



## Climate, Energy, and Environment Policy Committee

### DRAFT WEBINAR MEETING SUMMARY: SEPTEMBER 22, 2021

#### CEEPC MEMBERS IN ATTENDANCE

- Hon. Deni Taveras, Prince George's County
- Hon. Mary Cheh, District of Columbia
- Hon. Koran Saines, Loudoun County
- Hon. Cindy Dyballa, City of Takoma Park
- Hon. Matt De Ferranti, Arlington County
- Hon. Penny Gross, Fairfax County
- Hon. Takisha James, Town of Bladensburg
- Hon. Alanna Mensing, City of Manassas Park
- Hon. Del Pepper, City of Alexandria
- Hon. Dave Snyder, City of Falls Church
- Melissa Adams, Washington Gas
- Dr. Kambiz Agazi, Fairfax County
- Erica Bannerman, Prince George's County
- Mike Barancewicz, Loudoun County Public Schools (LCPS)
- Michele Blair, City of Laurel
- James Bradbury, Georgetown Climate Center
- Rachel Clark, District of Columbia
- Eric Coffman, Maryland Energy Administration (MEA)
- Randy Freed, Citizens' Climate Lobby
- Susan Gerson, LCPS
- Kim Goddu-Alexander, Bethesda Green
- Stephen Gyor, District of Columbia
- Dawn Hawkins-Nixon, Prince George's County
- Rachel Healy, Washington Metropolitan Area Transit Authority (WMATA)
- Maureen Holman, DC Water
- Kate Johnson, District Department of Energy and Environment (DOEE)
- John Lord, Fairfax County Public Schools (FCPS)
- Su Ly, U.S. Environmental Protection Agency (EPA)
- Elissa McDade, WMATA
- Regina Moore, Virginia Department of Transportation (VDOT)
- Shannon Moore, Frederick County

- Deborah Moran, City of Gaithersburg
- Guillermo Ortiz, Air and Climate Policy Advisory Committee (ACPAC) Chair
- Matt Ries, DC Water
- Adam Roberts, Bethesda Green
- Erica Shingara, City of Rockville
- Ted Trabue, DC Sustainable Energy Utility (DC SEU)
- Luke Wisniewski, Maryland Department of the Environment (MDE)

#### ADDITIONAL ATTENDEES:

- Blake Adams, District of Columbia
- Dawn Ashbacher, Frederick County
- Emily Badin, City of Takoma Park
- Sandra Brecher, Montgomery County
- Eric Campbell, DOEE
- Angela Conroy, Virginia Department of Environmental Quality (VDEQ)
- Kelly Crawford, DOEE
- Lou Ann Crook, City of Laurel
- Kenneth Scott Davies, LCPS
- Rich Dooley, Arlington County
- Kim Drake, MDE
- Bill Eger, City of Alexandria
- Jay Fiset, DMV Strategic Advisors
- Patricia Happ, Northern Virginia Transportation Commission (NVTC)
- Jenn Hatch, DOEE
- Kathie Hoekstra, City of Alexandria
- Michael Knapp, Regional Tree Canopy Subcommittee Chair
- Elizabeth Lovinggood, WMATA
- Justin Mabrey, MDE
- Debra Maes, FCPS
- Gina Mathias, Built Environment and Energy Advisory Committee Chair
- Amy Mesrobian, WMATA
- Matt Meyers, Fairfax County
- Raymond Mui, City of Alexandria

- Karina Navas, Prince George's Community College
- Chris Peot, DC Water
- Bill Pugh, Coalition for Smarter Growth
- Kristopher Russell, Dominion Energy
- Tim Shepherd, MDE
- Mark Smith, U.S. Department of Energy
- Norman Whitaker, VDOT
- Brittany Whited, District of Columbia
- Jonathan Willingham, District of Columbia
- Cole Wogoman, District of Columbia
- Andie Wyatt, Grid Alternatives
- Jennifer Zettl, City of Alexandria

