



TSMC Announces Updates for TSMC Arizona

PHOENIX, Arizona, Dec. 6, 2022 – TSMC (TWSE: 2330, NYSE: TSM) today announced that in addition to TSMC Arizona’s first fab, which is scheduled to begin production of N4 process technology in 2024, TSMC has also started the construction of a second fab which is scheduled to begin production of 3nm process technology in 2026. The overall investment for these two fabs will be approximately US\$40 billion, representing the largest foreign direct investment in Arizona history and one of the largest foreign direct investments in the history of the United States.

In addition to the over 10,000 construction workers who helped with construction of the site, TSMC Arizona’s two fabs are expected to create an additional 10,000 high-paying high-tech jobs, including 4,500 direct TSMC jobs. When complete, TSMC Arizona’s two fabs will manufacture over 600,000 wafers per year, with estimated end-product value of more than US\$40 billion.

In line with TSMC’s commitment to green manufacturing, it was also revealed that TSMC Arizona is in the planning stages for an on-site Industrial Water Reclamation Plant that when finished, will allow the TSMC Arizona site to achieve near zero liquid discharge.

“When complete, TSMC Arizona will be the greenest semiconductor manufacturing facility in the United States producing the most advanced semiconductor process technology in the country, enabling next generation high-performance and low-power computing products for years to come,” said TSMC Chairman Dr. Mark Liu. “We are thankful for the continual collaboration that has brought us here and are pleased to work with our partners in the United States to serve as a base for semiconductor innovation.”

The announcements were made at TSMC’s opening ceremony to celebrate the first batch of state-of-the-art semiconductor manufacturing equipment to arrive in TSMC Arizona. The event took place in Phoenix, Arizona and brought together TSMC leaders, customers, suppliers, partners, government officials, and academia leaders to commemorate a milestone in TSMC’s journey to bring leading-edge semiconductor manufacturing to the United States.

Presiding over the ceremony were TSMC Founder Dr. Morris Chang, TSMC Chairman Dr. Mark Liu, and TSMC CEO Dr. CC Wei. Notable guests of the event included President Joseph R. Biden, Jr., Department of Commerce Secretary Gina Raimondo, Arizona State Governor Doug Ducey, Phoenix City Mayor Kate Gallego, Apple CEO Tim Cook, AMD Chair and CEO Dr. Lisa Su and NVIDIA President and CEO Jensen Huang.



During the ceremony, TSMC revealed six semiconductor tools which are designed to support production of leading-edge semiconductor process technology. Among these include tools from long-time suppliers Applied Materials, ASM, ASML, Lam Research, KLA and Tokyo Electron.

“I’m deeply honored that we have been able to gather here to celebrate such a historic milestone for TSMC, which represents our dedication to building a semiconductor ecosystem here in the USA in order to better serve our customers,” said TSMC CEO Dr. CC Wei during the ceremony. “This project is truly a testament to the Grand Alliance TSMC has formed with customers, suppliers and partners to further our collaboration and unleash innovation.”

TSMC “First Tool-In” Third Party Quotes (in alphabetical order)

Customers

Amazon Web Services

“As a TSMC customer, we’re thrilled about this historic moment for TSMC’s new Fab21 in Phoenix, Arizona. We are excited to have some of the world’s most advanced process technology and manufacturing capacity for AWS’s next-generation semiconductor product designs available domestically with this new facility. The readiness of TSMC’s Arizona fab enables us to use US-based manufacturing to continue to innovate and deliver high-performance products, services and instances for our customers globally.”

- Peter DeSantis, Senior Vice President of Amazon Web Services Utility Computing

AMD

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“At AMD, we are all about pushing the envelope in high performance and adaptive computing to solve the world’s most important challenges. As the leader in semiconductor manufacturing, TSMC enables us to focus on what we do best: designing innovative chips that change the world. A strong, geographically diverse, and resilient supply chain is essential to the global semiconductor industry. TSMC’s investment and expansion in Arizona is extremely important and mission critical for both the semiconductor industry and our extended ecosystem of partners and customers. AMD expects to be a significant user of the TSMC Arizona fabs and we look forward to building our highest performance chips in the United States.”

