Metropolitan Washington Council of Governments

Climate, Energy, and Environment Policy Committee

DRAFT MEETING SUMMARY: JULY 26, 2023

CEEPC MEMBERS IN ATTENDANCE

- Hon. Takis Karantonis, Arlington County (Chair)
- Hon. Sarah Bagley, City of Alexandria
- Hon. Cindy Dyballa, City of Takoma Park
- Hon. Penny Gross, Fairfax County
- Hon. Tom Osina, City of Manassas
- Melissa Adams, Washington Gas
- Michele Blair, City of Laurel
- Amanda Campbell, City of Rockville
- Al Carr, District Department of Energy and Environment (DOEE)
- Eric Coffman, Maryland Energy Administration (MEA)
- Randy Freed, Citizens' Climate Lobby
- Danielle Freedman, Pepco
- Dawn Hawkins-Nixon, Prince George's County
- Kirk McPike, City of Alexandria
- Dale Medearis, Northern Virginia Regional Commission (NVRC)
- Naeem Mia, Montgomery County
- Scott Pomeroy, Scalable Strategies
- Jim Ponticello, Virginia Department of Transportation (VDOT)
- Julie Rosenburg, Faith Alliance for Climate Solutions
- Antoine Thompson, Greater Washington Region Clean Cities Coalition (GWRCCC)
- Luke Wisniewski, Maryland Department of the Environment (MDE)

ADDITIONAL ATTENDEES:

- Dawn Ashbacher, Frederick County
- Marc Aveni, Loudoun County
- Diana Burk, New Buildings Institute
- Valeria Carranza, Councilmember Glass' Media Assistant
- Emily Curley, Montgomery County
- Rich Dooley, Arlington County
- Michael Feldman-Wiencek, DOEE
- Molly Hesness, Fairfax County
- Michael Knapp, Montgomery County
- Audra Lew, City of Rockville
- David Lorenzo, Councilmember Glass' Legislative Assistant
- Demetra McBride, Arlington County
- Matthew Meyers, Fairfax County
- Kristin Mielcarek, Frederick County
- Lewis Morgante, Montgomery County
- Riaz Mohammed, Edison Electric Institute (EEI)
- Regina Moore, VDOT
- Adam Riedel, Arlington County
- John Sheridan, Prince George's County
- David Smedick, Rocky Mountain Institute (RMI)
- Kevin Smith, Fairfax County
- Casey Studhalter, DOEE
- Matthew Vasilakis, Building Electrification Institute (BEI)
- Brittany Whited, DOEE
- Andy Young, City of Falls Church

COG STAFF IN ATTENDANCE:

- Kelsey Boatwright, COG Environmental Programs
- Alissa Boggs, COG Environmental Programs
- Robert Christopher, COG Environmental Programs
- Maia Davis, COG Environmental Programs
- Jeff King, COG Director Climate, Energy and Air Programs
- Wyetha Lipford, COG Environmental Programs
- Tim Masters, COG Environmental Programs
- Erin Morrow, COG Transportation Planning
- John Snarr, COG Environmental Programs
- Kanti Srikanth, COG Deputy Executive Director for Metropolitan Planning
- Dusan Vuksan, COG Transportation Planning

1. WELCOME AND MEETING SUMMARY

Takis Karantonis, CEEPC Chair

Climate, Energy, and Environmental Policy Committee (CEEPC) Chair Takis Karantonis called the July CEEPC meeting to order. Chair Karantonis noted the submittal of a public comment letter to CEEPC available under meeting materials. The May CEEPC Meeting Summary was approved.

