Committee: **Economic Matters**
Testimony on: **HB1035 – The Next Generation Energy Act**
Submitted by: **Deborah A. Cohn**
Position: **Unfavorable**
Hearing Date: **February 28, 2025**

Dear Chair and Committee Members:

Thank you for allowing my testimony today on HB1035.

I recognize that HB1035 has some attractive elements, including efforts to ensure a reliable electricity supply and to address concerns about skyrocketing utility bills. HB1035, however, calls for construction of new gas-fired and nuclear generating stations that would be more costly and less useful in meeting the state's current needs than the main alternative—solar power with energy storage.

Electricity from gas-fired power plants has major disadvantages compared with energy from solar panels combined with utility-scale battery storage.[1] First, it is more expensive.[2] Second, gas-fired plants can take longer to construct.[3] Third gas-fired plants are less reliable when most needed.[4] During Winter Storm Elliott, nearly 40 percent of gas-fired power plants failed to perform as expected, accounting for 63 percent of the outages and bringing PJM to the brink of rolling blackouts.[5,6] PJM accordingly downgraded the reliability of this resource for emergency weather conditions from 92-95 percent to 62-79 percent.[7,8] That increased the amounts of power generation required in the August 2023 capacity auction and pushed up prices. Fourth, gas-fired

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[1] The current industry standard for lithium ion battery storage is four hour storage, which can be drawn down slowly to extend its availability albeit requiring more storage units. Newer utility scale thermal energy storage, particularly molten salt storage which is the type most frequently paired with solar generating systems, is safer than LI storage and can provide around six to ten hours of storage depending on the system design, with advanced systems reaching longer durations up to 24 hours. https://insideclimatenews.org/news/16012018/csp-concentrated-solar-molten-salt-storage-24-hour-renewable-energy-crescent-dunes-nevada/

[2] https://www.brattle.com/wp-content/uploads/2023/04/Real-Reliability-The-Value-of-Virtual-Power_5.3.2023.pdf

[3] Utility scale solar projects typically take 12-18 months to construct once permits are secured. Utility scale battery storage typically takes one to three years to construct with the entire cycle, including planning, permitting and construction taking two to four years.

[4] PJM Winter Storm Elliott Continued Outage Analysis, March 9, 2023, https://www.pjm.com/-/media/DotCom/committees-groups/committees/oc/2023/20230309/20230309-item-04a---winter-storm-elliott-outage-data-review.ashx

[5] https://www.nrdc.org/bio/tom-rutigliano/pjms-capacity-market-reforms-almost-not-quite

[6] PJM Winter Storm Elliot Continued Outage Analysis (March 9, 2023) https://www.pjm.com/-/media/DotCom/committees-groups/committees/oc/2023/20230309/20230309-item-04a---winter-storm-elliott-outage-data-review.ashx

[7] https://www.nrdc.org/bio/claire-lang-ree/pjms-capacity-auction-real-story; https://environmentamerica.org/center/articles/electric-bills-are-set-to-increase-in-june-for-65-million-americans-heres-why

[8] https://www.nrdc.org/bio/claire-lang-ree/pjms-capacity-auction-real-story

power plants contribute to climate change[9] and create local air pollution, including ozone, sulfur dioxide and nitrogen dioxide, which contributes to asthma and cardio-pulmonary conditions. Nuclear energy suffers from three of the same disadvantages. First, it is more expensive. Solar power can now be produced for one-third the cost of nuclear energy,[10] and industrial-scale, thermal energy storage would add only a trivial amount to the cost per kWh delivered to users.[11] Actual construction costs have nearly always far exceeded expectations. The Georgia Power Vogtle Units 3 and 4 cost $36.8 billion, more than twice the projected cost,[12] and a 2014 academic study, which looked at 180 traditional nuclear power projects around the world, found that 175 exceeded the initial budget by an average of 117 percent.[13] Small nuclear reactors have not fared better. The Utah Associated Municipal Power Systems NuScale Power small modular nuclear reactor project was initially projected to cost $3 billion and ultimately rose to $9.6 billion at which point the project was shelved.[14] Second, nuclear plants take far longer to construct. The Georgia project took 15 years to build, more than twice the project timeline,[15] and the 2014 study cited above found that 175 of the projects took, on average, 64 percent longer to build than estimated. Third, nuclear plants create problems in disposing of the spent fuel. Before calling for new nuclear power facilities, legislators need to consider whether they are willing to store the spent fuel indefinitely in their own neighborhoods or, if not, whether one can ethically impose that risk on anyone else.

Instead of encouraging investments that would result in higher costs, risk power shortfalls because of longer construction periods, continue reliability concerns (in the case of gas-based power plants), and entail environmental issues, Maryland should undertake the one-year integrated energy resource planning envisioned in the Energy Resource Adequacy and Planning Act (SB909/HB1037).

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[9] https://climate.mit.edu/ask-mit/how-much-does-natural-gas-contribute-climate-change-through-co2-emissions-when-fuel-burned; while gas contributes fewer carbon emissions than gas, methane, the main component of gas, turns into CO2 when burned, but before then much escapes into the atmosphere. The U.S. Environmental Protection Agency estimates that about 6.5 million metric tons of methane leak from the oil and gas supply chain each year—around 1% of total natural gas production. At this rate, methane leaks would account for around 10% of gas's contribution to climate change, and CO_2 emissions for the other 90%.

[10] https://www.lazard.com/media/xemfey0k/lazards-lcoeplus-june-2024-_vf.pdf

[11] "Solution to Energy Storage May Be Beneath Your Feet" (March 28, 2024), National Renewable Energy Laboratory (NREL) https://www.nrel.gov/news/features/2024/solution-to-energy-storage-may-be-beneath-your-feet.html

[12] https://thirdact.org/georgia/2024/06/09/plant-vogtle-the-true-cost-of-nuclear-power-in-the-u-s/; https://www.nonukesyall.org/pdfs/Truth%20about%20Vogtle%20report%20May%2030%20release.pdf

[13] Sovacool, Gilbert and Nugent, "Risk, Innovation, Electricity Infrastructure and Construction Cost Overruns: Testing Six Hypotheses," https://www.sciencedirect.com/science/article/abs/pii/S0360544214008925

[14] https://www.utilitydive.com/news/nuscale-uamps-project-small-modular-reactor-ramanasmr-/705717/

[15] https://thirdact.org/georgia/2024/06/09/plant-vogtle-the-true-cost-of-nuclear-power-in-the-u-s/; https://www.nonukesyall.org/pdfs/Truth%20about%20Vogtle%20report%20May%2030%20release.pdf

To minimize the risk of power outages resulting from delay caused by the integrated resource planning study, the state should enact no-regrets legislation that would accelerate the deployment of new solar projects and long-term power storage.

The State should also enact or participate in:

- State and regional transmission planning
    - HB1225, the Affordable Grid Act,
    - HB829 Advanced Transmission Technologies
- State legislation to increase renewable energy supply and storage:
    - HB398/SB316 the Abundant, Affordable Clean Energy Act
    - HB827/SB983 distributed generation certificates of public convenience and necessity; ground mount solar and small solar siting
    - HB1233/SB1022 community solar subscription out of service area
    - HB1036/SB931 Renewable Energy Certainty Act with amendments
- State legislation to build out an affordable, smart distribution grid
    - HB1225/SB908 (Affordable Grid Act) to account for distributed energy resources and take advantage of grid enhancing technologies
- Actively participate in PJM's scenario planning and implementation of FERC Order 1920 to ensure the reliable build out of the transmission grid

For these reasons, I urge an **UNFAVORABLE** report in Committee.