Committee: **Economic Matters**
Testimony on: **HB829 – Public Utilities – Transmission Lines – Advanced Transmission Technologies**
Submitting: **Deborah A. Cohn**
Position: **Favorable**
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Dear Chair Wilson and Committee Members:

Thank you for allowing my testimony today in support of HB829. As a Maryland since 1986, I am writing to underscore that we need to invest prudently in our transmission grid to ensure its planned growth in the most cost effective manner.

Maryland consumes almost six times more energy than it produces and imports around 40 percent of its electricity from other states. Importing electricity from other PJM states requires a robust transmission grid. Economic incentives, however, have induced utilities to invest in the distribution grid, leading to inadequate investment in the transmission grid. This investment is expensive and consumers are already concerned about rising utility bills. To contain increases in electricity bills, Maryland needs to understand its future need for energy resources, including a robust grid, ensure that utilities maximize the throughput of the existing grid, and then determine the most efficient build-out of additional transmission lines.

HB829 addresses all three concerns, ensuring in particular, that utilities identify existing and foreseeable areas of grid congestion, plan infrastructure investments to avoid emergency construction and in that process, maximize transmission through the existing grid by taking advantage of existing advanced transmission technologies.

Advanced transmission technologies include the infrastructure, hardware and software that increase the capacity, efficiency, reliability or resilience of new and existing transmission lines. They include grid enhancing technologies (GETS), high-performance conductors and storage systems used as transmission.

GETS includes several technologies. Dynamic line rating (DLR), the real time monitoring of wind, humidity, temperature and other factors that impact the amount of electricity that can flow safely through an existing transmission or distribution line, can increase line capacity by an average of 10-30 percent, take three to six months to deploy and cost less than five percent of the price of building new transmission lines[1]. Advanced power flow control devices act like air traffic controllers. They enable the redistribution of power from congested lines to lines with available capacity, increasing capacity by 10-25 percent.[2] Topology optimization addresses congestion in a manner similar to the rerouting of trains along different tracks through controlling switches in the tracks. Topology optimization uses software models of the grid network and real time conditions to trigger high voltage circuit breakers to redistribute power flow more efficiently through the existing grid.

Reconductoring existing lines with improved conductors using composite cores also increases throughput, enabling a wire to carry higher mechanical loads without increasing weight. Reconductoring

[1] https://ceepr.mit.edu/wp-content/uploads/2024/09/MIT-CEEPR-RC-2024-06.pdf
[2] Ibid.

can take one to three years to deploy but can double capacity and reduce transmission line loss by around 30 percent. It generally costs less than half the price of building a new transmission line.[3]

Storage systems are also transmission assets as they can quickly absorb excess electricity production and later reinject it into the grid to manage power flows on transmission lines. In effect, they function as virtual transmission lines that can be used to alleviate congestion, support voltage levels and improve grid stability. These functions are often referred to as "storage as transmission."[4]

HB820 imposes two requirements to ensure right-sizing the build-out of the transmission grid. The first ensures through the certificate of public convenience and necessity (CPCN) process that any applicant for a CPCN for a new transmission line carefully consider opportunities to defer or avoid the new construction. The second requires transmission line planning by owners and operators of overhead transmission lines.

Applications for a CPCN. In their request for a CPCN to construct a new overhead transmission line applicants would need to include an analysis of alternatives to the new line, including the use of advanced transmission technologies, alternative routes, changes to the existing distribution system that could avoid the need for the new transmission line, an analysis of the proposed transmission line route and the consideration of alternative routes. The application would also need to include the cost to ratepayers and the impact of the proposed line on the environment.

Congestion Planning. HB820 requires owners and operators of overhead transmission lines to plan for future congestion and determine the degree to which advanced transmission technologies can address this congestion. Every two years starting in December 2025, the owner or operator of an overhead transmission line must identify line congestion in the preceding three years, anticipated transmission congestion in the next five years, projected costs to ratepayers from this congestion, and the opportunity to use advanced transmission technologies to address the congestion and reduce costs.

Summary. HB820 thus takes advantage of technological advances and advanced grid planning to reduce costs to ratepayers, increase throughput on existing lines, reduce the need for costly reactive emergency construction of high voltage transmission lines, such as the $796 million new transmission line designed to facilitate import of electricity upon the closure of the Brandon Shores and Wagner coal generating station, and increase reliability of our electricity supply.[5]

For these reasons I support HB829 and urge a FAVORABLE report in Committee.

Thank you.

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[3] Ibid.

[4] https://www.utilitydive.com/news/energy-storage-underused-transmission-asset-ferc/727946/

[5] Federal Energy Regulatory Commission Order on Cost Allocation Report and Tariff Revisions, Docket Nos. ER23-2612-001 and ER23-2612-002 (November 8, 2023), https://elibrary.ferc.gov/eLibrary/filelist?accession_number=20231108-3068&optimized=false