2. COMMITTEE AND MEMBER UPDATES

A. Built Environment Energy Advisory Committee (BEEAC)

Dawn Ashbacher, Frederick County

- Today's CEEPC discussion topic on building electrification is of particular interest to BEEAC, as the committee has been looking at these aggressive strategies for quite some time. In June 2020, BEEAC had its first meeting in a series called "Net Zero Emissions and Building Decarbonization". In that series, BEEAC members heard from experts like the New Buildings Institute (NBI) on the "Five Foundations of Zero Carbon Building Policies" (i.e., energy efficiency, renewable energy, grid integration and storage, building electrification, and embodied carbon). That series also included a discussion with the Carbon Leadership Forum on strategies to reduce embodied carbon in the building sector. In 2021, BEEAC continued looking at building decarbonization with a panel on "Moving Beyond Code". NBI discussed their decarbonization code overlay for building electrification. NBI also has model decarbonization code language for existing buildings which BEEAC has not engaged yet but hope to at some point.
- Now that some jurisdictions have building electrification language in their climate action plans, BEEAC is looking at the grid implications. In June 2023, BEEAC had their first meeting in a series on grid integration called "Energy Transition, Building Integration, and the Future of the Electric Grid". BEEAC's second meeting in the gird series is scheduled for November 16, 2023, when they hope to engage NBI again on their GridOptimal® Buildings Initiative, which are a standardized set of metrics that measure and quantify a building's contribution to the grid.
- In September this year, BEEAC and the Regional Electric Vehicle Deployment (REVD) Working Group will collectively look at zoning and building codes as it relates to electric vehicle (EV) charging.

B. Air and Climate Public Advisory Committee (ACPAC)

Maia Davis, COG Environmental Programs, on behalf of Era Pandya, ACPAC Chair

- The 2023 Climate and Energy Leadership Awards Campaign concluded on June 30, and COG staff are excited to report that 17 applications were submitted: six in the government category, seven in the non-governmental organization category, and four in the education category. ACPAC met on July 17 to review and judge the applications. The final scoring process will conclude by early August to select the three winners. The winners will be announced at the October COG Board meeting, which is expected to be an in-person meeting.
- The next ACPAC meeting is September 18, 2023.

C. Regional Electric Vehicle Deployment (REVD) Working Group

Robert Christopher, COG Environmental Programs, on behalf of Virginia Burke, MDOT

- The Local Jurisdiction EV-Ready Checklist has been published on COG's EV Clearinghouse. This checklist serves as a tool for local governments and stakeholders to assess and enhance their

community's readiness for EV adoption. It covers best practices, examples, and resources in the areas of community planning, zoning, building codes, permitting and inspections, government fleets, public outreach and public safety and security. The checklist is a resource to assist COG members with EV deployment strategies.

- The Regional Electric Vehicle Infrastructure Implementation Strategy has been launched. This strategic document provides a roadmap for the development of an extensive and reliable EV charging infrastructure network throughout the COG region. The strategy will include:
    1. County and regional EV ownership projections for 2030, 2035, and 2045;
    2. An EV infrastructure needs assessment interactive map; and
    3. A report with an overview of regional EV deployment implementation, as well as a snapshot for each county detailing county projections for EVs and priority areas for EV infrastructure deployment.
- COG members are encouraged to leverage the resources available through the EV Clearinghouse, use the EV-Ready Checklist to assess and enhance EV readiness, and participate in the implementation of the Regional Electric Vehicle Infrastructure Implementation Strategy.

D. Greater Washington Region Clean Cities Coalition (GWRCCC)

Antoine Thompson, GWRCCC

- GWRCCC is working on a fleet equity guide as it relates to fleet electrification. This guide will be released at GWRCCC's Annual Conference on October 4, 2023. The Annual Conference will include a ride and drive, a procurement expo, and a number of panels. There will be roundtable discussions on various topics including accelerating biofuel use and vehicle electrification in the metropolitan Washington region.
- GWRCCC has received federal funding to provide apprenticeship work and technical training as part of workforce development in the vehicle electrification transition.
- CEEPC members that are offering workplace charging are encouraged to reach out to GWRCCC, as they are seeking to recognize people and organizations that are doing this in the region.

E. Recycling Committee

Adam Riedel, Arlington County

- The Recycling Committee met last week to discuss the topic of construction and demolition (C&D) waste. They heard from several presenters about the national state of C&D recycling.
- At the end of June, the committee concluded their annual Go Recycle Campaign, which is a $70,000 media campaign to promote good recycling behaviors across jurisdictions in the region.
- The next Recycling Committee meeting is September 21, 2023.

