



BUILT ENVIRONMENT AND ENERGY ADVISORY COMMITTEE (BEEAC)

Draft Webinar Meeting Summary: June 18, 2020

BEEAC Members in Attendance:

Gina Mathias, City of Takoma Park (Chair)
Bill Eger, City of Alexandria (Co-Vice Chair)
Dawn Ashbacher, Frederick County
Erica Bannerman, Prince George's County
Mati Bazurto, City of Bowie
Maya Dhavale, Fairfax County
Stan Edwards, Montgomery County
Ellen Eggerton, City of Alexandria
Jenn Hatch, DOEE
Adriana Hochberg, Montgomery County
Dale Medearis, NVRC
Kevin Milsted, Prince William County
Luisa Robles, City of Greenbelt
Najib Salehi, Loudoun County
Tim Stevens, City of Falls Church
Kate Walker, City of Falls Church

Additional Attendees:

Ben Butterworth, Cadmus Group
Kim Cheslak, New Buildings Institute

Akosua Dosu, Prince George's County
Cameron Duncan, Prince George's County
Lisa Goldberg, City of Alexandria
David Kaiser, City of Alexandria
Mathew Lee, Cadmus Group
William Marsh, Fairfax County
Elissa McDade, WMATA
Bala Srini, Above Green
Kudret Utebay, Cadmus Group

COG Staff:

Leah Boggs, COG DEP
Maia Davis, COG DEP
Kris Drummond, COG DEP
Katie Dyer, COG DEP
Jeff King, COG DEP
Tim Masters, COG DEP
Stephen Walz, COG DEP



1. CALL TO ORDER AND INTRODUCTIONS

Gina Mathias, City of Takoma Park (BEEAC Chair)

Chair Gina Mathias called the meeting to order.

2. NET ZERO ENERGY SERIES: NET ZERO EMISSIONS AND DECARBONIZATION

Kim Cheslak, New Buildings Institute

The New Buildings Institute (NBI) is a non-profit organization pushing for buildings that achieve zero energy and zero carbon. Their work is centered on five foundations to get to a zero carbon buildings future. These foundations are energy efficiency, renewable energy, grid integration and storage, electrification, and embodied carbon (achieving net zero carbon requires that these foundations are focused on in the order listed above). They use the US DOE definition of zero energy: “A zero energy building combines energy efficiency and renewable energy generation to consume only as much energy as can be produced onsite through renewable resources over a specified time period.” They use the following definition for zero carbon buildings: “A zero carbon building is defined as one that is highly energy-efficient and produces onsite, or procures, carbon-free renewable energy in an amount sufficient to offset the annual carbon emissions associated with operations.” Energy efficiency and renewable energy comprise the basis of net zero energy (NZE) buildings. Embodied carbon refers to the materials impact. Renewable energy, grid integration and storage, and electrification make up what is referred to as ‘operational carbon’. Net zero carbon buildings usually means buildings that are operationally SET UP to be zero carbon, but to truly be zero carbon, the grid also needs to be addressed. In the future, with a cleaner electricity grid, when and where energy is used becomes much more important. Today, the US electricity system uses inefficient fossil-fuel peaker plants to meet peak demand. The price of energy storage is falling quickly, but is projected to remain much higher than many demand-side alternatives for decades to come. As the electricity supply incorporates growing levels of intermittent renewables, demand will need to be more flexible with supply to assure grid reliability. Time of use will become increasingly important. Covid-19 is also impacting the electricity system with changing patterns in demand. There is still a peak in demand in the evenings, which means that peaker plants are required.

