

District of Columbia

Transportation Electrification Roadmap

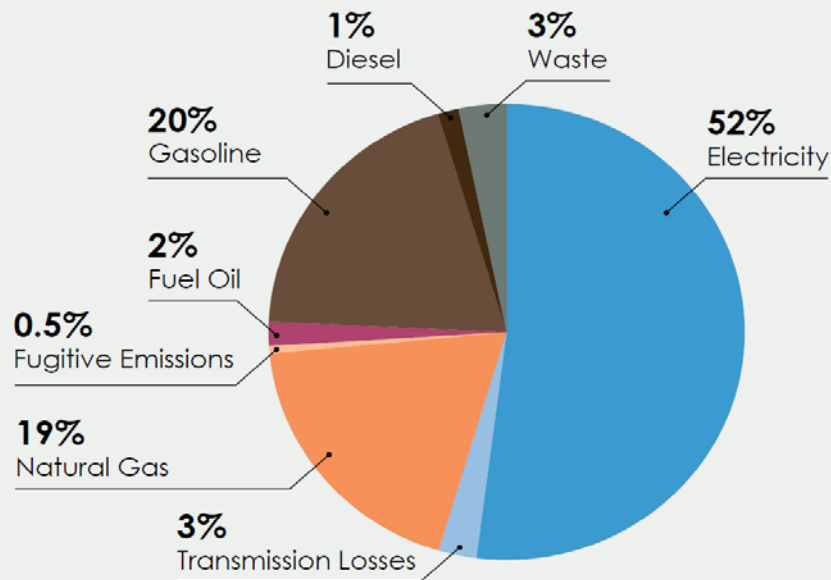
Wednesday, 22 September 2021



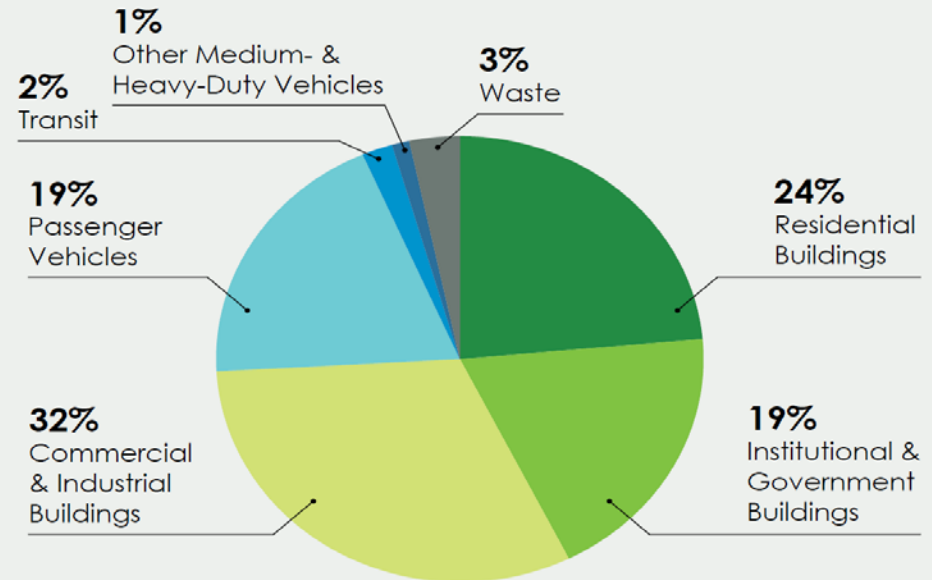
DC CLIMATE AND ENERGY GOALS

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

