

Metropolitan Washington Council of Governments (MWCOG)

## **Climate, Energy and Environment Policy Committee (CEEPC)**

Meeting Summary: July 22, 2015

### **Members and Alternates in Attendance:**

Roger Berliner, Montgomery County (Chair)  
Bill Eger, City of Alexandria (by phone)  
Brianna Nadeau, District of Columbia  
Austina Casey, District Department of Transportation  
Kambiz Agazi, Fairfax County  
Kate Zyla, Georgetown Climate Center  
J Davis, City of Greenbelt (by phone)  
Mike Barancewicz, Loudoun County Public Schools  
John Lord, Loudoun County Public Schools  
Tim Shepherd, Maryland Department of the Environment  
Luke Wisniewski, Maryland Department of the Environment (by phone)  
Kyle Haas, Maryland Energy Administration  
Michelle Vigen, Montgomery County (by phone)  
Nick Bonard, National Capital Planning Commission  
Bob Lazaro, Northern Virginia Regional Commission (by phone)  
Matt Dernoga, Prince George's County (by phone)  
Erica Bannerman, Prince George's County  
Gina Mathais, City of Takoma Park  
Fred Schultz, City of Takoma Park  
Glenna Tinney, ACPAC Chair  
Veronique Marier, Bethesda Green  
Molly Plautz, Dominion  
Dann Sklarew, George Mason University  
Ryne Shetterly, Complete Coach Works  
Brian Toll, Ecobeco (by phone)  
Michael Reed, Groundswell Energy  
Justin Fishkin, Local Motors  
Kathy Kinsey, NESCAUM  
Jerry Pasternak, Pepco  
Rob Stewart, Pepco  
Tim Stevens, Sierra Club (by phone)  
Rachel Healy, WMATA

### **COG Staff in Attendance:**

Steve Walz, Department of Environmental Programs Director  
Maia Davis, Department of Environmental Programs

Isabel Ricker, Department of Environmental Programs  
Sophie Earll, Department of Environmental Programs  
Madison Wagner, Department of Environmental Programs  
Erin Morrow, Department of Transportation Programs

## **1. Call to Order/Introductions/Chair Remarks/Approval of Meeting Summary**

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Chair Berliner called the meeting to order. The meeting summary from May, 2015 was approved.

## **2. Announcements and Updates**

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ACPAC Report (Glenna Tinney, ACPAC Chair)

- The CEEPC climate and energy and program received 33 applications this year, twice as many as in 2013. Opened it up this year to non-profits and businesses. Will score the applications, and do awards ceremony in October.
- ACPAC is seeking to learn more about environmental justice as it pertains to climate change and air quality issues in the coming months.

BEEAC and PACE Work Group Reports (Michelle Vigen, BEEAC Chair)

- The July meeting was a joint BEEAC and MSWG Energy & Built Environment meeting. Members provided input on ICF's initial analysis on the potential of GHG emission reduction strategies for MSWG.
- A PACE Work Group has been formed to build the capacity of members to advance commercial PACE programs. PACE was a large part of the discussion at BEEAC's July meeting.

Solarize (Isabel Ricker, COG DEP)

- COG has supported four successful solar co-ops so far this year, covering 6 member jurisdictions: Montgomery County, City of Rockville, and City of Bowie in Maryland, and Arlington County, Fairfax County, and City of Falls Church in Virginia.

Multi-Sector Working Group (Steve Walz, COG DEP)

- ICF recently completed their analysis of the greenhouse gas reduction potential of the strategies identified by the MSWG subgroups. The overall graph shows that these strategies achieve about half of the reductions needed to meet our GHG goal. The largest reduction is from potential changes in electrical supply system.

MWAQC Regional Action Plan (Steve Walz, COG DEP)

- At the May meeting, MWAQC passed a resolution on the committee's goals for reducing emissions in the region. The resolution supports implementation of an Action Plan to address current and future ozone standards and to better protect public health. The Action Plan includes local and state-level ozone reduction measures, some of which compliment measures in CEEPC's Climate and Energy Action Plan.

