

Built Environment and Energy Advisory Committee (BEEAC)

Meeting Summary: April 21, 2016

MEMBERS AND ATTENDEES:

Michelle Vigen, Montgomery County (Chair)
Eric Coffman, Montgomery County
Bill Eger, City of Alexandria (Vice Chair)
Joan Kelsch, Arlington County
Jeannine Cooper, Arlington County
Ellen Eggerton, Fairfax County (by phone)
Kate Walker, City of Falls Church
Gina Mathias, City of Takoma Park (by phone)
Kristin Larson, City of Bowie
Luisa Robles, City of Greenbelt (by phone)
Jeffrey Bond, Prince George's County
Daniel Lee, WMATA
Ben Foster, ICF (by phone)
Corey Jemison, ICF (by phone)
Scott Beckman, Lightbox Energy
Paul Lanning, Lightbox Energy
Zach Dobelbower, DC Department of General Services

COG STAFF:

Leah Boggs, COG DEP
Maia Davis, COG DEP
Jeff King, COG DEP (by phone)
Isabel Ricker, COG DEP
Madison Wagner, COG DEP
Steve Walz, COG DEP, Director
Aaron Waters, COG DEP

1. Call to Order and Introductions, *Michelle Vigen, Montgomery County (Chair)*

Chair Vigen called the meeting to order and attendees introduced themselves in person and by phone. The meeting minutes from the March meeting were approved by the attendees.

2. Jurisdiction Updates

Falls Church: The City of Falls Church is currently conducting a geothermal assessment of the area around its public middle and high school campus for district energy potential. The city is also continuing work on its Solarize campaign as well as budget planning for the upcoming fiscal year.

Greenbelt: The City of Greenbelt is holding a Public Works open house on May 21 to educate citizens about green opportunities in the city. The open house will include a demonstration of LED lightbulb potential as well as a lending library with retrofit and efficiency technology for residents.

Fairfax County: Fairfax County is working to launch a new webpage for its environmental business recognition program.

Takoma Park: The City of Takoma Park will be hosting the Montgomery County Greenfest event on April 30, with EPA Administrator Gina McCarthy as the keynote speaker. The city is also installing 14 electric vehicle charging stations to bolster its electric vehicle infrastructure.

Arlington County: Arlington County will be creating an energy lending library for Earth Day in which the county will lend interested citizens technology to learn more about how to make their homes more sustainable and efficient. One such example of this technology will be thermal imagers to take infrared pictures of residents' homes to show opportunities for heating and cooling upgrades.

Alexandria: The City of Alexandria is currently in the design planning phase of the process for its eco-district. The city will also be hosting its annual Earth Day celebration with the community as well as local environmental businesses and non-profit groups.

DC: The District of Columbia is working to revamp its affordable solar program, which provides solar at no cost to income-qualified, single-family households. The district's electricity supply contract is going through renewal and will now include "rider" language, which will open up block and index supply to nearby jurisdictions. The district is also going through the process of identifying five sites to plan electric vehicle charging stations.

Bowie: The City of Bowie will be holding an Earth Day celebration with concert and video performances. The city is also in the final stages of creating its sustainability plan, which will be complete by June. Bowie is open to citizen input for its sustainability plan, and will be displaying residents' ideas in City Hall in May.

Prince George's County: Prince George's County will conduct a tree-planting effort around the city to celebrate Earth Day. The county is also increasing the focus and reach of its litter reduction and waterway clean-up programs.

Montgomery County: Montgomery County recently hosted an energy summit where it launched a solar PACE program. The county also launched the recruitment process for its Greenbank board of directors. The Greenbank is now federally tax exempt, having achieved 501(c)(3) status as an organization. Montgomery County's environmental department is also growing, with the addition of two new staff members.

WMATA: WMATA is currently in the process of finalizing its sustainability report. The association also recently awarded employee sustainability efforts for chiller efficiency upgrades and energy storage technology in batteries to capture energy from trains for reuse.

