District of Columbia
Transportation Electrification Roadmap

Incentives / Transportation Needs Assessment

Webinar will begin shortly…
District of Columbia
Transportation Electrification Roadmap

Incentives / Transportation Needs Assessment

Thursday, 13 May 2021
Welcome – Opening Remarks – Agenda

Agenda Outline

• Welcome

• Introduction to the Grantee: the Electrification Coalition

• Transportation Electrification Roadmap (Eric Campbell, DOEE)
  • Goals

• Recapping previous webinars

• Introduction: a Transportation Needs Assessment

• Framework for Incentives (Brad Nelson)

• Breakout Discussion

• Report-out/Questions/Feedback/General Discussion
Schedule of Stakeholder Sessions

• 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
The Electrification Coalition

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
TRANSPORTATION ELECTRIFICATION
DC CLIMATE AND ENERGY GOALS

Clean Energy DC is the District’s first quantified roadmap to meet the Sustainable DC climate and energy goals.

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

@DOEE_DC
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

Eric Campbell
Eric.Campbell@dc.gov
202-450-0190
Transportation Electrification Roadmap

Transportation Vision:

Mode Shift to active transport and public transit

Fuel switch to Electricity

ROADMAP
Roadmap - Status

Transportation Electrification Roadmap Final Report due **October 31, 2021**

- **Receive Stakeholder comments and redraft accordingly**

**Introduction and Orientation:**
- Outline of Roadmap Activities

**Introduction to Mobility Equity:**
- Introduction to Electric Vehicles and Charging Equipment

**Equitable EV Charging Placement:**
- Discussion about desirable locations for EV chargers

---

Recordings of past sessions can be provided.
Transportation Needs Assessment

TNA
A Transportation Needs Assessment (TNA) is a process that involves determining communities’ transportation needs and setting criteria for understanding how to best allocate resources that increase mobility to meet those identified needs.

- Targeting specific communities and populations
- Focus on transportation electrification projects
- Complement moveDC/public transit
Transportation Electrification focus

**What?**
Identify community transportation needs which may be addressed by electrification programs.

**Why?**
Gather feedback in order to make recommendations for the Roadmap

**How?**
Survey exercise (and any direct feedback or comments!)
# TNA Process

<table>
<thead>
<tr>
<th>Needs Identification</th>
<th>To meet the District’s goals of carbon neutrality by 2050 while ensuring equitable outcomes for all residents.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Collection &amp; Analysis</td>
<td>This stage gathers information to identify existing concerns; gaps in mobility, awareness/knowledge, and services; and identify electrified transportation projects which may address these stakeholder concerns.</td>
</tr>
<tr>
<td>Data Application</td>
<td>Once data is collected the responses, input, and feedback will be used to evaluate solutions and determine how to best allocate resources that increase mobility to meet those identified needs.</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Evaluation helps understand what was successful and finds opportunities for improvement.</td>
</tr>
</tbody>
</table>
Transportation Electrification Focus

**moveDC Strategies**

- Implement the DC Circulator electrification plan and electrify the District-owned bus fleet by 2027
- Offer micromobility (bicycle and scooter) options in all 8 wards; leverage community partnerships
- Increase e-bikes to 25% of fleet; Add more bikeshare stations and increase use
- Encourage commercial/private interests and property developers to add EV chargers at sites in locations where there is demand

**Sample responses/programs include:**

- Electric carshare
- Electric Vehicle Group-Buy or Personal EV Incentives
- ICE-for-EV trade-in program (some cash value + transit incentives)
- E-bike purchase incentives
- Employer incentives for riding transit
Types of Questions

• How easy or hard it is to get to where you need to go
• Familiarity with different types of transportation options
• How you currently get around and how often
  • How you travel for certain purposes
• How you would consider traveling if the options were readily available and affordable
• What incentives you would be most interested in
Framework for Policies & Incentives
# Current EV Policies

