



Chesapeake Bay and Water Resources Policy Committee Climate, Energy and Environment Policy Committee

JOINT MEETING SUMMARY: JULY 27, 2016

CBPC MEMBERS IN ATTENDANCE

- Dan Sze, Falls Church (Vice Chair) &
- Judith Davis, City of Greenbelt
- Penny Gross, Fairfax County &
- Julie Palakovich Carr, City of Rockville &*
- Lisa Feldt, Montgomery County &
- J. L. Hearn, Washington Suburban Sanitary Commission
- Maureen Holman, DC Water & sp
- Hamid Karimi, DC Department of Energy and the Environment
- Jerry Maldonado, Prince George's County
- Christine Nagle, City of College Park
- Karen Pallansch, Alexandria Renew sp
- Mark Peterson, Loudoun Water

CEEPC MEMBERS IN ATTENDANCE

- Penny Gross, Fairfax County (Chair) &
- Konrad Herling, City of Greenbelt
- Julie Palakovich Carr, City of Rockville &*
- Del Pepper, Alexandria *
- Dan Sze, Falls Church &
- Melissa Adams, Washington Gas
- Kambiz Agazi, Fairfax County
- Erica Bannerman, Prince George's County
- Michael Barancewicz, Loudoun County Public Schools *
- Nick Bonard, National Capitol Planning Commission
- Lisa Feldt, Montgomery County &
- Maureen Holman, DC Water &
- Dann Sklarew, George Mason University
- Tim Stevens, Virginia Sierra Club
- Ted Trabue, DC Sustainable Energy Utility
- Glenna Tinney, ACPAC Chair
- Colleen Turner, MD Department of Transportation *
- Kathryn Zyla, Georgetown Climate Center

ADDITIONAL ATTENDEES

- Alexis Blakely, DC Sustainable Energy Utility
- Allison Deines, Water Environment and Reuse Foundation (WE&RF) sp
- Emily Dorrance, National Capitol Planning Commission
- Lauren Fillmore, Water Environment and Reuse Foundation (WE&RF) sp
- Alexis Goggans, DC Department of Energy and the Environment
- Judson Grief, US Water Alliance
- Saul Kinter, DC Water

- Brenna Mannion, National Association of Clean Water Agencies
- Shawn O'Neill, Fairfax Water ^{sp}
- George Nichols, DC Sustainable Energy Utility
- Matt Ries, Water Environment Federation
- Kevin Selock, Washington Suburban Sanitary Commission ^{sp}
- Chris Somers, Arlington County
- Kristina Surfus, National Association of Clean Water Agencies
- Beate Wright, Water Research Foundation
- Harry Zhang, Water Environment Research Foundation

COG STAFF IN ATTENDANCE

- Steve Walz, Director, COG Environmental Programs
- Leah Boggs, COG Environmental Programs
- Heidi Bonnaffon, COG Environmental Programs
- Amanda Campbell, COG Environmental Programs
- Maia Davis, COG Environmental Programs
- Jeff King, COG Environmental Programs
- Tanya Spano, COG Environmental Programs
- Madison Wagner, COG Environmental Programs
- Aaron Waters, COG Environmental Programs

(*) Indicates participation by phone

(&) Indicates member serving on both CBPC and CEEPC

(sp) Indicates speakers or panel members

1. CALL TO ORDER, WELCOME, AND INTRODUCTIONS

This meeting marks the second joint policy committee meeting of the Chesapeake Bay and Water Resources Policy Committee (CBPC) and the Climate, Energy and Environment Policy Committee (CEEPC). CEEPC Chair Penny Gross and CBPC Vice Chair Dan Sze called the meeting to order, welcomed attendees, and facilitated introductions. Chair Gross noted that the first joint policy committee meeting, three years ago, successfully brought to light commonalities between the missions of the two committees. This meeting will further that conversation and showcase innovations, challenges, and opportunities within the water-energy nexus.

2. COMMITTEE BUSINESS ITEMS

A. CEEPC Approval of Draft Meeting Summary from May 25th, 2016 (*Penny Gross, Chair*)

Action: CEEPC Quorum present, draft Meeting Summary approved

B. CBPC Approval of Draft Meeting Summary from March 18th, 2016 (*Dan Sze, Vice Chair*)

Action: CBPC Quorum present, draft Meeting Summary approved

3. INNOVATION, COLLABORATION, AND SHARED OBJECTIVES – SETTING THE STAGE

Penny Gross, CEEPC Chair

Dan Sze, CBPC Vice Chair

Steve Walz, COG DEP Director

CEEPC Chair Gross reviewed the status of the Regional Climate and Energy Action Plan update. This short term plan identifies a menu of actions that local governments can implement to ultimately reach the long-term regional goal to reduce greenhouse gas emissions 50% by 2050 (from the 2005 baseline levels). The third iteration of the Action Plan for 2017-2020 is currently being developed. The update is incorporating the work coming out of the Multi-Sector Greenhouse Gas Emission Work Group and other sources.

