



March 4, 2022

The Honorable C.T. Wilson, Chair  
Economic Matters Committee  
House Office Building, Room 231  
Annapolis, Maryland 21401

**Re: House Bill 708- Comprehensive Climate Solutions**

Dear Chair Wilson and Members of the Committee:

The Maryland Department of the Environment (MDE or the Department) has reviewed HB 708- *Comprehensive Climate Solutions*, and would like to offer a letter of information with recommended amendments (attached below).

The Department strongly supports the bill's overall objective to reduce greenhouse gas (GHG) emissions. Climate change is an urgent threat, and all levels of government and nongovernment organizations must take increasingly aggressive and balanced actions to reduce GHG emissions and increase community resilience. Maryland is a national leader in this area, realizing substantial reductions in emissions since the first Greenhouse Gas Reduction Act (GGRA) was passed in 2009, and with the Hogan administration taking bold new actions to achieve significant progress. While the Department welcomes efforts to accelerate action to combat climate change, we would like to provide information and offer some amendments to the bill as currently drafted.

*Overall*

The Department has some concerns with the language changes to existing law. The language in the 2009 GGRA and 2016 GGRA was the result of a very comprehensive process that resulted in strong environmental protection and economic growth. Those bills were agreed upon by a wide array of interested parties, including environmental advocacy groups, labor and industry representatives, state agencies, and public citizens. Some of the language changes to the existing GGRA that are proposed by this new bill would threaten the consensus underlying current state law.

The bill declares new goals to achieve a 60% reduction in statewide GHG emissions by 2032, and net zero GHG emissions by 2045. While the Department generally finds more ambitious goals to be laudable, the committee should be aware that developing a plan for Maryland to achieve those goals through state programs while still meeting the law's requirements for economic impacts will be difficult and may even be unachievable based on what Maryland can do at the state level to reduce GHGs. Such rapid reductions will require improvements in federal programs to advance new technologies and make major infrastructure investments. The Department believes that such federal action is necessary and long overdue, but when developing a state plan, the Department cannot assume federal action at that scale.

In 2020, the bipartisan, independent Maryland Commission on Climate Change (MCCC) unanimously approved a recommendation for Maryland to adopt similar ambitious GHG reduction goals. The MCCC recommended a different reduction goal for 2030 – at least a 50% reduction rather than a 60% reduction – and the same net-zero goal for 2045.<sup>1</sup> These paths are not mutually exclusive, as the goal in the GGRA sets a floor on reductions, not a ceiling. The Department has always aimed to develop plans to exceed the required reductions by as much as possible, given available technology, constraints on state authority, and the requirements in the law relating to economic benefit and other impacts.

<sup>1</sup> [mde.maryland.gov/programs/Air/ClimateChange/MCCC/Documents/MCCCAnnualReport2020.pdf](https://mde.maryland.gov/programs/Air/ClimateChange/MCCC/Documents/MCCCAnnualReport2020.pdf)

On February 19, 2021, the Department submitted its comprehensive 2030 GGRA Plan to the Governor and General Assembly. The well-documented and modeled plan advanced a portfolio of measures that would, if fully implemented, reduce Maryland's 2030 GHG emissions to approximately 50% below 2006 levels, in alignment with the MCCC's recommended 2030 goal.

#### *GHG Reduction Plan Timeline and Methodology*

The bill would require the Department to issue a proposed plan to achieve the new 2030 GHG reduction goals by June 30, 2023, followed by a final plan by December 31, 2023. In addition to the 2030 GHG reduction goals, the final plan would also require the Department to set the state on a path toward net-zero by 2045 by the end of 2023. The Department would like to provide feedback on that timeline. The bill's requirement for a final 2032 GHG plan following a draft by only six months does not allow for public comment and review of the numerous new mitigation programs that such a plan would need to propose, followed by material changes to program design and analysis. The Department and other state agencies would struggle to meet that deadline, as development of new mitigation programs requires significant time for research, careful analysis, and consultation among agencies and with outside experts, including other states and the MCCC. The revised 2032 GHG reduction goal would require that MDE repeat the comprehensive emissions and economic impact analysis included in the current GGRA plan process.

The bill also places some narrower methodological requirements on the GHG plan that gives MDE some concern. The provision requiring that MDE shall use the global warming potential for methane over a 20-year time horizon is problematic for at least two reasons. First, it would violate national and international GHG measurement protocols, including under the Paris Climate Agreement,<sup>2</sup> by estimating methane's impact on climate change over 20 years instead of 100 years. MDE's practice is to use the 100-year value to be consistent with national and international standards, and then supplement that with estimates using the 20-year value to understand the important near-term impacts of methane emissions. Second, developing a GGRA plan that meets a 60% reduction in GHG emissions by 2032 using a 20-year value for methane is a significant shift in the development of Maryland's plan to reduce GHGs because the 20-year value nearly triples the reported near-term climate impact of methane. The methane emissions reduction measures that would need to be identified to meet the 2030 target would be unprecedented and problematic to meet within the bounds of the current law.

