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October 2, 2023

Mark Stewart
Program Manager
Climate Change Program
Maryland Department of the Environment
1800 Washington Boulevard
Baltimore, Maryland 21230

RE: BGE comments regarding the Maryland Department of the Environment (MDE) and University of Maryland June 30th Climate Pathway Report

Dear Mr. Stewart,

Baltimore Gas and Electric (BGE) is dedicated to supporting Maryland's decarbonization goals and efforts to reduce greenhouse gas emissions. In addition to contributing to Exelon's Path to Clean, under which Exelon will achieve net-zero operational GHG emissions, BGE is committed to assisting the State of Maryland, our customers, and our communities in reaching their sustainability goals, while continuing to deliver on our core mission to provide safe, reliable, and affordable energy.

As such, BGE is an active participant in multiple State sponsored working groups and task forces. Additionally, BGE has engaged several expert consulting firms in studies to examine optimal pathways to achieve Maryland's climate goals while enabling practical outcomes for our customers. We are eager to continue our partnership with State leadership, our customers, communities, and engaged stakeholders to determine the energy transition pathway that fosters the greatest affordability, equity, reliability and resilience for our customers.

BGE appreciates the opportunity to provide the following comments on the Maryland Climate Pathway report:

1. BGE encourages the State to consider multiple pathways to achieving the goals of the Climate Solutions Now Act of 2022, including integrated electric and gas energy system pathways, towards net-zero. As the E3 study commissioned by BGE demonstrates, there are multiple avenues to reach the state's goals with very different impacts to Maryland residents and businesses, which should be compared and evaluated on the basis of feasibility and cost.
2. Key evaluation factors of cost and risk (notably resiliency and peak load impacts) were not explicitly considered in the MDE Climate Pathways report, but should be considered before MDE endorses a pathway towards net-zero.

3. To facilitate the siting and building of the infrastructure needed to enable the clean energy transition, we emphasize the need for statewide permitting and siting reforms regardless of which pathway we take.

While we agree that significant electrification, under any reasonable pathway, will be necessary to achieve Maryland's decarbonization goal, the E3 pathways study commissioned by BGE shows that there are many routes to reach net-zero, with widely varied impacts on costs for customers, constructability, resiliency, and risk. Indeed, E3's work for the Maryland Climate Commission in 2021 found similar results.

BGE encourages the State to consider and compare these multiple pathways towards net-zero and make recommendations based upon these factors. The cost of implementing the clean energy transition and, in-turn, the costs passed through to residents and businesses in the State is a particularly important consideration. The State should support a pathway that optimizes existing assets, keeps new costs down, and supports the realization of equity in this energy transition.

As shown in the E3 study prepared for BGE, as well as the E3 study conducted for the Maryland Climate Commission, the Integrated Energy Systems Pathways that leverage the combined capabilities of electric and gas delivery systems achieve Maryland's goals at far lower cost and risk for both consumers and the State's economy. Such pathways also provide greater resiliency, are more realistic in terms of constructability, and are less disruptive to residents. By combining significant electrification with the use of existing gas systems for back-up heating, the State will reduce the cost and construction burden of electric buildout required to meet winter peaks, producing more equitable outcomes for our customers. Indeed, with continued investment, the existing gas delivery systems can be leveraged to be powerful assets to support Marylanders through the decarbonization of our State's economy.

Importantly, vital peak load considerations were not modeled or considered in the MDE study, but they have a substantial impact on grid stability and infrastructure needs. BGE engaged the engineering firm 1898 to conduct a study of the grid infrastructure requirements to support high electrification scenarios, and the results show a massive requirement for new substations and electrical feeders, beyond what BGE finds to be plausible in the timeframes required. BGE strongly encourages peak load considerations and associated constructability and resiliency risks to be evaluated and considered in future pathway determinations.

Integrated Energy System pathways that consider additional technology options including cleaner fuels, such as renewable natural gas and hydrogen, advanced energy delivery technologies, such as networked geothermal, and grid modernization capabilities, such as battery storage and microgrids, will provide more flexibility and resiliency than a highest electrification/limited gas scenario. BGE urges the State to expand the technologies considered in the Maryland Climate Pathways study to incorporate a broader range of technologies, including those listed here.

Additional technology options would also allow flexibility should the State see current policy and IRA implementation rates lower than those anticipated in the Maryland Climate Pathways report. As noted in section 2.10 of the report, "low implementation of these policies leads to a gap of 10.2

MMTCO_{2e} with the State's 2031 target.”¹ As noted by other commentors in the public listening sessions, BGE feels that the report's reliance on full implementation of current incentives is overly optimistic and encourages the inclusion of a broader range of technologies to fill gaps created in a medium- to low-implementation scenario. The clean energy transition will require the installation of approximately 1 million heat pumps by 2045 in BGE's service territory alone, a challenging target that will require the full engagement of all stakeholders involved. Allowing hybrid heating approaches in proposed Clean Heat Standards and Appliance Emission Standards will also support customer choice and, by providing more options for customers, will likely increase customer device stock-turn over, a factor not considered in the Maryland Climate Pathways study.

In order to facilitate the clean energy transition, BGE emphasizes the need for permitting and siting reforms that will be critical to facilitate the clean energy transition regardless of which pathways we take. However, even with these reforms, BGE has concerns about the feasibility of constructing the assets necessary, especially in any pathway that contemplates limited reliance on gas to meet peak winter energy demands. The MDE Maryland Climate Pathways report does not address siting of electric assets and the need for permit reform. BGE agrees that the clean energy transition will require significant electrification efforts, regardless of pathway, but we have serious concerns that the required buildout of energy infrastructure cannot be achieved without permit and siting reforms. We recommend that siting and permitting risks be included in the future evaluation of pathway scenarios.

Thank you for the opportunity to comment on this report. We look forward to continued partnership with Maryland Department of the Environment and the State as we work together to achieve Maryland's decarbonization goals.

Sincerely,

Mark D Case

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¹ Kennedy, K., A. Zhao, S. Smith, K. O'Keefe, B. Phelps, S. Kennedy, R. Cui, C. Dahl, S. Dodds, S. Edelstein, S. Francis, E. Ghosh, G. Hurtt, D. Irani, L. Ma, Y. Ou, R. Prais, A. Taylor, A. Trivedi, N. Wetzler, J. Williams, and N. Hultman (2023). "Maryland's Climate Pathway: An analysis of actions the State can take to achieve Maryland's nation-leading greenhouse gas emissions reduction goals." Center for Global Sustainability, University of Maryland, p.84