## Member Updates

- District of Columbia – the Council recently approved a 20 year contract for wind power that will provide 35% of the DC government’s electricity use. DC also recently initiated a Greening the Fleet initiative to do a detailed fleet inventory of public and private fleets and develop comprehensive strategies to “green” these fleets.
- Montgomery County – first local government in the Country to approve Green Bank legislation. This will be likely be initially capitalized by the settlement agreement under the Exelon-Pepco merger. The County is hopeful the Green Bank will help to spur greater innovation, job creation and deployment of clean energy, particularly solar and commercial PACE.

### **3. Work Program and Budget**

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Steve Walz gave an overview of the Department of Environmental Programs budget and Regional Environment Fund. The first main area, climate and energy policy development, includes Climate & Energy Action Plan development and Progress Reporting, supporting the Multi-Sector Working Group, support members under the Climate Action Champions program, running the Climate & Energy Leadership Awards program, developing and updating the Gold Book on state and local air quality activities, managing regional climate & energy training initiatives, developing a regional greenhouse gas inventory, reporting with the Carbon Disclosure Project, and assisting local governments with local greenhouse gas inventories.

Steve gave an overview of the DEP work program activities and plans in the following departmental areas: BEEAC, Energy Infrastructure, Efficiency & Renewables, Sustainability & Adaptation, ACPAC, Diesel Retrofits, Member Support/Program Development, Recycling & Solid Waste, and Green Infrastructure.

### **4. Innovative Transportation Technology and Fleet Solutions**

*Kathy Kinsey, NESCAUM (moderator), Justin Fishkin, Local Motors, Ryne Shetterly, Complete Coach Works, Rob Stewart, Pepco*

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#### **Kathy Kinsey, NESCAUM**

RGGI states have reduced GHG emissions from power sector 45% from 2005 levels. Unfortunately transportation sector GHG emissions are growing in most states, contributing to ozone and smog problems, as well as climate change. No level of smart growth and public transit is going to get us the carbon reductions we need. Electrification of transportation is the only known strategy today that can achieve our climate goals.

California adopted a zero emission vehicle (ZEV) program, which requires auto manufacturers to make ZEVs a larger percentage of their vehicles in state – up to 15% by 2025. This has been adopted by eight states through an MOU committing to having 3.3 million ZEVs by 2025, including a multi-state action

plan. Purchase incentives, increasing and building out charging infrastructure, removing regulatory barriers for both ZEVs and charging infrastructure.

Local governments have a critical role to play in supporting and facilitating ZEVs through zoning codes, land use policy, building codes, permitting issues. New construction needs to be electric vehicle ready – installing the electric infrastructure necessary if not the charger itself – will have most significant and long lasting impact. Electrification of public fleets is another important step, especially as an educational, public awareness and lead-by-example initiative. COG and NESCAUM recently submitted application to US DOE on cooperative purchasing of EVs for local public fleets. NESCAUM works to support all of these efforts, including by developing model codes and ordinances for state and local governments.

Cathy introduced the panel members, who will discuss new and innovative technology and business models on low and zero emission vehicles: Justin Fishkin from Local Motors, Ryne Shetterly from Complete Coach Works, and Rob Stewart from Pepco Holdings.

### **Justin Fishkin, Local Motors**

At the Detroit Auto Show, Local Motors printed an entire car body on the expo floor. They hope to revolutionize auto manufacturing through micro-factories and 3D printing. They created the first 3D printed electric car called the Strati. Local Motors will be opening a micro-factory at National Harbor this fall. The company is based on two pillars:

- Co-creation – have relationships with a hundred thousand engineers around the world who assist in designing cars for local motors, but do not work for them.
- Community/micro-scale – looking to empower the demand side of the equation, enable people to design their own vehicles.

These factors enable them to design cars five times faster and ~10 times cheaper than big automakers. For example, DARPA asked them to design a rescue vehicle for the military. It took 3.5 months and cost \$400k, an order of magnitude smaller than traditional car manufacturing.

### **Ryne Shetterly from Complete Coach Works (CCW)**

CCW is the largest provider of repowers in the country. Their sustainability model makes them unique: CCW repowers scrap or retired buses that have reached mile or age limits, with all-electric engines. Additionally, CCW recycles all materials taken off the bus, which creates huge environmental benefits.

The ZEV package is specifically designed for the transit sector. It uses a lithium ion battery, which charges the bus in 4-5 hours and the bus can go 150 miles on that charge. CCW holds the nation's largest contract for electric buses, and developed the first inductively charged trolley in Monterey Selinas. By using fewer battery packs and focusing on opportunity charging, CCW can reduce the upfront cost.

