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

Roadmap - Status

Transportation Electrification Roadmap Final Report due October 31, 2021

Receive Stakeholder comments and redraft accordingly

Past stakeholder session topics

 January 27 Introduction and Orientation 	•	January	27	Introd	luction	and	Orientation
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•	March 17	Introduction to	Mobility Equity
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 April 29 Equitable EV Charging Placeme 	nt
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•	May 13	Transportation Needs Assessment/Incentives Framework	, k
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May 27 Potential Incentives

June 24 EV/ EV Service Equipment Strategy

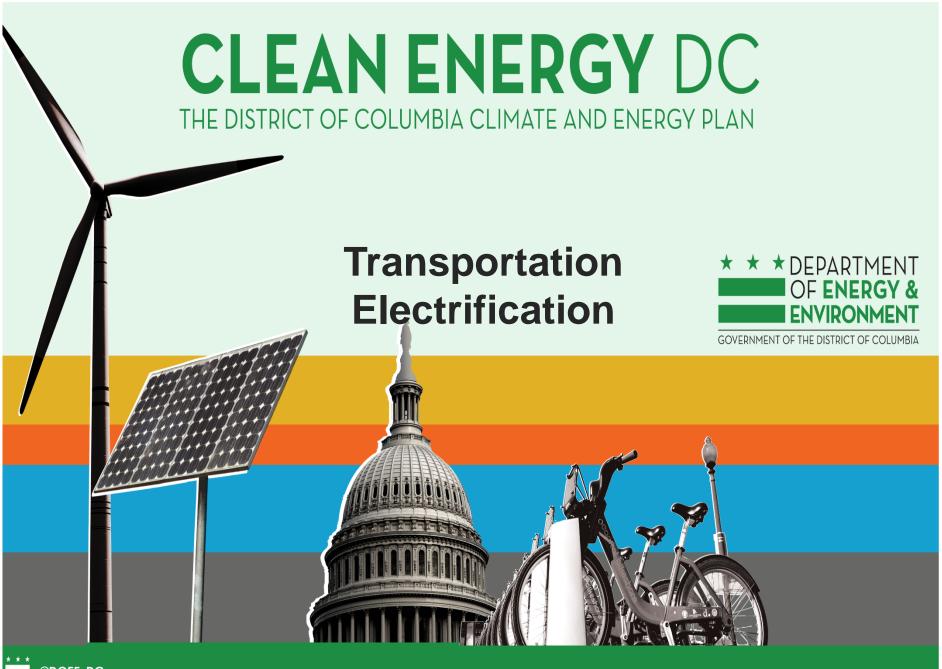
Recordings of past sessions can be provided.

Schedule of Stakeholder Sessions

Upcoming stakeholder session topics

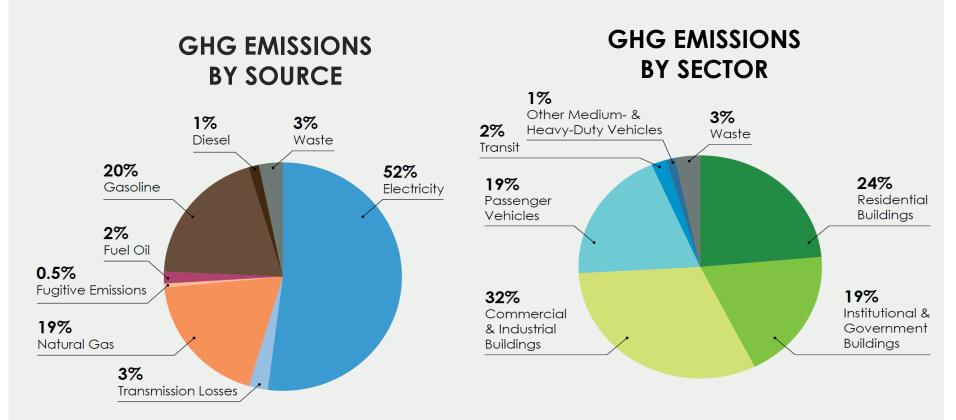
Thurs, August 26, 7pm Concluding Roadmap Feedback Group

Register at bit.ly/electrification-roadmap



DC CLIMATE AND ENERGY GOALS

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



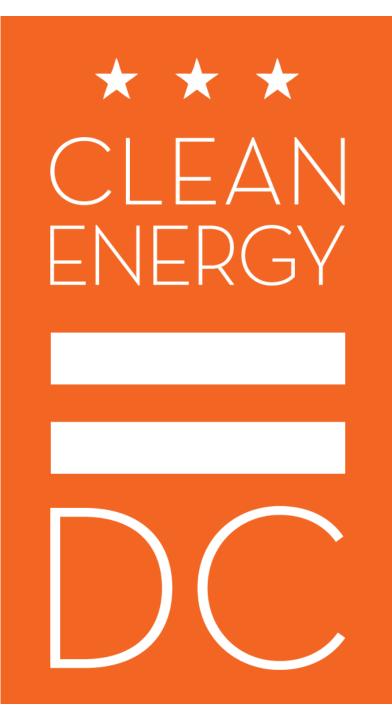
The plan will **reduce emissions by 50 %** by 2032 compared to 2006 levels, and will help the city achieve **carbon neutrality by 2050**