The COG region has adopted progressive greenhouse gas emission reduction goals. DC, Maryland, and Virginia all have aggressive Renewable Portfolio Standards (RPS) in place, while their grid mixes differ. Changing the grid mix and moving away from fossil fuels make up the primary method of lowering greenhouse gas emissions. Using buildings as grid assets will become important moving forward, with storage (whether battery storage or thermal mass heating/cooling) playing a critical part. NBI has the GridOptimal Building Initiative. The effectiveness of specific building features that support grid integration can be measured using GridOptimal building metrics. The electricity grid is also changing from a one-way system to a more distributed and interactive system; creating a need for more active grid management. GridOptimal empowers players on both sides of the meter to actively support the transition to a carbon free grid. This can be achieved through permanent efficiency, peak shifting, dynamic response, and dispatchable energy storage. Electrification is the other big piece of a shift to zero carbon buildings. The ideal form of electrification saves consumers money over the long term, enables better grid management, and reduces negative environmental impacts. NBI, in collaboration with BDC and EPRI, is working on the Building Electrification Technology Roadmap (BETR) with the goal of accelerating the development and adoption of advanced electric technologies. The fifth foundation, embodied carbon, is still in the early stages of development.

Bala Srinj, Above Green

Building codes with sector standards for energy efficient construction and operation are the cheapest, cleanest and easiest ways to push the market to a more sustainable future, while giving consumers greater financial benefit. This is also an efficient way for jurisdictions to meet net zero emissions and climate goals. With regard to state commercial energy code adoption, as of May 2020, the District of Columbia has adopted the 2017 DC Energy Conservation Code with ASHRAE 90.1-2013 along with substantial portions of ASHRAE 189.1-2014, and residential provisions of 2015 IECC (International Energy Conservation Code) and amended 2012 IgCC (International Green Construction Code). DC also has stretch codes including the DC Net-Zero Energy Program and the Building Energy Performance Standards (BEPS). Maryland has adopted 2018 IECC codes and Virginia has adopted 2015 IECC and ASHRAE 90.1-2013. Washington DC was number five of the top 10 cities according to the American Council for an Energy-Efficient Economy's (ACEEE) City Clean Energy Scorecard in 2019. Maryland was number seven in ACEEE's State Energy Efficiency Scorecard in 2019. The District was number 11, and Virginia was number 29. There is some disparity in adopted codes between different jurisdictions. For example, in Maryland there are differing codes (specifically the IECC and IgCC codes) for Montgomery County, the City of Rockville, and the City of Gaithersburg. This can present challenges to the construction industry in Maryland, as they have to take into account the changing jurisdictional codes.

Limiting global warming to less than a 1.5-degree Celsius increase requires achieving net zero buildings by 2050. The best way to support this is through required building codes. Architecture2030 developed the Zero Code, which integrates cost-effective energy efficiency standards with on-site and/or off-site renewable energy. New standards that exceed ASHRAE Standard 90.1-2016 have been incorporated into the Zero Code, such as the 2018 IgCC and ASHRAE 189.1-2017. Building Energy Performance Standards (BEPS) is the best program for existing building stock. DC has adopted this as a stretch goal, and Montgomery County is looking to adopt this too. An impact analysis of Montgomery County's adopted building codes shows that they will not reach their 2035 emissions reduction goal if they do not adopt stricter codes, alongside other strategies.

Discussion:

- Jurisdictions will have to work on BEPS and how they might apply to historic buildings in their communities, as this will be different to the majority of buildings. The goal will be to improve the energy performance of historic buildings, while preserving the historic features of these buildings. DC is in the process of rulemaking on energy standards and they are dividing out the different building segments to analyze the potential strategies for each building type. It also depends on what the historic features of the building are (i.e. the entire building versus the façade or one particular aspect of the building).
- Most jurisdictions that NBI works with will accept Passive House as an alternative compliance pathway to their building energy codes. There is also an ASHRAE committee looking at codifying Passive House language into their future standards.
- For those looking to build net positive buildings, there are some issues to think about. Depending on where you are, it may make more sense to rely on the state RPS as a source of clean energy, especially in an area like the metropolitan Washington region, where states are moving quickly toward a 100% RPS. There is a benefit to having greater utility-scale renewable energy, as it is easier to manage and easier to plan for. It is of greater importance to have a net zero grid than to have every building be net zero, although there will be a need for higher numbers of net zero buildings.

