1000 Maine Avenue, SW
Suite 700
Washington, DC 20024
www.washingtongas.com

Direct Dial: (703) 750-4530
madams@washgas.com

October 13, 2023

VIA EMAIL

Maryland Department of the Environment
1800 Washington Blvd.
Baltimore, MD 21230

RE: MDE CLIMATE PATHWAY REPORT COMMENTS

I. INTRODUCTION

On April 9th, 2022, the Climate Solutions Now Act ("CSNA") became law in the state of Maryland, targeting a 60% decrease in greenhouse gas ("GHG") emissions by 2031 from a 2006 baseline. In response, the Maryland Department of the Environment ("MDE") released its Draft Climate Pathway Report ("Plan") outlining how Maryland can achieve the CSNA targets. MDE has requested input from Marylanders before they publish the final plan. Washington Gas ("Company") is thankful for the opportunity to respond and hopes MDE will incorporate its feedback in the final version of the Plan.

Washington Gas was founded in 1848 by Congressional Charter and is marking its 175th year of providing affordable, safe, and reliable natural gas service to more than 1.2 million customers in the District of Columbia (~170k), Virginia (~550k), and Maryland (~512k). Washington Gas operates approximately $5 billion in natural gas system assets across its service territory and employs over 700 people within Maryland, as well as hundreds of contractors, plumbers, and tradespeople. Washington Gas serves customers in Montgomery, Prince George's, Charles, St. Mary's, Frederick, and Calvert Counties. The Company is committed to providing affordable, safe, and reliable energy to its customers and helping achieve Maryland's GHG emissions reduction targets. The Company, together with other natural gas distribution utilities, are responsible for delivering the primary source of heat to Maryland residential energy consumers, serving approximately half of all Maryland households while providing critical energy services to residential, commercial, and industrial customers at one-third the cost of electricity on a per unit basis.[1]

Maryland's gas infrastructure provides a wide range of current and future benefits to Maryland customers and is well-positioned to help the State meet its 2031 GHG reduction targets. The Plan's narrow and myopic focus on electrification as the sole solution for achieving decarbonization is not in the best interest of Maryland customers or the State's climate goals and ignores the role natural gas has and can continue to play in achieving GHG emissions reductions.

[1] DOE. Energy Conservation Program for Consumer Products: Representative Average Unit Costs of Energy (Aug. 28, 2023).

Instead, the Company believes maintaining the State's integrated, multi-fuel energy system offers a more affordable, reliable, resilient, and feasible solution to meet Maryland's climate targets. A multi-fuel solution offers many pathways toward decarbonization built around lower carbon fuels and higher penetrations of renewable electricity and advanced energy technologies (e.g., distributed energy resources ("DERs")) without sacrificing reliability and resiliency.

II. What new policy would you like the State to consider to achieve its GHG reduction goals?

The State should consider policies that support technology-agnostic solutions to help achieve its GHG reduction goals. The Plan suggests that electrification will be the sole solution to achieving the State's GHG reduction goals. However, the State should consider any policy that maintains utilities' and customers' ability to use fuels and energy technologies that best meet their needs while achieving the State's goals.

A recent study found that "a technology-neutral approach provides the most efficient way to ensure solutions suit local circumstances and provide consumers with affordable access to dispatchable energy."[2] Both the federal and state governments have shown support for this approach:

- The Bipartisan Infrastructure Law ("BIL") and the Inflation Reduction Act ("IRA") support developing lower carbon gas and fueled-based technologies.[3]
- Colorado's SB 21-264 requires the state's gas utilities to achieve a 22% reduction in emissions from 2015 levels by 2030 and tasked utilities with filing plans to achieve this goal.[4] The legislation does not prescribe specific technology solutions, and instead allows utilities to evaluate multiple solutions (including electrification) to meet Colorado's emissions goal at the least possible cost to customers.
- Michigan and its Public Service Commission's Low Carbon Energy Infrastructure Enhancement and Development grant program allows for GHG reduction technologies and projects to compete on a technology-agnostic basis.[5] Several lower carbon gas infrastructure projects, such as the replacement of fuel oil heating with natural gas infrastructure and renewable natural gas facilities, were awarded funds based on their ability to reduce GHG emissions cost-effectively for a large number of customers.

