June 7, 2019

Ben Grumbles, Secretary
Maryland Department of the Environment

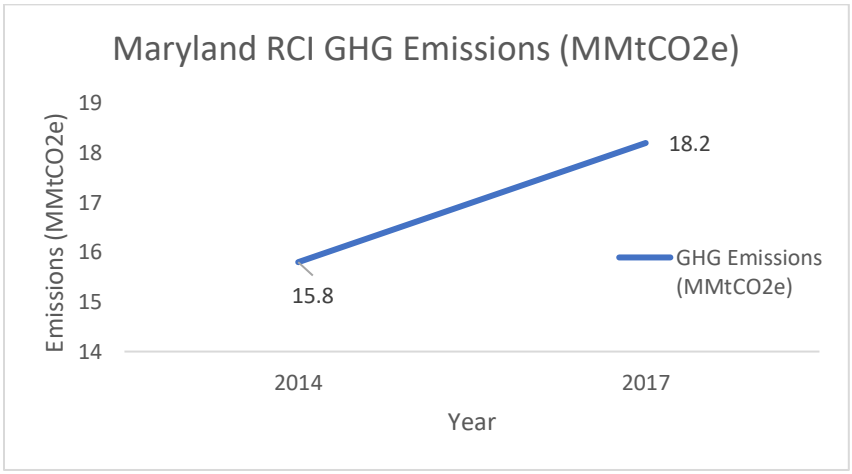
Stuart Clarke and Michael Powell, Co-Chairs
Maryland Commission on Climate Change
Mitigation Working Group

CC: Tad Aburn, Brian Hug, Luke Wisniewski

Re: Comments on fossil fuel use in the building sector and opportunities to reduce emissions from the sector to meet Maryland's Greenhouse Gas Reduction Act targets.

The Sierra Club and its over 70,000 members and supporters in Maryland appreciate the work of the state of Maryland and the Commission on Climate Change as it works to finalize and publish its Greenhouse Gas Reduction Act (GGRA) Implementation Plan. The GGRA's science-based goal of achieving 40 percent reductions of greenhouse gas emissions by 2030 from a baseline of 2006 emissions will ensure Maryland is doing its part to slow dangerous global climate disruption. As the state continues to realize reductions in the electric sector and works to develop more robust and innovative policy solutions for the transportation sector, we must more aggressively turn our attention to pollution reductions in the building sector.

According to the state's 2017 greenhouse gas emissions inventory documentation update, emissions from the Residential, Commercial, and Industrial (RCI) sector accounted for nearly a quarter of the state's climate pollution.[1] According to the state's official greenhouse gas emissions inventory published in 2016, but relying on 2014 data, the RCI sector accounted for only 17 percent of the state's emissions.[2] Of the state's three largest sectors contributing climate-altering pollution – transportation, electricity, and RCI – the RCI sector is the only space to have seen increased emissions from 2014 to 2017.



[1] https://mde.state.md.us/programs/Air/ClimateChange/Documents/2017%20GHG%20Inventory/MD2017PeriodicGHGInventory01042019.pdf
[2] https://mde.state.md.us/programs/Air/ClimateChange/Documents/2014Inventory/MD2014PeriodicGHGInventory.pdf

Looking deeper into the 2017 data for the sector data, it is clear that this increase in emissions is due to an increased use of gas as a fuel. The emissions associated with gas in the sector rose from our 2006 baseline by an additional 1.4 MMtCO2e. This increased trend in emissions from gas use in the building sector is troublesome for our climate and public health. Thankfully the state has an opportunity in the near term and over the next decade to reverse this trend and launch into a clean energy economy that pollutes less, replaces fracked gas equipment in buildings with more efficient electric options, and puts thousands of Marylanders to work.

Opportunities for Action

One of the earliest points of entry to solve this problem of increased emissions in the RCI sector is to address gas consumption in residential and commercial buildings – particularly focused on space and water heating, as well as cook stoves. Burning less dirty fuels in buildings by saving energy and switching to smart heating solutions - primarily heat pumps and induction stoves - will save families and businesses money, benefit public health, and grow local economies. Families and businesses are not fully utilizing all opportunities to increase efficiency and there are many barriers to the widespread deployment of energy-saving smart heating technologies, including financial disincentives, a lack of supportive policies, and consumer awareness.

