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CLIMATE STRATEGIES

HELPING PEOPLE WORK TOGETHER TO CREATE A BETTER SAFER AND MORE JUST WORLD

HB1035/SB937- Public Utilities- Electricity Generation Planning- Procurement, Permitting, and Co- Location (Next Generation Energy Act)

Testimony of Arianna Ugliano, The Center for Climate Strategies (CCS)
INFORMATIONAL

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Chair Feldman, Vice Chair Kagan, Chair Wilson, Vice Chair Crosby, and Members of the Education, Energy, and Environment and Economic Matters Committees

In consideration of SB 937 and related legislation and critical information needs, CCS reviewed a range of studies and information sources related to current forecasts of electricity needs and supply and demand options for Maryland's power sector and has identified a series of key findings.

Results indicate that there is no current shortage of generation capacity, and that the current highly uncertain demand forecast and the existence of a range of power system alternatives in Maryland deserve further study. A study of Maryland's electricity sector needs and alternative can be combined with near term, practical actions to address specific needs while also being useful in the longer term.

Findings are described in a new CCS white paper. The paper and a detailed summary with citations are available at https://www.climatestrategies.us/projects-all/maryland-future-demand.

The Center for Climate Strategies (CCS) is a non-profit, nonpartisan organization based in Washington, DC. Since its formation in 2004, it has provided leadership support, knowledge, and expert technical assistance to governments and stakeholders globally for the design, development, analysis, and implementation of multi objective strategies and actions in all economic sectors to address economic, environmental, and energy needs.

Since 2007, CCS has provided a variety of technical and facilitative support to the state of Maryland and its stakeholders for the development and implementation of policy actions and financing mechanisms. This includes a "Comprehensive Analysis of Maryland's Short- and Long-term Climate Stabilization and Clean Energy Goals and Investment Requirements" in 2023 and a variety of other studies and collaborations.

Key SB 937 review findings:

Maryland power demand forecasts are changing and highly uncertain, especially for data centers and Artificial Intelligence.

- Differing demand forecasts exist for Maryland, and these can significantly affect needs for additional electricity generation and storage capacity.

- Data center and AI technologies are becoming more energy-efficient-, and additional uncertainties exist for data center growth and constraints to data center deployment not related to energy supply.

New natural gas generation construction is costly and involves significant investor risk.

- Construction of 3.1 GW of gas-fired power plants would cost at least $5-6 billion, not including costs for new natural gas pipeline construction and maintenance or for annual fuel costs.
- Natural gas generation would increase GHG emissions by 1.5-7.3 MMtCO2e annually (2-10% of Maryland's current net emissions); carbon capture and storage is unlikely to be a feasible solution.
- Investors should consider the risk implications of demand shifts for long term investments made in the short term for large, capital-intensive generation capacities.

Nuclear is expensive and will take years to come online.

- Building new nuclear reactors, including traditional and small modular reactors, seems likely to be infeasible in Maryland based on cost considerations, potential difficulties in siting, and the ten or more years likely required to complete new units.

No single solution is likely to address power system needs, and many alternatives exist.

- Transmission and Distribution (T&D) improvements can improve power flows and increase efficiency at lower cost, through changes such as reconducting and the use of high efficiency transmission lines and other components.
- Solar PV is the least expensive form of capacity additions and can be installed in many places. Wind turbine costs are also declining. With investment in improved grid capacity and transmission, offshore wind generation will become increasingly feasible.
- Battery energy storage systems (BESS) have shown rapid technological evolution and cost reductions and can be rapidly installed to support grid capacity and peak power needs.
- Demand side actions, such as efficiency and demand response programs, can cut costs and offer "costs of saved energy" that are far below retail and wholesale grid electricity prices.

Further study is needed along with practical, immediate actions.

- A detailed update of Maryland's power sector demand forecast is needed, including expectations for technology and operations changes for data centers and AI.
- Detailed review of the full scope of all supply and demand management options also is needed, including a full suite of generation and demand-side management capacities.
- Power sector approaches are needed that manage system needs, investor risk, consumer access, economic opportunity, and environmental impact.

We ask that you seriously consider our findings and are delighted to answer questions and work together to create a pathway for sustainable and resilient energy resources in Maryland.

Respectfully,

Arianna Ugliano, CCS