3. Draft Renewable Energy Potential Study

Ben Foster, ICF

Under the Multi-Sector Work Group (MSWG), several goals have been created to reduce emissions in the region, including a goal to reach "10% of regional electricity consumption from renewable

sources.” Based on this 10% target, ICF is working to create a better understanding of how to achieve this goal and of what it means for different sectors and localities. The scope of this study is to refine the 10% renewable energy goal (mostly focusing on solar PV) in terms of total MWh, by sector and jurisdiction, and equivalent renewable energy deployment necessary to reach the goal; as well as to provide analysis of regional renewable energy issues such as renewable energy penetration and potential, desire and opportunities, and constraints.

In order to provide support and analysis to build confidence in the 10% renewable energy goal, ICF has researched and analyzed current adoption trends and forecasts, existing renewable potential studies from COG jurisdictions, regional green power purchases (GPPs), electric utility integrated resource plans, and potential for institutional, commercial, residential, and utility sectors. Going forwards, ICF will also analyze regional economic, policy, and technical constraints to deployment, opportunities and co-benefits, and solar hot water adoption potential.

ICF has collected the region’s 2012 total electricity usage, 10% of which will be sourced from renewable energy, including on and off-site renewables, and renewable energy credits (RECs), if the target is met. ICF is analyzing the region’s installed solar capacity and the renewable portfolio standard (RPS) policies in the District of Columbia, Maryland, and Virginia, as well as within the individual jurisdictions and areas outside of the region for comparison. For this study, ICF also analyzed residential, commercial, and governmental aggregated purchasing programs, community solar potential, renewable energy incentives, distributed generation deployment, and green power purchases within the region.

Based on the research and analysis conducted in the study so far, overall renewable energy consumption accounted for nearly 10% of total electricity consumption in 2015, with utility-supplied non-hydropower accounting for about 6%, voluntary consumer GPPs contributing about 3%, and distributed generation accounting for almost 1%. By 2022, overall renewable energy consumption in the region is forecast to reach over 25% of total electricity consumption, with additional regional strategies from the MSWG contributing slightly more than 5%. ICF is also working to create these forecasts and energy breakdowns by individual jurisdiction to illustrate consumption and targets.

Moving forward, ICF will conduct further analysis on how utility renewable energy supply relates to regional goals, the retirement of distributed generation RECs, how to capture individual jurisdiction targets in the overall goal, and feasible market scenarios for deployment. ICF plans to have a draft report by May 3rd and present its final draft for CEEPC review at the May 25th meeting.

4. District of Columbia DG Solar Project

Paul Lanning, Lightbox Energy and Zach Dobelbower, DC Department of General Services

The District of Columbia has long-term energy goals of 50% greenhouse gas emissions reductions by 2032 and an 80% reduction by 2050, as well as reaching 50% renewable energy sources by 2032. In order to meet these goals, the District has several policy initiatives and projects, including a smart roof program to build 20 MW of new solar on DC facilities in three phases. This program is the District’s third power purchasing agreement and will focus on the District’s existing buildings. The

DC Department of General Services' portfolio contains 400 buildings (30 million square feet), 85% of which are equipped with advanced metering systems. In order to achieve the significant targets the District has set, roofs may be an important resource in the District's ability to reduce emissions.

Rooftop solar deployment is impacted by several factors, especially age of the roof. Older roofs can be a challenge for solar deployment, which is best suited to new and end-of-life roofs. This important factor was analyzed in the portfolio assessment to determine which facilities would provide the best solar opportunities. Based on this assessment, buildings accounting for 6.5 MW of solar are ready for phase 1 installation immediately, buildings accounting for 6.5 MW will be installed in phase 2, after undergoing some repairs, and 7 MW will be installed on buildings in the longer-term phase 3.

The DC Smart Roof Program also focuses on cool and green roofs, as well as solar deployment, allowing emissions reductions to work in tandem and create co-benefits. Smart roof construction also provides job opportunities and other economic benefits, such as the displacement of carbon emissions. Currently, solar PV installations owned by the DC government account for 13 MW of power on 50 sites and account for 7 tons of CO₂ displacement every year.

