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Addressing the Memory Chip Affordability Challenge

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EXECUTIVE SUMMARY

Supply chain shortages stood out as one of the many challenges American consumers and businesses faced during the COVID-19 pandemic. Surges in demand and supply constraints led to higher prices and shortages of toilet paper, cleaning products, and personal protective equipment (PPE). Families had more disposable income from government checks and spent less on travel and dining out, while spending more on laptops, gaming systems, home repairs, and automobiles. It quickly became evident that microchip shortages were another constraint. Inventories shrank, wait times ballooned, prices rose sharply, and downstream businesses struggled to obtain the inputs needed to produce their products.

Consequently, addressing supply chain resiliency quickly became a priority for federal and state policymakers. Policies aimed at friend-shoring chip production, increasing supply chain transparency, and improving the efficiency of production and trade. President Biden signed the CHIPS and Science Act of 2022 to incentivize more semiconductor manufacturing, research, and workforce development.

Several years later, a similar challenge is unfolding rapidly in the memory chip industry. Demand is surging, and supply bottlenecks persist. However, this time demand is driven by the rapid growth of data centers. Hyperscale data center companies are buying unprecedented quantities of the world's most advanced memory chips. American consumers will face the same consequences: higher prices, longer wait times for products, and supply shortages that may persist for years. The memory chip imbalance is quickly becoming yet another affordability concern for households and policymakers alike.

The current memory shortage is not identical to the pandemic shock, but it has shown how supply chain bottlenecks can drive high prices and economic costs that ripple throughout the economy.

For policymakers, the overarching objective should be to increase supply, improve resilience, and lower consumer costs while preserving the price signals that drive investment, innovation, and long-term competitiveness. If Congress and the administration are concerned that AI-driven demand for high-bandwidth memory could constrain conventional DRAM supplies and raise costs for consumers and businesses in the near term, Congress should focus on improving and protecting market flexibility, ensuring transparency, and removing barriers that prevent firms from adapting to changing market conditions. Importantly, the administration should resist protectionist policies that would likely restrict supply and exacerbate price concerns, while leveraging trade discussions to

expand the supply of memory for household products. In the intermediate- to long-term, permitting reform will help domestic manufacturers invest and build efficiently and predictably.

WHAT ARE MEMORY CHIPS AND HOW ARE THEY USED?

Traditional memory chips, known as DRAM (dynamic random-access memory), are used in everything from laptops and smartphones to industrial equipment and automobiles. DRAM temporarily stores information that a processor is actively using, whether in a web browser, an app on your phone, a video game, or during data center processing. NAND memory provides long-term storage in devices such as solid-state drives, USB flash drives, smartphones (e.g., stored photos), and data center storage systems.

While we typically think of memory in terms of computers and phones, memory is embedded throughout the economy. Among the products Americans rely on daily and the technologies critical to the economy and national defense, memory chips are used in:

- → Household appliances such as refrigerators, dishwashers, washing machines, dryers, and smart thermostats.
- → Electronics, including laptops, smartphones, tablets, computers, gaming consoles, home security systems, smart televisions, streaming devices, and connected speakers.
- → Modern vehicles across infotainment, driver assistance, backup cameras, battery management, telematics, and display systems.
- → MRI systems, CT scanners, ultrasound machines, patient monitors, infusion pumps, diagnostic equipment, wearable health technologies, and hospital networking infrastructure all rely on semiconductors and memory.
- → Advanced radar systems, missile defense platforms, intelligence and surveillance equipment, secure communications networks, autonomous systems, and military data centers.
- → Broadband networks, including routers, modems, switches, optical equipment, wireless infrastructure, and data-center networking products.
- → Financial services such as payment processors, stock exchanges, banking, ATMs, and digital payment platforms.
- → Energy, including grid control centers, utility operations, pipeline monitoring, power plant controls, smart meters, and battery storage systems.
- → Transportation networks such as air traffic control, rail signaling, distribution centers, and logistics networks.

→ Agricultural technologies such as precision agriculture, GPS-guided tractors, autonomous equipment, irrigation controls, yield monitoring, drones, and farm management software.