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





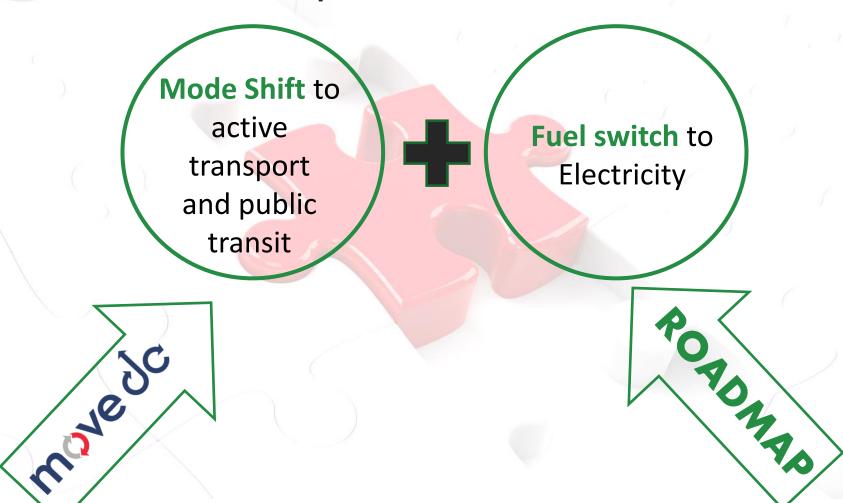
Transportation Electrification Roadmap Goals

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

Provide policies, cost estimates, and timelines

Transportation Electrification Roadmap

Transportation Vision:



QUESTIONS?



CONTACT INFORMATION

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Reducing Air Pollution with Electric School Buses



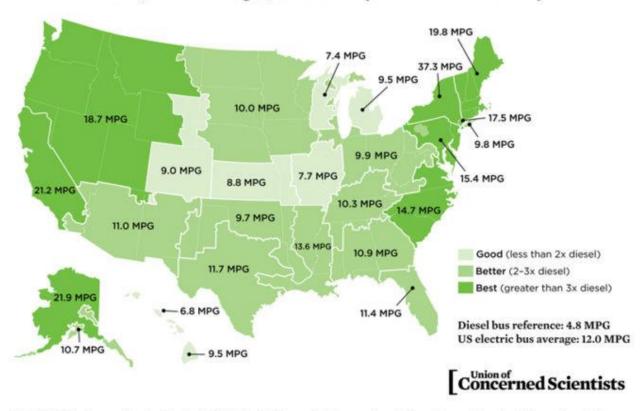
Air Pollution is now the largest environmental risk for early death

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.

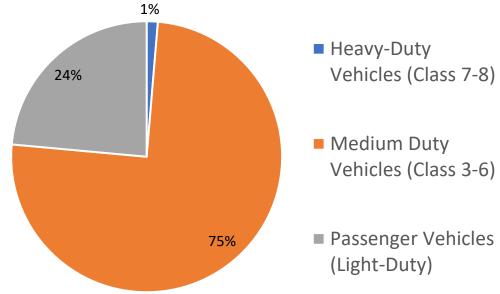


Note: The MPG (miles per gallon, diesel) value listed is the fuel efficiency a diesel bus would need to have the same life cycle global warming emissions as a battery electric bus in each region. Regional global warming emissions ratings are based on 2016 power plant data in the EPA's eGRID database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

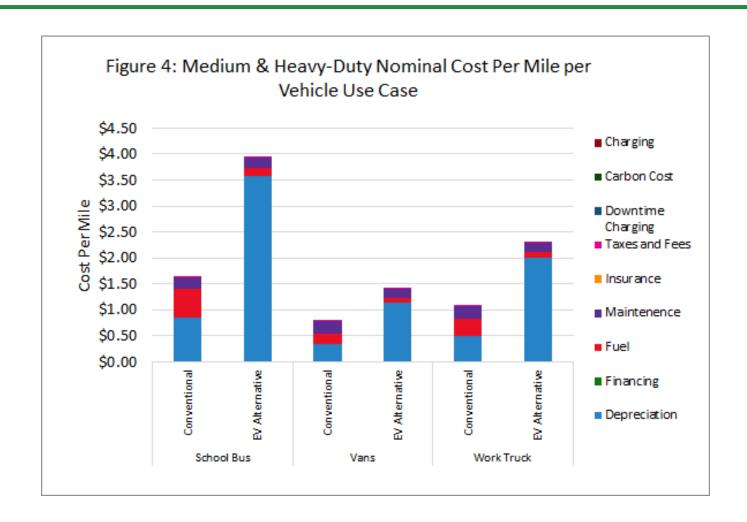
OSSE Fleet Vehicle Class Breakdown



Figure 1: Fleet Makeup



Funding an Electric School Bus Fleet



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

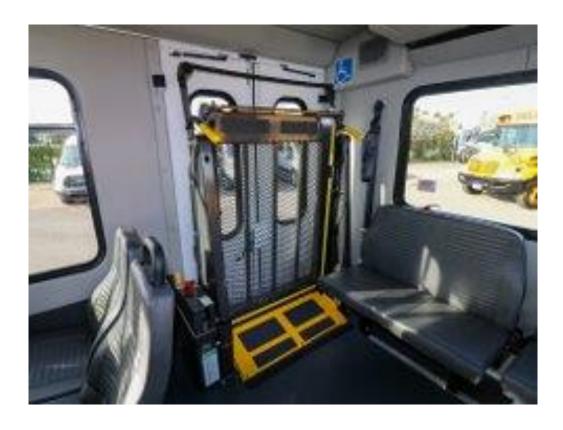




One option

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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