Massachusetts Department of Energy Resources

MASSACHUSETTS LEADING BY EXAMPLE PROGRAM

PUBLIC LEADERSHIP, STEWARDSHIP, COMMITMENT

Making the Transition to EVs: Accessing Resources for Electric Vehicles & Charging Infrastructure

MASSBUYS Expo 2023

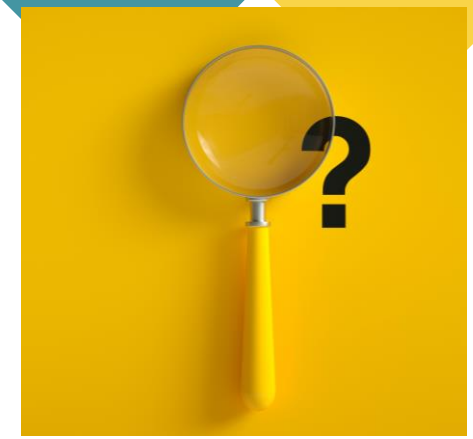
June 7, 2023

Agenda

Intro & Statewide Contracts

Funding & Technical Assistance Programs for Public Entities

Application Process Walk-Through



Q&A / Additional Resources

Introduction

Context

Electric Vehicle Fundamentals

EV Charging Fundamentals

Context

Transportation accounts for 42% of emissions in the Commonwealth; public entities can lead by example!

Commonwealth Decarbonization Priorities

- Reduce GHG emissions by at least 85% by 2050 and achieve net-zero emissions
- 2022 “An Act Driving Clean Energy and Offshore Wind” and funding bills
- Executive Order 594: *Leading by Example Decarbonizing and Minimizing Environmental Impacts of State Government*
- OVM Policies & Procedures for Executive Branch Fleets – EV First Acquisition Policy
- Green Communities Designation

Context

EVs and Charging Infrastructure

- Public entities should start planning for fleet vehicle electrification and strategize for fleet, workplace and public charging infrastructure as appropriate
- Lower total cost of ownership and available incentives means EVs are increasingly cost-effective
- Many EVs and charging station options already available through statewide contracts

Image source

Electric Vehicles

EV First Policy / EO 594

1

Battery Electric Vehicle (BEV)

- Draws propulsion energy solely from on-board electrical energy storage, charged from an external source of electricity

Fuel Cell Electric Vehicle (FCEV)

- Energy stored as hydrogen is converted to electricity by a fuel cell

2

Plug-in Hybrid EV (PHEV)

- Internal combustion engine
- \+ On-board electrical energy storage that can be recharged from an external source of electricity

3

Hybrid Electric Vehicle (HEV)

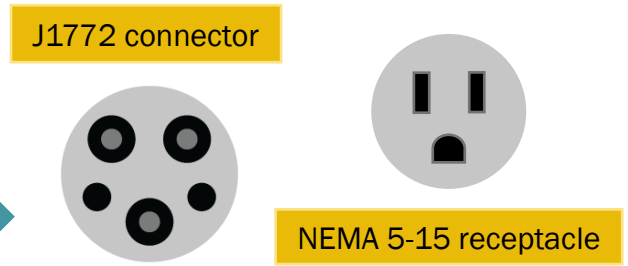
- Internal combustion engine
- \+ Small electric motor that uses energy stored in a battery to support a small portion of vehicle operations

Some of the BEVs available on VEH110

EV Charging

Level 1 Charging

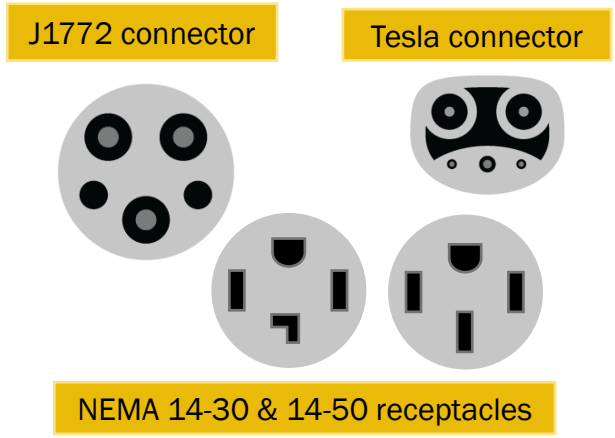
- 120-volt outlet (household plug)
- Approximately 3-5 miles of range per hour of charging