<table>
<thead>
<tr>
<th>Monetary Incentives</th>
<th>Current Policies</th>
<th>Policy Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AFV Conversion Tax Credit</td>
<td>50%/$19k per vehicle</td>
</tr>
<tr>
<td></td>
<td>AFV Infrastructure Tax Credit</td>
<td>50%/$1k Res/$10k Public EVSE</td>
</tr>
<tr>
<td></td>
<td>Reduced Registration fee for AFVs</td>
<td>$36 Total-First 2 yrs</td>
</tr>
<tr>
<td></td>
<td>Plug-In PEV Title Excise Tax Exemption</td>
<td>6% of MSRP/Median:$680</td>
</tr>
<tr>
<td>Operational Incentives/Requirements</td>
<td>AFV Exemption from Driving Restrictions</td>
<td>Fleets (10+) Time-of-day/day-of-week restrictions/commercial bans</td>
</tr>
<tr>
<td></td>
<td>AFV Acquisition Requirements</td>
<td>Fleets (10+) - 70%(8.5k lbs)/50%(25k lbs)</td>
</tr>
<tr>
<td></td>
<td>Passenger Gov Fleet Procurement Requirements</td>
<td>Avg MPG 22+ &amp; no SUVs (W/exemptions)</td>
</tr>
<tr>
<td></td>
<td>Emission Reduction Plan for TNCs</td>
<td>Every 2 yrs TNCs - update GHG reduction plan (Increasing ZEV use &amp; VMT)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>City Goals/Supportive Programs</th>
<th>ZEV Deployment Support</th>
<th>Ex order - Public &amp; commercial fleets (2030: 25% ZEVs/ 2045: 100% ZEVs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MHDV ZEV MOU Signatory</td>
<td>2030: 30% ZEV /2050: 100% ZEV (Sales)</td>
</tr>
<tr>
<td></td>
<td>Regional Transporation and Climate Initiative</td>
<td>Develop policies and programs energy efficiency of regional transportation systems and reduce emissions. (EVSE)</td>
</tr>
<tr>
<td></td>
<td>AFV and Infrastructure Support</td>
<td>Green Finance Authority - Increase private investment in clean transportation projects (Bonds &amp; funding allocations)</td>
</tr>
<tr>
<td></td>
<td>Low Emission Vehicle Standards</td>
<td>Title 13 of CA code of Regulations</td>
</tr>
</tbody>
</table>
Equity Electrification Framework

Greenlining Institute
Urban Transportation Policy Priorities

Urban Transportation Policy Priorities (District of Columbia)

- Electric Public Transit
- E-Bike (Shared or Owned)
- E-Carshare
- E-Rideshare
- Personal Electric Vehicle

- Personal Gas Vehicles
- Personal Electric Vehicles
- Ride-hailing (Uber, Lyft)
- Taxis
- Carshare (Zipcar)
- Bikeshare
- Rideshare (Car/Vanpool, Microtransit)
- Conventional Public Transit
- Electric Public Transit
- Active Transportation (Bike/Walk)

@DOEE_DC
## Equity Framework - Policy Examples

<table>
<thead>
<tr>
<th></th>
<th>Equity Focused Policy Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electric Public Transit</strong></td>
<td>Fleet Procurement Requirement (# or % by prescribed date)</td>
</tr>
<tr>
<td></td>
<td>EV First Transit Procurement Requirement</td>
</tr>
<tr>
<td><strong>E-Bike (Shared or Owned)</strong></td>
<td>Purchase incentives for low-income residents</td>
</tr>
<tr>
<td></td>
<td>Subsidized E-bike sharing for low-income residents</td>
</tr>
<tr>
<td><strong>E-Carshare</strong></td>
<td>Prioritization of E-Carshare stations in low-income areas</td>
</tr>
<tr>
<td></td>
<td>Subsidized EV car sharing for low-income users</td>
</tr>
<tr>
<td><strong>E-Rideshare</strong></td>
<td>TNC Electrification Requirement (# or % by prescribed date)</td>
</tr>
<tr>
<td></td>
<td>Cost Sharing for TNC charging hubs development in lower-income areas</td>
</tr>
<tr>
<td><strong>Personal Electric Vehicle</strong></td>
<td>High emission vehicle buy-back program for low-income residents</td>
</tr>
<tr>
<td></td>
<td>Increased purchase &amp; EVSE incentives for low-income residents (new &amp; used vehicles)</td>
</tr>
</tbody>
</table>
## CEDC EV Policy Priorities