MDE should support the cost-effective, ready-now technologies and strategies that can reduce the GHG emissions of the natural gas infrastructure, while preserving the opportunity for technologies and solutions that may soon become cost-effective in the future.

The State should consider policies that support the development of RNG to help achieve its GHG reduction goals. RNG is chemically identical to conventional natural gas but is typically sourced from organic waste.[6] MDE estimates the ~7 MMT CO2e that come from the State's

[2] Lowy Institute. Energy security: Embracing technological neutrality (May 5, 2022).
[3] The BIL includes grant funding opportunities that encourage the development of lower carbon gas and fuel-based technologies in addition to scaling renewable energy and electric system improvements. The IRA, passed in August 2022, replaced the existing clean energy Investment Tax Credit ("ITC") and wind Production Tax Credit ("PTC") with a technology-agnostic Clean ITC and PTC that rewards several types of energy technologies.
[4] Colorado. SB 21-264 (June 24, 2021).
[5] MPSC. Low Carbon Energy Infrastructure Enhancement and Development Grant (2022).
[6] SoCalGas. WHAT IS RENEWABLE NATURAL GAS?

landfills and wastewater treatment plants today may remain as high as ~5 MMT CO2e in 2050. States like California[7] and Virginia[8] have already developed legislation to support RNG projects, and the State should do the same to limit emissions from its landfills, wastewater treatment facilities, and agriculture sector. Research and ongoing development of RNG projects in Maryland and the broader US demonstrate some of the benefits that these systems offer:

- The World Resources Institute recognizes that "in many cases, RNG avoids more emissions than it generates, leading to a net-negative carbon intensity".[9]
- RNG technology has been deployed across the U.S., including in Maryland, over the last decade at a variety of facilities and has been proven to reduce emissions.[10] [11] [12]
- RNG can reduce the amount of emissions being released into the environment by landfills and water resource recovery facilities, as well as from upstream conventional gas sourcing requirements.[13]
- RNG can bolster system resilience by providing an additional source of local supply.

RNG is a source of lower carbon energy for Marylanders that supports the State's climate targets, and the State should consider policies that advance development of RNG resources.

The State should consider policies that support a wide range of energy efficiency solutions to help achieve its GHG reduction goals. Since the program's establishment in 2015, the Company's contributions to the EmPOWER Maryland energy efficiency program have helped save over 102 million therms of natural gas, or ~647,000 short tons CO2e emissions. These savings will continue to grow as the Company implements its 2024-2026 EmPOWER program roadmap.[14] To maintain the State's position as a national leader on energy efficiency, the State should consider policies that support a wide range of energy efficiency solutions, rather than the electrification-centric energy efficiency solution presented in the Plan.[15] Some considerations that further justify wide-ranging energy efficiency programs that look beyond electrification include:

- Deploying high efficiency natural gas appliances that leverage the natural gas infrastructure can produce more cost-effective energy efficiency gains compared to electrification solutions that may require costly home retrofits and grid upgrades.
- Massachusetts recently made investments to train hundreds of technicians to install electric heat pumps and offered financial incentives to spur demand. However, only ~18,000 heat pumps were installed in the state in 2022, well short of the state's annual target of 100,000.[16] MDE should recognize that customers may choose gas appliances over electric alternatives,

[7] S&P Global. California Regulators adopt mandatory renewable gas targets for gas utilities (Feb. 24, 2022).
[8] Virginia's Legislative Information System. SB 565 Natural gas, biogas, and other gas sources of energy; definitions, energy conservation (2022).
[9] World Resources Institute. 7 Things To Know About Renewable Natural Gas (Dec. 18, 2020).
[10] RNG Coalition. RNG Facilities Database (2023).
[11] BG&E. BGE Gains Regulatory Approval to Allow Use of Renewable Natural Gas on System (Oct. 7, 2021).
[12] Chesapeake Utilities. CleanBay Renewables, Inc. Renewable Natural Gas Project (Jul. 2020).
[13] EPA. Renewable Natural Gas (Aug. 3, 2023)
[14] Washington Gas Light Company. EmPOWER Plan for the 2024-2026 Program Cycle. Case No. 9705 (ML 304383) (Aug. 1, 2023).
[15] ACEEE. The 2022 State Energy Efficiency Scorecard (2023).
[16] Energy News Network. Massachusetts heat pump installer network has momentum in second year (Mar. 3, 2023).

and that EmPOWER is necessary to ensure GHG emissions are reduced when gas appliances are adopted.