Ryne noted that while the bus itself is zero-emissions, the life-cycle analysis is not zero emission because of the emissions from battery manufacturing and electricity used to charge it. Recently, CCW worked with the University of California to build the first real zero emission bus which is charged by solar panels.

CCW's ZEV buses are half the cost of a normal new bus. Additionally, estimated annual savings in fuel and labor costs are \$440,000-460,000.

**Rob Stewart, Pepco**

The Maryland Electric Vehicle Infrastructure Council is leading the effort to deploy advanced technology to the grid, including smart-charging and vehicle-to-grid (V2G) pilot programs. The challenge is the electricity consumption of two EVs is about equivalent to one residential home, which creates a problem if everyone charges vehicles at the same time in the same area (large volumes of EV deployment could overload a transformer and cause other problems for the grid). Pepco's pilot program offers (1) a time of use rate and (2) EV-only rates with a green rider option, which adds about 2 cents to the rate. There are 77 participants in the pilot. Pepco received an additional 27 applications in May that have not been included in the data for this presentation.

Passive demand response pricing provides the ability to demonstrate active demand response (DR). Active DR involves Pepco turning the charger down, not off, and gives customers the option to opt-out of that DR event. Pepco has also participated in a peak energy saving credit program, making them the first utility to use EVs for DR. Approximately 90% of customers took advantage of off peak rates for charging.

A V2G pilot launched by Pepco and the Department of Defense has identified and is working to address emerging challenges. The pilot includes 4 trucks with V2G and some passenger cars where PJM can send a signal to stop charging the vehicle. Scheduling vehicle availability is the biggest challenge.

Another emerging challenge is using V2G as net energy metering. Delmarva considers V2G as net metering and although there is not a lot of activity the University of Delaware is working on it. Utilities are challenged on interconnection and compliance with IEEE (UL 1741) which prevents back-feeding into the grid since it can cause safety issues for linemen. Technically, V2G is currently non-compliant with the current interconnection standard. V2G manufacturers don't want to invite UL, an independent safety science company, into the manufacture process. There is a lot of rigidity and oversight. Concern for utility standards will drive safety for equipment, code enforcement, how it will be certified and maintained.

**Discussion:**

One member commented that there is concern with concentration of the load – level 2 chargers have a higher load than level one, and some households may buy a second EV which doubles the load. Pepco is trying to understand where EVs are coming to prepare the grid for it, and to make sure that standards are robust to protect consumers.

In Maryland, the Energy Administration has a program to assist local governments with installing EV charging infrastructure and Maryland is also one of the signatory states of the ZEV MOU.

In response to a question on the Local Motors micro-factory, Justin described how they plan to opening in National Harbor by December 2015 and they are discussing the possibility of opening a full manufacturing facility/lab at the University of Maryland next year. When a customer comes into the micro-factory they can expect to pay in the range of \$18-30K for a vehicle depending on model, etc. One member commented that with the advancement of technologies such as this it will be interesting to see the interface between EVs, Uber and other transportation models; in the future we may see future as car as a service, contracting with the company rather than owning.

There was a little discussion around rail electrification. It was mentioned that it is possible to electrify anything, such as a locomotive, airport tugs, etc. Metro's purple line will require major overhead electric lines and there was a question as to why it's not being done for all light rail. Another commenter said overhead lines will require loss of many trees. European has a model for self-electrified light rail.

Moscow passed legislation ensuring that any multifamily or commercial would be built EV ready and there was a questions as to whether there are any similar requirements in the US and if there are any requirements for EV stations to purchase renewable power. The panel and committee members were not aware of any such requirements.

There was a question to whether electric can really work for heavy buses. Ryne, CCW, commented that it just requires more batteries and more power technology to provide necessary power and torque. As the technology advances the energy density of batteries will increase and continue to allow for greater range between charges. One member commended CCW on the reuse and recycling of the buses' materials.

In order for the committee to not just hear about the technology but to see it, WMATA, CCW and COG are partnering on a Zero Emission Bus Demonstration in August 2015. CEEPC, transit agencies, public sector fleet managers, and other interested parties are invited to participate. Local Motors future micro-factory at National Harbor is potentially another opportunity for a tour to see the technology first-hand.

## **5. Adjourn: Next Meeting Date September 23, 2015**

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