Additionally, the bill requires the plan to include "specific estimates of the reductions expected from each greenhouse gas reduction measure included in the plan." Older versions of the GGRA plan did include such "measure-by-measure" analysis, but methodologies and models have advanced since then, and best practice among modelers and planners is now to analyze the effects of multiple measures simultaneously within an economy-wide modeling framework. This is due to many programs interacting with one another in fundamental ways, so they do not have independently attributable impacts. By analyzing such measures together, analysts can capture those interactive effects and correctly estimate what all measures achieve together, which is the most important question for economy-wide planning.

The bill would also require the Department to incorporate aircraft-borne estimates of methane emissions from landfills into the GGRA Plan and to require landfill operators to take various actions in response to those estimates. The Department recognizes the value of aircraft-borne estimates and continues to fund the University of Maryland's (UMD) work to gather those estimates. The Department and UMD's researchers continue to collaborate on how those estimates can improve Maryland's GHG management. However, those estimates cannot replace the facility-level estimates the Department currently uses for regulatory purposes and for the GGRA Plan. The Department requires estimates that are (1) specific to a facility and (2) annual for those purposes. Aircraft-borne measurements do not provide estimates specific to a particular landfill or other sources as they measure methane emitted from numerous upwind sources/areas, and do not provide annual estimates since they only provide snapshots in time that are heavily dependent upon immediate conditions,

<sup>2</sup> "Pursuant the modalities, procedures and guidelines (MPGs) for the transparency framework for action and support adopted by decision 18/CMP.1, Parties agreed to use the 100-year time-horizon GWP values from the Fifth Assessment Report of the IPCC (see [table 8.A.1](#)), or 100-year time-horizon GWP values from a subsequent IPCC assessment report as agreed upon by the CMA, to report aggregate emissions and removals of GHGs, expressed in CO<sub>2</sub> eq ([decision 18/CMA.1, annex, paragraph 37](#))."

including weather. The Department recently collaborated with atmospheric researchers to evaluate the linkages between top-down aircraft-based methane measurements and bottom-up GHG emission inventory methods. A scientifically defensible approach for reconciling the differences could not be identified. As written, the bill does not give the Department the ability to vet the scientific or practical suitability of the aircraft measurements.

### *Regulations*

The bill would also require the Department to adopt regulations establishing surface methane emission standards for municipal solid waste (MSW) landfills by January 1, 2023. The Department currently has regulations under development that contain some of the most stringent methane control requirements for MSW landfills in the country, while meeting federal emission guidelines. However, the Department is in the process of taking extensive stakeholder and public input on the regulations and having fully adopted regulations by January 1, 2023 may prove to be difficult due to timelines the Department has to follow in the regulatory adoption process.

### *Operational Impact of Bill Provisions*

In addition to the Department's concerns noted above, HB 708 would have a significant impact on the Department in several ways. The first impact is tied to the increase in the GHG emissions reductions to 60% from 2006 levels by 2032. Under the bill, MDE would be required to adopt the first of two new plans by December 31, 2023, adopt regulations, and implement programs that reduce statewide GHG emissions to meet these more stringent emission reduction levels. The revised 2032 GHG reduction goal would require that MDE repeat the comprehensive emissions and economic impact analysis included in the current GGRA plan process using extended contracts with emissions and economic impact modelers. As noted above, for the 2030 GGRA Plan, emissions modeling was done on an economy-wide scale, consistent with best methodological practices, and best available models. HB 708 would require that emissions reductions be calculated for each individual measure included in the plan, despite the fact that relevant measures profoundly interact with one another, so there are not any independently attributable impacts. MDE can, however, estimate theoretical independent impacts by supplementing its economy-wide analysis approach with additional modeling scenarios that each evaluate the presence or absence of individual measures. MDE recently contracted for supplemental analysis to explore the emissions impact for a limited number of the most significant programs. The Department notes that, while the supplemental analysis is useful, the bill's required measure by measure analysis is problematic due to the interactions among measures. A full analysis of every one of the dozens of measures in the GGRA Plan would be a substantial and expensive undertaking.