- In Canada, the Québec government encouraged the development of a joint GHG reduction program by Hydro-Québec and Énergir, the main electric and gas utilities in the province. The program supports the use of energy efficient hybrid heating configurations (e.g., air-source heat pumps ("ASHP") with gas furnace backups), which leverage the natural gas infrastructure to reduce peak electric loads, provide reliable energy, and reduce the overall costs of achieving emissions reductions in the heating sector.[17] Énergir has stated that this program "maximizes the value of natural gas rather than the volumes distributed while at the same time reducing GHGs by over 500,000 tons by 2030."[18]

The State should consider policies that support the use of Combined Heat and Power ("CHP") to help achieve its GHG reduction goals and provide greater energy resiliency. CHP systems use natural gas to both generate electricity and produce heat.[19] Washington Gas customers continue to choose CHP systems for the efficiency and cost savings they offer, but CHP systems received little attention in the Plan despite their ability to help achieve the State's climate targets. CHP systems offer many benefits:

- They are over 80% efficient, compared to 50% for separate heat and power gas systems.[20] As a result, CHP systems reduce the amount of fuel used, GHG emitted, and money spent to meet customer energy demand. CHP systems can benefit low-income and historically disadvantaged Marylanders who are disproportionately affected by high energy costs. CHP systems offer both energy savings and GHG reductions to residents of multi-family units.
- They provide enhanced energy reliability and resiliency. CHP systems can be paired with solar, battery energy storage systems, or microgrids to realize additional resiliency and GHG reduction benefits.[21] For example, Montgomery County's Public Safety Headquarters runs on an 865-kW CHP system paired with a microgrid and rooftop solar and began operations in 2018 with a 25-year estimated system lifetime. The system provides critical resiliency benefits and avoids ~5,900 MT net CO2e emissions per year.[22] Similarly, in 2012 during Hurricane Sandy, when most of New York was without power, Co-op City's CHP system kept the lights on for its more than 60,000 residents throughout the storm.[23]
- CHP's carbon reduction benefits can be further enhanced with the use of lower carbon fuels or carbon capture technologies.[24]

CHP is a proven technology that offers reliability and resiliency benefits and can contribute to reducing the State's GHG emissions. The State should consider policies that allow CHP systems to play a key role in Maryland's energy future.

---

[17] S&P Global. Quebec's hybrid gas-electric approach to decarbonizing building space heat (Jun. 23, 2022).
[18] Énergir. Focus on 2030 is Énergir's new vision for its natural gas distribution activities in Québec (2023).
[19] DOE. Combined Heat and Power Basics
[20] EPA. What is CHP? (May 12, 2023).
[21] CHP Alliance. What is CHP?
[22] Oak Ridge National Laboratory – CHP Technical Assistance Partnerships. Montgomery County Public Safety Headquarters (2019).
[23] Forbes. Lessons From Where The Lights Stayed On During Sandy (Oct. 31, 2012).
[24] CHP Alliance. Webinar: Carbon Capture and CHP Technology (Jun. 15, 2022).

The State should consider policies that support the use of hydrogen across a variety of industries, especially transportation, to help achieve its GHG reduction goals.[25] [26] [27] Hydrogen is a clean fuel that can drive decarbonization across a variety of end uses, and federal incentives are bringing these opportunities into focus.[28][29] Transportation is one of the highest emitting sectors in the State, making it ripe for decarbonization initiatives supported by hydrogen. However, the Plan does not project the use of hydrogen in the transportation sector until 2035, despite research from the National Renewable Energy Laboratory ("NREL") showing that "hydrogen fuel cell electric vehicles ("HFCEVs") tend to become cost-competitive for long-haul (>500-mile) heavy trucks by 2035".[30] Instead, the Plan focuses in on battery electric vehicles ("BEVs") as the primary solution to drive decarbonization in the State's transportation sector. There are a few reasons the Company encourages MDE to consider HFCEVs in addition to BEVs:

