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Legislative Hearing on AI and the Grid: Meeting Growing Power Demand While Protecting Ratepayers.

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Good morning, Chairman Latta, Ranking Member Castor, Chairman Guthrie, Ranking Member Pallone, and members of the Subcommittee. Thank you for the opportunity to testify this morning.

My name is Whitney Muse, and I am President of Muse Energy LLC, an energy consulting firm. I am here in my personal capacity, however, and not on behalf of my firm or any client. Prior to founding Muse Energy, I served as Senior Policy Advisor in the Office of Clean Energy Innovation and Implementation at the White House. Previously, I served at the U.S. Department of Energy, first as Chief of Staff in the Office of Electricity and subsequently worked to establish the Grid Deployment Office, serving as Chief of Staff and Senior Advisor. Across these roles, I had the privilege of working on implementation of many of the policies and programs from the Energy Act of 2020, Infrastructure Investment and Jobs Act (IIJA) and Inflation Reduction Act (IRA).

This Energy Subcommittee hearing is a timely moment to discuss the opportunities and challenges of load growth that we are seeing in the power sector, after two decades of flat growth. The U.S. is now in an era of load growth driven by multiple sources – data centers and artificial intelligence (AI) usage, increased manufacturing, and electrification of transportation, heating, and more. This load growth is happening as we are seeing rising electricity prices and escalating concerns about affordability, with a growing need to ensure that consumers and ratepayers are protected.

The grid underpins nearly all aspects of our lives. Transmission connects generation resources and loads across the system and moves power from where it is generated to locales where it is consumed, while the distribution system delivers power to individual homes and businesses. Transmission provides many benefits including improved resiliency and reliability of the grid, reduced congestion on the grid, and allows for faster incorporation and interconnection of new generation and load onto the grid. A proactively planned transmission grid, that incorporates high-capacity regional and interregional transmission lines to connect the lowest cost generation resources, yields savings for consumers relative to a more piecemeal or siloed approach.[1]

In this time of load growth, bill pressures, and more, we need action. DOE, the National Laboratories, and many other entities have produced many studies that point to the value of transmission and the grid and most recently, provide numerous estimates of the coming load growth. What we need is investment, deployment, and steel in the ground to meet the demands of the moment.

[1] Ham, Dasom, et. al. "Transmission lowers US generation costs, but generator incentives are not aligned." Proceedings of the National Academy of Sciences. March 2026. https://doi.org/10.1073/pnas.2524463123

My testimony below addresses the seven bills under consideration at today's hearing.

Summary:

1. **H.R.____, the Load Forecasting Enhancement Act**

   Federal and state joint efforts to improve load forecasting will be helpful as load forecasting continues to be a more dynamic process.

2. **H.R. ____, the Affordable Innovation for the Grid Act**

   The report from DOE, in collaboration with FERC and NERC, on opportunities to utilize AI and other high-performance computing technologies to enhance the grid should not slow the continued progress of deployment of these technologies.

3. **H.R. ____, the Advanced Transmission Technology to Reduce Rates Act**

   The clearinghouse of resources related to advanced transmission technologies will be helpful. Technical assistance should be offered to a broader set of state stakeholders. DOE should consult with the land management agencies for a more complete federal discussion of wildfire mitigation.

4. **H.R. ____, the Ratepayer Protection Act**

   Aims to have large load customers to cover all incremental costs of upgrades. The 100MW definition is concerning as it could cover large loads outside of the data centers and also not include all data centers that are large loads.

5. **H.R. 6336, the Fair Allocation of Interstate Rates Act**

   This bill is concerning as it could stymie much needed regional and interregional transmission deployment by providing another avenue to block multi-state transmission projects via cost allocation concerns.

6. **H.R. 6633, the High-Capacity Grid Act**

   I am supportive of this bill's approach to accelerate deployment of best available transmission conductor technologies on the grid. Advanced conductors are one potential grid solution, appropriate in specific circumstances.

7. **H.R.6529, the Protecting Families from AI Data Center Energy Costs Act**

   This bill highlights the importance of protecting residential and small commercial ratepayers from increased costs associated with large loads with requisite stakeholders participating in a FERC technical conference.

H.R.____, the Load Forecasting Enhancement Act

Given the dynamic nature and varied projections of load growth, improved load forecasting is necessary to better understand the size and scale of load that is coming along with the temporal and geographic aspects of the load. More transparency and visibility within load forecasting will aid grid planning, yielding improved grid reliability and affordability. The robust pace of load growth requires a load forecasting process that is more dynamic.

This bill ensures that states are part of the load forecasting process via the joint board with the Federal Energy Regulatory Commission (FERC) and the incorporation of load forecasting procedures into the state energy conservation plans.

H.R. ____, the Affordable Innovation for the Grid Act

AI and high performance computing technologies are already deployed across the bulk power system to enhance the capacity, operations, and efficiency of the grid. DOE selected projects for IIJA funding via the Grid Resilience and Innovation Partnerships (GRIP) program that included these technologies. The report from DOE, in collaboration with FERC and NERC, should not slow the continued progress of deployment of these technologies.

