DISTRICT DEPARTMENT OF TRANSPORTATION

Status of Electric Vehicles

DC Fleet Challenges - now

Challenges for DC Gov

1. Limited budgets for fleet replacement unless approved through asset replacement budget process (CARRS).
2. No funds with vehicle purchase unless approved in budget requests for charging infrastructure.
3. Limited fleet staff for most agencies except FEMS, MPD and DPW.
4. Spread across many sites owned by DGS or other but different agencies wrok there
5. Fleet not mission focused and is just needed it for people movement mostly.

Challenges DDOT

1. Vehicles to market is very slow for large purchases.
2. Window to order EVs can close for a full year for orders.
3. Limited to mostly light vehicles and requires charger be present.
4. Many of DDOT sites are leased or old - energy infrastructure is costly

EV Concepts - now

There are three areas that will have some EV programming, but they are not always going to focus on the same needs.

1. Government Fleet Charging
2. Public Space Charging
3. Transportation Services (Circulator, OSSE, Vehicles for Hire, Refuse Trucks)

- Leverage DPR sites for 1-3 Level 2 for any gov fleet – topping off or overnight
- Leverage DC gov properties to have charging Hubs for large fleet so we do not cross town. DGS is thinking one in each quadrant.

All can benefit from a reduction in the large capital expense for traditional charging infrastructure.

Can we find ways to create revenue or P3 for charge for service?

EV Fleet – as we go

DDOT needs to think about the different uses.

1. Heavy Ups to facilities is expensive and works only where we have ownership.
2. Heavy and Medium Vehicles are still not to market in a big way (1-3 years out).
3. Flexibility is key to the first wave as technology is changing.
4. The most need is light vehicles where we can be most creative.
5. Public charging is not the answer when parking spaces exist in private spaces/garages.
6. By using the battery as the source of power we can change the funding process so we can have an investment in the right asset.

EV Fleet - next

Last is the future state.

1. Do we have a CaAS program for agencies to use and pay into?
2. Can we create a revenue stream here? Is this a business process for LSDBE pilot?
3. The other option of the program would be a level 3 charger “parking lot” for Amazon, UPS, Fed Ex, Government Vehicles etc where we build the new EV “gas station” for rapid 15-25 min charge.
4. They get off the street as they will need to charge during the delivery cycle and maybe create a coffee shop or food truck space to provide revenue for both our site and local business.
5. We can also use that same mobile support to charge vehicles instead of making the full capital purchase for smaller agencies.

PORTABLE

TOWABLE

DC and DDOT Fleet

DC Agencies

1. DPW has a mix of Prius Hybrid and Chevy Bolts for Parking Enforcement.
2. All others have no Evs from what I know if they have anything they have hybrids or a couple Bolts.
3. FEMS has no EVs from what I know.
4. MPD has no EVs for vehicles or motorcycles some e-bikes.
5. Most vehicles are light, but FEMS has Med/Heavy needs.
6. MPD has uptime and 24 hr cycles to deal with too.

DDOT

1. Light – level 2, Energy to Asset (E2A) – 12 hrs of time to charge, charge is multiple days worth of driving
2. Med/Heavy – level 2 or 3, Possible E2A, 12 hrs of time to charge, charge could cover several days

DDOT Fleet and Charging

DDOT

1. Light -
    1. Rivian – 56
    2. Ford Lightning - 27
    3. Bolts - 92
    4. Ford Transit Vans- 9
2. Medium
    1. Lion 6 Stakebody – 1
    2. Forklift – 1
3. Heavy
    1. E-Swingo Sweeper -2
    2. Lion 6 Attenuators – 2

In Process

1. Volvo Front End Loader - 1
2. Battle Truck with bucket – 2-3
3. Telehandler JCB – 2
4. Battle Truck with dump body – 1
5. Bolts – 25
6. Tacomas – 15 (FY28)

DDOT

1. DDOT Fleet
    1. Level 2 chargers at three locations
        1. HQ (125)
        2. Farragut(30)
        3. Warehouse (30)
2. South Capital Site –
    1. 180 mwh chargers – 2
    2. 3.5 mw battery storage with charger
3. 1541 W Street NE Site (solar plug in)
    1. 500 mwh battery storage with charger
    2. 500 mwh battery storage with charger
4. Portable Charger
    1. 200 mwh with 90 mwh solar plug in

DDOT – South Capitol Site

DDOT – DDOT Warehouse

DDOT – DDOT Farragut Site

DDOT Solar Programming - 2025 Bridge and Street Maintenance Solar Carport Study

DDOT Solar Programming - 2025 Bridge and Street Maintenance Solar Carport Study

Design Overview

- 208-volt, 3-phase, grid-interactive microgrid
- Includes battery energy storage sized to use all solar energy produced
- Built to operate independently during extended utility outages

Key Benefits

- Keeps fleet charging even during long Pepco outages
- Enables 100% zero-emission EV charging without relying on energy “netting”
- Provides high reliability with only a small cost increase:
  - ~6% more than a fully islanded microgrid
  - ~20% more than a standard grid-interactive system that shuts down during Pepco outages

Solar & Storage Insights

- LiDAR analysis shows space for solar canopies totaling ~521.5 kW
- Expected solar output supports a fleet 3× larger than the current DDOT Bridge & Street Maintenance fleet
- Battery storage may lose up to 10% efficiency, with possible lower output in December

DDOT Solar Programming - 2025 Bridge and Street Maintenance Solar Carport Study

DISTRICT DEPARTMENT OF TRANSPORTATION

Next steps -