July 29, 2024

The Honorable Chuck Schumer
Majority Leader
United States Senate
Washington, D.C. 20510

The Honorable Mike Rounds
United States Senate
Washington, D.C. 20510

The Honorable Martin Heinrich
United States Senate
Washington, D.C. 20510

The Honorable Todd Young
United States Senate
Washington, D.C. 20510

Dear Majority Leader Schumer, Senator Rounds, Senator Heinrich, and Senator Young:

As industry leaders in clean energy technology, data center operations, and Information Technology infrastructure, we commend your collaboration to accelerate America's artificial intelligence (AI) future. Home to many of the companies driving this transformation, the U.S. is well poised to maintain its leadership position in the global economy.

AI presents an opportunity to expand the frontier of economic growth in the U.S., however, our success is not guaranteed. The U.S. is in a race to compete with our rivals, particularly China, on the development of a robust, safe, and efficient AI and electric infrastructure.

The recently published "Roadmap for Artificial Intelligence Policy in the U.S. Senate" (Roadmap) is an encouraging step towards bipartisan policymaking on a technology that holds immense promise for the modernization and digitization of the American economy, including the aging and overwhelmed electric grid. We appreciate the Roadmap's energy-related AI considerations, particularly its support for addressing and mitigating environmental consequences of rising energy demand associated with AI systems and collecting data center energy usage data. However, to spur America's AI potential and grow the economy, while also addressing environmental concerns, it is important to understand the interconnected worlds of digital infrastructure and electric infrastructure—one cannot exist or grow without the other. As such, Congress should develop sound policies that promote the modernization of both the U.S.' digital and electric infrastructure.

Demand growth results from various factors, including not just the expansion of data centers to support AI operations, but also the resurgence and reshoring of manufacturing and the electrification of transportation and buildings. This growth is also boosting economic development, increasing the number of high-quality jobs, and addressing the imbalance within our existing supply chains. However, unlike when load demand was flat or declining, we need a national urgency to modernize the electric infrastructure and support greater use of all forms of renewable and low-carbon energy in order to efficiently power an AI-enabled future.

While the continued headlines of AI-driven load growth get all the attention, it is important to recognize that AI is only a minority of total load demand. Still, policies affecting electricity

infrastructure are woefully inadequate to manage the new demand from across the economy reliably, sustainably, and cost-effectively. Preparing our electricity systems to adapt to new growth, including embracing intelligent distribution technologies and incentivizing new and existing data centers to run efficiently, sustainably, and securely, is the key to unlocking America's AI future and mitigating the coinciding load demand.

Data centers are the backbone that support the vast computational requirements, data storage, and real-time processing capabilities essential for AI operations. However, AI data centers are fundamentally different than traditional data centers. That is because AI technologies, particularly Machine Learning and deep learning algorithms, require significantly more computational power to train models, analyze vast datasets, and deploy real-time applications than most routine business and personal applications used prior. More computational power requires both more energy for computing and more energy for cooling. The good news is that just over the few years that AI computing has taken off, chip and server manufacturers have already begun developing the next generation of more efficient AI systems to address these energy demands.

Innovative data centers of the future are already being developed. For example, Digital Climate Alliance members are collaborating with other industry partners to optimize data center infrastructure by establishing data center reference designs and leveraging digital twins to simulate and build sustainable AI data center operations. In addition, many new large scale data center developers are designing data centers for heat reuse,[1] zero water consumption, and liquid cooling,[2] which will make them significantly more energy and water efficient than traditional data centers.

These are just a few examples of how industry is doing its part to accelerate American leadership in AI. However, in addition to supporting technological innovations, including digital twins and liquid cooling, policymakers should also prioritize deploying smart grid technology to modernize the grid in a cost-effective manner, increasing the availability and accessibility of energy usage data, and enhancing the Department of Energy's (DOE) research and development efforts relating to data centers.

Specifically, as Congress continues exploring policies to support the development and deployment of safe, ethical, and sustainable AI, we urge you to consider the following policy recommendations:[3]

1. ***Incentivize and accelerate the deployment of smart grid technologies to manage increasing load demand.*** Direct the Federal Energy Regulatory Commission, the North American Electric Reliability Corporation, and state public utility commissions to evaluate barriers to flexible demand and hold sustainability paramount.

2. ***Develop accurate forecasts on the energy use and efficiency of data centers.*** Direct Lawrence Berkeley National Laboratory to update its data center efficiency report every two years and include a separate category for data centers in the U.S. Energy Information Administration's Commercial Buildings Energy Consumption Survey.

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[1] "Taste the Cloud: Sustainable Produce," Wyoming Hyperscale Indoor Farms, accessed June 26, 2024, https://wyominghyperscaleindoorfarms.com/index.html

[2] About Us," Liquid Cooling Coalition, accessed June 26, 2024, https://www.lccoalition.com/mission-and-vision

[3] Digital Climate Alliance, *Promise and Peril: Sustainability & the Rise of Artificial Intelligence*, June 2024, pp. 14-15, https://www.digitalclimate.io/2024-ai-white-paper

3. ***Direct the DOE to maintain a cross-organizational working group tasked with crafting guidance and recommendations on data center energy use and efficiency.*** Guidance and best practices concerning the power demands associated with AI and data centers of the future must be developed in concert with industry partners – including data center operators, technology service providers, grid operators, and more.

4. ***Incentivize and accelerate the deployment of sustainable, secure data centers.*** Encourage the adoption of liquid cooling solutions in both new and existing data centers deploying high performance computing applications and AI infrastructure and encourage the development and adoption of waste heat recovery systems.

5. ***Prioritize policies aimed at reforming electric power regulation to enable efficient and reliable operation of the grid and its necessary modernization.*** There must be a faster and more coherent way of addressing permitting and multi-state infrastructure development to enable this economic engine to grow and compete with our rivals. As new data centers seek to come online to support AI growth and increasing connectivity, policies supporting the buildout of new generation and transmission capacity are integral to the future of the data center market and American competitiveness.

AI is already playing a key role in the energy sector; for instance, it can improve power generation, grid operation, demand management, and use of distributed resources.[4] As Congress considers the above policy recommendations to unlock America's AI potential, we hope you will also continue working with industry to evaluate the positive impacts AI can have on the availability and affordability of energy in the U.S.

We are in a race to compete with our rivals, particularly China, on the development of AI and electric infrastructure. Now is the time for serious conversations about how to speed up the pace to build electricity infrastructure and systems that will power the digital and new AI economy for years to come. We need to make it a national priority to incentivize secure and sustainable data centers and to modernize and expand the grid in a more coherent way to enable this economic engine to continue to grow.

Sincerely,

The Digital Climate Alliance

The Liquid Cooling Coalition

The Business Council for Sustainable Energy

National Electrical Manufacturers Association

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[4] Id. p. 5