As more advanced technology has been integrated into most products Americans use daily, memory chips are found in nearly every sector of the economy. This also includes the growth of artificial intelligence, which is rapidly reshaping the memory market.

AI'S EXPANDED MEMORY CHIP USE

Artificial intelligence promises enormous benefits for the American economy. It will increase productivity, accelerate scientific discovery, improve logistics, strengthen energy security, and help businesses serve consumers more efficiently. However, training and running large AI models require moving enormous amounts of data between processors and memory. Data center growth has created significant demand for a more specialized memory type known as High Bandwidth Memory (HBM). Unlike conventional DRAM, which sits on a circuit board, HBM stacks multiple DRAM layers vertically and places them extremely close to advanced processors. The result is dramatically faster data transfer speeds and lower power consumption.[1]

For context, a single data center chip has 6 times as many gigabytes as a computer and 24 times as many as a smartphone.[2] Therefore, a single AI server can consume as much memory as hundreds of laptops or thousands of simpler connected devices.

Not only is DRAM in greater demand, but data center companies are also paying substantial premiums and signing multiyear contracts to meet their short-term memory needs. Unsurprisingly, the memory chip industry has shifted toward higher-margin HBM manufacturing. Price signals are guiding DRAM suppliers as they allocate supply to its highest-value use. According to Bloomberg Intelligence, AI accounted for 32 percent of global DRAM consumption in 2020. That share grew to 50 percent by 2025 and is expected to reach 60 percent by 2030.[3]

Other estimates place AI's share of the memory market even higher. According to reports citing IDC research and industry analysts, data centers are projected to account for roughly 70 percent of memory-chip demand in 2026, reflecting the rapid growth of AI infrastructure.[4]

Demand has pushed prices markedly higher. TrendForce's February 2026 forecast projected that Q1 conventional DRAM contract prices would rise 90–95 percent, and its March update forecast another 58–63 percent jump in Q2, as suppliers continued to shift capacity toward AI and server applications.[5] In some cases, spot prices for short-term memory have increased by 700 percent over the past year.[6] *The Wall Street Journal* recently reported that Micron's contract prices for one

data center memory chip rose from $350 to $1,300 over the past year, a 271 percent increase.[7] With memory demand changing rapidly, the memory industry's structure and complexity make it difficult for markets to adjust accordingly.

THE CHALLENGES OF A MARKET RESPONSE AND BARRIERS TO ENTRY

In some respects, the memory chip market is functioning as expected. AI companies are willing to pay more for HBM, and manufacturers are rationally responding to price signals. Capacity expansion is underway, and DRAM consumers are absorbing higher costs, cutting production, or passing them on to consumers. In fact, some memory production is already shifting from planned HBM output to DRAM production due to recent higher profit margins in general-purpose memory.[8] Nevertheless, shortages will likely persist, and new fabs and substitute technologies are likely years away from providing meaningful relief.

The structure and intricacy of the memory market, along with the barriers to entry, make it difficult to meet rising demand quickly. DRAM manufacturing is incredibly complex. Manufacturing memory requires cutting-edge fabrication processes, advanced packaging technologies, and highly specialized equipment and engineering expertise. Consequently, the market is extremely concentrated. Three companies dominate the memory market: Micron Technology (United States), Samsung Electronics (South Korea), and SK Hynix (South Korea). Together, they account for more than 90 percent of the market. The remainder consists mostly of one Chinese company, ChangXin Memory Technologies (CXMT). Two Taiwanese companies, Nanya Technologies and Windbond Electronics, operate in a more niche market and are primarily conventional DRAM producers.

In addition to manufacturing complexity, market concentration creates its own challenges for market entry. The larger firms hold most of the world’s accumulated process knowledge, IP, and equipment relationships necessary to build out new capacity. CXMT, established in 2016, was built with massive state and municipal government support and a government-supported cluster of supply chains. Market entry by a non-state-led venture would still likely require partnering with or licensing from one of the larger incumbents.

Among those larger incumbent firms, Micron and SK Hynix are investing heavily in new U.S. memory manufacturing and packaging capacity. Still, Micron's first Idaho DRAM fab is not expected to begin wafer output until the second half of 2027. SK Hynix's Indiana HBM facility is not expected to begin mass production until the second half of 2028. Micron broke ground on its upstate New York facility in January, but it is not expected to begin producing memory chips until 2030. Therefore,

these projects are unlikely to provide meaningful near-term relief from the current tightness in the memory market.