- BEVs will increase loads on the electric grid and increase the scale and costs of the requisite infrastructure upgrades. In addition, there are functional limitations of medium and heavy-duty BEVs. HFCEVs can have comparative advantages in this regard. According to the DOE, "hydrogen fuel allows vehicles to travel longer distances with less refueling, so it is ideal for fueling heavy-duty tractor trailers and public transit buses."[31] Hydrogen refueling infrastructure can also offer scalability advantages for large depots or commercial charging centers given the relative ease of scaling up HFCEV charging infrastructure compared to electric grid and BEV charging infrastructure.[32]
- Maryland transit agencies have already committed to using both HFCEV and BEV technologies. Recently, Montgomery County announced a dual hydrogen and electric bus project, where it plans to procure 13 HFCEV buses by 2025.[33] The State should enable consumers and jurisdictions to pursue transportation technologies that best meet their needs and support any solution that can drive transportation emissions reductions.
- The Company is working with other partners through the Connected DMV initiative to develop opportunities that utilize hydrogen technology as an important pathway to emissions reductions within the State and region. Policies that enable gas utilities to invest in new hydrogen infrastructure and leverage existing natural gas infrastructure and resources for hydrogen use to meet Maryland's climate targets should be given strong consideration.

The State should consider policies that support the expanded use of carbon capture, especially in commercial buildings, campuses, and industrial applications, to help achieve its GHG reduction goals.[34] Maryland has already recognized the potential of carbon capture to reduce emissions from electricity generation. Initial results from the Power Plant Research Program's ("PPRP") 100% Study indicate that both the State and PJM may rely heavily on

[25] MDE. Maryland's Climate Pathway (Section 2.2 page 44) (June 2023).
[26] MDE. Maryland's Climate Pathway (Section 2.2 page 45) (June 2023).
[27] MDE. Maryland's Climate Pathway (Section 2.4 pages 60-61) (June 2023).
[28] DOE. Hydrogen Fuel Basics
[29] The Department of Energy's ("DOE") 1/1/1 goal ($1/1kg of hydrogen in 1 decade) and incentives in the BIL and IRA aim to bring the price of hydrogen low enough to be cost-effective by 2031.
[30] NREL. Decarbonizing Medium- & Heavy-Duty On-Road Vehicles (March 2022).
[31] DOE. Hydrogen's Role in Transportation (Feb. 25, 2022).
[32] RECHARGE. The case for hydrogen trucks (March 3, 2022).
[33] Canary Media. This East Coast bus depot will make its own carbon-free fuel (May 18, 2023).
[34] MDE. Maryland's Climate Pathway (Section 2.4 page 61) (June 2023).

natural gas generation with carbon capture to meet its emission goals.[35] However, many are unaware of the current and potential applications for carbon capture in commercial buildings. Commercial-scale carbon capture systems are being piloted today in New York City, and building owners are finding that the carbon capture systems are a cost-effective emissions reduction tool that can allow buildings to comply with local emissions laws while retaining their existing natural gas HVAC equipment through the end of the useful life.[36] In Maryland, carbon capture could similarly be used to comply with MDE's Draft BEPS regulations. Early analyses indicate that such carbon capture systems can offer some of the lowest cost GHG reductions from the commercial buildings sector, helping to protect low-income Marylanders from the further inflation of energy-related costs.[37] They may also be an important alternative strategy for energy intensive industries, like data centers and industrial customers, that may face increasingly uncertain electricity access and quality issues.

Carbon capture can be a win-win-win technology that helps support energy choice and access, while reducing emissions and preserving jobs.

III. Other than new policies, what do think the State should consider when developing its Greenhouse Gas Emissions (GHG) Reduction Plan (required under the Climate Solutions Now Act)?

The State should consider a scenario analysis along with a robust public input process to add credibility to the Plan. A scenario analysis will add more credibility to the plan by allowing the state to compare the various costs and benefits of different policies and measures. This type of comparison helps the public and lawmakers understand the impacts of various paths that can be taken and select the best path forward. Other states are pursuing scenario analyses for similar reports. For example: The California Air Resources Board's 2022 Scoping Plan, which sets the state's energy and decarbonization strategy, uses four scenarios to model different assumptions, policy tools, and outcomes.[38]

Public input would provide transparency into why certain decisions and assumptions were made. Soliciting feedback from relevant industries (e.g., utilities, emergency services and healthcare, automakers, manufacturing, and other energy-intensive and highly energy dependent industries, etc.), academia, and other organizations to establish a public record of inputs and challenges can illustrate the thoroughness of the Plan for the short and long term. MDE should also include making all written comments from stakeholders concerning the Plan (including these comments) available on the public record and accessible through MDE's website.