- Lisa Su, Chair and CEO of AMD



Ampere Computing

“We are honored to be present at TSMC’s milestone event. As a customer since Ampere’s founding, we applaud the significance of TSMC Arizona for advanced semiconductor manufacturing capability in the US. We look forward to our continued partnership with TSMC as Ampere brings high performance cloud processors to market based on their most advanced manufacturing technology.”

- Renee James, CEO, Founder and Chairman of Ampere Computing

Apple

“This facility is an incredible testament to global collaboration, to TSMC’s ingenuity, and it is an important milestone for advanced manufacturing in America. The innovation in Apple Silicon has transformed our devices and we are proud to become TSMC’s largest customer at their new Arizona site.”

- Tim Cook, CEO of Apple

Broadcom

“TSMC has been a strategic foundry partner to Broadcom supporting us on a wide range of technology needs. We view Fab 21 deployment in Phoenix, Arizona as a key milestone that onshores, for the first time, manufacturing of the most advanced technology nodes into the US. “We share TSMC’s excitement in achieving this critical milestone and the value this Fab will bring to Broadcom and our customers.”

- Charlie Kawwas, Ph. D., President of Broadcom Semiconductor Solutions Group

Marvell

“Marvell applauds TSMC for investing in the future of the semiconductor industry with its new Fab21 facility in Phoenix, Arizona. Building advanced node manufacturing capacity in multiple locations worldwide will strengthen resiliency of the global semiconductor supply chain and enable companies like Marvell to continue driving leading-edge innovation using the most advanced process technology and manufacturing capacity available today. We look forward to our ongoing collaboration with TSMC’s talented team.”

- Matt Murphy, President and CEO of Marvell

Microchip Technology

“We welcome TSMC to the semiconductor ecosystem in Arizona. TSMC’s Fab 21 is of strategic importance for the resilience of the global electronics supply chain and for the national security of the United States.”



- Ganesh Moorthy, President & CEO of Microchip Technology, Inc.

Micron

"TSMC's Fab 21 expansion is an important step toward securing U.S. supply of advanced semiconductor technology. TSMC is a long-standing Micron partner, and their commitment to high-quality, innovative logic foundry services helps enable Micron to deliver industry-leading memory and storage solutions."

- Sanjay Mehrotra, President and CEO of Micron

NXP Semiconductors

"By partnering to bring 5nm technology to the automotive industry, TSMC and NXP are contributing to accelerating the transformation to Software Defined Vehicles as well as strengthening the resilience of the automotive supply chain. As a longstanding collaborator and trusted partner, we welcome TSMC and are excited for them to join the rich industry ecosystem here in Arizona."

- Andy Micallef, Executive Vice President of Global Operations of NXP Semiconductors

NVIDIA

"Chips are the engines that modernize and automate the world, driving human progress. The future of humanity is tied to the chip industry. TSMC is the bedrock of the world's chip industry. From our beginning, NVIDIA has entrusted TSMC as we invented the GPU and accelerated computing, and revolutionized 3D graphics, scientific computing, AI and self-driving cars. Our ongoing work on drug discovery and climate science would not be possible without them. Bringing TSMC's investment to the United States is a masterstroke and a game-changing development for the industry."

- Jensen Huang, founder and CEO of NVIDIA

Qualcomm Technologies

"Semiconductors are a critical component of the digital economy and having a resilient supply chain is essential as digital transformation advances across industries. TSMC's expansion into Arizona will bring advanced semiconductor manufacturing technology to the United States, which will benefit the American fabless industry and economy at large. TSMC's Arizona facility will strengthen the semiconductor manufacturing ecosystem in the US which will enable us to serve our US customers better, and as a longtime customer of TSMC, we are pleased to start leveraging the Arizona facility to manufacture our leading-edge products when production begins in 2024."



- Roawen Chen, SVP, Chief Supply Chain & Operations Office of Qualcomm Technologies

Suppliers

Applied Materials

“Applied Materials congratulates TSMC on this exciting milestone at its new state-of-the-art chip manufacturing facility in Arizona. Applied and TSMC have a long history of collaborating to deliver semiconductor innovations, and we look forward to working closely together to accelerate next-generation technology and strengthen semiconductor manufacturing in the U.S.”