**COG STAFF IN ATTENDANCE:**

- Antonio Castañeda, COG Transportation Planning
- Maia Davis, COG Environmental Programs
- Jennifer Desimone, COG Environmental Programs

- Katie Dyer, COG Environmental Programs
- Lyn Erickson, COG Transportation Planning
- Jeff King, COG Environmental Programs
- Wyetha Lipford, COG Environmental Programs
- Tim Masters, COG Environmental Programs
- Andrew Meese, COG Transportation Planning
- Mark Moran, COG Transportation Planning
- Erin Morrow, COG Transportation Planning
- Eric Randall, COG Transportation Planning
- Kanti Srikanth, Deputy Executive Director Metropolitan Planning
- Dusan Vuksan, COG Transportation Planning
- Amanda Woolsey, COG Environmental Programs

## **1. WELCOME AND MEETING SUMMARY**

*Deni Taveras, CEEPC Chair*

Climate, Energy, and Environmental Policy Committee (CEEPC) Chair Dani Taveras called the CEEPC September webinar meeting to order. The July CEEPC/CBPC Meeting Summary was approved.

## **2. COMMITTEE AND MEMBER UPDATES**

### **A. Built Environment Energy Advisory Committee (BEEAC)**

*Gina Mathias, BEEAC Chair*

- BEEAC has been engaging with the New Buildings Institute (NBI) to explore methodologies to net-zero energy buildings and decarbonization. Part of this process included a discussion on transitioning to all-electric buildings, which garnered a lot of attention at BEEAC and the March CEEPC meeting. With assistance from COG's Climate and Energy team and other cities, NBI has requested technical assistance from the US Department of Energy to evaluate several scenarios related to decarbonization and net-zero energy codes including: applying the 2021 IECC for residential and commercial buildings, mixed-fuel use scenario, and an all-electric scenario for residential and commercial buildings. This evaluation will be in the form of six technical documents, with energy use intensity, source energy use intensity, costs, and carbon emissions serving as the metrics for the analysis.
- BEEAC held a technical webinar on September 16 to discuss the changes to the International Code Council (ICC) code development process, and relevant impacts on local governments.
- BEEAC's next meeting is November 18.

### **B. Air and Climate Public Advisory Committee (ACPAC)**

*Guillermo Ortiz, ACPAC Chair*

- ACPAC has selected the 2021 Climate and Energy Leadership awardees. Winners were awarded in 2 categories: governmental agencies and non-governmental organizations. Consistent with previous years, awardees will not be announced until the award presentation at the fall COG board meeting. COG's October 13 press release will announce the winners.
- ACPAC's next meeting is November 15.

### **C. Greater Washington Region Clean Cities Coalition (GWRCCC)**

*Jeff King on behalf of Ira Dorfman, GWRCCC*

- Baltimore Gas and Electric (BGE) has filed its Semi-Annual Progress Report and Mid-Course EV Program Evaluation Report (Case No. 9478) with the Maryland Public Service Commission. The filing includes innovative changes to its EV program that are especially impactful on GWRCCC's regional goals to address equity and affordability concerns in underserved communities and to expand charging infrastructure. These provisions include a 25% discount for multifamily tenants to utilize BGE's DC fast charging stations; an expanded budget for community outreach and education; and expansion of 150 kw and 50 kw fast charging units in place of slower-charging units. The plan is a good template for Pepco and Dominion to follow. GWRCCC plans to submit a letter of support to the Maryland Public Service Commission and encourages CEEPC Committee members, regardless of jurisdiction, to do the same by the October 6 deadline.
- GWRCCC will hold its Annual Awards Luncheon on October 14 at Clyde's in Gallery Place. Area fleets and government jurisdictions throughout the DMV will be recognized for their leadership in advancing electrification and other clean transportation initiatives. Information on registration and a list of the 2021 award winners will be made available shortly.