The State should consider the costs of proposed policies to ensure feasibility and affordability. The costs and feasibility associated with widespread electrification are an open question that utilities and stakeholders are grappling with. This Plan should use existing public data and benchmarks on costs and adoption trends to realistically project the costs that will be associated with the policies described in the Plan. Other states have conducted analyses to help inform decision making around electrification:

---

[35] Maryland DNR. Briefing to the 100% Study Working Group (May 4, 2023).
[36] Canary Media. Carbon capture for New York high-rise apartments is a real thing now. (Dec. 8, 2022).
[37] CenterPoint Energy. Natural Gas Innovation Plan (June 28, 2023).
[38] CARB. 2022 Scoping Plan for Achieving Carbon Neutrality (Nov. 16, 2022).

- Xcel Energy in Colorado created a Clean Heat Plan with multiple scenarios and associated costs and found that to achieve the states GHG reduction goals an electrification-focused scenario would cost $472 million while a 'Clean Heat Plus' scenario, one that included a mix of gas and electric GHG reduction solutions, would cost $163 million.[39]
- Home Innovation Research Labs found that electrifying an average efficiency gas house in Baltimore's climate zone provides minimal annual benefit and the payback period is between 48-60 years.[40] In contrast, upgrading to a high-efficiency gas house from an average efficiency gas house can produce annual savings between $176 and $196, with a payback period of only 5-7 years.[41]

The State should consider the full extent of the proposed cap-and-invest policy impacts. High costs to comply with a cap-and-invest policy could increase the cost of living or cost of doing business in Maryland. MDE should clarify how it plans to avoid burdening customers before recommending the State adopt this policy in its Plan. A similar cap-and-invest program in Washington State was recently implemented through the Climate Commitment Act (2021). The program requires certain entities, including Puget Sound Energy, the state's largest electric and gas utility, to reduce their carbon emissions or purchase allowances to cover them. This led to Puget Sound Energy paying approximately $16.8 million for its contributions to statewide GHG emissions, all of which was passed through to its customers.[42] As the State considers a cap-and-invest policy, they should consider the cost burdens such a policy will have on customers, and how the cost burdens may worsen with increasing costs from electrification.

The State should use a more relevant and realistic estimation of anticipated electric load. MDE uses 1990s EIA data on historical load growth in Maryland to project future demand[43] with a ~23% increase in demand by 2031 and a ~94% increase in demand by 2050. These increases likely underestimate the strain that will be placed on the grid by the broad electrification of the State's economy as described in the Plan. Credible analyses from institutes and utilities anticipate electricity demand increasing by much more than what MDE predicts.

- Baltimore Gas & Electric found that meeting Maryland's climate goals with rapid electrification would triple the peak demand on the grid.[44]
- The Rocky Mountain Institute anticipates that nationwide electricity demand could increase by approximately 44% from 2021 to 2031 and will more than double by 2050.[45]
- Gil Quiniones, CEO of Chicago-based ComEd, projected that electrification and demand growth are "going to double to triple the size of [ComEd's] grid."[46]

---

[39] Xcel Energy. 2024-2028 Clean Heat Plan (Aug. 1, 2023).
[40] Home Innovation Research Labs. Cost and Other Implications of Electrification Policies on Residential Construction (Feb. 2021).
[41] Home Innovation Research Labs. Cost and Other Implications of Electrification Policies on Residential Construction Page 14, Table 12 (Feb. 2021).
[42] MyNorthwest. Gas bill rates to increase for Puget Sound customers (Aug. 29, 2023).
[43] MDE's supplemental modeling output data shows a 22.7% increase in electricity consumption from 2020 to 2030 and a 93.8% increase from 2020 to 2050. (section 2.1 page 34).
[44] NAIOP. BGE Study: Building electrification will triple peak demand, require doubling of feeder infrastructure (Oct. 12, 2022).
[45] RMI. Is Georgia Power's New Plan Enough to Reach Net Zero by 2050? (March 14, 2022).
[46] S&P Global. Musk urges US power utilities to prepare for higher than expected grid demand. (Jun. 13, 2023).