GHG EMISSIONS BY SOURCE



GHG EMISSIONS BY SECTOR

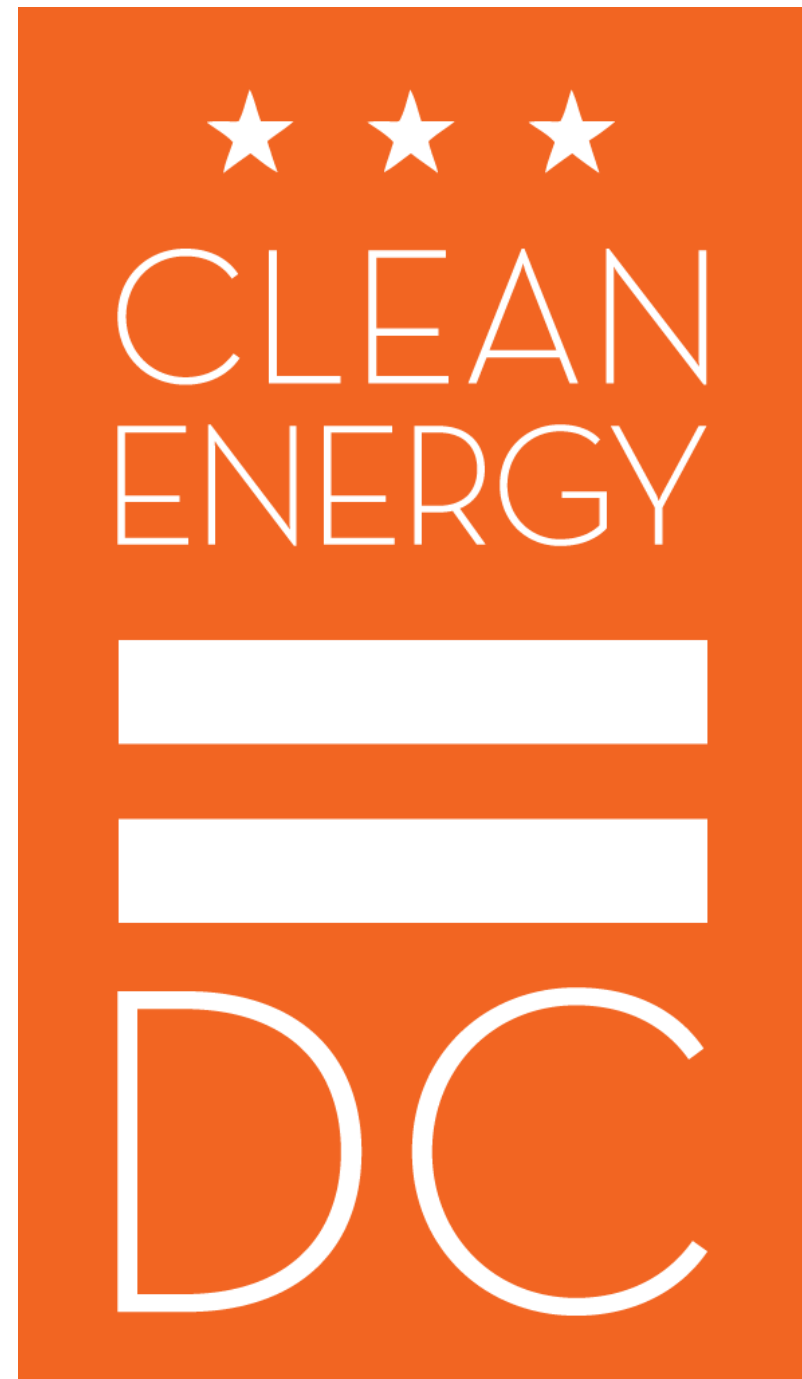


The plan will **reduce emissions by 50 %** by 2032 compared to 2006 levels, and will help the city achieve **carbon neutrality by 2050**

