

Mitigation Working Group Summary

November 19th, 2019

Members: Ben Grumbles (chair), Michael Powell (chair), Chris Hoagland, Tom Ballentine, Susan Payne, Elliott Campbell, David Smedick, Elizabeth Bunn, Arjun Makhijani, Drew Cobbs, Colby Ferguson, Colleen Turner

Attendees: Joanne Ivancic, Paul Berman, Don Goldberg, Bruce Ho, Ken Choi, Bihui Xu, Nicholas Wetzler, Luke Wisniewski, Jeff Silva, Drew Budelis, Eddie Pounds, John A Mosheim, Cindy Osorto, Erick Thunell, Chris Beck, Scott Zaharcko

On the Phone: Tom Walz, Lisa McNeilly, Larry Liebesmann, Michael Siren, Ian Ullman, Tory Clarke, Paul Pertunsky

After a brief introduction from Chris Hoagland, the MWG dove right into the public comment period.

- Paul Berman quoted a report of UMCES and Don Bosch and asked that his comments be included in the record. He stated that it was difficult to track changes over time. He stressed that we need to look forward and make addressing climate change “a central part of governing”.
- Don Goldberg was concerned with the draft GGRA report, specifically citing that it “doesn’t seem to reflect the urgency of climate change.” He recognized that Maryland is a small state and that reductions here may not be much in the grand scheme, but hoped that Maryland would be a leader and mentor to other states in the overall effort to mitigate climate change.
- Jeff Silva echoed his concerns from the full commission meeting, mentioning the climate emergency declaration signed by over 11,000 scientists worldwide. That document is available [here](#).
- David Smedick first pointed to the letter he sent to MDE and asked about the public hearings for GGRA Outreach. Both of these were distributed and are available on our site [here](#). He then implored the MWG to start thinking about what the coal plants will do as they are phased out – the “bare minimum” would be to start asking these asking these difficult questions now. Plant owners should submit a plan for phase out. Specifically, what are their plans moving forward? May need to adopt a new policy to phase out coal.

The draft GGRA plan discussion began in earnest after the public comment.

Colby Ferguson began the conversation with concerns for agriculture. He mentioned that Healthy Soils seemed to be the only agriculture-related initiative in the plan, and was concerned that agriculture may be driven out of business before healthy soils really came into play. He suggested the Transportation Climate Initiative (TCI) as a possible way to help the industry. However, this is not possible at the current time because TCI only covers on-road; non-road is already exempt from federal tax. On this note, there will be a TCI workshop in Owings Mills next Monday, November 25th. Sign up [here](#).

Tom Ballentine asked what can be done about states that are not joining the Climate Alliance, and asked if MD was benefiting for the USCA. Ben responded that the USCA provides a good forum for information sharing and partnerships. Our proposed HFC regulation is an example of an initiative that MD gained insight on via USCA.

Tom asked about RGGI expansion (PA) – Ben replied that it's great for the region and the RGGI program. PA joining RGGI would likely reduce emissions leakage. MD would be less isolated border-wise.

The meeting moved forward into discussion on our approach for reaching our goals. The two main ideas were (1) that we would make a specific plan with the technologies we currently have (largely aiming for renewables and biofuels) versus (2) creating a plan for the upcoming years and early goals, while trying to leave room for new technologies to emerge in the future. From the ensuing discussion, Chris Hoagland reiterated that we're trying to use both of these methods in our approach. He pointed to the supporting excel documentation in the GGRA, explaining that to get to our 2030 goals we plan to focus on renewables and biofuels, but after that the Plan leaves room for new and improved technologies.

The meeting continued on with a discussion on Equity and labor issues, echoing the concerns of the Sierra Club in regards to coal workers. Chris Hoagland pointed to the Just Transition section which was written as a starting point for all equity related issues. Powell augmented this, reminding the group that equity was written into the law and therefore has to be part of the plan.

There was a brief discussion on why biomass was not included under CARES. This was due to biomass already being accounted for RPS; CARES is aimed at things that will change.

The final conversation was on electrification. Colby Ferguson stated that if we're pushing electrification, the grid will undergo a sizable demand increase. Have we prepared for this? Hoagland responded that policy scenario 2 was specifically addressed this – it contains the math behind accounting for additional demand / heat pumps (can you help clean this sentence up?). On this topic, David Smedick proposed including a specific section to upgrade the grid as needed.

Arjun continued this topic, pointing out the need for more distribution system operators and possibly a slight revamp to the current grid. The grid as-is was designed for centrally located plants. As renewables enter the picture, we need to plan for the possibility that a significant portion of our energy will come from non-central sources. In addition, we need to carefully plan the land where we will build to capture renewable energy sources. Maryland seemingly has plenty of space, but after narrowing down due to terrain issues and/or other red flags, the actual amount of usable land is much less than expected. Measures may need to be taken to ensure renewables don't heavily disrupt or dis-service communities and workplaces.

Bihui Xu address land use issues and reminded the work group that the State is meeting 75% compact development goals and addressing RE citing issues.

The biofuels and energy discussion time was mostly used for presentation. As such, please see their presentation for more details.

Arjun Makhijani, Ph.D., President, Institute for Energy and Environmental Research

Summary: Proposed energy mix for meeting load with renewable electricity, without nuclear or fossil fuels

- 75% clean, renewable by 2030
- 100% clean, renewable electricity by 2040, actual electrons (not RECs)

Transportation: Prohibit petroleum/fossil fuel vehicle sales in and after 2035, 100% zero emission road transport by 2050

Buildings: Net zero new buildings, solar can be on or offsite: 2022 for residential, 2025 for commercial

- 40% oil and propane and 20% natural gas converted by 2030
- 80% oil and propane and 60% natural gas converted by 2040
- 100% fossil fuel buildings converted to electricity by 2050

Industrial Sector: Goal: 90% reduction in industrial petroleum use by 2050 relative to 2011, Goal: 50% reduction in natural gas use by 2050 relative to 2011

- Renewable hydrogen, made with wind and solar, can be used in place of much oil and natural gas both as fuel and feedstock.
- HFC (refrigerants) and SF₆ (electrical equipment): Adopt the EU target of a two-thirds reduction of fluorinated gases by 2030 relative to a 2014 baseline. Phase-out fluorinated gases completely by 2050.

Sequestration: Add one million tons of negative CO₂e emissions per decade via regenerative agriculture, forestry, buildings