MDE promotes broad electrification across several sectors and has a duty to accurately represent the possible impacts to the State's energy systems and consumers.

The State should include more realistic transportation assumptions. MDE's modeling assumes that passenger miles and total transportation energy consumption decline in the long-term, a point that potentially contradicts the policies advanced in the Plan.[47] In regard to passenger miles projected, less travel within Maryland is potentially indicative of lower levels of economic activity and spending in the State; this is antithetical to the State's economic goals. Regarding transportation energy consumed, the Plan places a large emphasis on transportation electrification, yet the data provided by MDE indicates that the overall energy consumption from electric transportation is expected to decrease by 20% in 2050 if the policies in the Plan are implemented. This does not align with the Plan's projections that transportation is increasingly electrified nor is it consistent with other credible analyses. According to Princeton University, transportation sector electricity demand is projected to increase by 1,191% between 2024-2035 under their 'Current Policies Mid-Range'[48] scenario.[49] MDE should explain their analyses and clarify why energy consumption by electric transportation decreases overall under the Climate Pathway.

The State should reconsider its assumptions regarding its future energy portfolio and interactions with the Bulk Power System (PJM Interconnection).[50] MDE's supplemental modeling output data shows a 99% increase in reliance on PJM imports for energy between 2020 and 2030 in the Climate Pathway policy scenario. However, there are some PJM-related considerations that the State should analyze and clearly state its plan to address:

- PJM is forecasting 40 GW of retirements on its system between 2022 and 2030, which will require bringing new capacity online.[51] New projects that are needed to replace retiring generators are facing delays driven by supply chain risks, raw material shortages, and lengthy interconnection queues.[52] Considering that in 2022, PJM saw only 2,000 MW of new projects built, of which only 700 MW were renewables,[53] the State should address how the Plan for how will meet its goals given the rate at which projects come online.
- PJM's current and future electricity generation mix may present challenges to reducing GHG emissions through widespread electrification. Today, fossil fuel resources comprise over 56% of PJM's generation mix.[54] During periods of peak demand, hourly fossil generation is often higher.[55] Natural gas-fired generation continues to be the largest contributor to the PJM generation mix, a trend that is expected to continue as demand grows and retiring coal plants

[47] MDE's supplemental modeling output data shows a 31.3% decrease in 2050 total passenger miles between the current policy and Climate Pathway policy projections. The modeling output data also shows a .021 EJ (20.2%) decrease in overall energy used by all forms of electric transportation in 2050 between current policies and Climate Pathway policies.
[48] This scenario incorporates current federal policies and assesses the likelihood of their impact through three different ranges – conservative, mid-range, and optimistic.
[49] Princeton University. Rapid Energy Policy Evaluation and Analysis Toolkit (July 5, 2023).
[50] MDE. Maryland's Climate Pathway (Section 2.1 page 32) (June 2023)
[51] PJM. Energy Transition in PJM: Resource Retirements, Replacements & Risks (Feb. 24, 2023).
[52] DOE. America's Strategy to Secure the Supply Chain for a Robust Clean Energy Transition (Feb. 24, 2022).
[53] PJM Inside Lines. New Interconnection Process Aims To Ensure Reliability, Enable State Policies (Jun. 30, 2023).
[54] PJM. Markets & Operations (last accessed Oct. 10, 2023).
[55] PJM. Winter Operations of the PJM Grid: December 1, 2020 – February 28, 2021 (Apr. 7, 2021).

create the need for more system capacity. Accelerated electrification may cause emissions to rise, due to increased reliance on fossil generators. MDE should clarify what analysis it has performed to account for these emissions.

