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Attn: Kimberly Coble and Michael Powell, Co-Chairs  
c/o Mark Stewart  
Maryland Commission on Climate Change  
Greenhouse Gas Mitigation Working Group  
1800 Washington Blvd.  
Baltimore, MD 21230

Re: BGE Comments on the Climate Change Mitigation Working Group (MWG) Draft Recommendations for 2022

Dear Co-Chairpersons Coble and Powell and Mr. Stewart:

BGE wishes to provide supplemental comments to our October 4<sup>th</sup> letter to the Mitigation Working Group (MWG). We provide herein a link to the study conducted by E3 Consulting on our behalf, examining potential pathways within the BGE service territory for achieving Maryland's GHG reduction targets. We also provide BGE's summary response to the E3 analysis, and our perspective on the optimal approach to reaching Maryland's climate goals. Finally, we provide comments regarding some of the priority recommendations under consideration by the MWG. Please share our comments with all members of the Mitigation Work Group.

E3 Consulting recently completed separate studies for the State of Maryland and for BGE that show there are multiple pathways to net-zero by 2045, each with different costs, risks, and realistic chances for achieving Maryland's GHG reduction goals. The most recent study analyzing BGE's service territory, was released on October 7, 2022, can be found at: <https://www.ethree.com/e3-releases-integrated-decarbonization-study-for-baltimore-gas-and-electric/>. This study builds upon the prior work that E3 conducted for the state and examines the critical role that an integrated energy system (gas and electric delivery systems) can play in assisting the state in attaining its decarbonization objectives.

**The principle finding of E3's analysis is that scenarios that rely on an integrated gas and electric system result in significant customer and economy-wide savings, lower risks, are more "constructible", and result in less customer disruption.** Significant electrification will be required, but the gas delivery system is an essential component of achieving Maryland's climate goals.

BGE's summary response to the E3 study and our own vision and commitment for supporting Maryland's goals to achieve net-zero carbon emissions are attached to these comments.

## **BGE's Comments Regarding Recommendations Before the MWG**

The Climate Solutions Now Act (CSNA) of 2022 established processes and working groups to study and recommend a plan for achieving Maryland's GHG reduction goals. The state should allow for the completion of the required studies and analyses before many of the additional recommendations currently before the Mitigation Work Group are considered. Our overriding comment on the recommendations is that BGE opposes recommendations that fail to recognize the critical contribution of the gas delivery system to achieving Maryland's decarbonization goals.

BGE has some additional, specific comments on the current draft list of recommendations.

### **~~10. The General Assembly should authorize MDE to develop a zero-emissions standard for space heating and water heating equipment~~**

BGE opposes this recommendation as inconsistent with adoption of the least cost and optimal pathway for Maryland, which must include both electric and gas delivery systems. Hybrid heating systems that rely on electric heat pumps carrying most of the annual heating loads, with gas generally providing backup heat, are an essential element of the optimal pathways. The predominately all-electric pathway is significantly more expensive, and beyond cost factors alone, requires so much additional electric infrastructure buildout as to be unworkable and unrealistic. The system studies required by the CSNA should be completed so that we can ensure the system can be ready for the transition while maintaining the resiliency and reliability customers expect.

### **12. The General Assembly should also amend PUA § 7–211 to require that EmPOWER work better for reducing GHG emissions with provisions to:**

- a. Include specific GHG reduction targets, ~~to be established by MDE~~; developed through the ongoing Public Service Commission process.
- b. ~~Encourage fuel switching from fossil fuels to efficient electric appliances with incentives for heat pump space heating and hot water heating, high efficiency electric clothes dryers, and induction ranges/stovetops starting in 2024 (as recommended by the MCCC in 2020 and 2021);~~
- c. ~~End incentives for fossil fuel appliances starting in 2023 (as recommended by the MCCC in 2021); and~~
- d. Provide audits that recommend steps for homes/buildings to become electric-ready, along with rebates for these investments.

BGE opposes items b and c and suggests the imbedded amendment language (in red) for item a. As stated above, hybrid electric and gas heating systems should be encouraged as they provide a lower cost and lower risk solution. Ending incentives for certain natural gas appliances, especially equipment like hybrid heating systems, is not in alignment with maintaining long term use of the natural gas system and gas heating devices.