- With regard to procurement, including the site energy use intensity (EUI) target for the building in the RFP is critical, as it prevents companies that feel they cannot achieve that particular EUI from applying. This allows the procurement staff to assess applications comparably.
- DOE has its Zero Ready Homes program. In the 2021 IECC, there are “net zero ready” provisions, but they are referred to as solar- and/or storage-ready provisions.

3. JURISDICTION UPDATES AND PEER EXCHANGE ROUNDTABLE

Luisa Robles, City of Greenbelt

The City of Greenbelt recently signed a PPA with a solar company to establish a solar farm within the City’s grid. This will offset over 80% of their municipal electricity usage.

Stan Edwards, Montgomery County

Montgomery County is in the beginning stages of developing a Climate Action Plan (CAP). They have a consultant working on this. Previously, the County had five technical workgroups that developed 850 recommendations for the County to consider. The County’s climate goals are aggressive, with a target of 80% greenhouse gas (GHG) emission reductions by 2027, and 100% by 2035. The County believes the 2030 regional emissions goal should be higher than 50%, but understand the challenges of this. Additionally, the County is looking at strategies for buildings to achieve net zero energy targets.

Erica Bannerman, Prince George’s County

Prince George’s County Council approved a resolution for the County to establish a Climate Change Commission. This Commission will be responsible for developing their CAP, which will include aggressive goals to help the County achieve its climate adaptation and resilience objectives. A draft plan will be presented to the County Council in February 2021; a final plan will be delivered towards the end of 2021.

Mati Bazurto, City of Bowie

The City of Bowie’s Council recently approved their 2025 CAP. The plan sets a 50% reduction in GHG emissions against 2015 levels by 2030. It is likely that the City will meet that goal sooner than 2030. The City is working with Tesla on a solar farm project. This may incentivize a more aggressive goal for 2030. The City’s CAP will focus on three areas: City/government, residential, and commercial. The City of Bowie wants a goal that is more aggressive than 50% by 2030.

Dawn Ashbacher, Frederick County

Frederick County is looking into how to best proceed with regard to a CAP. The County has a long history of taking practical steps toward climate action; they have had one of the longest running LMI energy efficiency programs in Maryland. The County Executive has also recently proposed a forest resource ordinance to conserve the County’s forest cover. Since the County is still in conversations regarding their CAP and 2030 regional emissions goals, it is difficult to suggest a feasible goal at the moment.

Bill Eger, City of Alexandria

The City of Alexandria has a CAP dating back to 2011. Subsequently, the City passed its Environmental Action Plan 2040 update and is calling for an update of the 2011 CAP. This will be going to the City Council this Fall. This update should be concluded in the Summer/Fall of 2021. Equity is going to be a big focus of this work. Economic development in the context of climate action will also be tied into this work. Currently, the Environmental Action Plan calls for a 50% reduction in GHG emissions by

2030, and 80-100% by 2050. The City is hoping to see a regional goal that reflects this and pushes these goals further.

Najib Salehi, Loudoun County

Loudoun County is looking at updating the County's energy strategy. Until this has been updated, it is difficult for the County to suggest emission reduction goals.

Kate Walker, City of Falls Church

The City of Falls Church has not started work on its CAP. This last year, the City has finished its Environment chapter for the City's Comprehensive Plan. One of the goals of this is to create a CAP. As a smaller jurisdiction, the City relies on the region to a large extent. This applies to climate action, where regional goals drive a lot of the climate work in the smaller jurisdictions. The Virginia Clean Economy Act will also aid VA jurisdictions in achieving their emission reduction goals. Thus, the City is in favor of aggressive regional emission reduction goals.

Jenn Hatch, DOEE

DOEE is revising their timeline for the District's Carbon Neutrality Strategy due to Covid-19. The District's goal is to be carbon neutral by 2050. The planning process is placing more emphasis on equity and resilience. While this work is happening, DDOT is working on their Long-Range Transportation Plan: Move DC. This has not been updated for some time, and DOEE is looking for opportunities to incorporate parts of the carbon neutrality strategy into the transportation planning work. The District supports an aggressive goal for the region.