- The North American Electric Reliability Corporation's ("NERC") is concerned that policies related to decarbonization, decentralization, and electrification will negatively impact the reliability of the electric grid due to resulting changes in the grid's energy resource mix.[56] MDE should clarify what analysis, if any, it has performed to suggest reliability will be preserved during the implementation of the policies it proposes in the Plan.
- The Plan assumes that all the renewable energy produced in-state will be used in-state, and that any emissions from imported energy will be covered by purchasing Renewable Energy Certificates ("RECs").[57] However, relying on RECs to achieve the State's climate goals are an imperfect solution. Today's REC markets do not currently account for the location, timing, or additive nature of renewable energy generation and cannot be counted on to meaningfully decarbonize the State's electricity supply. In this regard, RECs are much like other carbon offset markets (such as buying and selling forest conservation credits). The Plan's reliance on RECs to achieve the State's climate goals may increase competition with other PJM states for high quality RECs, potentially forcing State to purchase increasingly expensive and in-demand RECs in lieu of pursuing more cost-effective solutions.[58] [59] MDE should explain what analysis, if any, it performs to determine availability, price, or quality of the RECs used to meet its RPS obligations. MDE also proposes to leverage the State's participation in the Regional Greenhouse Gas Initiative ("RGGI") to meet its renewable energy goals,[60] yet this initiative is not an actionable policy. The Plan should clarify how a more aggressive RGGI target will tangibly reduce GHG emissions and recognize Maryland's limited ability to effectuate this change. In addition, market mechanisms that facilitate the deployment of lower carbon fuels and use of verifiable offsets should be available to gas utilities on a comparable basis.

The Company recommends that all emissions in the Plan should be expressed in 100-year Global Warming Potential ("GWP"), consistent with the Intergovernmental Panel on Climate Change ("IPCC") and EPA reporting. This method is consistent with current international GHG inventory practices. The CSNA uses a 20-year GWP[61], whereas the IPCC and other US regulatory reporting agencies, including EPA, use a 100-year GWP metric.[62] Deviating

[56] NERC. 2023 ERO Reliability Risk Priorities Report (Aug. 17, 2023).
[57] RECs are generated by renewable energy projects for every megawatt hour of energy they produce and are often purchased by third parties to 'claim' the energy a specific project generates and offset the buyer's emissions. RECs can be a useful instrument for driving decarbonization, but they are not a perfect solution. RECs can be purchased from any project willing to sell them, often with few restrictions on where the buyer are seller are located, when the RECs were generated, or whether the RECs drive incremental decarbonization on the electric grid. For example, a new natural gas plant operator in Maryland could offset its emissions with RECs from a solar farm in Michigan that were generated months before the natural gas plant started operating. In this example, the purchase of those RECs did not fund the development of a new solar project, but simply provided extra revenue to an existing project.
[58] New Jersey Economic Development Authority (NJ EDA). Clean Energy (2023).
[59] Delaware.gov. Renewable Energy Portfolio Standards (2023).
[60] MDE. Maryland's Climate Pathway (Executive Summary page 16) (June 2023).
[61] Maryland Legislature. Senate Bill 528 (Mar. 19, 2022) 2–1205. (E) (3)
[62] IPCC. CLIMATE CHANGE 2023 Synthesis Report (Mar. 19, 2023). "GHG emission metrics are used to express emissions of different greenhouse gases in a common unit. Aggregated GHG emissions in this report are stated in CO2-equivalents (CO2-eq) using the Global Warming Potential with a time horizon of 100 years (GWP100) with values based on the contribution of Working Group I to the AR6" (Page 44, footnote 69).

from this standard creates an incompatibility with RGGI and other protocols critical to measuring Maryland's GHG reduction efforts and making comparisons to other jurisdictions. This can make it especially difficult to align climate goals across state lines, and a universal standard consistent with the IPCC is important in ensuring that GHG emissions are reduced both in Maryland and the region at large.

IV. CONCLUSION

The Company recognizes the charge of MDE in developing a Climate Pathway and appreciates the opportunity to provide feedback prior to the development of a final version. This feedback is intended to ensure MDE considers the consequences the Plan will have on all Maryland residents and to constructively support MDE in amending and aligning its plan to the public interest. The Company believes it is possible to achieve the GHG emissions reduction goals outlined in the CSNA through an integrated, multi-fuel energy ecosystem, and that this is a more cost effective, secure, reliable, resilient, and feasible solution than broad electrification. A technology-agnostic approach that preserves customer choice while still meeting Maryland's GHG emission reduction targets can provide benefits to all Marylanders. While the Company recognizes the short timelines on which MDE is working, this Plan should continue to be iterated and improved into 2024 (if need be) to be most useful to the State and all of its stakeholders and residents. Washington Gas respectfully requests that you consider the recommendations outlined above when finalizing the Plan.