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



Buses and private fleets 50% Low or
ZEV by 2030 → 100% ZEV by 2045

Transportation Electrification Roadmap

Timeline

→ FINAL Transportation Electrification
Roadmap Report due **November 1, 2021**

EV Ecosystem

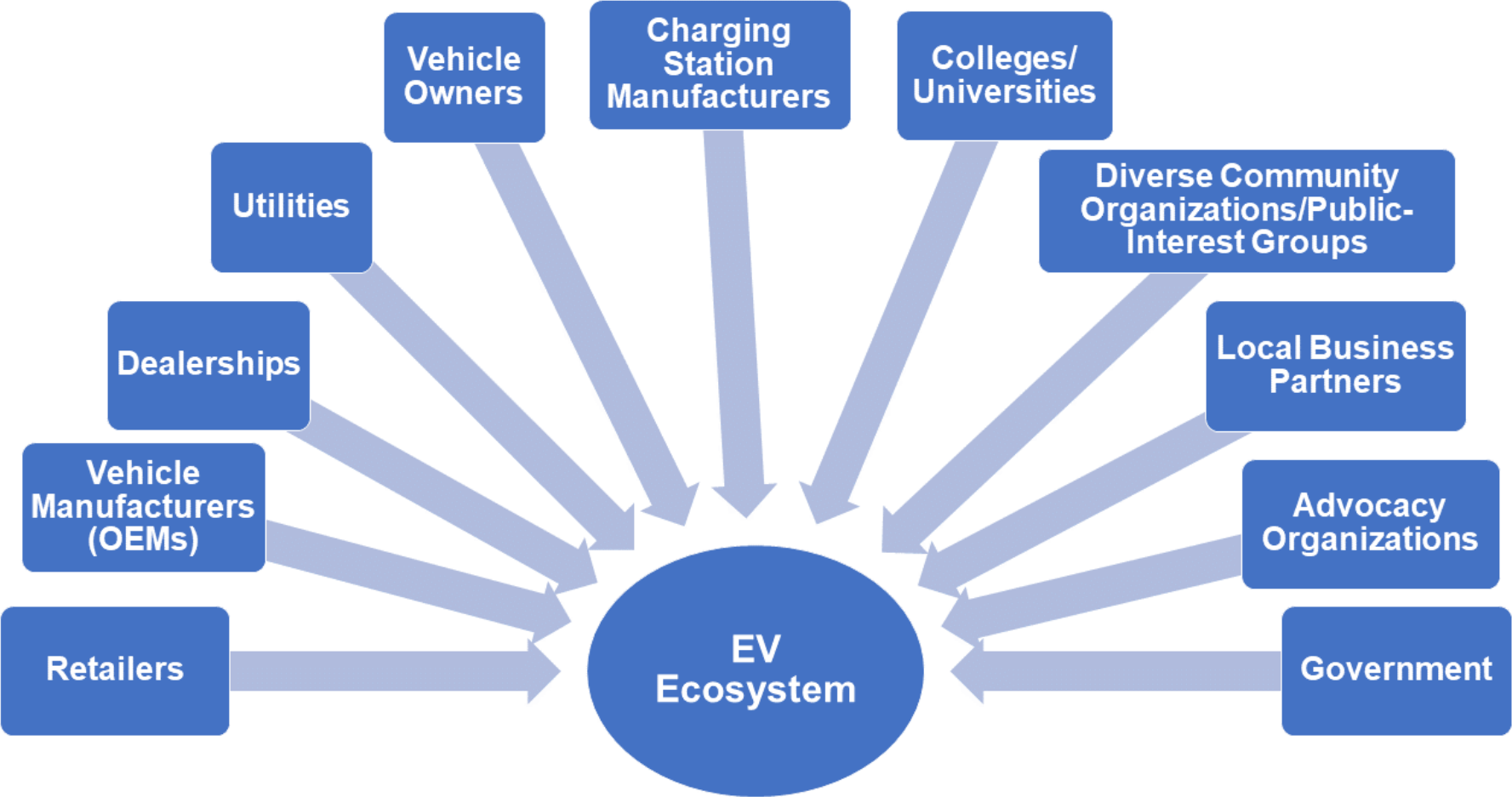


Figure 1. The Electric Vehicle (EV) Ecosystem

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
- 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.