THE ECONOMIC IMPACT ON CONSUMERS AND THE ECONOMY

The growth of AI and data center development will have significant positive impacts on technological breakthroughs, scientific discovery, business efficiency, and economic growth. These developments can be important sources of job creation and tax revenue for counties. Many of the activities and products consumers use daily (web browsing, GPS navigation, asking a voice assistant a question, or producing and listening to a podcast) rely on AI and data centers.

However, beyond the direct costs of AI use, the AI boom also carries second-order spillover costs. Because DRAM is a direct substitute, the reallocation from DRAM to HBM shrinks the supply of memory chips. With a relatively fixed number of fabs and years-long lead times to build new ones, this diversion reduces the supply of consumer DRAM, pushing up prices for consumer products across the board. Since memory chips are used in most technologies across the economy, American families and consumers will be harmed multiple times over. The cumulative impact will be reduced supply, higher prices, and products that may have less memory than they otherwise would.

The most immediate consumer impact is likely to be felt in PCs, laptops, smartphones, tablets, and gaming devices. The research firm Gartner estimates that the combined price of DRAM and solid-state drives (SSDs) could rise by 130 percent by the end of the year, pushing PC prices up 17 percent and smartphone prices up 13 percent. Gartner also projects that higher memory costs will reduce worldwide PC shipments by 10.4 percent and smartphone shipments by 8.4 percent in 2026 compared with 2025.[9]

Another research firm, IDC, has an even more severe forecast for smartphones. IDC expects global smartphone shipments to decline 13.9 percent year over year in 2026 to 1.09 billion units, marking the steepest annual contraction on record.[10] It cites the memory chip shortage as the primary driver, along with higher energy and transportation costs driven by the war.

Consumers of lower-end devices, such as basic tablets, PCs, and smartphones, are especially affected because memory accounts for a larger share of total costs, and that share is only growing. For PCs, the share of memory in the total bill of materials is expected to increase from 16 percent in 2025 to 23 percent. Gartner's senior analyst Ranjit Atwal warned, "This sharp increase removes vendors' ability to absorb costs, making low-margin entry-level laptops nonviable. Ultimately, we expect the sub-$500 entry-level PC segment will disappear by 2028."[11]

Consumers may also receive lower-end products. Manufacturers could respond to higher memory costs by reducing memory capacity. A laptop that once shipped with 16 gigabytes of memory may now ship with 8 gigabytes, or a smartphone that once included 256 gigabytes of storage may now offer 128 gigabytes at a similar price point. Again, shortages that force companies and consumers to adjust or ration are the market at work. Consumers may buy phones less often or receive less memory per dollar spent, but those devices are also more capable because they can run AI.

Memory shortages will not simply raise prices for consumers buying new products. They ripple through the entire economy by extending replacement cycles, reducing product availability, increasing demand for used goods, and slowing the diffusion of newer, more productive technologies. In that sense, the economic costs can persist long after the initial supply disruption begins. When chip shortages constrained vehicle production between 2020 and 2022, consumers shifted to the used-car market, and prices increased substantially.[12] Used vehicle prices rose by more than 50 percent between early 2020 and early 2022 as semiconductor shortages constrained new vehicle production and pushed consumers into the secondary market.[13] AlixPartners estimated that automakers lost approximately 7.7 million vehicles in production and $210 billion in revenue worldwide.[14]

Similar dynamics occurred in the computer and smartphone markets as consumers delayed upgrades and increasingly relied on refurbished devices. If memory shortages raise the cost of new laptops, phones, vehicles, and other electronics, demand could again migrate into secondary markets.