Most new EVs come with a mobile NEMA charging cord you can keep in the vehicle

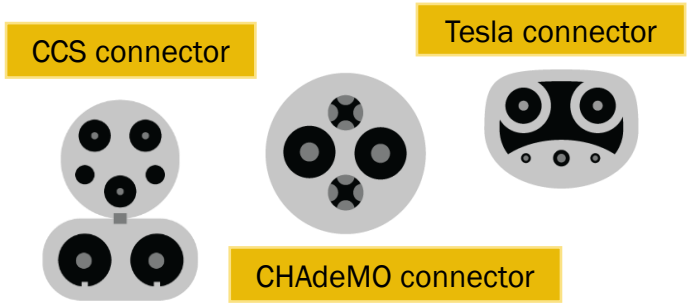
Level 2 Charging

- 240-volt outlet or charging station
- Approximately 20-25 miles of range per hour of charging



DC Fast Charging (DCFC)

- 208/480 three-phase input at station
- Approximately 100-200+ miles of range per 30 minutes of charging*



**Charging power varies by vehicle and battery state of charge; batteries should not be charged predominantly by DCFC*

Statewide Contracts

VEH110 & VEH111

VEH102

Applicable Statewide Contracts

Electric Vehicles

VEH110: Light- and Medium-Duty Vehicles

- Sedans
- SUVs
- Minivans

EVs only!

- Light-duty and medium-duty trucks
- Large passenger and cargo vans
- Cutaway buses and vans
- Police pursuit vehicles
- Special service vehicles
- School buses and 7D vehicles
- Wheelchair accessible vehicles

VEH111: Heavy-Duty Vehicles

- Trucks
- Heavy equipment
- Paving and road equipment
- Utilities service equipment
- Buses
- Snow removal
- Trailers

Applicable Statewide Contracts

EV Charging

VEH102: Advanced Vehicle Technology Equipment, Supplies, and Services

Category 1: Electric vehicle supply equipment (EVSE) hardware, software, and ancillary products

- Level 1, Level 2, DCFC, portable, solar-powered, and inductive charging hardware
- Site assessment, installation, and commissioning
- Network software
- Data and billing services
- Servicing and maintenance
- …and more

Category 3: After-market electric conversion technologies

- Hybrid electric and plug-in hybrid vehicle tech
- Options to attain HEV and PHEV as vehicle upfits/retrofits

MA State Appliance Efficiency Standards

Effective January 1, 2023, the Standards prohibit the sale and installation of less efficient equipment, including certain Level 1 and Level 2 EV charging stations.

Compliant EV charging stations must:

1. Meet applicable ENERGY STAR® requirements *and*
2. Be certified by the manufacturer on the State Appliance Standards Database (SASD)