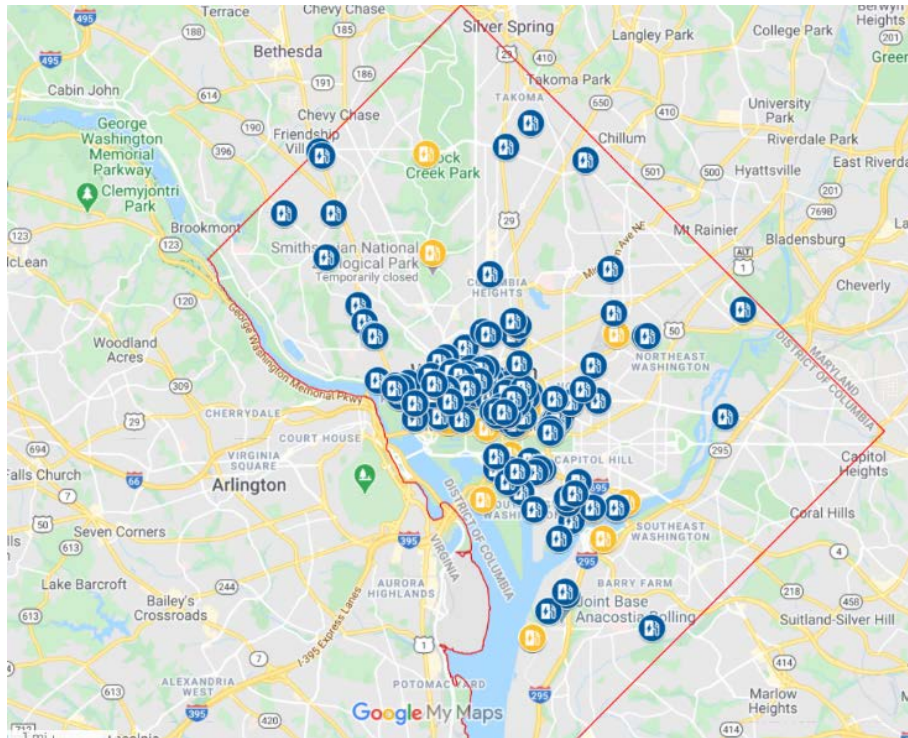
Transportation Electrification Roadmap

A few feedback comments:

- The District one of the lowest levels of household car ownership in the US, after NYC, and our drivers are low mileage.
- Public charging infrastructure should become a group purchase with siting coordinated by the ANCs
- Don't want to incentivize workplace charging b/c don't want to encourage SOV trips
- Fit in with grid moderation and Mode shifts
- Charging access on the street would be optimal
- Deemphasize private car ownership and emphasize equity programs for TNCs.
- Want to know how we are reaching out to low-income residents to make sure everyone that needs to be heard is able to be heard
- Focus on mobility more than electrification

EV Charging Station Assessment

CURRENT PUBLIC EVSE LOCATIONS



EV Charger Type	Number of Charge Ports
Level 2 (blue)	546
DC Fast Charging (yellow)	33

PROJECTED EV CHARGING NEED BY 2030 (GOAL OF 25% EVS REGISTERED)

EV Charger Type	Number of Charge Ports
Workplace – Level 2	2,677
Public – Level 2	1,858
Public – DC Fast Charging	542

Analysis – Public EVSE Locations

Preferred Deployment Sites:

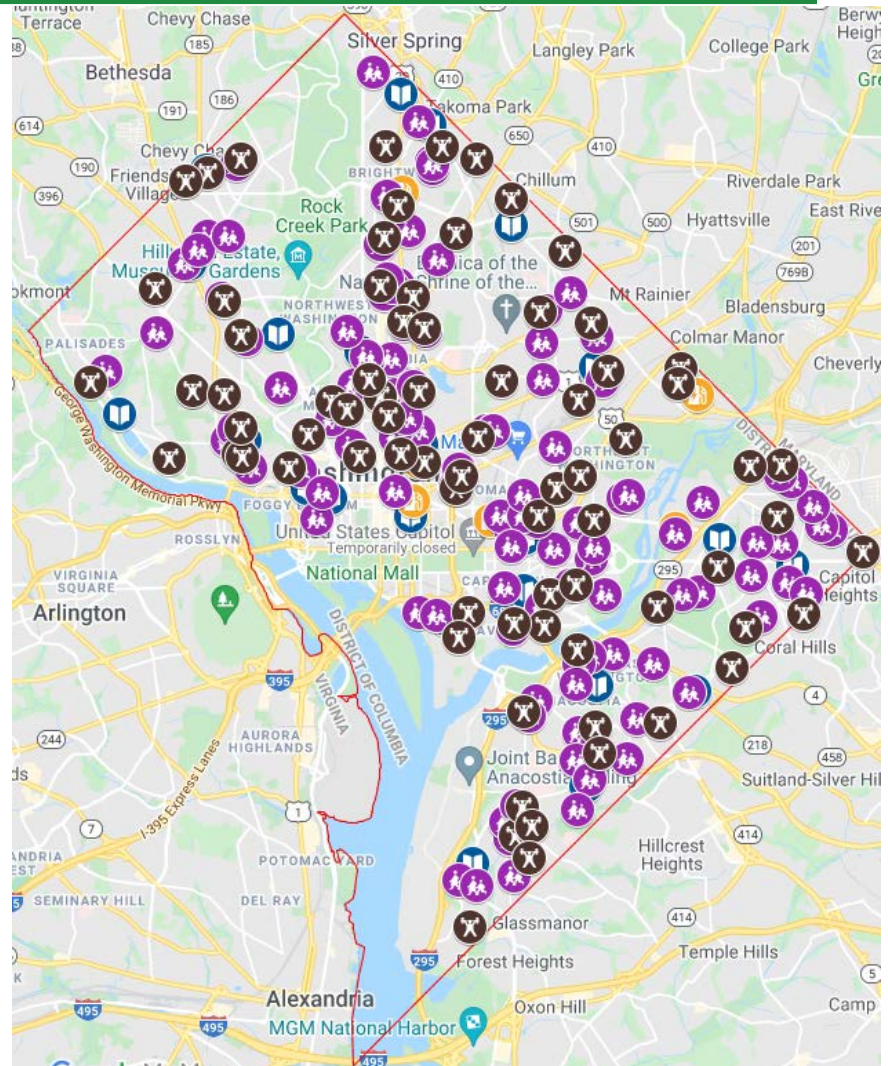
District-owned properties

- Recreation Centers (brown)
- Libraries (blue)
- District owned parking lots (purple)
- Public school parking lots (orange)

Undesired Deployment Sites:

