSMC makes the world's most advanced semiconductor technology, and thanks to this monumental investment, the company will be able to continue expanding in our city—creating thousands of high-wage jobs and fueling economic growth for generations. Phoenix is proud to lead the Biden administration's charge to bring back American manufacturing, and we stand ready to deliver results. I am grateful to our Congressional delegation, business leaders, and education partners who helped advocate for and ultimately pass the CHIPS Act. This was truly a team effort, and I look forward to the positive impact this investment will have on the entire region."

Governor Katie Hobbs, State of Arizona

"Arizona is an international leader in the semiconductor industry, a testament to our strong and enduring relationship with TSMC. With this vital investment made possible by the CHIPS Act, this partnership will continue to thrive. We are at the forefront of our country's economic future because of our high-skilled workforce and dynamic economic engine, and TSMC's growth and investment right here in Arizona will continue to show the world that our state is the best place for businesses to invest. I want to thank ACA President Sandra Watson for her essential work cementing Arizona as the silicon desert and TSMC Chairman Mark Liu for his partnership with our state. Some of the world's most advanced chips will be made here in Arizona at TSMC, and this investment underscores our commitment to innovation and technological leadership."

National Industry Trade Organizations

John Neuffer, SIA President and CEO

"Today's TSMC announcement is a big win for America's economy, supply chain resilience, and the advanced chip manufacturing ecosystem. The new TSMC facilities—sparked by the CHIPS and Science Act—will spur job creation and economic growth in Arizona while also broadening the state's already substantial semiconductor footprint. We commend TSMC for its ambitious investments in the U.S. and applaud the Commerce Department for continuing to make progress in implementing the CHIPS Act's landmark manufacturing incentives and R&D investments. CHIPS remains on track for great success, and we look forward to continuing to work with leaders in government and industry to ensure it delivers maximum benefits to America's economic and technological leadership."

State of Arizona Industry Organizations

Chris Camacho, President & CEO, Greater Phoenix Economic Council

"With the most advanced chips in the world, TSMC is ushering a new era of national solidity through domestic semiconductor production with backing from the CHIPS funding. Greater Phoenix has emerged as the heartbeat of U.S. advanced manufacturing capabilities, and the continued partnership and collaboration between the region and company will lift both to unprecedented heights."

Danny Seiden, President and CEO, Arizona Chamber of Commerce and Industry

"Congratulations to TSMC on this award, which underscores the value of the CHIPS Act and will help solidify Arizona's place as the country's leading hub for semiconductor manufacturing. Arizona's economy and competitive standing are made stronger by TSMC's contributions, and we look forward to TSMC's expanded investment and continued growth in the state."

Sandra Watson, President and CEO, Arizona Commerce Authority

"We are proud to celebrate today's historic funding announcement and TSMC's continued high-tech growth in Arizona. TSMC's expansion adds thousands of new jobs to Arizona's rapidly growing semiconductor ecosystem, bolsters our state's leadership in advanced chip technology, and represents a new milestone for U.S. supply chain resiliency. We're sincerely grateful to TSMC for their continued commitment to and investment in Arizona and thank the Biden Administration, Governor Hobbs, and all our partners for their collaboration and leadership."

Higher-Education

Dr. Michael Crow, President, Arizona State University

"This historic investment in TSMC is the continuing expansion of the impact from the CHIPS and Science Act, in this case to support an indust leader that ASU and many others in Arizona have been proud to assist," said Arizona State University President Michael Crow. "Today's announcement represents not only an acknowledgement of the impact TSMC will have on innovation in semiconductor manufacturing and research in the United States, it serves as a call to action for ASU, which has pledged its full capacity for innovation, workforce development a research to advance TSMC's long-term success. We look forward to the collaboration and work ahead."

Dr. Steven R. Gonzales, Chancellor, Maricopa County Community College District

"As a leader in semiconductor manufacturing, TSMC is creating opportunities for our students to learn new technologies and develop the skills necessary to shape the future of work. Today's announcement solidifies Arizona's role as a leader in chip manufacturing. I look forward to the collaboration ahead as we strengthen our existing semiconductor 'Quick Start' programming and work with TSMC to develop an apprenticeship pathway to support the next wave of growth and TSMC's expanding footprint."

Kyle Squires, Dean, Ira A. Fulton Schools of Engineering, Senior Vice Provost for Engineering, Computing and Technology, Arizona State University

"What makes our partnership with TSMC compelling is their strategic investments that are designed to foster a comprehensive partnership encompassing recruitment, student success, faculty engagement, and breakthroughs in research and innovation. Their approach to driving these investments resonates deeply with our own direction and values at ASU. The synergy between our objectives and TSMC's goals has established the foundation required for transformative impacts, benefiting not only ASU and TSMC, but also our region. With the CHIPS Act investment serving as the impetus, we anticipate a significant acceleration in our collaborative efforts, promising a transformative era for semiconductor innovation and technology."

About TSMC

TSMC pioneered the pure-play foundry business model when it was founded in 1987 and has been the world's leading dedicated semiconductor foundry ever since. The Company supports a thriving ecosystem of global customers and partners with the industry's leading process technologies and portfolio of design enablement solutions to unleash innovation for the global semiconductor industry. With global operations spanning Asia, Europe, and North America, TSMC serves as a committed corporate citizen around the world.

TSMC deployed 288 distinct process technologies, and manufactured 11,895 products for 528 customers in 2023 by providing broadest range of advanced, specialty and advanced packaging technology services. The Company is headquartered in Hsinchu, Taiwan. For more information please visit https://www.tsmc.com.