3. ASK THE EXPERTS: BUILDING ELECTRIFICATION

Matthew Vasilakis, Managing Director, Building Electrification Institute
Diana Burk, New Buildings Institute Project Manager, Zero Carbon Building Codes
David Smedick, Rocky Mountain Institute Manager, Carbon-Free Buildings

Building electrification experts from Building Electrification Institute (BEI), New Buildings Institute (NBI), and Rocky Mountain Institute (RMI), were available to answer CEEPC members' building electrification questions. NBI and RMI have building electrification/decarbonization studies/reports posted under meeting materials. Reports cover policy, codes, economics, and costs.

Q&A:

1. With regard to the electrification of older, smaller multifamily buildings:
    a) How much and what kind of rehabilitation work needs to be done before electrification related work can proceed in this type of building?
    b) What are effective ways of reaching smaller building owners and tenants?
    c) Are there any program models, especially for smaller communities?

    - *Matthew Vasilakis (BEI)* emphasized the complexity of the issue and the need for regional one-stop shops to facilitate electrification projects. He suggested partnering with neighboring cities to pool resources and create programs and accelerators that offer information on building types, contracting ecosystems, incentives, and case managers to guide community members through the process. The goal is to reduce administrative burdens and provide a starting point for building owners. Matthew also highlighted the importance of understanding the nuances of each local jurisdiction to tailor the programs effectively. Funding at the local, state, and federal levels is crucial to support these initiatives.
    - *David Smedick (RMI)* offered examples of successful one-stop shop programs, such as the Built to Last program in Philadelphia, where over 20 funding streams were consolidated into a single portal. He also mentioned Maryland's recent announcement for a retrofit program that will address health and safety issues, energy efficiency, electrification of appliances, and energy assistance. David encouraged local, state, and regional governments to leverage the influx of federal funding and explore opportunities for combining different funding streams to facilitate more comprehensive retrofits.
    - *Diana Burk (NBI)* proposed two approaches to address electrification in smaller multifamily buildings. Firstly, strong building codes are crucial to ensure that new buildings are energy-efficient and electrified from the start. Secondly, targeting existing buildings during renovation and retrofit projects is a great opportunity for electrification. Diana specifically recommended encouraging the replacement of fossil fuel equipment with electric alternatives, such as heat pump units to replace air conditioning units.

2. What are model building codes for electrification? And what are cost-effective options for large buildings with natural gas boilers? This was asked with reference to one of Frederick County's buildings that is 200,000 square feet and it would take something like 75 heat pumps to replace the relatively new gas boiler.

    - *Diana Burk (NBI)* highlighted NBI's Building Decarbonization Code, which focuses on energy efficiency, electrification, renewable energy, and grid integration. Additionally, the upcoming edition of the International Energy Conservation Code (IECC) will have optional appendices for electric-ready requirements in commercial buildings and all-electric buildings in residential areas. Additionally, NBI have produced a Montgomery County Codes Analysis.
    - *David Smedick (RMI)* acknowledged that large buildings with natural gas boilers present significant challenges for electrification. While solutions exist and Europe has made progress with large heat pumps and industrial applications, the process requires further research. The European Heat Pump Association has valuable resources and case studies to share. Additionally, David suggested exploring clean energy project tax credits offered by the Inflation Reduction Act (IRA). There is a 30 percent tax credit for clean energy projects, including geothermal systems. However, each building's unique characteristics must be considered, and the electrification of large buildings remains a tough nut to crack.

3. How can localities effectively retrofit low-income housing while building trust within the community? And how can localities ensure affordability after retrofitting low-income housing? After retrofits, the housing might become unaffordable for tenants, especially if working with landlords who may increase the rent due to the improved amenities or energy efficiency.

    - *Matthew Vasilakis (BEI)* suggested starting conversations with the communities to understand their specific situations, daily pressures, and concerns. By addressing their immediate needs and showing how energy efficiency retrofits can improve their quality of life, reduce energy costs, and provide a healthier living environment, trust can be built. Community co-creation and collaboration were highlighted as essential elements to shape policies and programs that receive complete buy-in from the community. Matthew recommended face-to-face conversations, working with community-based organizations, and empowering community members to become champions for the initiatives. BEI has helped the District of Columbia assess the potential impacts of building electrification for its low-income communities, including impacts to public health and safety, climate resiliency, housing and energy costs, and economic development. BEI is working with the National Housing Trust on community engagement in several cities too. Find more resources here.
    - *David Smedick (RMI)* suggested working on tenant protections post-retrofit to ensure that rents do not skyrocket and gentrification is minimized. He mentioned federal requirements and guidelines through the U.S. Department of Housing and Urban Development (HUD) and the U.S. Department of Energy's Weatherization Assistance Program that have reporting requirements from landlords who receive upgrades. David also referred to examples from California and Maryland, where tenant protections are included in the low-income housing tax credit program, suggesting that local governments could adopt similar measures to ensure affordability after retrofits.

