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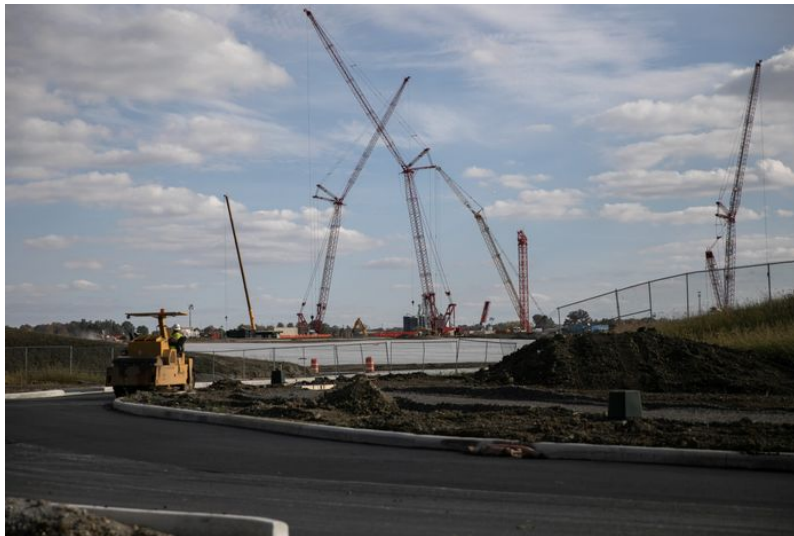
EXCLUSIVE POLICY

Eager for Economic Wins, Biden to Announce Billions for Advanced Chips

Industry, lawmakers worry semiconductor production could take years because of negotiations, permitting and worker shortages

By [Yuka Hayashi](#) [Follow](#)

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The U.S. government is encouraging the construction of semiconductor plants, such as this Intel factory in Ohio. PHOTO: MADDIE MCGARVEY FOR THE WALL STREET JOURNAL

WASHINGTON—The Biden administration, eager to highlight a signature economic initiative as elections approach, is expected to award billions of dollars in subsidies to Intel, Taiwan Semiconductor Manufacturing Co., or TSMC, and other top semiconductor companies in coming weeks to help build new factories.

The grants are part of the \$53 billion Chips Act, intended to reshore production of advanced microchips and fend off China, which is fast developing its own chip industry.

The slow pace of implementation of the 2022 bipartisan law has frustrated some. More than 170 firms have applied but, to date, just two tiny grants have been made, to makers of less advanced chips.



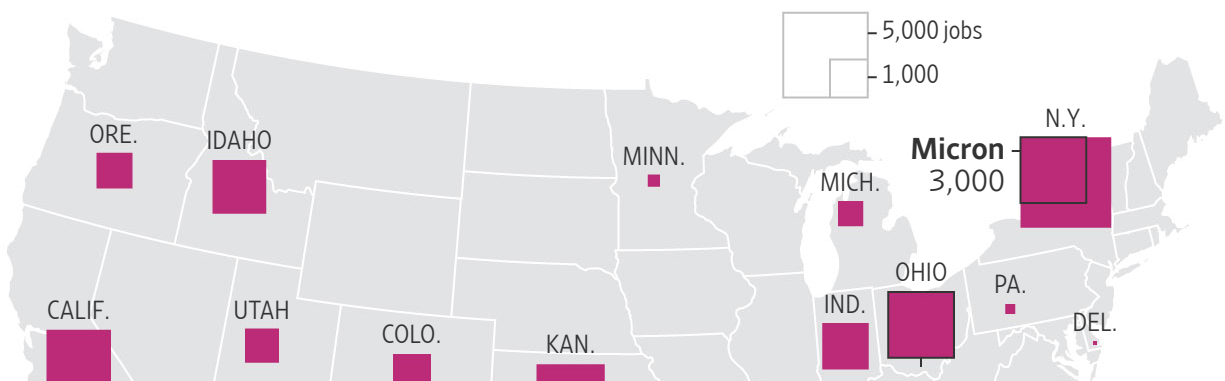
President Biden tours a TSMC plant under construction in Arizona. PHOTO: BRENDAN SMIALOWSKI/AGENCE FRANCE-PRESSE/GETTY IMAGES

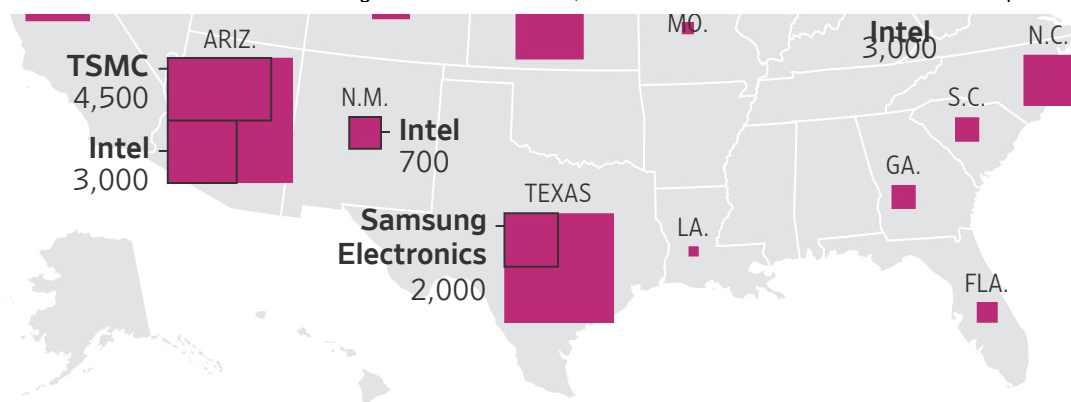
Industry executives familiar with negotiations said the forthcoming announcements are for much larger sums, in the billions of dollars, and aimed to kick-start manufacturing of advanced semiconductors that power smartphones, artificial intelligence and weapons systems.