<table>
<thead>
<tr>
<th>Current Policy Goals</th>
<th>Time Frame</th>
<th>Progress</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Electric Public Transit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Set target for reducing transit bus emissions 65% per vehicle mile by 2032</td>
<td>Short Term</td>
<td>Significant</td>
</tr>
<tr>
<td>Pursue Funding Options to Subsidize Electric Transit Buses and Electric Charging Structure</td>
<td>Short Term</td>
<td>Some</td>
</tr>
<tr>
<td>Implement an EV bulk buy program (Public Vehicles)</td>
<td>Short Term</td>
<td>Initiated</td>
</tr>
<tr>
<td><strong>E-Bike (Shared or Owned)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E-Carshare</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pursue and EV-only car sharing fleet</td>
<td>Medium Term</td>
<td>Initiated</td>
</tr>
<tr>
<td><strong>E-Rideshare</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Personal Electric Vehicle</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Provide an EV purchase incentive</td>
<td>Short Term</td>
<td>Some</td>
</tr>
<tr>
<td>Adopt an EV-ready parking lot requirement</td>
<td>Short Term</td>
<td>Some</td>
</tr>
<tr>
<td>Adopt an EV-ready building code</td>
<td>Short Term</td>
<td>Some</td>
</tr>
<tr>
<td>Establish an EV Showcase and Purchase Center</td>
<td>Short Term</td>
<td>Some</td>
</tr>
</tbody>
</table>
Transportation Comparison: Cost & Emissions

### Transportation Cost Comparison

<table>
<thead>
<tr>
<th></th>
<th>Annual VMT Per Driver (Miles)</th>
<th>Annual Fuel Cost</th>
<th>Annual Maintenance Cost</th>
<th>Annual Total Cost</th>
<th>Avg. Non-Luxury Vehicle Cost (New)</th>
<th>TCO 10 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICE</td>
<td>7,013</td>
<td>$673.14</td>
<td>$554.03</td>
<td>$1,370.80</td>
<td>$26k</td>
<td>$39,708</td>
</tr>
<tr>
<td>BEV</td>
<td>7,013</td>
<td>$246.16</td>
<td>$168.31</td>
<td>$415.79</td>
<td>$37k</td>
<td>$41,158</td>
</tr>
<tr>
<td>E-Bike</td>
<td>7,013</td>
<td>$18.23</td>
<td>$322.60</td>
<td>$339.53</td>
<td>$1.5k</td>
<td>$4,895</td>
</tr>
</tbody>
</table>

- $1,450 difference in cost between ICE and BEV over 10 years
- Incentive as low as $1,500 would bridge the 10-year TCO cost gap between ICE and BEV sedans but not the upfront cost differential
- $1,500 incentive for an E-bike would completely cover the purchase cost.

### Transportation Emissions Comparison (Current PJM Energy Mix)

<table>
<thead>
<tr>
<th></th>
<th>Annual VMT Per Driver (Miles)</th>
<th>Annual CO2 Emissions (Lbs)</th>
<th>10 Year Emissions (Lbs)</th>
<th>% ICE Emissions Redux</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICE</td>
<td>7,013</td>
<td>5,633</td>
<td>56,330</td>
<td>N/A</td>
</tr>
<tr>
<td>BEV</td>
<td>7,013</td>
<td>1,611</td>
<td>16,110</td>
<td>71%</td>
</tr>
<tr>
<td>E-Bike</td>
<td>7,013</td>
<td>119</td>
<td>1,190</td>
<td>98%</td>
</tr>
</tbody>
</table>

- BEVs - 71% reduction in CO2 emissions
- E-Bikes - 98% reduction in CO2 emissions
Breakout Groups

Discussion areas:

Initial input about transportation needs related to electric transportation options

Feedback on the TNA process

Input on the awareness of current EV/EV charging incentives
Contact Information

Thank you for your participation.

How Can We Improve?

Andrea McCarthy
Program Manager
amccarthy@electrificationcoalition.org
(202) 753-4126