1919 S. Eads St.
Arlington, VA 22202
703-907-7600
CTA.tech

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The Honorable Julie Fedorchak
U.S. House of Representatives
1607 Longworth House Office Building
Washington, DC 20515

Dear Congresswoman Fedorchak,

Thank you for your leadership in advancing a stable, affordable, and sustainable energy supply to power next-generation artificial intelligence (AI) infrastructure. The intersection of energy and AI is not merely a technical challenge – it is a foundational issue for American innovation, economic growth, and national security.

The Consumer Technology Association (CTA®) represents more than 1200 American technology companies, 80 percent of which are startups or small and mid-sized businesses. We also own and produce CES®, which convenes tech leaders and over 4500 exhibiting companies in Las Vegas in January. Our members are the world's leading innovators – from startups to global brands – helping support more than 18 million American jobs.

I. Introduction

AI is transforming every sector of the economy—from healthcare to logistics and manufacturing— but its potential hinges on reliable, scalable energy infrastructure. Without modernization, the U.S. risks ceding ground in the global AI race.

Congress must act to enable AI innovation while ensuring long-term energy security. Below are key policy priorities to achieve this balance.

II. Accelerate Federal Permitting for Energy and AI Infrastructure

Lengthy federal permitting processes stifle progress. McKinsey & Company estimates the median review takes about three years— with some energy projects, like the SunZia transmission line, facing delays of up to 17 years. At the same time, Dominion Energy reported that the wait time to connect large data centers to the electric grid has climbed to as long as seven years due to surging

demand[1]. These bottlenecks directly constrain AI deployment.

To address this, Congress should expedite permitting reform under the National Environmental Policy Act (NEPA), support interstate siting compacts for transmission projects, and formally designate AI data centers as "critical infrastructure" to prioritize development. Streamlining approvals could save the energy sector $10 billion while accelerating AI infrastructure.[2]

These actions would accelerate project timelines, enhance coordination, and strengthen U.S. leadership in AI and energy independence.

III. Modernize the Electric Grid to Support AI Growth

The U.S. grid is increasingly strained by aging infrastructure, capacity bottlenecks, extreme weather, and outdated technology. In 2023, U.S. data centers consumed 176 terawatt-hours (TWh) of electricity—4.4% of the nation's total usage—with demand expected to double or triple by 2028, consuming as much as 12% of U.S. electricity.[3] States like Virginia and Texas are projected to host 34% of total U.S. data center capacity by 2030.[4]

This exponential growth is colliding with the rise in extreme weather events and the expanding integration of variable energy sources like wind and solar. Severe storms, wildfires, and flooding—now responsible for the majority of power outages—expose the grid's vulnerabilities. Much of this instability has emerged in the past decade.

To ensure grid resilience and meet future energy needs, policymakers must invest in high-voltage transmission, advanced grid management technologies, and smart infrastructure. We must also deploy AI-driven tools for real-time energy management. The Department of Energy (DOE) and the National Renewable Energy Laboratory (NREL) have identified AI as critical to grid modernization. AI can enhance real-time operations, forecast demand, and support the seamless integration of distributed energy resources.[5] Modernizing the grid—by hardening physical lines and deploying AI-driven tools—will improve system reliability and enable real-time energy optimization.

A modern, resilient grid is essential to supporting AI workloads and maintaining U.S. leadership in technology and innovation.

IV. Embrace an All-of-the-Above Energy Strategy

AI's energy demands require a diverse, resilient mix of sources. In 2023, U.S. data centers drew 40% of their electricity needs from natural gas, 24% from renewables (primarily solar and wind), and roughly 15% each from nuclear and coal.[6] This balanced approach strengthens grid reliability, reduces systemic risk, and ensures energy availability across regions and use cases. At the same time, to ensure our overall electricity needs are met, the U.S. should reduce barriers to stable energy sources for baseload power, such as small modular reactors and other cutting-edge nuclear generation technologies.

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[1] Bloomberg, "Data Centers Face Seven-Year Wait for Dominion Power Hookups," Aug. 2024.
[2] McKinsey, Powering a New Era of U.S. Energy Demand, 2025.
[3] Department of Energy, Data Center Electricity Demand Report, Dec. 2024.
[4] CSIS, The Electricity Supply Bottleneck on U.S. AI Dominance, Mar. 2025.
[5] NREL, Generative Artificial Intelligence for the Power Grid, Mar. 2025.
[6] International Energy Agency (IEA), Energy and AI Report, Apr. 2025.