As we have recommended for other states and cities in the Mid-Atlantic and Northeast, Maryland should establish emission reduction goals specifically associated with the building sector, utilizing heat pump and induction stove deployment targets as supportive benchmark metrics. Goal-setting for emission reductions in the sector combined with technology deployment targets will help the state better account for the success of programs and better differentiate the reductions associated with state actions versus market influences. These emission reduction goals and heat pump and induction stove benchmarks should be tied to meeting or exceeding our overarching Greenhouse Gas Reduction Act goal of 40% reductions below 2006 levels by 2030. To help meet those emission reduction goals and technology reduction targets, the state should be focused on the following key near-term strategies in the residential and commercial building sectors:

- Ending new gas hookups for new construction
- Developing and implementing policies and programs that result in replacement of gas-burning heating and cooking equipment with efficient electric alternatives in existing residential building stock – with a focus on deployment of clean alternatives in overburdened and underserved communities
- Establishing a PSC docket on the future of gas utilities in Maryland
- Ensuring Maryland is adopting the most aggressive building codes and performance standards

Ending New Gas Hookups for New Construction

New construction is expected to last beyond our critical climate action dates of 2030 and 2050. This means that we need our construction practices to consider the climate impacts of buildings throughout their long lifetime, including the on-site emissions associated with any fuel burning. We simply cannot lock in decades of new climate pollution emissions from our residential and commercial building stock with short-sighted gas hookup decisions. The easiest place for the state to begin our efforts to reduce emissions associated with gas in the building sector is to not make the problem worse. Every building we hook up to gas makes it harder and more expensive for families and businesses.

Maryland would not be alone in considering ending the practice of new gas hookups. The District of Columbia (DC) has cited a serious concern with, and even opposition to, a proposal from Washington Gas and Light that extends the Multi-Family Piping Program because it is designed

deploy new gas hookups in the building sector, which runs counter to the City's environmental and climate goals that require a transition away from fossil fuels.[3]

New Policies and Programs to Replace Gas-Burning Technologies & Metrics to Consider
Coupled with an initiative to halt new gas hookups, the state needs to launch a robust effort to help current gas customers transition to heat pumps, induction stoves, and other technologies utilizing clean, renewable electricity instead of harmful fossil fuels.

These efforts should focused from the outset on ensuring the benefits of investment into clean technologies are prioritized to overburdened and underserved communities, starting with affordable housing. Not only can we get dangerous and poisonous gas and fumes out, but we can improve efficiency, save money, and get the lead, mold, asbestos, dangerous wiring, and everything else threatening our families out at the same time. This requires the coordination of energy and housing assistance programs with efficiency and electrification retrofits.

One of the most critical steps to ensure this transition in buildings will involve a re-visioning of our highly successful energy efficiency programs in the state. We must ensure that our regulatory and policy structures incentivize the switch from gas furnaces to efficient heat pumps. First, we need to make sure that EmPOWER no longer provides incentives for new gas equipment. That means that we need to end EmPOWER subsidies and incentives for gas equipment and technology upgrades, even for efficiency gains in the gas sector. The resources that currently promote additional investment in gas technologies would be better spent incentivizing fuel switching from gas to electric heat pumps, induction stoves, and other efficient and clean appliances. Similar to ending new gas hookups in the new construction industry, ending incentives from EmPOWER that encourage the purchase of new gas-powered equipment and transitioning those resources to electrification opportunities offers another important opportunity to avoid locking in more fossil fuel use and greenhouse gas emissions.

EmPOWER needs to continue as a leading climate action policy. However, as we continue to broaden our emissions reduction needs, our landmark energy efficiency program needs to be more clearly tied to our climate action policies. EmPOWER cannot remain a kilowatt-hour-focused program; Maryland needs to ensure our conservation programs are resulting in and measuring greenhouse gas efficiency and reductions as well as energy consumption reductions, across electricity and on-site consumed fuels. These metrics can be included in cost effectiveness testing within the EmPOWER program by valuing the avoided cost of carbon.

Future of gas utilities in Maryland
As a condition of the Exelon-PHI merger, Maryland's Public Service Commission (PSC) recently led a public conference on grid modernization, resulting in the creation of various spaces for innovative policy thinking, significant stakeholder engagement, and a variety of Orders aimed to better prepare Maryland for a cleaner, more equitable, and more distributed electric grid. Much work is needed to further develop and implement many of the recommendations from participating stakeholders, but the proceeding serves as a potential model for exploration of further evolutions of our regulated industries in the state. We believe that the PSC should open a docket to investigate the consistency of the gas regulatory environment with our state climate action policies like the Greenhouse Gas Reduction Act.

Our current gas regulatory systems are, ultimately, incompatible with reaching our 2050 climate targets because they are inherently built to distribute climate-altering fossil fuels for consumption.

