District of Columbia
Transportation Electrification Roadmap

School Bus Electrification

Webinar will begin shortly…
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Transportation Electrification Roadmap

School Bus Electrification

Thursday, 29 July 2021
Welcome – Opening Remarks – Agenda

Agenda Outline

• Stakeholder session schedule
• The District’s Clean Energy Plan (Eric Campbell, DOEE)
  • Transportation Electrification Roadmap
• School Bus Electrification
  • Vehicles/ Charging Equipment
  • Financing
• Breakout Discussion
• Report-out/Questions/Feedback/General Discussion
Transportation Electrification Roadmap Final Report due **October 31, 2021**

- *Receive Stakeholder comments and redraft accordingly*

**Past stakeholder session topics**

- January 27  Introduction and Orientation
- March 17   Introduction to Mobility Equity
- April 29   Equitable EV Charging Placement
- May 13     Transportation Needs Assessment/Incentives Framework
- May 27     Potential Incentives
- June 24    EV/ EV Service Equipment Strategy

Recordings of past sessions can be provided.
Schedule of Stakeholder Sessions

Upcoming stakeholder session topics

- Thurs, August 26, 7pm  Concluding Roadmap Feedback Group

Register at bit.ly/electrification-roadmap
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

@DOEE_DC
Transportation Electrification Roadmap

Transportation Vision:

- **Mode Shift** to active transport and public transit
- **Fuel switch** to Electricity

[move dc]
QUESTIONS?

CONTACT INFORMATION

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School Bus Electrification
Reducing Air Pollution with Electric School Buses

Air Pollution is now the largest environmental risk for early death

And is responsible for more than 6 million premature deaths each year
What about non-renewable generation?

Battery electric buses have lower global warming emissions than diesel (and natural gas) buses everywhere in the country.

Note: The MPG (miles per gallon, diesel) value listed is the fuel efficiency a diesel bus would need to have the same life cycle global warming emissions as a battery electric bus in each region. Regional global warming emissions ratings are based on 2016 power plant data in the EPA’s eGRID database (the most recent version). Argonne National Laboratory’s GREET 2017 model was used to estimate emissions from diesel and electricity fuel production.
Figure 1: Fleet Makeup

- Heavy-Duty Vehicles (Class 7-8) - 75%
- Medium Duty Vehicles (Class 3-6) - 24%
- Passenger Vehicles (Light-Duty) - 1%
Funding an Electric School Bus Fleet

Figure 4: Medium & Heavy-Duty Nominal Cost Per Mile per Vehicle Use Case

- Charging
- Carbon Cost
- Downtime Charging
- Taxes and Fees
- Insurance
- Maintenance
- Fuel
- Financing
- Depreciation
Challenges unique to the OSSE fleet
Options to reduce barriers to electrification

Collins E-450 Type A Electric School Bus
Charging an Electric School Bus Fleet
Incorporating Equity in Electric School Bus Programs
Electric School Bus Rider Experience

One option

Another option
Electric School Bus Rider Experience

ADA accessible electric bus
Twin Rivers Unified School District – Sacramento, CA

- First in the country
- Now operating 40 Electric School Buses
- All new buses will be alternatively fueled
Breakout Groups

Discussion areas:

How to inform communities of the benefits of electric buses

Where would you like to see these buses deployed initially?

How can the District serve equity and racial justice in its electric school bus fleet transition?
Contact Information

Thank you for your participation.

How Can We Improve?

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