- The Mid-Atlantic Electrification Partnership project, a \$6M, 39-month effort funded by the US Department of Energy, has launched. The purpose of this program is to support and foster a regional electric vehicle (EV) ecosystem in DC, MD, VA and WV. To learn more, contact [Ira Dorfman](#) or [Alleyn Harned](#).

#### D. Regional Tree Canopy Sub-Committee (RTCS)

*Michael Knapp, RTCS Chair*

- The Regional Tree Canopy Sub-Committee (RTCS) is currently working with the planning directors' technical advisory committee to support staff to develop a presentation on the regional tree canopy goals and related metrics, scheduled for October 15. Pending on recommendations from the planning directors, RTCS will submit their recommendations and goals to CEEPC.
- Because of the recent surge in storm intensity in the DC area, RTCS plans to develop a set of recommendations for local governments to react to wide-scale tree damage. RTCS plans to start working on these recommendations during the subcommittee meeting in early November.

#### E. Select Member Updates

*Maia Davis on behalf of Matthew Gaskin, DDOT*

- The District Department of Transportation (DDOT) now has charging facilities in the parking garage at their new headquarters on 250 M Street, SE. They are currently working to upgrade and replace 2 out of their 3 currently available public EV charging stations.
- DDOT is currently transitioning to a framework for EV station ownership that would allow companies in the private sector to operate and maintain public EV charging stations.

*Kambiz Agazi, Fairfax County Board of Supervisors*

- [The Final Community-wide Energy and Climate Action Plan \(CECAP\)](#) report was presented to and accepted by the Fairfax County Board of Supervisors on September 14. Complimenting the Resilient Fairfax Initiative, CECAP is Fairfax County's first greenhouse gas (GHG) emission reduction plan developed by a working group of community members, regional business representatives, and nonprofits. The Fairfax County Office of Environmental and Energy Coordination (OEEC), management consulting firm ICF, and COG advised the CECAP Working Group and managed the planning process. The CECAP report establishes a carbon neutrality goal for the community by 2050, and details specified strategies, actions, and recommended activities for implementation to achieve targeted emission reduction goals.
- Fairfax County emphasizes their commitment to providing leadership and catalyzing action for climate change as stated in the County's Carbon Neutral Counties Declaration, Operational Energy Strategy, and related green initiatives that complement the CECAP.

*Brittany Whited, DOEE*

- The District of Columbia is set to receive \$8.125 million from the Volkswagen (VW) Settlement Fund. The District is currently working on two main projects related to the settlement funds:
  - 1) Vehicle Replacement Project  
In partnership with DDOT, DOEE is working to replace 12 diesel Circulator buses with electric models. In total, DDOT is replacing 14 diesel Circulator buses, however, only 12 were eligible for replacement using VW settlement funds. DOEE has allocated approximately \$5.1 million out of the \$8.125 million for this project and plans to replace 3 diesel street sweepers next year in collaboration with the DC Department of Public Works (DC DPW). These replacements will be supported through EPA's Diesel Emissions Reduction Act (DERA) Funding.

2) Diesel-powered Switcher Locomotive Repower Project (Amtrak)  
Using DERA and VW settlement funds (\$2 million) and working with Amtrak's national and regional engineering teams, DOEE plans to repower 5 switcher engines with updated, lower-emitting engines. The first switcher should be repowered by the end of next year.