HB 708 would establish a new Just Transition Employment and Retraining Working Group under the MCCC to perform various tasks, including a study, provide recommendations, and a report to the Commission and General Assembly. The working group would be staffed by MDE. The bill would also modify § 1-701 and § 1-702 of the Environment Article to require the Department, in consultation and coordination with the Commission on Environmental Justice and Sustainable Communities (CEJSC), the Maryland Department of Health, Maryland Department of Labor, and Maryland Department of Planning to recommend a methodology to identify communities disproportionately affected by climate change; develop specific strategies to address environmental justice concerns, reduce emissions of GHGs and co-pollutants; build climate equity and resilience within disproportionately affected communities; and establish goals for the percentage of state funding for GHG emission reduction measures that should be used for the benefit of disproportionately affected communities. The Department would be required to solicit input from all segments of the population that will be impacted by the policies developed. MDE would be required to submit a report on these requirements by December 31, 2023 to the MCCC and the General Assembly. Both the MCCC and CEJSC are volunteer bodies with other responsibilities, so the majority of the work required under this bill would be performed by MDE. The bill would also require MDE to perform an annual analysis of spending by all state agencies on GHG reduction programs, including an evaluation of the portion of spending that benefits disadvantaged communities, according to criteria established.

The amount of information needed is significant and widely varying and would involve a high level of analytical complexity for MDE staff. Though the Department currently has adequate and sufficient staff and resources to conduct its mission effectively and efficiently, any additional legislatively-mandated program or regulation, such as this, could

hamper our efficiency, force us to divert resources away from current core competencies, and could disrupt customer service and/or diminish services.

Thank you for your consideration. MDE is willing to discuss the amendments offered more in depth with the sponsors and advocates as the Department believes they would be beneficial to the state. We will monitor HB 708 during the committee's deliberations, and I am available to answer any questions you may have. Please feel free to contact me at 410-260-6301 or at [tyler.abbott@maryland.gov](mailto:tyler.abbott@maryland.gov) .

Sincerely,

A handwritten signature in black ink, appearing to read "Tyler Abbott", with a stylized flourish at the end.

Tyler Abbott

cc: The Honorable Kumar P. Barve, Chair  
George "Tad" Aburn, Director, Air and Radiation Administration  
Mark Stewart, Manager, Climate Change Program

## MDE Amendments to HB 708- Comprehensive Climate Solutions

MDE added language in CAPs and blue font

### Amendment 1: Clarify targets as net emissions targets.

1) **Insert** “net” in each instance of “statewide **NET** greenhouse gas emissions.”

### Amendments 2-3: Identify a potential pathway to achieve a 60% reduction in net emissions by 2032.

2) In § 2–1204.1 **Amend**: “The State shall reduce statewide **NET** greenhouse gas emissions by [40%] **60% AT LEAST 50%** from 2006 levels by **2030**.”

3). In § 2–1205(b)-(c) **Amend**: “On or before [December 31, 2018] **JUNE 30, 2023**, the Department shall: (1) Submit a proposed plan that reduces statewide **NET** greenhouse gas emissions by [40%] **60% AT LEAST 50%** from 2006 levels by 2030 **AND IDENTIFIES A POTENTIAL PATHWAY THAT REDUCES STATEWIDE NET GREENHOUSE GAS EMISSIONS BY 60% FROM 2006 LEVELS BY 2032** to the Governor and General Assembly; and “The Department shall, on or before December 31, [2019] **2023**, adopt a final plan that [reduces]: (I) **REDUCES** statewide **NET** greenhouse gas emissions by [40%] **60% AT LEAST 50%** from 2006 levels by 2030; **AND (II) IDENTIFIES A POTENTIAL PATHWAY THAT REDUCES STATEWIDE NET GREENHOUSE GAS EMISSIONS BY 60% FROM 2006 LEVELS BY 2032**.”

### Amendments 4-7: Keep Maryland in compliance with national and international greenhouse gas accounting standards.

4) In § 2–1205(E)(3) **Strike**: “**SHALL USE THE GLOBAL WARMING POTENTIAL FOR METHANE OVER A 20–YEAR TIME HORIZON, AS ACCEPTED IN THE MOST RECENT ASSESSMENT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, IN ESTIMATING THE STATE’S GREENHOUSE GAS EMISSIONS REDUCTIONS.**”

5) In § 2–1205(E)(5) **Strike**: “**SHALL INCLUDE SPECIFIC ESTIMATES OF THE REDUCTIONS EXPECTED FROM EACH GREENHOUSE GAS EMISSIONS REDUCTION MEASURE INCLUDED IN THE PLAN.**”

6) In § 2–1206(9) **Strike**: “**INCORPORATE TOP–DOWN METHANE EMISSIONS DATA ACQUIRED THROUGH AIRCRAFT OBSERVATIONS.**”

7) In §2–407 **Strike**: the entire subtitle.

### Amendment 8: Extend the timeline for regulation development.

7) In §2–408 **Amend**: “**ON OR BEFORE JANUARY 1, 2023 2024, THE DEPARTMENT SHALL ADOPT REGULATIONS ESTABLISHING SURFACE METHANE EMISSIONS STANDARDS FOR MUNICIPAL SOLID WASTE LANDFILLS.**”