### **~~13. Legislation should further direct that the PSC's regulations require gas utilities to file plans consistent with the PSC's requirements by no later than January 1, 2026, and should clarify that the PSC has authority to issue orders before January 1, 2026, to further electrification and mitigate the potential for stranded gas infrastructure.~~**

- a. ~~The General Assembly should end the policy set forth in Public Utilities Article § 4-210 that has the express purpose of "accelerat[ing] gas infrastructure" investments and authorizes the PSC to provide expedited recovery from customers of such investments.~~
- b. ~~Short of an all electric construction code, or for any exceptions to an all electric building code, the PSC should reform the gas line extension policy.~~

BGE suggests removal of Recommendation 13 as it does not comport with E3's analysis that finds integrated energy delivery solutions can best achieve Maryland's GHG reduction goals.

**14. General Assembly should provide funding to counties to install systems that capture methane from landfills and wastewater treatment plants** ~~and, use the captured methane for on-site power generation~~ to interconnect with the natural gas distribution system where available, and be used for other purposes including local generation where gas system interconnections are not feasible.

BGE suggests modification of the language to promote biogas injection into the distribution system as the optimal pathway for decarbonization.

~~**18. Maryland should codify a commitment to zero emissions electricity for both a consumption and a production basis by 2040. Additionally, Maryland should aggressively encourage the Regional Greenhouse Gas Initiative states to reduce the regional CO<sub>2</sub> emissions cap to zero by 2040.**~~

BGE suggests removal of Recommendation 18 as it is unworkable. Maryland electricity supply is sourced from throughout the PJM region and executing the goal of zero emissions while maintaining reliable supplies cannot be accomplished in Maryland alone and will require the cooperation of the entire region.

Thank you for the opportunity to provide these additional comments, and we look forward to partnering with the State to achieve its decarbonization goals.

*Mark D Case*

The Maryland General Assembly's landmark environmental legislation, the Climate Solutions Now Act of 2022 (CSNA), targets net-zero greenhouse gas (GHG) emissions by 2045. BGE supports this ambitious goal and has a history of investing in and planning for a cleaner and more sustainable future for Maryland, including our own [Path to Clean](#) roadmap to net-zero operational GHG emissions.

**BGE is eager to partner with State leadership, our customers and communities, and engaged stakeholders toward our clean energy future, and commits to help achieve Maryland's goals using an optimal pathway that fosters greater affordability, equity, reliability and resilience.**

Under the CSNA, the Maryland Department of Environment (MDE) is required to adopt a plan to reach net-zero goals with input from the Public Service Commission (PSC), other state agencies and stakeholders by December 2023. BGE commits to working with MDE and all key stakeholders to select and implement the optimal pathway to the State's GHG reduction goals while continuing to provide safe, reliable and affordable energy.

## Evaluating Pathways to Achieve CSNA Goals

BGE engaged Energy + Environmental Economics (E3) to analyze viable pathways that achieve the State's net zero goals and identify potential implications for BGE's customers and service area. E3 analyzed three key decarbonization scenario pathways that built on prior work E3 performed for the State: 1) Limited Gas; 2) Hybrid; and 3) Diverse. As Figure 1 shows, the three pathways each achieve Maryland's net-zero GHG emission targets and all require significant electrification – including building and transportation electrification. This analysis is the first decarbonization study released since the CSNA's enactment.

**The most important finding by E3 is that the Hybrid and Diverse pathways, both of which leverage the combined capabilities of electric and gas delivery systems, achieve Maryland's goals at lower cost and less risk for customers and the State's economy.**

These Integrated Energy System (IES) pathways also deliver greater resiliency, fuel diversity, more realistic constructability and less disruption to customers and the State's economy.

**The Limited Gas pathway, which relies almost exclusively on electrification, will result in a significantly higher cost, more economic and energy system disruption, and a less diverse/resilient system compared to IES scenarios.** Preliminary analysis conducted in parallel with the E3 work indicates that BGE's required electric grid capacity would triple or more (from 6,500 MW today to as high as 22,500 MW by 2045), which would require approximately 250 new or expanded substations and 1,700 new electrical feeders. This infrastructure will require an enormous financial investment, threatening affordability for customers, and poses an incredible siting and permitting challenge in central Maryland's heavily developed regions.