*Angela Conroy, VDEQ*

- Virginia's allocation of VW settlement funds is about \$93.6 million total and is administered through a state Beneficiary Mitigation Plan. \$87 million has been dedicated to the electrification of transportation for the following projects:
  - 1) Drive Virginia Electric Network  
\$14 million has been allocated to improve the "Drive Virginia Electric Network" in an effort to expand state-wide electric vehicle charging infrastructure. This project is about 54 percent complete, with over 14 host sites, 132 chargers and 264 charging ports added in the Commonwealth to date.
  - 2) Electric Public Transit Bus Replacement Program  
Over \$16 million has been dedicated to the "Electric Public Transit Bus" program, set to replace older diesel public transit buses with all-electric buses. Through the Department of Rail and Public Transportation's MERIT grant cycle program, \$9 million of VW settlement funds were allocated for the replacement of 17 diesel public transit buses in Alexandria, Blacksburg, and Hampton Roads. 21 additional buses are in the process of replacement in the Commonwealth.
  - 3) Port Equipment Electrification Project  
In collaboration with Virginia Port Authority, DEQ is planning on electrifying port equipment including ship-to-shore gantry cranes and yard tractors.
  - 4) Clean School Bus Program  
In August, Governor Northam announced over \$10.5 million in VW funds for replacement and electrification of 83 diesel school buses across 19 school districts. DEQ is currently preparing for another \$10 million round of funding opportunities for public school buses.
  - 5) Clean Air Communities Program  
The Clean Air Communities Program (CACCP), open to submission from state, local, and tribal government entities, supports and funds projects to replace medium and heavy-duty diesel fleets with all-electric vehicles. \$10 million has been funded in medium and heavy-duty state and local government fleets.

*Luke Wisniewski and Tim Shepard, MDE*

The state of Maryland was awarded \$75.7 million in VW settlement funds. \$11.3 million was allocated for EV infrastructure and approximately \$64 million dedicated to vehicle replacement.

- 1) Vehicle Replacement Project  
MDE has approved 40 projects under vehicle replacement program so far, including projects involving switchers, cranes, school buses, public buses, and trains. Most of the vehicle replacement projects are expected to be completed in 2022. MDE will be re-opening funding for electric school buses and electric medium and heavy-duty trucks with an anticipated start date in early 2022.
- 2) EV Infrastructure  
The allocated \$11.3 million for EV infrastructure expansion was broken into 3 rounds of \$3.7 million dollar funding per round. The first round of funding was completed this past summer with 37 approved projects focused on corridor hub fast charging, workplace charging, and state-owned properties. In the first round of funding, MDE funded 13 fast charger locations

with a total of 36 Level 3 Fast chargers and 24 business-located charging stations for a total of 145 Level 2 chargers. The next round of funding is anticipated to open in November-December, with the proposal submission period remaining open until March 2022.

*John Lord, Fairfax County Public Schools*

The EPA is celebrating 30 years of ENERGYSTAR partnerships. Fairfax County Public Schools encourages those who have not become ENERGYSTAR partners, to become a partner in this initiative.

### **3. JOINT LETTER OF SUPPORT FOR THE PROPOSED RULE TO REVISE EXISTING NATIONAL GREENHOUSE GAS EMISSIONS STANDARDS FOR PASSENGER CARS AND LIGHT TRUCKS**

*Tim Masters, COG Staff*

COG staff have drafted a comment letter of support for the EPA's proposed rule to revise existing GHG emission standards (SAFE Vehicles Rule standards) for passenger cars and light trucks through model year 2026. The letter focuses on improving car emissions standards with regard to air quality and climate change and discusses the direct regional benefit of more stringent emissions restriction implementation in the DC area. A revision from the TPB Steering Committee included the incorporation of language that emphasized equity and inclusion in these standards. The letter was subsequently provided to CEEPC's Legislative Committee for approval and received positive feedback. The deadline for comment is September 27.

**Action:** The letter of support was reviewed and approved by CEEPC.

### **4. FEDERAL TRANSPORTATION ELECTRIFICATION LEADERSHIP**

*Mark Smith, US DOE*

The US DOE is developing a Transportation Electrification Roadmap to build on the Biden administration's goal to decarbonize the transportation sector by 2050. The roadmap outlines actions needed to equitably electrify transportation across the nation. Petroleum makes up almost 92 percent of transportation energy consumption. The mission of DOE's Vehicle Technologies Office (VTO) is to decarbonize transportation across all modes, through batteries and electrification (battery costs), materials technology (how to make vehicles more energy efficient), mobility systems (new program, smart mobility with ridesharing), and demonstration and deployment (clean cities coalition, competitive funding opportunities on an annual basis).