- Gary Dickerson, President and CEO of Applied Materials

ASML

“Today's Tool-in of the first ASML tool into TSMC's new Fab21 in Phoenix, Arizona is yet another milestone in the long-standing relationship between our two companies. TSMC and ASML have collaborated for decades to help drive the semiconductor industry forward. This first system, and much more other ASML systems that will follow, will enable TSMC to apply their process technology to create the next generation of advanced chips.”

- Peter Wennink, President and CEO of ASML

ASM

“We are excited by TSMC's new fab. As a trusted partner, we are committed to continue supporting TSMC as they continue expand their global manufacturing footprint and drive leading-edge technologies. TSMC's new fab investment further strengthens the semiconductor ecosystem in Arizona, which has also been home to ASM's US headquarters for already close to 50 years.”

- Benjamin Lo, CEO, ASM

KLA Corporation

“Congratulations to TSMC on this milestone. TSMC is a valued collaboration partner for KLA in developing leading-edge process control technologies for manufacturing the most advanced semiconductors. The delivery of KLA's SpectraFilm™ F1 films metrology system to TSMC's Fab 21 in Arizona is a significant step in bringing TSMC's advanced semiconductor manufacturing to the United States. KLA is pleased to support the company as they continue to drive innovation and growth for the industry.”

- Rick Wallace, President and CEO of KLA Corporation



LAM

“The leading-edge semiconductor manufacturing tools and technology at TSMC’s new state-of-the-art U.S. fab are reflective of the breakthrough innovation possible through collaboration. We congratulate TSMC on their newest facility and we are proud to continue our long-standing work together to help enable the next generation of semiconductors.”

- Tim Archer, President and CEO of Lam Research

TEL

“Tokyo Electron (TEL) is very excited to participate in today’s TSMC Arizona Fab First Tool-in ceremony. This Fab will bring in the most advanced semiconductor manufacturing technology to the US semiconductors. It is remarkable for TSMC, who is one of our important partners, to achieve this milestone. TEL has collaborated with TSMC for a long time to move in our best cleaning tool “CELLESTATM-i”. Today I am not only proud to say that the CELLESTATM-i has been selected, but I also look forward to contributing to the most important semiconductor manufacturing technology in the US.”

- Tony Kawai, CEO OF Tokyo Electronics

Industry Partners

Microsoft

“The tool-in of TSMC’s Arizona fab marks a significant moment for the state of chip manufacturing in the United States, and an important step forward for the entire global technology sector. TSMC and Microsoft have collaborated to accelerate silicon innovation, including through our work on the TSMC Open Innovation Platform and our Joint Innovation Lab initiative. With TSMC’s newest Fab21 location in Arizona, we look forward to deepening our relationship to further accelerate global growth and progress with the most advanced semiconductor technologies.”

- Rani Borkar, Corporate Vice President of Microsoft Cloud Hardware Systems and Infrastructure

Construction Partners

United Integrated Services

“TSMC and UIS have cooperated together for more than three decades. Our relationship



is like a family that has been shaped by our trust and respect for each other. We're honored to be part of this historic project for the United States to deliver UIS' MEP and Cleanroom Construction services. TSMC's record of achievement, we believe, is globally respected as unique in the modern era. Upon completion of TSMC Arizona FAB21 project, we intend for all of the United States to share in the many benefits that TSMC's advanced technologies brings across society. "

- Belle Lee, Chairman of United Integrated Services

Marketch International Corp.

"It is our honor and privilege to participate in TSMC's new Fab in Phoenix, Arizona, which marks a very important milestone of the cooperation between TSMC and MIC. Congratulations to TSMC Arizona! MIC looks forward to a bright and glorious future of cooperation with TSMC and continuing to work hand in hand to the successful completion of the work to come."

- Margaret Kao, President and CEO of Marketch International Corp.

Okland Construction

"Okland Construction Company is honored to partner with TSMC on such a monumental project. As a locally owned and operated general contractor, we are thrilled to be part of a truly global team bringing the leading-edge semiconductor manufacturing to Arizona. The Fab21 project has been an exciting opportunity, and we are continually amazed by TSMC's innovation and expertise. We are committed to continue our support of TSMC's future growth in Arizona. We and our trade partners are grateful to play a small role in this project's success. Congratulations to TSMC and all of its partners on a significant milestone for the industry and the state of Arizona!"