[3] https://edocket.dcpsc.org/apis/api/filing/download?attachId=84274&guidFileName=09bd0174-7a44-4d90-a578-e20b1f2ec733.pdf

We have approximately thirty years to eliminate fossil fuel consumption; however, infrastructure investments within our gas regulatory systems are built to last beyond that timeframe. We risk locking our state into decades of additional and unnecessary greenhouse gas emissions due to our current regulatory environment. We must begin establishing new rules for the gas industry in Maryland, including thorough quantification of methane leaks in existing infrastructure, requiring competitive "non-pipes alternatives" like heat pumps and induction stoves in proposed infrastructure investments, and depreciating any assets included in such competitions consistent with the state's climate policies and 2050 goals. Our electric utilities should be required to offer seasonal time of use rates that lower consumer operating costs for heat pumps, while minimizing the impact of this new load on the grid.

These evolutions of our regulated gas and electric markets are critical to meeting our climate goals and will take time and extensive stakeholder discussions. Maryland would not be alone in starting these conversations – these concerns with the structure of the regulated gas industry's inconsistency with climate targets have been raised in utility commission proceedings and rate cases in DC, New York, and Philadelphia. We must start now with an open PSC docket on the future of the regulated gas industry in the state.

Building Codes and Performance Standards

Maryland has historically adopted leading building codes and required high performance from our building stock; however, those efforts have still resulted in an increase in emissions from the RCI sector. We must be more aggressive in our codes and performance standards, with a particular eye toward driving out gas consumption.

In this space, Maryland must

- Establish a clear plan to regularly adopt the newest, highest standard codes that lead us to net-zero all-electric energy building codes for new construction by 2030
- Evolve programs from implementing energy based requirements to greenhouse gas emissions based requirements
- Require "Ready" codes for air-source heat pumps, behind the meter solar, electric vehicles, batteries, and grid interactivity
- Lean into equitable solutions by adopting advanced codes for public buildings, including public multi-family house construction
- Implement electric-only Stretch codes
- Adopt building energy use, benchmarking, labeling, and disclosure ordinances for government owned/operated buildings, and eventually for large commercial and residential buildings
- Adopt minimum building performance standards for existing buildings for government owned/operated buildings, and eventually for large commercial and residential buildings

As with many of the other recommendations in this letter, Maryland would not be acting alone in moving forward more ambitious codes and performance standards. In fact, New York City[4] and DC[5] have made national headlines for moving forward with building performance standard ordinances. The Northeast Energy Efficiency Partnerships[6] have created numerous resources tracking building code adoption and performance standard adoption for the region, and may serve as an excellent resource for Maryland to lead in the codes and standards space.

[4] https://laws.council.nyc.gov/legislation/int-1253-2018/

[5] http://lims.dccouncil.us/Legislation/B22-0904?FromSearchResults=true

[6] https://neep.org/sites/default/files/Project%20Brief%20-%20Building%20Energy%20Codes%20%26%20Benchmarking.pdf

Co-benefits of building electrification
As the state pushes gas out of buildings, we will see more than climate pollution reductions. In many cases homes and businesses will need to be rewired and new appliances installed. That rewiring can also support rooftop solar and electric vehicle charging stations needed to reduce climate pollution from power plants and motor fuels. The state will need more experienced construction workers of many types, particularly electrical workers, and should work with the members of the North American Building Trades Unions to fund appropriate training and apprenticeship workers. The opportunity is here, now, to pair the necessary growth in the clean energy economy with local, family-sustaining, union jobs.

Further, eliminating point-sources of pollution within our homes and businesses will have a measurable impact on public health. Gas stoves are noted as contributors to poor indoor air quality, emitting nitrogen dioxide and ultrafine particles.[7] A study published in ScienceDirect even found that, without proper ventilation, moderate use of a gas-burning stove indoors can result in nitrogen dioxide levels that exceed outdoor ambient air quality standards.[8] Induction stoves provide a tangible, clean alternative to gas stoves and are an exciting technology that Maryland should be incentivizing.

Conclusion
Taking these steps in an equitable way requires mobilization and market transformation. We can put a stop to climate pollution, people being threatened by gas explosions, and children being poisoned by leaks, fumes, lead, mold, and more. We can save money and create thousands of family-supporting jobs by moving our buildings off gas and other dirty fuels to clean, renewable electricity over the next few decades. But we need to start now, by not making the problem worse with new gas hookups and by creating policies and programs to transition our existing building stock.

We look forward to continuing this conversation with the Maryland Department of the Environment and the Maryland Commission on Climate Change and appreciate your attention to this letter. Please do not hesitate to reach out if you have any questions regarding the information or recommendations in contained in this letter.

Respectfully,

David Smedick
Campaign and Policy Director
Sierra Club Maryland Chapter

[7] https://scopeblog.stanford.edu/2018/03/06/use-your-range-hood-for-a-healthier-home-advises-indoor-air-quality-researcher/
[8] https://www.sciencedirect.com/science/article/pii/S036013231730255X