District of Columbia
Transportation Electrification Roadmap

Equitable EV Service Equipment Placement

Webinar will begin shortly…
District of Columbia
Transportation Electrification Roadmap
Equitable EV Service Equipment Placement
Thursday, 29 April 2021
Welcome – Opening Remarks – Agenda

**Agenda Outline**

- Welcome
- Introduction to the Grantee: *the Electrification Coalition*
- Transportation Electrification Roadmap (Eric Campbell, DOEE)
  - Goals
  - Recapping January/March webinars
- Intro to EV Supply Equipment/Charging Stations/Charging Infrastructure
  - Current locations/Equitable Placement
- Opportunities:
  - Public Private Partnerships
  - Utility Transportation Electrification Program
  - Curbside Charging
  - Projected Needs/Barriers – Roadmap Analysis
- Breakout Discussion
- Report-out/Questions/Feedback/General Discussion
Schedule of Stakeholder Sessions

- Thur, April 29 | 7pm: Equitable EV Service Equipment Placement
- Thur, May 13 | 7pm: Incentives / Transportation Needs Assessment
- Thur, May 27 | 7pm: Incentives For Businesses, Fleets, Utility and Energy Interests
- Thur, June 24 | 7pm: EV/ EV Service Equipment Strategy
- Thur, July 29 | 7pm: School Bus Electrification
- Thur, August 26 | 7pm: Concluding Roadmap Feedback Group

Register at bit.ly/electrification-roadmap
Who We Are

The Electrification Coalition (EC) is a nonpartisan, non-profit organization committed to promoting policies and actions that facilitate the deployment of electric vehicles on a mass scale, in order to combat economic and national security dangers caused by our dependence on oil.

- Technical Lead: Climate Mayors EV Purchasing Collaborative
- Electrification Advisor: Bloomberg American Climate Cities Challenge
- Freight Electrification Pilot Project: Hewlett Foundation
- Lead Electrification Partner: Smart Columbus
- Electrification Advisor: City of Atlanta Partnership
- Project Lead: Drive Electric Northern Colorado
- Project Lead: Rochester EV Accelerator
CLEAN ENERGY DC
THE DISTRICT OF COLUMBIA CLIMATE AND ENERGY PLAN

Transportation Electrification

DEPARTMENT OF ENERGY & ENVIRONMENT
GOVERNMENT OF THE DISTRICT OF COLUMBIA
Clean Energy DC is the District’s first quantified roadmap to meet the Sustainable DC climate and energy goals.

GHG EMISSIONS BY SOURCE

- 52% Electricity
- 20% Gasoline
- 19% Natural Gas
- 3% Waste
- 1% Diesel
- 2% Fuel Oil
- 0.5% Fugitive Emissions
- 3% Transmission Losses

GHG EMISSIONS BY SECTOR

- 24% Residential Buildings
- 32% Commercial & Industrial Buildings
- 19% Institutional & Government Buildings
- 19% Passenger Vehicles
- 2% Transit
- 1% Other Medium- & Heavy-Duty Vehicles
- 3% Waste

The plan will reduce emissions by 50% by 2032 compared to 2006 levels, and will help the city achieve carbon neutrality by 2050.
Overview of CEDC Act

The Act, effective as of March 2019, will realize CEDC goals by targeting three areas:

• **Transportation Emissions Reduction and Electrification** - mandates and incentivizes a path for zero-emissions fleets, buses and private vehicles

• **Renewable Energy** - mandates 100% renewable energy by 2032

• **Energy Efficiency** - Establishes a first-of-its kind Building Energy Performance Standard for buildings
Transportation Electrification Roadmap Goals

1. Buses and private fleets 50% Low or Zero Emissions Vehicle (ZEV) by 2030 → 100% ZEV by 2045

2. 100% EV replacement of public buses and school buses at End-Of-Life by 2021

3. At least 25% ZEV registrations by 2030 (estimate ~75,000 EVs)

Provide policies, cost estimates, and timelines
QUESTIONS?

CONTACT INFORMATION

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Transportation Electrification Roadmap

Transportation Vision:

- Mode Shift to active transport and public transit
- Fuel switch to Electricity
EV Charging is only one piece of the puzzle

- Consumer EV adoption
- Private fleet electrification
- Dealership engagement
- School bus electrification
- Policy recommendations for Transportation Electrification – incentives, rate design, etc
Transportation Electrification Roadmap Final Report due **October 31, 2021**

- Receive **Stakeholder comments and redraft accordingly**

**January 27 Webinar – Introduction and Orientation:**

- View our previous **webinar recording (shared in chat)**
- Outline of Roadmap workstreams in relation to goals; overview of work completed, work that remains, and how it will be achieved.