CEEPC Chair Gross also reported on the Chesapeake Bay Environmental Finance Forum, which was held at the University of Maryland on April 25-26, 2016. Speaking in her capacity as a member of the CBPC's Local Government Advisory Committee perspective, she emphasized that financing continues to be a critical element to ensure restoration of the Bay.

CBPC Vice Chair Size reviewed the history and key objectives of the CBPC. CBPC's initial focus was solely on Bay issues but has expanded its focus to cover a broader range of regional water issues. A nexus between the missions of the CBPC and CEEPC is a new Chesapeake Bay Program Policy Principle on flexibility and innovation, that both committees will be asked to endorse later in the agenda. CBPC Vice Chair Size noted that the CBPC's next meeting will be its sixth annual Chesapeake Bay and Water Resources Forum held on September 16th, 2016, and will include participants from the EPA and the states.

DEP Director Steve Walz reviewed the recent COG Federal Lab-to-Market Forum for Water and Energy Infrastructure. The goal of the forum was to expand capacity for technology commercialization to support the region's economy, sustainability, and resiliency. Next steps include exploring the possibility of a regional water technology innovation cluster forum and investigation of further usage and facilitation of federal laboratory technology that could be used by businesses and other sectors.

Discussion

- Discussion addressed ongoing concerns regarding the District's reliance on the Potomac River as a single source of drinking water, and encouraged staff to coordinate with ICPRB on these matters. Mr. Walz noted that the Water Security Workgroup will be addressing alternate supply sources for the region, and that the results would be brought back to the CBPC.
- The federal Council on Environmental Quality and Office of Management and Budget recently discussed innovative solutions to water and energy issues, and included many local and state representatives. Updates will be provided to CBPC and CEEPC as this progresses.
- The issue of proprietary information was raised during the Lab-to-Market Forum. It was noted that each lab treats transfer of technology and intellectual property differently.

4. WATER, ENERGY, & CLIMATE – WATER SECTOR

A. TOWARDS 'ENERGY NEUTRALITY' – RESULTS AND FINDINGS OF RECENT RESEARCH

Allison Deines - Director, Special Projects, Water Environment and Reuse Foundation (WE&RF)
Lauren Fillmore - Senior Program Director, WE&RF

Ms. Deines described that WE&RF is a national non-profit that identifies, supports, and disseminates water research. WE&RF's subscribers overlap with COG, as seven of COG's local governments and wastewater utilities are members of WE&RF. They provide approximately \$200,000 a year in research funds to WE&RF and are national leaders in technology and innovation.

Nationally, the drinking water and wastewater sector is the 4th highest for energy usage, with one-third of that energy used by wastewater, and the remaining two-thirds used by drinking water. The greatest energy use for the wastewater sector is aeration (60%), whereas the greatest energy use for drinking water treatment and supply is for pumping (84%).

Ms. Fillmore provided details on WE&RF's recent research on net-zero energy and balancing energy demands with recovery at wastewater plants. One WE&RF study evaluated 25 scenarios to identify 'potentially recoverable' energy in the wastewater process. The research has shown that up to five times more energy is stored in wastewater than is required for its treatment.

Opportunities for energy recovery include:

- 1) Thermal heat recovery (80% of the energy generated in the wastewater process is in the form of heat, and 20% as chemical energy);

- 2) Conversion of the chemical energy to digester gas (roughly 33% of chemical energy could be recovered this way); and
- 3) Via improved utilization of supplemental carbon to aid in advanced nutrient treatment processes.

WE&RF developed a Net-Zero Energy Solutions Guide that shows how best practices at typical wastewater operations could reduce energy demand on average by 40%. However, there are limitations and challenges to easily accomplishing that level of energy demand reductions. For example, the greater the nutrient removal required, the more energy intensive the process. Implementation of best practices can reduce energy demand but is not likely to achieve energy neutrality.

WE&RF noted that additional projects to address energy recovery in drinking water and wastewater facilities include use of on-site solar and wind energy, geothermal power, strategic electric power demand management, microgrids, in-line electric turbines, and equipment and technology improvements/upgrades.