DOE is focusing on research and development to lower costs of batteries to continue the expansion of EV adoption. In the past five years, there has been a decrease in battery pack costs, with battery packs costing \$269/kWh in 2015 and \$144/kWh in 2021. DOE's VTO seeks to develop pathways to reduce the cost of battery packs to \$100/kWh, increase the range of EVs to 300 miles, and decrease vehicle charge time to 15 minutes or less to make EVs an attractive competitor to gasoline automobiles in the national market. A critical issue regarding battery manufacturing and distribution involves the socio-economic complexities surrounding copper, lithium, and cobalt extraction from economically unstable regions in the Global South. A proposed solution from DOE involves battery re-use and recycling for new battery production.

DOE's VTO seeks to address barriers and restrictions to utility-scale EV infrastructure adoption by improving equitable access to the benefits of electrified transportation. DOE's Community Partnership Projects include advocating for widespread workplace and off-street charging, incorporating tenets of environmental justice and community resiliency into EV infrastructure planning, and workforce training for first-responders, tow truck operators, self-insured operators, technicians, and salvage yard employees.

Discussion:

- DOE's VTO works with the Federal Transit Authority (FTA), as the administration's electrification efforts include both electrification of transit and school buses. VTO seeks to provide technical assistance with transit electrification projects on behalf of the FTA.
- DOE's VTO works with the Office of Electricity and the Buildings and Technologies Office to look at the interaction of vehicles and the grid from a resiliency standpoint. Part of the vehicle-to-grid process involves developing an onsite battery storage system that addresses the needs of buildings and vehicles to help offset electricity loads to the grid. VTO seeks to involve electric utilities early in the process to establish demand and capacity limitations.
- The issue of transit access and equity is important and implementing clean public transport services in underserved communities is a focus of DOE's VTO.

## **5. DISTRICT OF COLUMBIA TRANSPORTATION ELECTRIFICATION ROADMAP**

*Eric Campbell, DOEE*

DOEE developed the Clean Energy DC (CEDC) plan in 2018, which was the District's first roadmap that quantified measures to meet Sustainable DC's climate and energy goals. The plan is set to reduce emissions by 50 percent by 2032 and will help the District achieve carbon neutrality by 2050. The Clean Energy DC Omnibus Amendment Act was put in place shortly after the development of the plan in 2019 and seeks to aid CEDC goals by targeting transportation emissions reductions and electrification, renewable energy, and energy efficiency performance standards for buildings. The three overarching goals of the transportation electrification roadmap are as follows:

- 1) 50 percent of buses and private fleets replaced by zero emission vehicles by 2030 and 70 percent by 2045
- 2) 100 percent EV replacement of all public and school buses at end of life by 2021
- 3) At least 25 percent of vehicles registered in the District to be ZEV by 2030

The final transportation electrification roadmap report is due October 31, 2021. A major part of developing a transportation electrification roadmap involves consideration of the overarching "EV Ecosystem", which includes vehicle owners, utilities, dealerships, charging station manufacturers, and advocacy organizations. To incorporate different components of the EV Ecosystem into the transportation roadmap, DOEE conducted a series of stakeholder session meetings on topics related to equitable EV charging placement, mobility equity, and transportation needs assessment.

DOEE also conducted an EV charging station assessment to determine current distribution of charging infrastructure in the District. Undesirable EV station deployment locations include snow emergency routes, bike lanes, and bus lanes. DOEE wants to transition from department ownership to private sector involvement and ownership of EV stations. The EV Charging Station Assessment showed a significant discrepancy in the distribution of charging stations in the District, with the majority of EV infrastructure installed in and around the business district of downtown DC. To combat

the “EV Charging Gap” barrier in lower-income neighbourhoods of DC, DOEE aims to provide incentives for EV purchases and ensure the necessary infrastructure is being installed.