**March 17 Webinar – Introduction to Mobility Equity:**

- View our previous **webinar recording (shared in chat)**
- Introduction to Electric Vehicles and Charging Equipment; definition of Mobility Equity, review of the 12 mobility equity indicators, and overview of several EV Adoption Strategies (including incentives) that are being considered as recommendations.
Equitable EV Service Equipment Placement

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EVSE
EV Service Equipment
(Charging Equipment/Charging Stations)

**Level 1**
120V
- Standard 120V outlet
- Adds 5 miles per hour of charge*
- Residential use

17-25 hours to fully recharge a 100-mile battery

**Level 2**
240V
- 240V outlet, can also be hardwired
- Adds 20-60 miles per hour of charge*
- Residential & commercial use

4-5 hours to fully recharge a 100-mile battery

**Level 3**
480V
- DC Fast Charger
- Adds 60-100 miles per 20 minutes of charge*
- Commercial use
EV Service Equipment
(Charging Equipment/Charging Stations)

- AC Level One
- AC Level Two
- DC Fast Charge

- J1772
- CCS
- CHAdeMO

- Tesla Combo

Diagram showing different types of EV charging equipment and connectors.
Equitable EV Service Equipment Placement

Equitable Placement Priorities:

- **Plan for the Electric Future**
- **Provide Public Amenity**
- **Equal access in every Ward**
- **Affordable pricing**

Current EV Charging Deployment
Equitable EV Service Equipment Placement

At least 25% ZEV registrations by 2030 (estimate ~75,000 EVs)

**Projected EV Charging Need by 2030**

<table>
<thead>
<tr>
<th>EV Charger Type</th>
<th>Number of Charge Ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Workplace – Level 2 (L2)</td>
<td>2,677</td>
</tr>
<tr>
<td>Public – Level 2 (L2)</td>
<td>1,858</td>
</tr>
<tr>
<td>Public – DC Fast Charging (DCFC)</td>
<td>542</td>
</tr>
</tbody>
</table>

**Current Public EV Charging:**
- Level 2 - 546 outlets
- Level 3 - 33 outlets
Montgomery County, March 2021:

- Opening pre-determined spaces on County-owned property for EVSE companies to install-finance-operate-maintain electric vehicle charging stations.

- Third-party would implement, at its sole cost. Final award is to be based on the proposal that provides the greatest overall community benefit and value to the County.

Considerations: Sovereignty/security concerns
Curbside Charging

DC law and regulations do not currently permit the running of residential power into public space such as the curbside to support private electrical infrastructure including EV charging stations and electrical outlets.

DDOT:
• Final rulemaking underway -- EVSE vendors will be able to apply for permits to install, own, and operate EV charging stations in public space and along the curb.

• Rulemaking explicitly allows for blocks with Residential Parking Permit (RPP) parking to be considered by vendors.

• Vendors who apply for permits must present their plans to affected ANC(s)
Curbside Charging

Eligible parking spaces:
• Residential blocks with/without RPP

Exclusions:
• Rush hour restrictions
• Snow emergency routes
• Locations with reserved accessible parking
• Streets designated as part of moveDC’s transit or bicycle priority network
• Places where bus and bicycle lanes are adjacent to the curb.
Pepco’s Proposed Transportation Electrification Program

- The PSC did approve Pepco to provide “make ready” infrastructure to support EV charging stations, which includes improvements to utility-side infrastructure up to the conduit and meter.

Up to 35 Smart Level 2 charging stations; Up to 5 depot and 1 on-route chargers; 20 Fast-Charging stations
Offering 10: Make-ready infrastructure for 2 DCFC and 10 Level II for taxi/rideshare

- Pepco applied through the Mid-Atlantic Electrification Partnership for federal DOE grant funding to increase the charging capability for this Offering.
- Should the parties choose to move forward with this grant, Pepco will make a formal request to the PSC to modify this offering.

Offering 11: Make-ready infrastructure for five (5) 125kW bus depot chargers and one (1) 500kW on-route charger

- Pepco continues to coordinate with WMATA and DDOT and is currently reviewing requests for EVCS make-ready infrastructure at 2 bus depots. Both WMATA and DDOT’s plans for electrification within their bus depots currently call for 150kW chargers.
- Parties are reviewing available capacity and the expected charging profile at the bus depots. Pepco may formally request a modification of this Offering to meet the needs of the transit agencies.
Utility Transportation Electrification

Excerpts from Pepco’s Transportation Electrification Program (April 2021 Update):

**Offering 7: Make-ready infrastructure for 35 Public Smart Level II EVCS**
- Through March 31, 2021, construction completed for four (4) Level II EVCS.
  - Another six (6) stations under construction
- Applications for thirteen (13) stations under review at commercial locations.

**Offering 8: Make-ready infrastructure for 20 Public DCFC**
- Pepco received inquiry for a rebate for previously installed DCFC, but has not received applications for DCFC installations in commercial spaces.

*EVCS = EV Charging Station*
Current Public EVSE Locations

**Current Public EV Charging:**
- **Level 2** - 546 outlets (Blue)
- **Level 3** - 33 outlets (Yellow)
Analysis – Public EVSE Locations

District-owned parking lots

Public school locations
Analysis – Public EVSE Locations

Recreation centers

Public libraries

@DOEE_DC
Analysis – Public EVSE Locations

Snow emergency routes

Bike lanes
Breakout Groups

Feedback on:

• The most useful charging levels in each use-case: Residential (MUDs, curbside); public chargers (L2 vs L3 needs); workplace charging?

• Infrastructure placement -- where would you like to see EVSE infrastructure? Needs, concerns?

• Private sector EVSE development – any concerns about specific vendors?
How Can We Improve?

How do you want to see EV development incorporate equity?

What would you like to see addressed that has not been?