

Committee: Economic Matters

Testimony on: HB1225 – Public Utilities – Electric Distribution System Plans – Establishment (Affordable Grid Act)

Submitting: Deborah A. Cohn

Position: Favorable

Hearing Date: February 21, 2025

Dear Chair Wilson and Committee Members:

Thank you for allowing my testimony today in support of HB1225. As a Maryland since 1986, I am writing to underscore that we need to invest prudently in our distribution grid to ensure its planned growth in the most cost effective manner.

While much attention is being paid to developing affordable and reliable renewable energy supplies, we need to be able to access those supplies efficiently and affordably while facilitating decarbonization of our buildings and transportation sectors. We need prudent investment in the electrical grid. HB829 addresses using advanced transmission technologies in the CPCN process; HB1225/SB908 addresses requirements and evaluation criteria that will enable the PSC to ensure prudent build-out of the distribution grid.

The existing distribution system is quite old and as a result, is designed to take electrons in one direction: from big power plants to consumers. A modern grid needs to be a bidirectional grid that takes advantage of digital technologies like sensors, smart meters, demand management, demand flexibility and two-way communications between utilities and end-users. It also needs to take advantage of new technologies, such as grid enhancing technologies¹, to increase grid efficiency and reliability at the lowest cost.

A bidirectional grid can also facilitate growth of community and residential solar, EV charging and related battery storage that can serve as virtual power plants (VPPs). California successfully used VPPs during heat waves in 2020 and 2022 to reduce blackouts.² In New England VPPs are used to shave peak demand to avoid reliance on peaker plants.³ Currently, when local circuits are saturated, the next customer on that circuit who wants to connect a new heat pump, EV

¹ Grid enhancing technologies (GETs) include 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. 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. 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. <https://ceepr.mit.edu/wp-content/uploads/2024/09/MIT-CEEPR-RC-2024-06.pdf>.

² <https://rmi.org/clean-energy-101-virtual-power-plants/>

³ <https://www.wbur.org/news/2024/08/28/virtual-power-plants-eversource-massachusetts-batteries-ev-chargers>

charging station or rooftop solar facility is forced to pay the entire cost (roughly \$10,000) of a new circuit. The cost of other utility investments are socialized. To increase reliability at the lowest cost through EV charging stations in residential buildings of all sizes, rooftop solar, smart meters and other resources that can serve as VPPs, investing in new circuit breakers needs to be socialized as well.

Modernizing our distribution grid requires the collaboration of utilities, the Public Service Commission (PSC), technology developers and a well-trained installer workforce. Existing law does not require the PSC review and approve a utility's distribution plan. Utilities earn a rate of return on infrastructure investments. Lacking muscular oversight, transparency and accountability, this approach risks reliance on unnecessarily costly infrastructure improvements rather more cost effective methods. Importantly, **HB1225 calls for the PSC to require utilities to submit distribution system plans that the PSC must review and approve.**

HB1225 draws on best practices for grid planning, drawing on distribution system planning methodologies developed by the National Association of Regulatory Utility Commissioners (NARUC) and the National Association of State Energy Officials and consultation with the Maryland Public Service Commission (PSC). Many of these best practices are already being used effectively by other states and utilities.

Distribution System Planning: HB1225 requires utilities every three years to submit a distribution system plan for the PSC's approval. The Plan must include:

- Data-sharing between electricity and gas utilities (i) to prevent electricity and gas demand from being double-counted and (ii) to coordinate on decarbonization and electrification planning.
- Forecasts and scenarios for predicted load growth (including from DERs and building electrification) and electricity generation capacity
- Analysis of system constraints that impede the incorporation of new technologies and capacity, thereby pinpointing where investment in capacity will facilitate the uptake of DERs.
- Preferred solutions for upgrading the grid and explanations for those decisions, including a cost-benefit analysis comparing solutions requiring capital expenditure with non-capital, or reduced capital solutions.
- Incorporation of technology innovations that will modernize the grid and improve its reliability and resilience.
- Coordination of transmission and distribution.
- Use of funds and incentives to encourage private investment in VPP components and technology
- Identification of sites having greatest value for decarbonization.

- Management of capacity to incorporate Distributed Energy Resources (“hosting capacity”)
- Analyses and targets using PSC developed metrics to better enable the PSC to monitor, evaluate and report on progress.

Transparency and Accountability: HB1225 requires the PSC to review and approve (and implicitly reject or require changes to) each utility’s plan. It specifies certain criteria for approval or rejection. It specifically allows the PSC to reject a plan if it is not cost effective or doesn’t minimize cost to ratepayers without compromising grid performance. And it requires utilities to provide annual progress reports on implementation of their three-year plans.

- Increases reliability of the grid at lower costs by facilitating development and use of distributed energy resources
- Socialize the cost of construction of new capacity where system constraints limit uptake of rooftop solar and battery storage
- Help energy developers identify the best places to connect to the grid.

Conclusion: HB1225 is a well thought through method for ensuring grid distribution planning that (i) minimizes the risk of unnecessarily costly investments, grid congestion requiring emergency improvements or results in delays in interconnection and (ii) improves distribution grid reliability in a cost-effective manner. For these reasons I urge this Committee to issue a favorable report on HB1225.