4. What can building owners do to better manage the complexity involved with high efficiency electrical systems?

    - *Diana Burk (NBI)* emphasized the importance of facilities managers being knowledgeable about high efficiency electrical systems' operation to ensure optimal performance and utility bill reductions. Two key actions recommended are commissioning the systems when first installed to ensure proper functioning and retro-commissioning existing buildings to verify their operation. Adequate funding and staff for operation and maintenance were highlighted as essential elements often overlooked, especially compared to construction funding.
    - *David Smedick (RMI)* built on the first response and suggested an interesting opportunity in the electrification space: workforce development and training for facilities managers. He stressed the need for specialized training to equip facilities managers with the knowledge and skills required to handle new efficient electric systems effectively. David encouraged accessing state, local, and federal funding to create programs focused on training facilities managers on these systems. Such initiatives would contribute to the overall decarbonization efforts and ensure a systemic approach to managing these systems in buildings.

5. With regard to electrification readiness, what are best practices to ensure that new buildings that wouldn't "pencil-out" for full electrification today, are electrification-ready / retrofittable without major obstacles? Affordable housing residential construction is a typical case.

    - *Diana Burk (NBI)* provided examples of electric-ready measures for smaller equipment like stoves, closed dryers, and water heaters, which involve ensuring the availability of

appropriate electrical outlets and space for air circulation for heat pump water heaters. For larger equipment like boilers in commercial buildings, the focus is on ensuring the electrical capacity to power heat pumps and having sufficient space for future heat pump installations. While smaller systems are easier to make electric-ready, larger systems require more careful consideration, and the readiness depends on the building's design and space availability.

- *Matthew Vasilakis (BEI)* suggested using an electric-ready checklist that the administration can use to verify a building's preparedness for electrification. Such a checklist can ensure that all necessary measures have been implemented, and it can be used by developers to demonstrate their readiness for electrification, offering the administration assurance that the requirements have been met. An electric-ready checklist can serve as a valuable tool to assess a building's readiness for future electrification and to ensure compliance with the necessary standards and measures.

6. With regard to power availability planning, what are some best practices for negotiating future power availability with utilities and best practices on planning for appropriately sized and located electric infrastructure?

    - *David Smedick (RMI)* highlighted the success seen with utilities in some states, such as Maryland, Virginia, as well as the District of Columbia in engaging in future planning discussions through utility commissions and dockets, often related to Climate Action Plans. These discussions involve bringing the electric utility to the table to talk about grid planning. Facilitating formal proceedings or working group discussions with utility commissioners and staff is suggested to move the planning process forward effectively. David also mentioned the importance of utility data transparency and the potential for additional requirements around utility data in federal programs.

7. What technologies are currently available for electric backup power to replace small generators?

    - *Diana Burk (NBI)* mentioned the increasing use of battery energy storage systems like Tesla's Powerwall for smaller building types. Although battery costs have decreased, they are still relatively expensive compared to diesel generators. Battery systems may not provide backup power for as long as diesel generators, but they offer cleaner and more environmentally friendly solutions. Larger building types, such as hospitals, are still predominantly using diesel generators as they are required by code to provide backup power for extended periods. However, some hospitals may consider using battery energy storage systems in conjunction with diesel generators to reduce the time the generators need to be operational during power outages.

8. In Virginia, the utility, Dominion Energy, is projecting very high load growth over the next 15 years due to rapid growth in new data centers and transportation electrification. This growth in demand is making it harder to retire fossil fuel plants in the utility's generation mix. If this region accelerates building electrification, could this inadvertently make it harder to decarbonize the grid?