While the exact impacts on different sectors of the economy and on consumers remain to be seen, industries are sounding the alarm. In a recent letter to Treasury Secretary Scott Bessent and Commerce Secretary Howard Lutnick, a wide range of businesses expressed concern about the imbalance in memory chip supply. The letter, signed by representatives of the automotive, retail, medical devices, and broadband trade associations, urged the administration to consider ways to increase supply, reduce regulatory barriers, and ease constraints on alternative sourcing.[15]

More broadly, it is important to weigh the consumer and broader economic benefits of increased data center development and AI. Americans derive many benefits from using AI, whether that is planning a trip better, saving time on research, being more productive at work and at home, and being more creative. More broadly, AI will help unleash innovations that make families safer, healthier, and happier. For policymakers, it is important to note that high prices and adjustments are part of how the market functions, not evidence that the market is broken. However, it is also an

opportunity to improve policies and regulations on the margin to work more efficiently and respond more quickly to changing price signals.

THE CHIPS AND SCIENCE ACT AND THE CURRENT MEMORY IMBALANCE

Congress passed the CHIPS Act in August 2022, which provided $52.7 billion in grants, government-backed loans, and funding for research and development and workforce development for chip manufacturing. The law also includes a 25 percent investment tax credit for semiconductor facilities and manufacturing equipment. The full bill, including R&D authorizations, totals $280 billion.[16]

Policymakers primarily designed the CHIPS Act to support leading-edge logic (advanced CPUs, GPUs) and leading-edge DRAM production. The bill was less a response to pandemic-related supply chain disruptions (though that became another motivating factor) and more a push to reshore domestic semiconductor manufacturing. Because most advanced semiconductor manufacturing occurs in Taiwan, proponents deemed the subsidies necessary to diversify in case of any Chinese aggression in the region.

Critics of the bill have pointed to rent-seeking, corporate welfare, and wasteful taxpayer-funded spending.[17] Even more neutral analyses have noted the costs and inefficiencies of industrial policy spending.[18] President Trump has repeatedly criticized the bill as wasteful subsidies and has called on Congress to end the law.[19]

How does the law apply to the current memory challenges facing the economy? CHIPS dollars effectively subsidize the fixed costs of fab construction but leave the chip-production allocation decision entirely to the company. For instance, Micron has received CHIPS funding, but the incentive structure does not tie grants to the type of memory produced, so Micron can rationally take the subsidy and still shift toward HBM. In total, the three large memory makers have received more than $11.65 billion in funding, nearly one-third of the allocated CHIPS subsidies to date, though not all of the funding has gone toward DRAM production.

- → **Micron ($6.44B):** The bulk of this funding goes to new fab construction in New York and Idaho. An additional $275M supports the expansion of the Virginia facility.[20]
- → **SK Hynix ($458M):** The entire award is for establishing an HBM advanced packaging fabrication and R&D facility specifically for AI products. The facility will include an AI memory packaging factory, as well as advanced packaging manufacturing and R&D facilities. By design, this award does nothing to address the conventional DRAM shortage.[21]

→ **Samsung ($4.75B):** The Texas facility mainly makes logic chips (processors), not memory chips.[22]

A HISTORY OF ANTITRUST LAWSUITS

Over the past two decades, antitrust lawsuits and government investigations have targeted DRAM manufacturers. Between 1998 and 2002, the world's largest memory chip manufacturers coordinated to inflate memory chip prices artificially. They did so through a network of bilateral contacts, secret meetings, and coordinated pricing, which led U.S. businesses and, ultimately, consumers to pay more.[23] The U.S. Department of Justice investigated and secured guilty pleas from several companies. Samsung paid a $300 million criminal fine, while Hynix paid a $185 million fine.[24] Micron, while not convicted of the underlying price-fixing conspiracy, paid civil settlements totaling approximately $150 million across multiple cases.[25]

More recently, federal courts dismissed allegations that Micron, Samsung, and SK Hynix coordinated to restrict supply. A class-action lawsuit filed in 2018 against Micron, Samsung, and SK Hynix alleged that the companies collectively restricted DRAM supply beginning in 2016, driving DRAM prices up dramatically through 2018.[26] The complaint cited parallel production restraint, public statements by executives, and the fact that the three firms controlled roughly 90–95 percent of the global DRAM market, with prices rising by about 350 percent.[27]

However, the courts ultimately rejected the case. In 2022, the Ninth Circuit affirmed the dismissal, finding that the plaintiffs had shown largely parallel conduct and similar business decisions by firms in a concentrated market, but had not produced sufficient evidence of an actual agreement among the companies to fix prices.[28] The court concluded that the allegations did not plausibly establish a violation of the Sherman Act.