The District has a unique school bus system that poses significant logistical challenges. DC generally does not provide public school buses, except for special needs and disabled students. The stakeholder engagement session on school bus electrification was overwhelmingly positive. DOEE is working with WMATA to support them with their legislation regarding bus fleet electrification.

## 6. ZERO EMISSION TRANSIT BUS PANEL

*Antonio Castañeda, COG Department of Transportation*

The 2020 State of Public Transportation Report, released to provide an overview of public transportation activities in the National Capital Region, provided some significant updates regarding transportation electrification including overview of ridership, revenue sources, and studies in progress. There was increased interest in electric bus procurement and public transit electrification in the National Capital Region, with a current total of 40 electric buses in the region, with 13 procured in the past year. However, current estimates project that most fleet agencies in the area will have less than 10 percent of their fleet electrified by 2025.

Electric bus procurement concerns include Buy America compliance, performance of electric buses, associated costs, and managing expectations of electric bus deployment and impacts. Major accomplishments were noted in the Blue/Orange/Silver line corridor reliability and capacity study, DDOT bus priority toolbox, DASH’s zero emission feasibility review and zero emission implementation plan. Next steps to encourage regional coordination with regards to zero emission bus planning were discussed, and include energy infrastructure investments and planning, workforce development, utility rate redesign, funding for electric bus and facility conversion, and fleet lifecycle timeline analysis for new and existing electric fleet buses.

*Rachel Healy and Amy Mesrobian, WMATA*

Metro operates the largest bus fleet in the region and is in the process of developing a plan to convert their fleets to zero-emission vehicles. Through the development of their sustainability vision and principles, WMATA illustrates the critical role of transit services as key drivers of policy implementation and the transition to zero-emission transit vehicles.

In June, the Metro board of directors adopted a goal to transition to a zero-emission bus fleet and to specifically purchase only low emission buses in the next round of bus procurement, with “zero-emission bus” referring to buses with no tailpipe emissions. The current and upcoming activities to achieve this transition are as follows:

1. Electric Bus Test and Evaluation

This program will procure and test the performance and charging system efficiency of 12 electric buses and their respective charging systems. 10 standard-length and 2 articulated electric buses will be tested from varying manufacturers, with the analysis expecting to be complete by the end of 2024. This evaluation will provide critical insight on scaling up zero-emission bus fleets in the DC area.

2. Continued Coordination with Electric Utilities

WMATA is working with electric utilities to ensure a successful electric bus transition and offset potential future issues related to grid capacity, intermittency, and electricity demand.



The electricity demand of charging a garage of zero emission buses is high, with 9 MW of high-capacity electric connection required to charge a garage of 150 electric buses. As this is currently above the capacity of localized grid connections, WMATA is prioritizing collaboration with utilities to address issues related to shared charging infrastructure, utility investment requirements, inclusion of equity rate structure, and funding designations.

3. Evaluation of Additional Funding Sources  
WMATA received a \$4 million Low-No grant from the FTA to partially cover costs associated with implementation of the Electric Bus Test and Evaluation Program.
4. Upcoming Five-Year Bus Procurement  
WMATA is currently developing their upcoming five-year bus procurement contract to support the transition to zero-emission buses. Issuance of request for proposals are expected in FY 2022, with contract bus deliveries to begin in FY 2024.
5. Hiring of Program Management Team
6. Planning and Capital Project Development for Garage Electrification  
Conversion of existing Metro facilities to support all-electric fleets requires specific considerations, including charging equipment type, garage configuration, workforce development, materials storage, and operational and safety considerations. In other updates, a bus garage in Northwest DC will reopen with full electric-bus capacity.
7. Exploration of Potential Hydrogen Fuel Cell Bus Test and Evaluation  
WMATA staff will review the potential for hydrogen fuel cell bus implementation in the transition to zero-emission public transit fleets.
8. Transition Plan Development  
This plan will evaluate the actions required to successfully transition to zero-emission bus fleets, with expectations for data and technologies to adapt over time. The current draft target states 100% of new bus procurements will be zero-emission by 2030, 65% of the fleet to be zero-emission by 2038, and 100% of the fleet to be zero-emission by 2045.