Scenario	1. Limited Gas	Integrated Energy System Scenarios	
		2. Hybrid	3. Diverse
Description	High-electrification and shift away from delivered gas	Leverage an increasingly clean system, electrification, and gas network	
Buildings	Electrification	Electrification with gas/electric hybrid heating	Adds gas heat pumps and network geothermal
Industry	Electrification	Electrification and alternative fuels	
Transportation	Light duty vehicle electrification with alternative fuels for medium and heavy-duty vehicles		
Electricity	Zero-carbon electricity by 2045		
Other Sectors	66% reduction by 2045		
Net Incremental Cost 2020-2045	\$52 Billion	\$38 Billion	\$40 Billion
Overall Risk Level	Highest	Moderate	Moderate to High

Figure 1. Incremental costs include renewable energy capacity and energy, clean gaseous fuels, customer equipment conversions, transmission & distribution infrastructure, and net of savings from avoided gasoline and fossil fuel usage.

# BGE's Vision For A Cleaner Future

BGE supports pathways that leverage an integrated systems approach. We will partner with our customers and key stakeholders, with critical support from our regulators and legislators, and develop and implement programs and initiatives needed to reduce GHG emissions in central Maryland in support of the State's goal. This will require policy and regulatory changes, and we will work with the PSC and the Legislature on these transitions and reforms.

Our vision includes the following foundational elements:

➤ **Continued Grid Modernization:**

This is required to support Maryland's transition to additional renewable and carbon-free generation sources and enable the growth of Distributed Energy Resources and two-way power flows. To expand grid capacity, advanced forecasting tools, integrated electric and gas planning processes, and new operations platforms including an Advanced Distribution Management System (ADMS) and Distributed Energy Management System (DERMS) will be implemented in the next few years.

➤ **Building Decarbonization/Electrification:**

Develop new programs that incentivize customers to adopt electric heat pumps and water heaters, while retaining existing gas furnaces to provide resilient heating. Gas will shift to a back-up heating resource on the coldest days of the year when electric heat pumps are not efficient and will remain available for cooking and other household and business applications. However, gas delivery rates will increase as gas customers and usage decreases over time, requiring innovative regulatory solutions to support affordability, particularly for low- and moderate-income customers. Leveraging the existing capacity of our gas delivery system allows us to mitigate the amount of new electric grid capacity that will be required and as result, achieve the state's GHG reduction goals at a far lower cost to customers.

➤ **Transportation Electrification:**

Build on our successful EVsmart program to continue advocating for policies that enhance the State's transportation electrification goals, and introduce new proposals to rapidly accelerate EV adoption, including fleet charging, electrified school and transit buses, and investments to support EV charging across the service territory. We will seek to leverage federal funds programs to offset customer costs where feasible and will implement rate incentives and managed charging solutions to mitigate peak demand impacts and augment the benefits of EVs.

➤ **Energy Efficiency and Demand Response:**

Offer new programs and innovations to meet EmPOWER Maryland's increasingly challenging energy efficiency goals that builds on our nationally recognized leadership and success in energy efficiency and demand response. We will offer programs for both new construction and deep retrofits of existing building stock and continue to innovate in our behavioral based initiatives.

➤ **Grid Resiliency and Expansion:**

Continue performing in-depth capacity planning analyses to identify and implement system upgrades to meet the growing demands of building and transportation electrification. Even under the IES pathways modeled by E3, we anticipate peak demand growing by approximately 75% to 100% (to ~12,000 MW) by 2045. We will also design new resiliency initiatives to support the increasing reliance on electricity across all sectors of the economy.

➤ **Clean Fuels Transition/Emerging Technologies:**

Conduct pilot projects with emerging clean, carbon-neutral technologies such as Renewable Natural Gas (RNG) and hydrogen. As examples, we are launching a hydrogen lab at our Spring Gardens gas headquarters facility and interconnected the State's first biomass RNG supply facility in Howard County to our gas infrastructure in 2022. We will also continue researching clean energy solutions and emerging technologies such as networked geothermal heating, gas heat pumps, carbon capture and storage, and more.

➤ **Policy:**

Work with the PSC and the legislature, customers and key stakeholders to identify needed policy and regulatory changes in the areas of rate design, ratemaking, electric planning and interconnection, and permitting and siting. Maryland's net-zero GHG emissions goal puts significant cost pressures on Marylanders, even under optimal pathways, requiring new solutions that support both affordability and equity. A commitment to workforce development will also be a key prerequisite to achieving our energy system transformation.

Maryland's goal of net-zero GHG emissions can only be achieved through a coordinated effort involving all segments of the State's society. BGE is always focused on the safe and reliable delivery of affordable energy to our customers; we are now excited to work with all stakeholders on creating a cleaner and brighter future for all of Maryland.