More recently, a class-action antitrust lawsuit filed in the U.S. District Court for the Northern District of California by a group of individuals and small businesses alleges that Samsung, SK Hynix, and Micron have colluded to fix DRAM prices and supply since 2022.[29] Micron has denied the allegations and says itwill contest them in court; it is too early to know whether any evidence has been established that the current memory shortages are the result of collusion. Nevertheless, the history of antitrust scrutiny in the DRAM industry underscores the importance of vigilance and transparency in a market dominated by a small number of global suppliers.

LEARNING A LESSON FROM THE DATA CENTER BLOWBACK

The rapid backlash against data centers should serve as a warning for policymakers to get ahead of memory chip price concerns before they become a flashpoint. Concerns over electricity bills, water, and noise fueled a groundswell of opposition, even if many of those concerns were unfounded. Even so, opposition has increased significantly since the beginning of the year. A January 2026 *POLITICO* poll found that only 28 percent of voters opposed building a data center within three miles of their homes, while 37 percent supported it. Only a few months later, a March *Gallup* poll found that 71 percent of Americans objected to local construction of data centers, with 48 percent strongly opposed.[30]

If memory prices keep climbing and the explanation is that chipmakers are diverting chips from households to data centers, the issue risks becoming a hot-button issue that only heightens Americans' affordability concerns. While data centers are being built across the country, the memory chip issue could have an even broader political reach, as it affects every household buying a laptop, phone, or car with embedded electronics.

None of this is an argument for banning, slowing, or delaying data center buildout or AI development. The technology's benefits for productivity, innovation, and national competitiveness are real and worth pursuing, and reflexive obstruction would forfeit those gains. Instead, policymakers must be transparent about the tradeoffs, clearly explaining why prices are rising, who is affected, and what is being done to expand supply and ease the burden on American families and businesses.

WHAT SHOULD POLICYMAKERS DO NEXT?

In the near term and in the long run, policymakers should assess opportunities to remove frictions and improve market responses. The first step for Congress and the Trump administration is to do no harm. Mandating production levels, imposing price controls, or creating government reserves carry real risks of distorting investment signals and exacerbating market imbalances. Congress and the administration should empower the private sector to respond to price signals organically in the short and long run while exploring ways to improve market transparency. Reforms should

1. **Resist any protectionist policies that would worsen price impacts.** Congress and the administration should avoid actions that would restrict global DRAM capacity and equipment, thereby further increasing costs for American buyers of laptops, phones, cars, and appliances. One harmful example is the Multilateral Alignment of Technology Controls on Hardware (MATCH) Act. The MATCH Act would impose U.S. export controls banning the sale of key semiconductor

manufacturing equipment to China and threaten companies in allied nations (Japan and the Netherlands) with expanded U.S. jurisdiction if their governments fail to align with American restrictions within 150 days. The bill directly targets YMTC and CXMT, two Chinese memory chipmakers that are growing rapidly despite existing controls. By slowing CXMT's ability to add capacity and remove additional volume, when AI-driven demand is already constraining supply, the legislation would raise prices for the same American consumers and downstream industries the bill claims to protect.

In addition, the bill has several flaws and potential unintended consequences that could exacerbate the DRAM supply crunch. Even with an allied-facility carve-out for Korean operations in China, the bill could still indirectly tighten the global DRAM market. If export controls or strained relations with Japan and the Netherlands disrupt the flow of tools or services that Samsung and SK Hynix's operations in China depend on, global supply could be reduced. Even a modest disruption to those fabs' access to equipment could push prices higher well beyond China's borders. Furthermore, the empirical record of similar export controls in the semiconductor industry has been poor, and they have not meaningfully stifled China's ability to expand its domestic capacity. Critically, protectionism reduces the incentive to innovate, lower costs, and compete in the global market. Mark Dalton, Senior Policy Director for Technology and Innovation at the R Street Institute, noted that export controls on the semiconductor industry "have accelerated China's progress toward strengthening its indigenous technology stack and, perhaps more importantly, they have simultaneously damaged U.S. competitiveness by reducing revenues critical to funding the high levels of research and development (R&D) that characterize the industry." The MATCH Act risks going down a similar path, and policy should refrain from protectionism or subsidization where the industry is already a technological leader and collecting record profits.