WE&RF also noted that it collaborates with others, such as Water Research Foundation, to evaluate specific opportunities for decreasing energy usage/demand. WE&RF and the Water Environment Federation (WEF) have partnered to produce the Leaders Innovation Forum for Technology (LIFT).

Discussion

- Ms. Fillmore addressed questions about the relationship between costs and regulations, and their report findings, noting that research has been conducted to determine how cost can play a role in decision making. The use of life-cycle cost recovery over a 20 to 30-year time horizon more accurately reflects the financial implications of and utilization of these major public assets versus focusing only on the initial capital cost investments. While many new technologies may not fit into the current regulatory landscape, they can be used in conjunction with other processes like shortcut carbon capture to optimize efficiency.
- Ms. Fillmore addressed that wastewater technologies can be used to meet sustainability objectives, noting that while EPA has guidelines on incorporating sustainability practices, it is often a challenge to implement given multi-jurisdictional inconsistencies.
- Ms. Spano cited the plans for COG to help organize an updated 'limits of wastewater technology' workshop in the coming year.
- Ms. Fillmore addressed use of biogas, noting biogas is a renewable resource, that studies have shown that biogas from the wastewater sector is cleaner than landfill gas and that cleanup technology has advanced greatly. She also addressed energy recovery, noting that energy recover from stormwater management is an evolving issue (a potential topic for a future meeting).

CEEPC Chair Gross thanked the speakers and noted that she felt that such a discussion at the Chesapeake Bay Programs' LGAC could be very informative.

B. LOCAL WATER UTILITY PERSPECTIVES & OPPORTUNITIES – PANEL DISCUSSION

Karen Pallansch, Chief Executive Officer, Alexandria Renew

Maureen Holman, Sustainability Chief, DC Water

Shawn O'Neill, Energy Programs Manager, Fairfax Water and Energy

Kevin Selock, Production Team and Parkway Plant Manager, Washington Suburban Sanitary Commission

Alexandria Renew - Ms. Pallansch provided an overview of the Alexandria Renew facility and its operational challenges and physical constraints. She highlighted key efforts and innovations implementing upgrades and planning for the future. Examples include use of chemically enhanced primary treatment to enhance carbon capture, building in flexibility when planning their enhanced

nutrient removal (ENR) process to meet Bay TMDL requirements such as use of a side-stream and later a mainstream Anamox process and reuse of digester gas to reduce energy use.

Ms. Pallansch also noted examples of partnerships with DC Water and New York on the Anamox process, with the federal Department of Energy's Superior Plants Program, COG on cooperative purchasing, with VEPGA on electrical rates, and with developers on reclaimed water use.

DC Water - Ms. Holman provided an overview of DC Water's challenges, as significant energy usage is needed for processes and facilities. For example, the Clean Rivers Program uses very deep tunnels where it is very energy intensive to pump the water from that underground storage.

Ms. Holman noted that DC Water supports the District government's environmental goals. She also noted DC Water's great collaborative relationship with Alexandria Renew Enterprises, and that many of the innovations and activities previously mentioned were also being implemented at DC Water, though often at a larger scale. She highlighted DC Water's efforts to pursue innovation such as DC Water's new O Street Pumping Station facility, use thermal energy recovery from wastewater, and development of district heating/cooling. DC Water is also considering ways to improve the resiliency and redundancy of systems not just to achieve energy savings but to also address the need to be operational under emergency conditions. DC Water is exploring the use of microgrids to enable continued operations via an 'energy island' when the energy grid is down.

Fairfax Water - Mr. O'Neill echoed that Fairfax Water faces many of the same challenges and efforts that the previous speakers described. Ninety percent of Fairfax Water's costs are the result of needing to pump water. One innovative effort implemented to address efficiency was the installation of a power bar to show their operators how power is being utilized at all times, which has saved them \$2.8 million over the first three years. In addition, the use of variable frequency drives for pumping has saved up to \$100,000 per year.

Fairfax Water's secondary focus is on implementing solar at a small scale and considering installation of solar panels in public areas in the future; however, it currently is not economically feasible to do large projects. They have locked in rates to purchase renewable energy using a 3rd party provider, which have resulted in savings of \$250,000 per year. Other cooperative electrical agreements are resulting in 4% saving per year. Fairfax Water is also investigating the use of microgrids to increase resiliency, including the usage of the Covanta Waste-to-Energy facility that is near one of their facilities. Fairfax Water's customers include the military and hospitals, so resiliency is also very important for future consideration.