    - *Diana Burk (NBI)* emphasized that while there is a high demand for electrical capacity due to the growth in EVs and building electrification, it should not deter the adoption of electrification. Building electrification and EVs are essential for reducing carbon emissions and transitioning to a cleaner energy future. She referenced RMI's analysis showing that replacing furnaces with heat pumps in all 48 states would lead to emission reductions with the current grid. She highlighted that heat pumps are three times more efficient on average

than electric resistance heat, resulting in reduced carbon emissions when transitioning to heat pumps for space heating or water heating. The Department of Energy's new appliance efficiency standard will transition the market to heat pump water heaters soon. Additionally, Diana suggested that utilities should consider taking advantage of new federal tax incentives to invest in renewable energy capacity instead of fossil fuel plants.

9. What are the primary criteria for high-performance/cost-effective deployment of geothermal systems in building design and operation; and what are the primary limitations? And what "scale" is needed for geothermal to be practical?

    - *Diana Burk (NBI)* noted that air source heat pumps are becoming popular due to their efficiency and ease of retrofitting in existing buildings. Geothermal systems require digging, which can be costly, but there is a new tax credit available for them, and they are also efficient. Both types of systems should be considered for building heating and cooling.
    - *Michael Feldman-Wiencek (DOEE)* added that the DC Housing Authority will be retrofitting one of their larger historic properties with ductless water-source heat pumps (similar to standard fan-coil units found in a central boiler/chiller setup) for in-unit heating/cooling and central water-to-water heat pumps for domestic hot water. Both systems will utilize geo-exchanged water loops and are projected to be efficient enough to enable the property to be net zero with on-site solar. This solution works for a large site. Further exploration would be needed to achieve something as effective for a smaller urban site.

10. What are the equipment cost and electrical requirement assumptions to convert and electrify an existing gas-fueled home (currently operating with furnace, hot water, cooktop, dryer), along with a Level 2 EV charger?

    - *Diana Burk (NBI)* explained that converting an existing gas-fueled home to electric requires consideration of the electrical panel's capacity. Upgrading the panel may not always be necessary, as there are smart panels and circuit breakers that allow systems to share loads. Calculating the panel capacity can be done using conservative estimates or by analyzing existing electric bills to determine actual usage. IRA provides incentives for rewiring homes and electric panel upgrades, making the retrofit potentially less expensive with federal funding available.
    - *David Smedick (RMI)* suggested that localities should consider not only the costs of retrofitting existing buildings to electrify them but also the future costs of maintaining fossil fuel systems for those buildings that remain on them.

4. U.S. EPA PROPOSED POWER PLANT RULE

Riaz Mohammad, Edison Electric Institute Director, Resiliency and Environmental Policy

On May 11, 2023, EPA issued proposed Clean Air Act emission limits and guidelines for carbon dioxide (CO2) from fossil fuel-fired power plants based on cost-effective and available control technologies. Riaz Mohammad reviewed the proposed rule for new and existing gas units, as well as existing coal units, which are divided into subcategories based on retirement dates. The standards include requirements for carbon emissions reduction, hydrogen blending, and carbon capture. Riaz highlighted potential legal issues related to the adequacy of technology demonstration and the feasibility of hydrogen blending and carbon capture. Additionally, the phased approach and identical standards for new and existing gas units raise questions about EPA's statutory authority. On the technical side, challenges with infrastructure, pipeline capacity, and raw materials for hydrogen production were noted. Overall, stakeholders are still grappling

with the proposal's effectiveness and feasibility. Comments on EPA's proposed rule are due on August 8, 2023.

Discussion:

- Given the technical complexities and the limited time before the comment deadline, CEEPC will not submit comments on this rulemaking. COG staff will continue to track the proposed rule.

5. ADJOURN

Takis Karantonis, CEEPC Chair

Chair Karantonis adjourned the meeting. Upcoming CEEPC meeting dates for 2023 include:

- Wednesday, September 27, 2023 – in person with virtual option
- Wednesday, November 15, 2023 – virtual only

All meeting materials including speaker presentations can be found on the COG website or by clicking the link below –
https://www.mwcog.org/events/2023/7/26/climate-energy-and-environment-policy-committee/