- Bill Okland, President and CEO, Okland Construction

CTCI (中鼎)

"CTCI is delighted to join this monumental fab tool move-in ceremony of TSMC and is proud to be part of this significant establishment as a general contractor. While the fab will bring in the most advanced semiconductor manufacturing technology to the US, we will continue devoting ourselves to assist TSMC, one of CTCI's most important partners, and the US advanced technology industry to establish new manufacturing bases in a safe, timely, and professional manner."

- John T. Yu, Group Chairman of CTCI (中鼎)



Austin Commercial

“As one of the preeminent U.S. builders for semiconductor and wafer manufacturing facilities in the United States, Austin Commercial is honored to partner with TSMC to bring the world’s most advanced chip manufacturing to Arizona. Our partnership with TSMC has been cohesive, collaborative, and beneficial to both companies in our work on the TSMC Arizona campus. We take pride that the TSMC Arizona campus will make a significant positive impact to the community and will help resolve the global supply chain shortage in the microchip industry.”

- Kent McNorton, Sr. Vice President at Austin Commercial

Trade Groups

Semiconductor Industry Association

“U.S. enactment of the CHIPS and Science Act was a landmark leap forward for semiconductor production and innovation, spurring bold new investments in this country by TSMC and others that will not only strengthen the chip ecosystem, but also bolster our economy and supply chain resilience.”

- John Neuffer, President and CEO of the Semiconductor Industry Association

Global Semiconductor Alliance

“TSMC is an integral and critical partner in the semiconductor ecosystem and their 25-year collaboration with the Global Semiconductor Alliance (GSA) has helped create and support a healthy \$578 billion semiconductor industry that is expected to achieve \$1 trillion in revenue by 2030. The recognition of the economic criticality of semiconductors to the \$85 trillion global economy and the vast societal impact has customers and policymakers calling for a more diversified manufacturing base and resilient supply chain. TSMC’s new US manufacturing facility in Arizona that will provide the most advanced semiconductor process technology in the US helps achieve this goal.”

- Jodi Shelton, Co-Founder and CEO of the Global Semiconductor Alliance

SEMI

“SEMI applauds TSMC’s establishment of this unique operation to manufacture advanced node chips at scale in the United States, and President Biden’s participation today reflects the impact of this substantial investment to reignite domestic semiconductor manufacturing. Over my decades-long career in the semiconductor industry, I have



observed TSMC's exceptional journey to take a leadership position in numerous endeavors, including recently advocating for the successful passage of the U.S. CHIPS and Science Act of 2022. I am inspired by their efforts to develop this monumental facility in Arizona that will create jobs and strengthen the technology supply chain through their unique model of co-innovation with customers."

- Ajit Manocha, President and CEO of SEMI

Education Partners

Arizona State University

"Arizona State University has been preparing for years to assist in helping Arizona become the home of a company like TSMC. ASU will work to provide the talent to support the workforce that TSMC needs and research that is of value. Our collaboration is essential to the success of the company, the state, and the objectives and ambitions of the country, as reflected in the visit and support from the President of the United States. Arizona State University has been engaged with TSMC since it began considering Phoenix as its destination, and we are committed to building that relationship in innovative and deeply connected ways as we move into the future."

- Michael Crow, President of Arizona State University

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 291 distinct process technologies, and manufactured 12,302 products for 535 customers in 2021 by providing broadest range of advanced, specialty and advanced packaging technology services. TSMC is the first foundry to provide 5-nanometer production capabilities, the most advanced semiconductor process technology available in the world. The Company is headquartered in Hsinchu, Taiwan. For more information please visit <https://www.tsmc.com>.



TSMC Spokesperson:

Wendell Huang
Vice President and CFO
Tel: 886-3-505-5901

Media Contacts:

Nina Kao
Head of Public Relations
Tel: 886-3-563-6688 ext.7125036
Mobile: 886-988-239-163
E-Mail: nina_kao@tsmc.com

Ulric Kelly
Public Relations
Tel: 886-3-563-6688 ext. 7126541
Mobile: 886-978-111-503
E-Mail: ukelly@tsmc.com