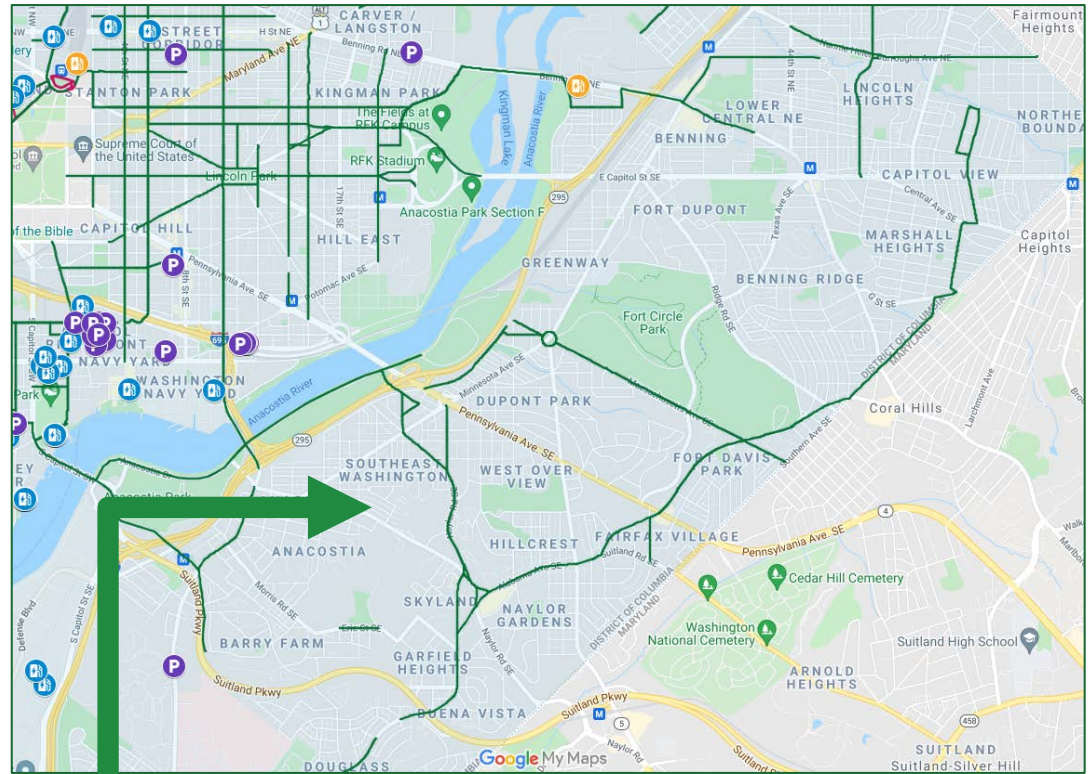
Prioritized locations

- Snow emergency routes
- Bike lanes
- Bus lanes



Where EV Charging Gaps Exist

LOW INCOME AND LIMITED OFF-STREET PARKING, DENSE NEIGHBORHOODS



Some overlapping charging, but more needed to serve residents.

Lack of low-income neighborhood charging

Charging an Electric School Bus Fleet



QUESTIONS?





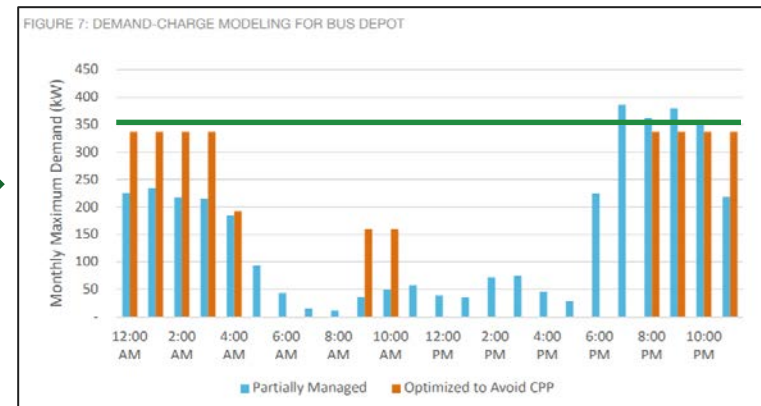
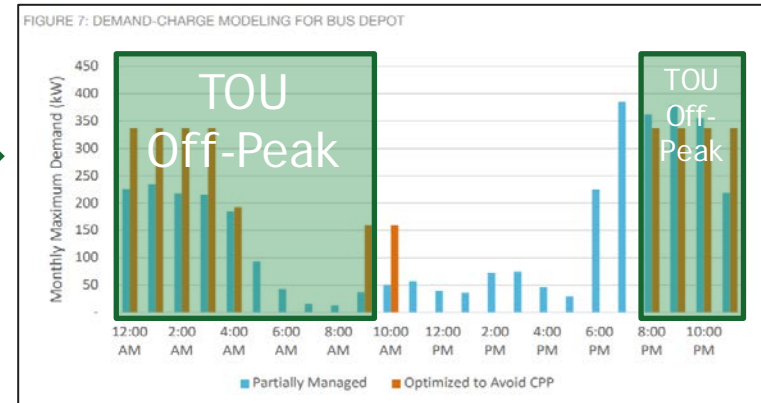
CONTACT INFORMATION

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Types of rate structures

Rate structures to incentivize electrification:

- Time of use (TOU) 
 - Price based on time of the day, incentivizes lower cost charging during off-peak hours
- Minimize demand charges
 - Eliminate, minimize, or establish a moratorium on demand charges
- Subscription-based fees 
 - In place of demand charges, a flat fee based on expected peak usage