2. **Ease constraints on memory chips, manufacturing equipment, and raw materials.** Although domestic memory chip manufacturing is set to come online in the next few years, U.S. firms currently import most of their short-term memory chips, including those from Micron's operations in Japan. These chips enter the U.S. market tariff-free, and that should remain the case. The administration should refrain from imposing trade restrictions on non-U.S.-based chip manufacturers. While certain restrictions should remain in place to address legitimate security concerns, Section 301 exclusions could increase the number of suppliers available to U.S. buyers and help lower prices during periods of tight supply. In addition to conventional DRAM, the administration should explore exclusion processes for production inputs, such as semiconductor-grade wafers, specialty gases, photoresist chemicals, manufacturing equipment,

and other inputs used in DRAM manufacturing. Doing so could increase supply, improve resiliency, and help lower costs for manufacturers and consumers who rely on memory-intensive technologies. One area of opportunity is the ongoing trade talks with Seoul. Negotiations could help reduce potential disruptions to Korean-owned production in China, provide multi-year export licenses, commit a greater share of their global output to DRAM, and explore faster capacity expansion in the U.S.

3. **Direct the Federal Trade Commission (FTC) to conduct a Section 6(b) study of memory capacity allocation.** The administration should direct the FTC to use its Section 6(b) authority to examine how Samsung, SK Hynix, and Micron allocate fab capacity between HBM and conventional DRAM, including whether those decisions involved communication or coordination with competitors, customers, or industry groups. Such a study would not presume wrongdoing; it would gather information, clarify market dynamics, and produce a staff report. The study could confirm that each firm is independently responding to price signals. However, because these three firms control most of the global memory supply and American buyers are already facing higher prices due to shifts in product mix, the public and policymakers need a transparent, fact-based record of how these decisions are made.

4. **Streamline opportunities for innovation, alternatives, and product substitutes.** When alternative memory components or leaner hardware configurations are available, regulatory requirements governing component substitutions and product modifications can prevent manufacturers from adapting quickly. Validation, certification, and approval processes often take months or years, leaving firms tied to disrupted supply chains long after viable market alternatives exist. This challenge is particularly acute for products subject to extensive regulatory oversight, including medical devices, automobiles, communications equipment, industrial control systems, and other electronics that require certification before modified components can be deployed. In a letter to the Trump administration, industry stakeholders recommended easing constraints on alternative sourcing and product redesign during memory chip disruptions, including expedited validation and approval procedures for regulated products. The administration could advance this goal by directing agencies such as the FDA, FCC, and NHTSA to create expedited review pathways for memory-component substitutions and associated hardware, firmware, or software changes when manufacturers demonstrate a bona fide supply disruption. Federal procurement rules could similarly provide greater flexibility during supply disruptions by allowing agencies and contractors to qualify alternative suppliers, substitute functionally equivalent components, and modify technical specifications without restarting lengthy procurement or approval processes. Such an approach would preserve

necessary safety and performance standards while enabling manufacturers to respond more quickly to supply shortages and changing market conditions.

CONCLUSION

The growing memory chip imbalance largely reflects the market's rational response to extraordinary demand driven by data centers' needs. Nonetheless, the impact on American families and businesses could be substantial. The COVID-era chip shortage offered a glimpse of what may be in store for consumers: higher prices and longer wait times. With policymakers hyper-focused on affordability, the chips issue will once again be front and center in Washington.

The policy response should not be to override price signals or to throw more taxpayer money at the problem, but to reduce government-imposed policies and regulations that could help expand supply and allocate more memory to products Americans rely on daily. Reforms that liberalize markets and increase transparency will best protect U.S. taxpayers and consumers.