Washington Suburban Sanitary Commission (WSSC) - Mr. Selock summarized key features regarding WSSC and its water-energy projects. WSSC is negotiating its fourth energy performance saving contract; where efficiencies are paid for by future reductions. Current energy demand management program optimizations have reduced costs by approximately \$600,000 per year and WSSC estimates use of an active demand response program that will offer dynamic adjustments of power usage that can save \$400,000 per year. WSSC's Energy Management Plan includes the use of two Power Purchase Agreements (PPA) for solar in operation at WSSC sites and one purchasing from a wind farm in Pennsylvania, and that WSSC is in the development stage for new solar facilities totaling 10 MW.

Biosolids energy recovery is a new focus with construction of a biosolids processing plant at their Piscataway wastewater treatment plant to process incoming biosolids from all of their wastewater treatment plants. This facility will approach net-zero energy. WSSC is also working with WERF, Alexandria Renew, and DC Water to explore the use of side stream processes, as well as to identify ways to recover nutrients in biosolids.

Discussion

- Ms. Pallansch cited the need to help face the ongoing challenges to the land application of treated biosolids in Virginia and opportunities to better utilize the energy stored in biosolids. She further noted work at the regional level to recognize the interrelationship between water and wastewater usage in a watershed and to look more closely at how to enhance water reuse including the evaluation of existing codes that may constrain reuse.
- Ms. Holman noted that wastewater thermal is a very emergent issue, was recently included in a Renewable Portfolio Standard (RPS) for the District, and provides opportunities for further investments.
- Ms. Holman noted that expenses are high for emergent technologies such as microgrid applications and that funding often lags behind technology. Mr. O'Neil noted that resiliency is a major need, and Mr. Selock stated that financing for renewable energy efforts continues to be a challenge. They noted that COG advocating for federal, state and other funding therefore is important.
- Discussion addressed that collaboration on education and outreach to water utility customers and rate payers would be an excellent opportunity to showcase collaboration and emergent technology. Committee members expressed an interest in exploring research and development opportunities in the region. Future recommendations from committee members regarding CEEPC's Action Plans should be directed to COG staff.

5. NEW COG POLICY PRINCIPLE

Heidi Bonnaffon, Environmental Planner

Ms. Bonnaffon summarized the history of the CBPC principles and the rationale for a new principle. The new policy principle addresses flexibility and innovation in implementation as a core value across a multi-sectorial and multi-jurisdictional landscape. This new principle would go before the COG board at their September meeting for formal adoption.

It was noted that the 'staged implementation' text is to convey the ability to pilot a program or projects over time as new information becomes available, also known as adaptive management. It was further noted that voice, voluntary, sound science, and equitability were the original foundation for the CBPC's efforts; and that decades later that addressing implementation is an appropriate new principle.

Action: Motion to accept proposed policy principle was passed by both committees.

6. COMMITTEE BUSINESS

A. UPCOMING COMMITTEE EVENTS/ACTIVITIES

Alexis Goggans from DOEE discussed Climate Ready DC. The draft plan can be found at www.sustainablefuture.gov or in this committee's meeting documents online. Seventy actions have been identified to be addressed in the Plan. Public comments are currently being accepted through Labor Day.

B. STAFF AND TECHNICAL COMMITTEE PROGRAM UPDATES

The committees received the written General Updates for CBPC and CEEPC. Mr. Waltz reported that COG's new website launched on the July 21, 2016. Member feedback on the website is welcome.

C. MEMBER UPDATES

- The Atlantic Magazine published a story about low-income renewables in District and Ward 7 and 8, and the small commercial pilot program's installation of solar; and

- The District enacted Council Member Cheh's bill to raise the Renewable Portfolio Standards by 50% by 2032 and create a Solar for All Program to lower energy bills by half in low-income households by 2032.
- The Montgomery County's Green Bank is now incorporated. Ms. Feldt is serving on the Board.
- Questions have come up at NACO (National Association of Counties) regarding sea level rise and whether there is a need to be concerned with this issue on the east coast. There is a challenge of explaining our region's climate issues to representatives who face different challenges in their parts of the country. There is critical need for regional coordination to address this challenge.

7. ADJOURNMENT

The meeting was adjourned at 12:15 p.m.

The next **CBPC** meeting is scheduled for **September 16, 2016**.

The next **CEEPC** meeting is scheduled for **September 28, 2016**.

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