Shifting Demand Load

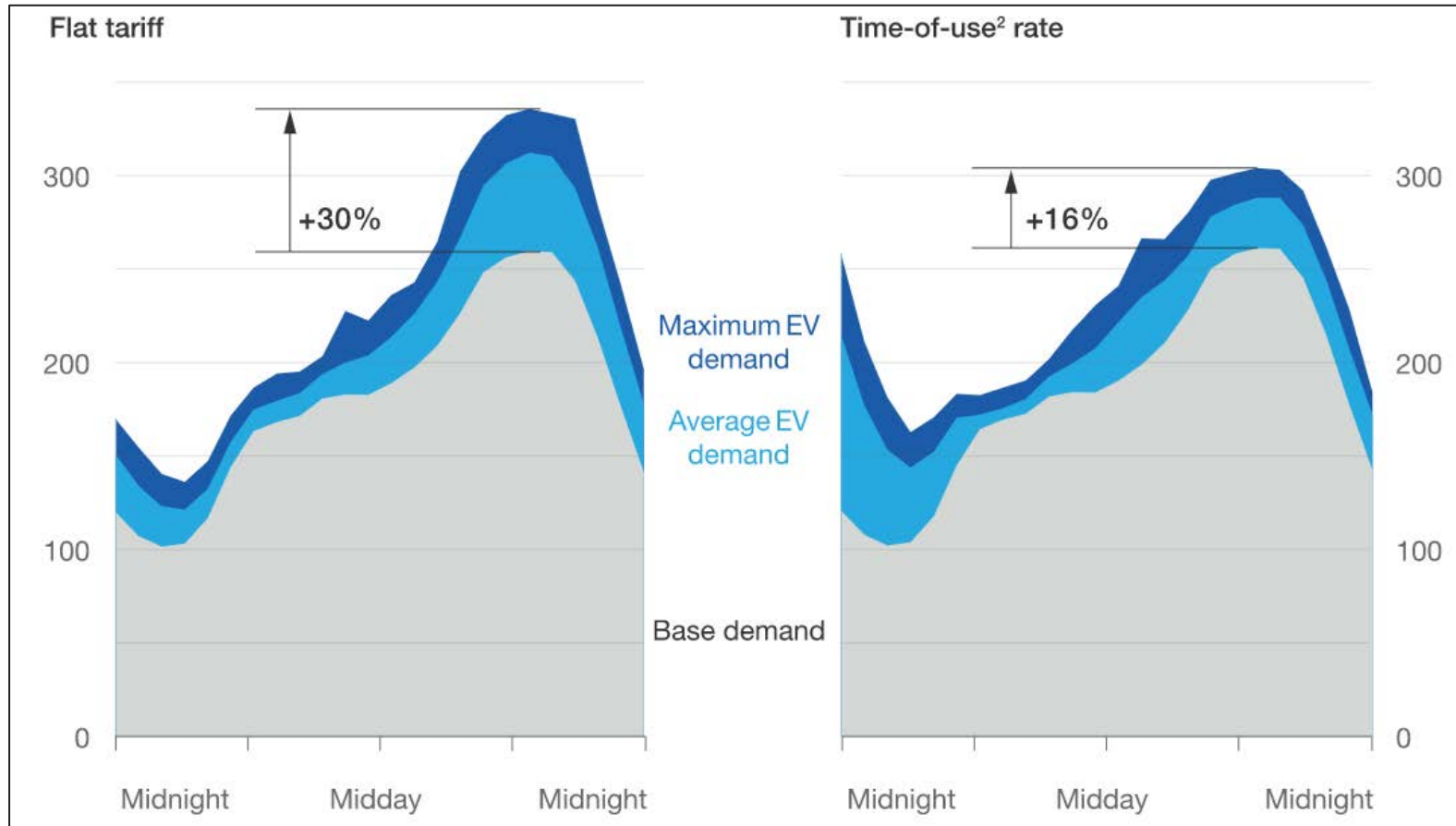


Chart Source: McKinsey & Company

Transportation Electrification Roadmap

A few feedback comments:

- **Where would you like to see EV charging?**
 - Churches and places of worship
 - Public schools may be hard
 - Park service adjacent land – destination charging
- **How do you define equitable placement of EV chargers? How do you envision equitable EV charging development?**
 - Commitment to operation and maintenance
 - Can people afford to use them and reach them
- **What are your concerns about EV charging?**
 - Don't want to incentivize workplace charging b/c don't want to encourage SOV trips
 - Fit in with grid moderation and Mode shifts—hopefully electric bikes are also part of the conversation

Equity Framework - Policy Examples

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

Transportation Electrification Roadmap

A few feedback comments:

- **What kinds of transportation options do you think the District should consider and why?**
 - Charging access on the street would be optimal
- **What types of transportation should not be empathized and why?**
 - Public buses could be a joint solution to deprioritize personal driving.
 - Electric bus and bike lanes
 - Reduce costs on E-bike sharing
 - Deemphasize private car ownership and emphasize equity programs for TNCs.
- **Is there anything you would like to see addressed in the Transportation Needs Assessment?**
 - Want to know how we are reaching out to low-income residents to make sure everyone that needs to heard is able to be heard
 - Focus on mobility more than electrification
 - Infrastructure needs, can add ebikes but need lanes.

Transportation Electrification Roadmap

A few feedback comments:

- A few things about the District - we have one of the lowest levels of household car ownership in the US, after NYC, and our drivers are low mileage. Is there a way to skew the incentives toward high mileage drivers in DC? Like perhaps Ride Hail drivers?
- In curbside charging, there should be consideration of charging all sorts of EVs (i.e. scooters, e-bikes, electric skateboards)
- Public charging infrastructure should become a group purchase with siting coordinated by the ANCs

Transportation Electrification Roadmap

A few feedback comments:

- Funding incentive programs requires careful thought and exploration on what warrants funding and how, especially given regressive/progressive structures – whether through taxes or rate-based
- Given the barriers (upfront costs, access to EVs and charging), funding incentive programs combined alongside educational awareness campaigns is crucial
- Be ready to take advantage of federal programs
- Public fleets – particularly transit buses – ought to electrify first
- Continually evaluate equity considerations
- Policies should focus on deployment of EVSE – both public and private, and include efforts around multi-unit dwellings
- Fully packaged incentives – include financing and maintenance

Charging Strategies

EV Readiness Act of 2020

Curbside Charging

Workplace Charging

Multi-Unit Dwelling

Public Private Partnerships

Transportation Electrification Roadmap

A few feedback comments:

- **What are the barriers facing businesses and fleets to acquire EVs or to add EV charging?**
 - Business costs – operational schedule costs, factoring charging times when scheduling business activities, depending on what kind of charging.
 - Taxis and TNCs – Uber and Lyft might need to think through charging times.
 - Small businesses – would want to learn about what financial support might be available for turning over the fleet. Could this be something that is very clearly laid out by the city?
- **Would Level 1 charging access near your home or at work be adequate for the majority of your charging needs?**
 - Level 1 would meet majority of needs for some. Businesses would need more access to Level 2 and DC Fast Charging.
 - Renters do not have space to install. Want charging closer to home

Transportation Electrification Roadmap

A few feedback comments:

- **What benefits or priorities about electric school buses are the most important to you? What would be most important to inform communities about?**
 - A gateway to integrate V2G for other fleet vehicles.
 - Depots could provide more of a residential benefit or deterrent. Main depot is off W Virginia Ave. Currently neighborhood is concerned about noise and emissions.
- **How would you like to see the electric school buses deployed initially?**
 - Can we determine where areas with worst air quality are?
 - Another metric– seat miles traveled, find routes where children are exposed for most amount of time.
- **How can the District serve equity and racial justice in its electric school bus fleet transition?**
 - Prioritizing routes. The young people who get to benefit from EV school buses are either kids with asthma or those who are in communities that have been on the receiving end of emissions and or black and brown communities.
 - Whole other equity angle related to jobs, and training. Making sure that communities that need increase economic opportunities are receiving opportunities to receive training and work with the school buses.