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Sponsor Testimony
Senate Concurrent Resolution 2
Senate Energy Committee
February 11, 2025

Chairman Chavez, Vice Chair Landis, Ranking Member Smith, and members of the Senate Energy Committee: Thank you for the opportunity to provide sponsor testimony on Senate Concurrent Resolution 2.

This resolution would strongly urge Congress, the Governor, PJM and other regulatory groups, and our state energy providers to invest further resources and enhance planning for naturally occurring and man-made threats to our interconnected grid system, hardening its composition. This is non-partisan issue, as every president since President Clinton has worked to prepare the United States for an event of this caliber because they understood the wide-reaching risks of an unmitigated geomagnetic disturbance.

Our knowledge of geomagnetic disturbances is not new. Naturally occurring events of geomagnetic disturbance, often in the form of coronal mass ejections and other solar events, have happened since the formation of the solar system. Our last natural occurrence of this scale destroyed power complexes across the Eastern Seaboard, Canada, and the United Kingdom. However, post-World War II nuclear testing revealed the extent of man-made electromagnetic pulses. A single nuclear warhead detonated 300 miles above the Earth would effectively render all electrically-equipped devices in the United States useless. While nuclear weapons have not been used since 1945, the proliferation of these weapons and the adoption of EMPs in military strategy by foreign adversaries is known.

Because of the interconnected nature of our critical infrastructure systems, any geomagnetic disturbance poses a significant risk to the safety and prosperity of all Ohioans. Ohio, the other states in our distribution region, and our generation partners must continue to prioritize the integrity of the system and promote the reliability, resiliency, and security of our electrical network.

While geomagnetic disturbances often rank lower than other threats to the system, this should not provoke complacency. As we have seen across the country, attacks on substations cause detrimental power outages, particularly in rural communities. A substation losing the ability to generate power could have secondary and tertiary effects on the community it services. These effects can range, but when taken as an aggregate, pose a significant threat the health and safety of Ohioans. The loss of electric generation poses significant threat to transportation, health care, other energy generation methods, financial services, and everything between. Nothing would be worse than a loss of power to a nuclear plant causing unparalleled destruction in its fallout. No one wants to think of the life-saving medicine and equipment that would be rendered useless by an electromagnetic event of any caliber. From the food that we eat to systems that run our government, nothing would be safe.

The obstacles to a reliable and resilient system have been shared by our federal regulatory and compliance agencies, the Government Accountability Office and the private sector. These obstacles range from a lack of communication between the state and federal government, aging components and lack of necessary materials, physical and cybersecurity threats, a lack of diversity in generation methods, and the lack of flexibility in energy policy that create vulnerabilities. The GAO as part of their High-Risk series noted that 51% of their recommendations regarding the security of critical infrastructure have not been implemented.[1] By the nature of our critical infrastructure system, the effects of an attack would be dramatic.

There are other avenues in which the state and the nation can take beyond the physical security of electric generation. New technology and systems

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[1] GAO, Urgent Action Needed to Address Critical Cybersecurity Challenges Facing the Nation, June 2024

including microgrids and GIC (ground induced currents) blocking devices add critical redundancy to an overburdened system. Following the devastation of Superstorm Sandy, New Jersey created the Energy Resilience Bank, requiring new energy projects to abide by "blackstart" and "islanding" principles if they requested state funds.[2] The private sector has made strides in the use new materials for support structures and continue to make microgrids more affordable to consumers.

From a policy perspective, Ohio could provide incentives to local governments and our energy providers to take into consideration zoning and population density bonuses when a new substation is planned. Furthermore, the harmonization of state and federal policies regarding physical and cybersecurity should become more focused on outcome-based goals that incentivize continual development. The United States also must return to manufacturing our electrical grid components domestically. We as a nation have exported transformer construction to the country with the largest reserve of electrical grade metals: China.[3] While this list is not exhaustive, it is representative of the work that energy partners between the private and public sector have suggested to continue building a stronger, safer, reliable, and most importantly, a resilient grid that is able to recover from disturbances of this magnitude.

We have come to rely on electricity to meet our basic human needs. This is truly a public safety issue. We need to take preventative measures now to ensure that our power supply remains protected and secure to those seeking to threaten the wellbeing of our families, neighbors, and communities. I applaud the work done by my colleague Senator Frank Hoagland in the 133rd General Assembly through Senate Bill 33, which increased the penalties for those who willfully cause damage to a critical infrastructure facility. While this legislation was crucial, the rapidly changing circumstances requires direct and urgent consideration. Thank you again for your time and attention. I will be happy to answer any questions you may have.

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[2] New Jersey Board of Public Utilities, ERB- Energy Resilience Bank

[3] GAO, DOE Could Better Support Industry Efforts to Ensure Adequate Transformer Reserves, August 2023