A major barrier to zero-emission fleet adoption concerns increased financial costs of zero-emission buses as compared to diesel. Electric buses cost approximately \$300,000 more than diesel buses to purchase, with current projections for a single 150-bus garage at \$60 million. Strategies to navigate this barrier will depend on the specifications and location of the facility. Incremental addition of electric buses to existing garages has a lower incremental cost than more drastic measures, however some locations may need to be retrofitted or replaced to adequately support an electric fleet.

#### *Raymond Mui, Alexandria DASH*

The DASH Public Bus System serves as a supplementary public transit bus system for the City of Alexandria, with a fleet of 100 fixed-route, heavy-duty buses. DASH transitioned from conventional diesel buses to diesel-electric hybrids in 2011. In 2017, the Alexandria City Council adopted a board policy to aid in the transition to an all zero-emission public bus fleet in concordance with the Eco-City Alexandria Initiative and Alexandria Environmental Action Plan. This involved a discontinuation of Diesel-Hybrid bus procurement. The overarching goal for the implemented board policy was to have 100 percent of purchased buses be zero-emission by 2027, with a full fleet transition by 2035.

DASH has a handful of completed and ongoing studies to aid in the transition to zero-emission bus fleets, including a feasibility and zero-emissions implementation study plan. They plan to move forward to Phase II of their ongoing DASH Implementation Study in 2022. As DASH is a non-federal recipient property, they are not qualified to receive FTA funds and must depend exclusively on local and state funds to support electrified bus deployment. In 2019, DASH was able to secure a portion

of the Commonwealth of Virginia's VW settlement funds which funded initial deployment of 6 electric buses and chargers in 2020. To demonstrate technology interoperability of electric bus procurement, DASH split their electric fleet and charger manufacturing sources equally between New Flyer and Proterra. DASH is continuing the split deployment approach between New Flyer and Proterra in the second round of funding. The second order is funded by Northern Virginia Transportation Authority (NVTA) funds and is expected to result in a total of 14 zero-emission buses post-deployment. All the zero-emission buses and chargers deployed were procured by DASH using the Virginia State Bus Contracts.

DASH is currently undergoing a facility expansion project, with additional capital money to help build charging infrastructure for zero-emission bus deployment. To best use DASH's facility expansion, improve efficiency, and lower overhead costs, DASH plans to place the charging dispensers and chargers overhead the bus.

A challenge arises from the contractual nature of vehicle procurement availability, which has the potential to hinder the expediency of zero-emission bus deployment. DASH is also facing issues with regards to training and workforce development, as sourcing qualified technicians for high-voltage electric charging systems is difficult. High initial costs of battery electric buses present a significant capital funding challenge as well. Another interesting challenge relates to the limited knowledge of the long-term performance of electric buses, given the shortened lifespan in the market and research sphere as compared to conventional diesel buses.

#### Discussion:

- There have not been any major efforts in the City of Alexandria to educate current staff regarding charging station maintenance. Right now, they are primarily relying on vendor support for maintaining charging infrastructure. It is currently unclear whether training will be adopted by the city's fleet maintenance group, facilities group, or if this will continue to be outsourced.
- A group of transit agencies, utility regulators, planning organizations, and private sector stakeholders are preparing a letter to send to Congress urging federal investments in electric buses and infrastructure to aid the transition.

#### **7. ADJOURN**

*Deni Taveras, CEEPC Chair*

Chair Deni Taveras adjourned the meeting. Upcoming CEEPC meeting dates for 2021 include:

- November 17

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

<https://www.mwcog.org/events/2021/9/22/climate-energy-and-environment-policy-committee/>