H.R. ____, the Advanced Transmission Technology to Reduce Rates Act

This bill would create a helpful clearinghouse of resources related to advanced transmission technologies. Navigating the relevant funding opportunities, authorities, and technical analyses available from DOE was a constant challenge for stakeholders that I heard from while working at DOE and the White House. This is an opportunity to build on the well-received Grid and Transmission Program Conductor that served as a clearinghouse for the Grid Deployment Office's transmission and grid resilience financing programs, as well as other existing DOE transmission and grid programs.[2]

DOE has a long history of providing technical assistance to grid stakeholders, including utilities, transmission organizations, and states, which this bill would continue. I urge consideration of a broader set of stakeholders to be eligible for technical assistance from DOE at the state level, including the state legislative bodies that may draft state legislation for

[2] Grid and Transmission Program Conductor. https://www.energy.gov/oe/grid-and-transmission-program-conductor

consideration of advanced transmission technologies and the state energy offices that may implement state policies related to advanced transmission technologies.

I recommend that best practices for wildfire mitigation should include DOE coordination or collaboration at the federal level with the federal land management agencies that have responsibilities for vegetation management and other wildfire mitigation responsibilities, including bureaus and components within the Department of the Interior and the Department of Agriculture.

H.R. ____, the Ratepayer Protection Act

The Ratepayer Protection Act seeks to have large load customers to cover all incremental costs of generation, transmission, and distribution upgrades necessary to serve that large load. The bill includes language regarding financial assurances for the upgrades and customer termination, which are helpful to reduce speculative projects and reduce costs related to stranded assets.

I raise concerns about the 100MW peak demand definition for large loads, as that size does not only apply to data centers, but can also apply to manufacturing and industrial facilities across the country, for example aluminum smelters. There are also data centers that are large loads relative to a utility's service territory but are under the 100MW threshold.

H.R. 6336, the Fair Allocation of Interstate Rates Act

This bill will slow the much needed deployment of regional and interregional transmission development across the country that could provide significant reliability, resilience, and affordability benefits. Given the ideological diversity across the country, this bill could slow transmission deployment by offering another avenue to stall transmission projects via litigation targeting cost allocation decisions as neighboring states do not always have the same policy priorities. There have been previous hearings and testimony regarding the challenges and delays that stem from litigation of transmission projects' siting and permitting decisions.

Comprehensive transmission planning that includes regional and interregional transmission projects can yield savings on consumers' electric bills, reduced congestion on the grid, increased access to lower-cost generation, and improvements in the overall efficiency of the power system.[3] We need more transmission built, especially more regional and interregional transmission projects, to better connect the grid and balance supply and demand across larger geographies.

The regional transmission organizations that manage and operate the grids across the country serve states with different policy priorities. Even when neighboring states have different policy priorities, all of the residents want reliable and affordable power. This bill will hamper the ability to achieve that goal.

[3] Zimmerman, Zach. et. al. "Large Scale Transmission Deployment Saves Consumers Money." Grid Strategies. June 2025. https://gridstrategiesllc.com/wp-content/uploads/GS_Transmission-Deployment-Saves-Consumers-Money.pdf

H.R. 6633, the High-Capacity Grid Act

The High Capacity Grid Act pushes for the deployment of best available transmission conductor technologies on the grid, which I support. Advanced conductor technologies can increase transmission capacity more quickly than most alternatives and can provide additional grid benefits, including increased system efficiency and low-sag characteristics when deployed over long spans.

Advanced conductors are one tool among a suite of grid solutions that can increase the capacity of the existing grid, while improving reliability, resilience, and affordability. Deployment of advanced conductors is necessary but not sufficient to get to the grid that we need to meet rowing load demand. Advanced conductors are most often used in challenging situations where building a higher voltage line is not possible, where the timeline to increase capacity is short, and/or to bridge a long span between transmission towers.[4]

I am supportive of the inclusion of periodic review to ensure that improvements in technology, materials, and system performance continue to be reflected in the best available transmission conductor standard that is called for in this bill.

H.R. 6529, the Protecting Families from AI Data Center Energy Costs Act

This bill highlights the importance of protecting residential and small commercial ratepayers from increased costs associated with large loads. The FERC technical conference that brings together all necessary stakeholders can advance and elevate the national dialogue on the

[4] Gentle, Jack. "Advanced Conductor Scan Report." Idaho National Laboratory. September 2024. https://inl.gov/content/uploads/2024/04/23-50856_R13_-AdvConductorsScanProjectReportCompressed.pdf

topic, incorporating examples from different large load tariffs in place by various utilities and approved by state regulators. I support the explicit inclusion of ratepayer advocates, necessary stakeholders to include to ensure that cost concerns of the ratepayers are incorporated into the technical conference.