Discussion

BEEAC attendees asked about rate pricing variations for different facilities and were told that prices vary by site and bundle. Installation projects are bundled and paid for as a single portfolio. Individual site costs differ, but are aggregated and paid for under a single price rate. Attendees asked how sites were chosen and were told that DC DGS conducted a deep feasibility study to determine the best sites for solar deployment. However, not all sites were approved for solar installation, but the relative size of each project bundle was maintained by adding new sites. Attendees also asked why green roofs versus solar roofs were chosen at different facilities. DC DGS analyzed the benefit of green and solar roof installation and moved forward on installation of the technology that proved most beneficial for each site. Green roofs have been deployed at 30 sites accounting for 350,000 square feet of building portfolio. DC DGS also looked at the benefits of solar thermal installation, but lack of demand for this technology made the program focus on solar PV.

5. Montgomery County Solar and Advanced Energy Initiative

Eric Coffman, Montgomery County

The Montgomery County Solar and Advanced Energy Initiative was developed to help fulfill the county's climate protection and green economy plans. The county is required by law to deploy solar on-site and has seven existing systems, eight sites under development, and over 10 additional projects in scoping. All sites are located on public buildings and grounds and the county purchases all the energy generated from these sites.

This initiative utilizes a solar power purchase agreement and is projected to save the county \$11 million in electricity costs over the project's life. The project requires no upfront cash from the county and a third party designs, finances, builds, owns, maintains, and operates each site over a 20 year lifespan. Some examples of projects in Montgomery County include the liquor warehouse, which uses almost net zero energy, the Silver Spring Regional Services Center, the Jane Lawton Community Recreation Center, the UpCounty Service Center, the Gaithersburg Library, and the

Clarksburg Correctional Institution, which will have a significant MW capacity and potential to reach net zero energy use.

Microgrid technology will play an important role moving forward with this program, and already exists at two critical facilities. Microgrids allow for 100% electric grid independent facilities using combined solar, combined heat and power, and advanced controls, as well as providing comparable or reduced utility costs and the ability to expand.

There are challenges and risks associated with solar and advanced energy projects. The MD solar renewable energy credit (SREC) market collapse and SunEdison possible bankruptcy, as well as risk aversion from vendors and partners, impact the renewable energy market in Montgomery County. Permitting and soft costs also provide barriers to installation. A limited number of appropriate sites and facilities will also play a role in the expansion of the solar and advanced energy initiative in Montgomery County.

6. City of Bowie Solar Projects

Kristin Larson, City of Bowie

The City of Bowie has several existing, planned, and under construction solar projects. The city's Genealogy Library had 3.6 kW of solar capacity installed in 2010 under an Energy Efficiency and Conservation Block Grant issued by the US Department of Energy (US DOE). The Radio and TV Museum also had 8.82 kW of solar capacity installed in 2011 under the same grant. The Park Maintenance Facility had 30.88 kW of solar capacity installed in 2012-2013 using funds from the US DOE grant and an allocation from the city's renewable energy budget. The city's Senior Center has 15.25 kW of solar capacity, installed in 2014 with an allocation from the city renewable energy budget. The City of Bowie Streets and Utilities Building and wastewater treatment plant had 12.48 kW and 19.24 kW of solar capacity, respectively, installed in 2015 using funding from the renewable energy budget and an MEA Smart Energy Communities grant.

The city is currently installing 4 MW of solar capacity on the Entzian Farm Property, which is being financed under a SolarCity power purchase agreement. This project is currently in the permit processing stage and will be connected to the city's energy bill. The electricity from this project will be city-owned and fed into the grid, but the City of Bowie will get the renewable energy credit.

Overall, the City of Bowie has 90.27 kW of solar PV capacity installed across six facilities, with a projected savings of over \$45,000 in 25 years. The city has 4 MW of solar power installation in progress, which has a projected savings of \$370,000 annually. The environmental benefit of these solar projects is equivalent to the energy used in 388 homes over one year.

Discussion

BEEAC attendees asked about the cost of operation and maintenance to the city and were told that these costs would be undertaken by the City of Bowie, but that the costs should not be significant.