ADDENDUM: CASE STUDY: MICRON'S PERMITTING AND LEGAL CHALLENGES AND THE NEED FOR REFORM

Micron's semiconductor manufacturing campus in Clay, New York, underscores the need for comprehensive permitting reform. The full campus will include four semiconductor fabrication facilities and attract more than $100 billion in private investment over the coming decades.[31] Permitting delays, duplicative environmental reviews, and construction bottlenecks have already pushed the first fab's opening from 2028 to 2030.[32] Each year of delay leaves American households, manufacturers, and defense contractors exposed to supply imbalances. The delay stems from multiple factors, including stated worker shortages, but lengthy permitting schedules and litigious activists certainly play a role.

To be sure, the environmental review of the manufacturing facility was thorough. As with many projects, Micron's facility faced duplicative reviews at the federal and state levels. New York State's environmental impact statement alone reflected two and a half years of environmental review. Under the National Environmental Policy Act (NEPA), the project underwent an Environmental Impact Statement (EIS), whereas others were reviewed through a narrower Environmental Assessment.[33] The project was large in scope and involved several major land-use changes, which warranted a full EIS. Nevertheless, the duplicative, expansive review and subsequent litigation demonstrate the need for a more efficient, predictable process.

After multi-round public review, including public comment periods and virtual hearings, the New York State Department of Environmental Conservation issued nine environmental permits in December 2025. The Department concluded that the project's impacts on freshwater wetlands, water quality, and endangered and threatened species could be adequately managed through protective conditions, mitigation projects, and ongoing monitoring.[34] The U.S. Department of Commerce's CHIPS Program Office, with the Army Corps of Engineers and the Environmental Protection Agency as cooperating agencies, separately issued a Record of Decision in December 2025 approving the disbursement of federal financial assistance. It found that the project's environmental effects were reasonably foreseeable, assessable, and mitigable.[35] In fact, agencies spent 612 days on a 22,000-page environmental impact study, including a 45-day public input period.[36] Notably, the project has broad support from local leaders and workers eager for jobs.

Hours before the groundbreaking, Neighbors for a Better Micron and the California-based advocacy group Jobs to Move America filed a lawsuit alleging that the environmental review was rushed and that it gave inadequate time for public comment. Jobs to Move America went door-to-door and found only six residents willing to serve as plaintiffs, who together formed Neighbors for a Better Micron. According to reporting in Syracuse's *Post-Standard*, "Before the suit was filed, the group had never held a meeting or a vote. Some members didn't even know who the others were."[37] Even if construction at the Micron facility is allowed to continue, the lawsuit could void the final environmental impact statement and revoke permits.

Micron's experience illustrates the fundamental flaws in America's permitting process. Although well-intentioned, the permitting process has become a sprawling, duplicative system that layers reviews, invites litigation, and stretches timelines into years or even decades. The process is burdensome for project applicants and the agencies conducting the review, requiring extra paperwork, unclear procedures, and redundant efforts. Most concerning, the process creates opportunities for seemingly endless litigation. Even after completing a multi-year environmental review and major approvals, projects remain vulnerable to post-approval litigation that can create uncertainty, increase costs, and delay constructiontimelines.

With respect to building semiconductor facilities in the U.S., policymakers recognized that the permitting process can be improved without sacrificing environmental protection. Following the CHIPS Act, the Building Chips in America Act of 2023, signed into law by President Biden on October 2, 2024, sought to streamline federal permitting for semiconductor manufacturing projects receiving CHIPS Act support by exempting certain projects from NEPA. However, its scope is limited, applying only to projects that commenced construction before the end of 2024, that are financed via a loan

rather than a grant, or for which a federal subsidy was less than 10 percent of the project's cost. Micron's facility does not meet any of these conditions.

As Congress explores permitting reform, it should identify opportunities to streamline reviews, reduce duplication, narrow the scope of litigation, and offer greater certainty for project developers while maintaining strong environmental safeguards. Permitting reform would not address near-term memory supply challenges, but it would provide more regulatory clarity for investments in future capacity expansion. Substantive permitting reform should create efficiencies, inject certainty, constrain frivolous litigation, and eliminate duplicative reviews. While reform of the National Environmental Policy Act receives the most attention, improvements to the Clean Water Act, the Clean Air Act, the Endangered Species Act, and the National Historic Preservation Act will ensure that permitting reform is substantial and meaningful. A full list of policy reforms to modernize America's major environmental statutes is available in the C3 white paper, "Permitting Reform is Back On: What Should It Include?"[38]

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