The executives expect some announcements to come before the State of the Union address scheduled for March 7, when President Biden, a Democrat, will seek to showcase his economic achievements as the presidential campaign picks up steam. Former President Donald Trump is the front-runner for the Republican nomination.

“There is pressure obviously to get the big names funded before things start really heating up,” said William Rinehart, a senior fellow for technology and innovation for the American Enterprise Institute, a think tank.

Estimated jobs from announced investments in the semiconductor manufacturing supply chain





Note: Based on investments announced from May 2020 to December 2023.

Source: Semiconductor Industry Association

The announcements are preliminary, to be followed by due diligence and then final agreements. Funds will be released in stages as the projects progress.

Some lawmakers and industry officials worry that, because of permitting and other delays, it could be years before the taxpayer-subsidized factories are churning out made-in-America chips.

Among the likely recipients is Intel, which is led by CEO Pat Gelsinger and has projects under way in Arizona, Ohio, New Mexico and Oregon that will cost more than \$43.5 billion. Another is TSMC, with two fabrication plants, or fabs, under construction near Phoenix for a total investment of \$40 billion. Arizona and Ohio are considered battleground states in November's presidential and congressional races.

South Korea's Samsung Electronics has a \$17.3 billion project near Dallas. Micron Technology, Texas Instruments and GlobalFoundries count among other top contenders, industry executives say.

"Certainly, in the early part of this year, we will be announcing major progress," Michael Schmidt, director of the Chips Program Office, said. "We are on schedule."

A Commerce Department spokeswoman declined to discuss individual applications, timing or award amounts. "This is a merit-based process with tough commercial negotiations—CHIPS awards will be entirely dependent upon which projects will advance U.S. economic and national security," she said.



Intel CEO Pat Gelsinger holds a semiconductor chip during a Senate hearing in 2022. PHOTO: TOM WILLIAMS/ZUMA PRESS

The Chips Act includes \$39 billion in manufacturing grants to cover as much as 15% of the total cost of each project up to \$3 billion per fab, as well as loans, loan guarantees and tax credits.

How the Chips Act is implemented makes for an early test of Washington's ability to carry out industrial policy—government support for industries deemed strategic—where China, Japan and Germany have far more practice.

Delivering on signature economic policies—such as the Chips Act, a 2021 infrastructure law, and the 2022 Inflation Reduction Act aimed at renewable energy—is also urgent for Biden's re-election push. The laws are individually popular: An October survey by progressive-aligned Navigator Research showed the Chips Act was among the more popular Biden programs, with 69% of respondents expressing support.

But voters overall have a dim view of Biden's economic stewardship. A December poll by The Wall Street Journal found "Bidenomics," the collective moniker for such programs, is viewed favorably by less than 30% of voters and unfavorably by more than half.

Part of the gap might lie in how long it has taken to actually implement the laws. The Chips Act's requirements on workforce and national security have complicated the funding negotiations. Shortages of skilled workers loom.

TSMC, which produces roughly 90% of the world's most advanced chips, said last week it expected to delay production at the second of its Arizona plants by one to two years, citing uncertainty over U.S. incentives. TSMC had earlier postponed the opening of the first fab from 2024 to the first half of 2025.

“The main reason is the lead time and the alternatives that these firms have,” said John VerWey, an adviser on security and technology at the federal Pacific Northwest National Laboratory who has studied regulatory hurdles for plant constructions in the U.S. “When TSMC wants to build a fab in Taiwan or in Japan, they can do so much faster than they can in the U.S.”



TSMC is building two plants near Phoenix. PHOTO: CAITLIN O'HARA/BLOOMBERG NEWS

Administration officials say that the Chips Act has already spurred private sector investments exceeding \$200 billion. Some 12,000 people work daily at TSMC's Arizona site.

“Let's think about what's possible 10 years from now if we are bold,” Commerce Secretary Gina Raimondo said in February last year.

The most immediate threat to the timely construction is the National Environmental Policy Act, which requires large federally funded projects to pass environmental review before grants are released, regardless of whether they have already obtained state and local government permits. Full NEPA reviews took an average of 4.5 years between 2013 and 2018, according to a federal government report. Critics say each year of delay adds roughly 5% to the construction cost of a chip plant.

A Senate-passed bill exempting major Chips Act projects from NEPA review has failed to gain traction in the House. Some Republicans want a wider permitting overhaul covering energy and other sectors. Some Democrats worry about diluting environmental standards.

“The process could take five years and that’s not the intention of why we are doing this thing,” said Sen. Mark Kelly (D. Ariz.), a lead author of the Senate bill. “We are trying to get these chips built here in the United States as soon as we possibly can.”

Industry executives also say negotiations have been complicated by a lack of clarity on how the program’s rules will work. Some executives in private complain that what the Commerce Department has offered so far is insufficient. They also worry about accompanying conditions, such as activity in China, sharing of excess profits with the government and paying construction workers union-scale wages.

A shortage of skilled workers has been cited as a reason for potential delays. The Semiconductor Industry Association, a trade group, estimates the industry will face a shortfall of 67,000 workers by 2030, including technicians, computer scientists and engineers.

“The chip industry is capital-intensive and, as such, firms need predictability,” said Jimmy Goodrich, a semiconductor expert advising Rand Corp. “They will hedge significant investments such as purchasing equipment, which accounts for 80% of fab costs, until they are certain that there is market demand and that government incentives will be in place at the level needed to compete globally.”

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