4. REGIONAL CLIMATE ACTION PLAN AND SCENARIO PLANNING UPDATE

Maia Davis, COG

COG is continuing to work on developing the 2030 Regional Climate and Energy Action Plan. In July, there will be a webinar to discuss the regional GHG emissions Business-As-Usual (BAU) and Scenario Technical Elements. After input from CEEPC's July meeting, an update will be given to the COG Board in August. Staff will be working to draft language for the plan on the mitigation strategies for BEEAC and CEEPC review in September. Also in September, COG will bring a CEEPC a draft resolution on the proposed climate goals. CEEPC would need to approve the resolution to go to the COG Board. The COG Board would then need to vote to approve. Thereafter, COG can move forward to bring the full plan to BEEAC for review in November. This would ideally be adopted by CEEPC in November. If adopted before the end of the year, COG will submit the plan to the Global Covenant of Mayors (GCoM) and the CDP global public disclosure platform for states and regions. The region is on track to be the first US region to fully meet GCoM's global standards for climate planning. If increased goals are adopted, metropolitan Washington will have the most aggressive regional GHG emission reduction goals in the country.

COG's goals include 20% GHG emission reductions below 2005 levels by 2020, and 80% by 2050. With a straight-line approach from the 2020 to 2050 goal, that puts the 2030 goal at 40% by 2030. That is the minimum bar for the 2030 plan's goal. COG is proposing that jurisdictions decide on a 40%, 45%, or 50% goal for 2030, and a carbon neutrality goal by 2050. These would be the mitigation goals, while resilience goals would include becoming a Climate Ready Region by 2030, and achieve regional resilience by 2050. There will have to be more regional collaboration in defining Climate Ready Region. Santa Monica released a plan last year and used the term Climate Ready Community, which has similar concepts to what the COG region has discussed.

Currently, the business-as-usual scenario through to 2030 shows overall emissions remaining relatively flat. Residential and commercial energy consumption increase a bit through 2030, but emissions overall remain flat due to a decrease in transportation emissions. Previously, COG brought draft scenarios that only looked at a 40% goal by 2030. Virginia's recent RPS legislation contributes to significant decreases in emissions in achieving goals. COG staff have updated these scenarios to look at what it would take to get to 50%. The core aggressive assumptions that went into the scenarios include the current Renewable Portfolio Standards in DC, MD and VA, which is the biggest contribution to emission reductions. Increased distributed generation is needed, as well as increased green power purchases. EV adoption rates would also need to increase significantly.

COG is working on the local and regional GHG inventories for 2018. Official results will only be released later this Summer. As of now, regional emissions between 2005 and 2018 looks to have dropped 12% below 2005 levels. Some jurisdiction inventories will reflect a higher reduction percentage, but regionally the metropolitan Washington area has decreased around 12% below 2005 levels.

COG has a general email address to address questions regarding the climate planning process, which is climate2030@mwkog.org.

Discussion:

- FERC has been updating some of its requirements. PJM won't allow systems that have subsidies behind them into their forward-looking bidding market, which will make it harder for renewable systems to get into that market. This would certainly have an impact on the region's ability to meet goals. What impact this has on fossil fuels that get subsidies remains to be seen.

5. COG UPDATES, NEXT BEEAC MEETING DATE AND ADJOURNMENT

Jeff King, COG

Kirsten Maynard is a marketing expert working for Waxman Strategies. One of her clients is very active on the East Coast and is involved in biogas development work. In early July, there will be a webinar on this work, and any interested participants from BEEAC are welcome to join.

Gina Mathias, City of Takoma Park (BEEAC Chair)

Chair Gina Mathias adjourned the meeting.

All meeting materials including speaker presentations can be found on the MWCOG website or by clicking the link below -

<https://www.mwkog.org/events/2020/6/18/built-environment-and-energy-advisory-committee-beeac/>

The next CEEPC meeting is July 22, 2020

The next BEEAC meeting is September 17, 2020

Reasonable accommodations are provided upon request, including alternative formats of meeting materials. For more information, visit: www.mwkog.org/accommodations or call (202) 962-3300 or (202) 962-3213 (TDD)