As demand accelerates, the U.S. must avoid repeating the mistakes of other nations that transitioned too rapidly away from base-load power. Germany's energy crisis provides a cautionary example: early retirements of domestic energy sources led to an overreliance on foreign imports, including from adversarial nations, and higher electricity prices.[7] By keeping their nuclear plants operational, Germany's average electricity price would be 23% lower than its actual average.[8] To prevent similar vulnerabilities, America should pursue an additive—not transitional—approach to energy policy.

Congress should champion policies that incentivize private-sector investment in advanced nuclear and clean energy, while avoiding policies that artificially constrain energy supply. Future-proofing the grid for AI-driven applications will require modern technology, expanded capacity, and diversified generation to sustain U.S. innovation and energy security.

V. Support AI-Driven Energy Efficiency Across the Economy

While AI's increases near term electricity demand, it also unlocks unprecedented efficiency gains. According to the National Renewable Energy Laboratory (NREL), generative AI can enable real-time grid operations, forecast energy usage, and help design a 100% clean electricity system by 2035.[9]

AI systems enhance efficiency at every stage of the energy lifecycle:

- **Smart Grid Optimization**: AI improves grid resilience by managing load balancing, integrating diverse energy sources, forecasting demand, and optimizing cooling systems.
- **Predictive Maintenance**: By detecting infrastructure issues before failure, AI reduces unplanned outages and operational costs.
- **Real-Time Monitoring and Optimization**: AI analyzes data from smart meters, IoT devices, and sensors to adjust heating, cooling, and equipment operation automatically — reducing waste and enhancing performance.
- **Demand Forecasting and Management**: AI predicts consumption patterns and price fluctuations, enabling businesses and utilities to shift usage to off-peak hours and reduce peak load pressures.
- **Anomaly Detection**: AI quickly identifies abnormal energy use, allowing for real-time diagnostics and rapid response to inefficiencies or system faults.
- **Building Energy Management**: AI platforms can save up to 30% of electricity use in buildings by analyzing and optimizing HVAC and other systems.[10]

With the right policy support, AI can serve not only as a driver of innovation but also as a catalyst for achieving national energy efficiency and sustainability goals.

VI. Promote Voluntary Energy Transparency Standards for AI

[7] Harvard International Review, "Germany's Energy Crisis: Europe's Leading Economy Is Falling Behind," September 2022.
[8] Foro Nuclear, *Germany's Nuclear Shutdown Mistake: Rising Prices, Increased Emissions and Economic Recession*, April 2023. https://www.foronuclear.org/en/updates/in-depth/germanys-nuclear-shutdown-mistake-rising-prices-increased-emissions-and-economic-recession
[9] NREL, eGridGPT: Trustworthy AI in the Control Room, 2025.
[10] T. Rowe Price, How AI Innovations Could Help Solve the U.S. Energy Problem, Feb. 2025.

Transparency around AI's energy impact is vital—but it must be implemented in a way that avoids rigid, one-size-fits-all mandates that stifle innovation. CTA supports voluntary, industry-led frameworks that promote accountability while enabling flexibility. Prescriptive requirements risk stifling innovation, especially among early-stage and smaller AI developers who may lack the resources to comply.

Public-private collaboration has proven effective. The ENERGY STAR program is a case in point: for over 30 years, it has delivered more than $500 billion in consumer energy cost savings and avoided 5 trillion kilowatt-hours in electricity use—without heavy-handed regulation. ENERGY STAR's voluntary, consensus-based model shows how smart frameworks can simultaneously foster innovation, enhance consumer trust, and promote U.S. leadership in energy efficiency.

A similar approach—developed in partnership with DOE and NIST and tailored to AI—could ensure the sector remains both energy-conscious and globally competitive.

VII. Strengthen Domestic Energy Tech Supply Chains—Without Tariffs

AI depends on secure access to semiconductors, batteries, heat pumps, transformers and other energy technologies. Congress should pursue non-protectionist incentives, rather than tariffs—to promote domestic manufacturing and workforce development while maintaining global competitiveness.

VIII. Conclusion

America's innovation edge depends on a robust, flexible, and future-ready energy system. A comprehensive, all-of-the-above energy strategy will ensure our power grid can sustain high-performance computing, enable next-gen technologies, and secure U.S. competitiveness.

With the right energy strategy, the U.S. can power the next wave of technological breakthroughs and lead a new era of sustainable prosperity, resilience, and global innovation leadership. We welcome the opportunity to work closely with you to advance these shared goals.

Sincerely,

Gary Shapiro
CEO and Vice Chair
Consumer Technology Association

Kinsey Fabrizio
President
Consumer Technology Association