7. COG Updates

Updating the RESF-12 Annex to the Regional Emergency Coordination Plan

COG members are involved in a committee on energy emergency and resiliency discussions to add energy emergency preparedness to Regional Emergency Support Function #12. These members are reviewing the process of plans and actions in the event of a large-scale energy emergency. This review process will work to update the Regional Emergency Coordination Plan. A small working group within the committee has been tasked to determine what parts of the plan must be updated and will deliver final approval by June 1st. A follow-up discussion will be included at the next BEEAC meeting.

COG Projects

COG is participating in DC's Greening the Fleet Initiative with US DOE's Clean Cities Program. This initiative is working to green DC's public and private fleets by analyzing the environmental and economic benefits of switching the existing fleet to alternative vehicles. The project is currently in the data gathering process and COG will be analyzing the data once it has been collected.

COG is working with the National Association of Regional Councils on a project to upgrade infrastructure in the region. This is a two-year project and is in its beginning stages. A further update will be given soon.

Legislative Updates

In Virginia, Governor McAuliffe vetoed bills to extend tax credits for coal companies, and has taken two important actions related to climate change in the budget process:

- Introduced Budget Item 120, which allocates \$1 million to expand the clean energy industry with an emphasis on prioritizing solar projects in Southwest Virginia.
- Amended Budget Item 369 1c to allow the Department of Environmental Quality (DEQ) to prepare Virginia's Clean Power Plan when the Supreme Court's stay is lifted.

In Maryland:

- The General Assembly increased the state's GHG reduction goal to 40% below 2006 levels by 2030, and increased the RPS to 25% by 2020, with 2.5% solar carve-out.
- MCEC's Green Bank bill passed but with significant changes. No commitment was made to fund a Green Bank, but MCEC was awarded a \$3.3M grant from the Strategic Energy Investment Fund for general administration. A task force will also be established to determine how best to make MCEC self-sustaining without deviating from its mission and charge
- In addition to lifting the 100kW cap on PACE-funded renewable energy projects, the General Assembly directed MCEC to conduct a study to determine optimal design and implementation strategies for a residential PACE program in MD.
- On electric utility regulation, utilities are now required to complete interconnection within 20 business days of installation. Also, retail energy service providers may now be fined for violating consumer protection or education requirements.
- Extended the state income tax credit for electricity produced from biomass, agricultural waste, or methane gas from anaerobic or thermal decomposition. Eliminated credits for generation co-fired with coal, which were previously eligible.
- Several bills were introduced to advance energy storage for grid resiliency, among other topics, but were withdrawn by the sponsor or failed in committee. MCEC and other groups will

be working with the sponsors and industry stakeholders to evaluate and position the bills for success next year.

The US Senate passed comprehensive energy legislation on April 20. It is the first significant energy bill reach the White House since 2007. The bill includes several measures to expand clean energy access for federal operations, including allowing federal agencies to enter into 25 year PPAs, and directs DOE to begin several new grid modernization initiatives. The House version of the bill, passed last year, includes several measures that the administration and environmental advocates are concerned about, so we are watching what happens when the bills are reconciled in conference committee.

Upcoming Events and Announcements

On June 2nd, COG, in partner with the Federal Laboratory Consortium for Technology Transfer, Mid-Atlantic Region, will be hosting a lab-to-market technology forum on energy and water infrastructure. This forum will focus on commercializing innovative technology from federal laboratories that can improve our regional energy and water infrastructure.

Climate and Energy Leadership Award nominations are now open until June 22nd. COG created this award to recognize organizations in the region for their pursuit of environmental opportunities and stewardship in line with greater regional greenhouse gas reduction goals. This program highlights and encourages leading practices in a broad range of climate solution in the region. Four applicants will be recognized in the Local Community, Education Institution, Non-Profit Organization, and Private Business categories.

The Solar Powering America by Recognizing Communities (SPARC) technical assistance grant and Cities Leading through Energy Analysis and Planning (Cities LEAP) grant are open now and seeking qualified applicants.

8. Upcoming Meetings and BEEAC Adjournment

- CEEPC Meeting – May 25, 2016
- BEEAC Planning Call – May 5, 2016
- BEEAC Meeting – May 19, 2016