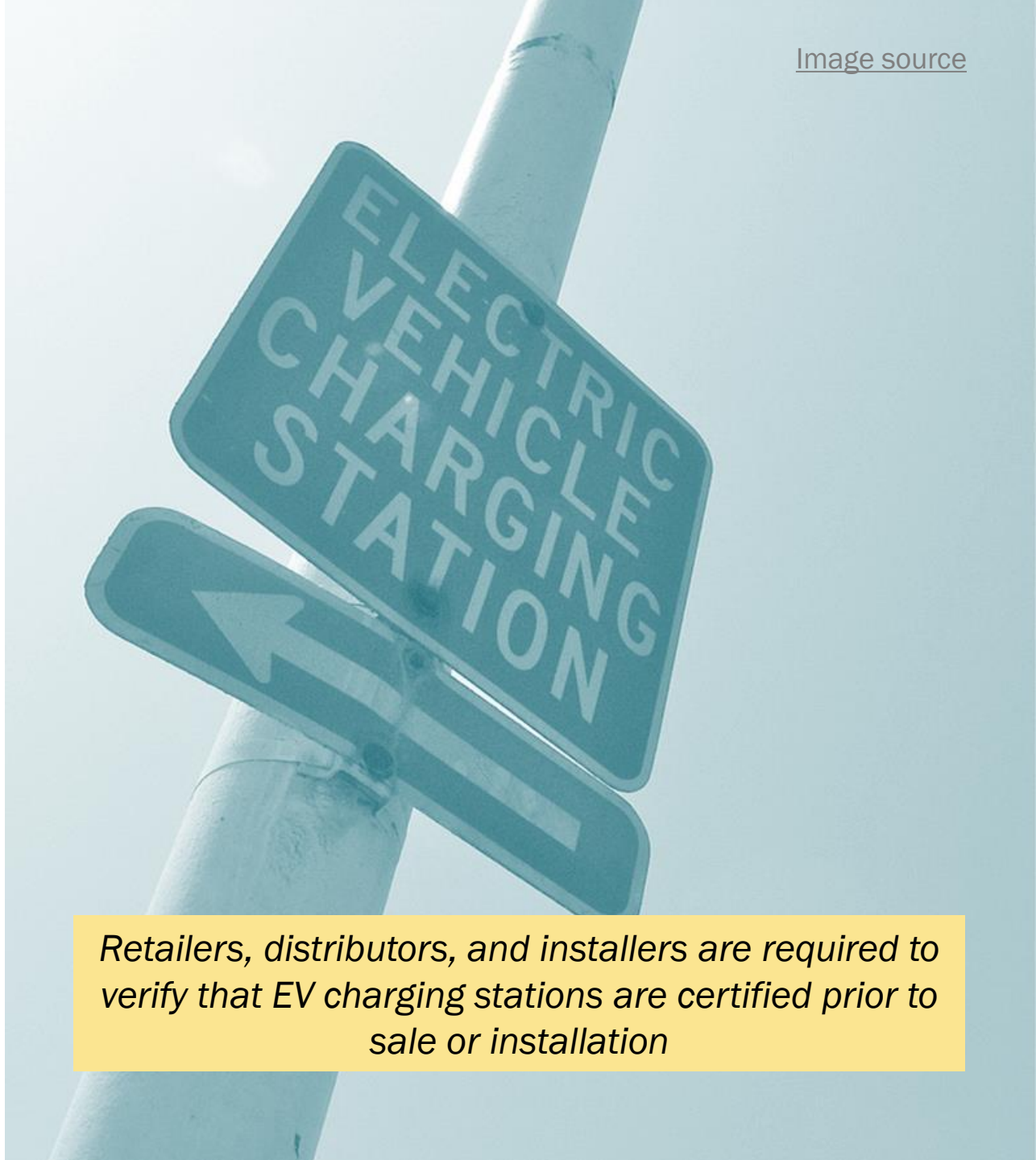


Image source

Retailers, distributors, and installers are required to verify that EV charging stations are certified prior to sale or installation

Funding & Technical Assistance Programs for Public Entities

Electric Vehicles

Overview of Funding & Assistance Opportunities

Electric Vehicles

Battery electric (BEV), plug-in hybrid (PHEV) and fuel cell electric vehicles (FCEVs)

MassCEC Advisory Services

Fleet electrification planning support for nonprofit fleet managers and school bus electrification planning.

Utility Fleet Advisory Services

Public fleet electrification planning and total cost of ownership estimates.

Planning

MassEVIP Fleets

Rebates of up to $7,500 for public fleet BEVs and $5,000 for PHEVs.

MOR-EV Trucks

Rebates starting at $7,500 for public fleet BEVs and FCEVs.

Purchasing

Fleet Advisory Services

MassCEC Mass Fleet Advisor (link)

- Free electrification planning for interested private, commercial, and non-profit fleet managers
- Focused on medium-duty and heavy-duty fleet assets (Class 2b and up)
- Services include site assessment, total cost of ownership analysis, vehicle market inventory analysis, charging analysis, and next step recommendations

MassCEC School Bus Advisory Services (link)

- Free school bus electrification planning for public school districts
- Services include EV and charging analyses; financial modeling; assistance navigating funding opportunities; and providing procurement educational materials

NOI released for MassCEC Accelerating Clean Transportation – School Bus Fleet Deployment Program

Fleet Advisory Services

Utility Programs: National Grid and Eversource (*coming soon*)

- Free program open to publicly-owned fleets, including:
  - Municipal and state fleets
  - Public transit agencies
  - Public universities
  - School buses
- Program includes analysis of an organization's fleet conditions and needs, provides recommended electric alternatives, total cost of ownership savings, and information on available financial incentives
- Preference given to fleets that operate in Environmental Justice Communities

Electric Vehicle Funding Programs

MassEVIP Fleets (link)

- Rolling grant for municipalities, state agencies, and public higher education campuses; up to 25 vehicles per entity
- PHEVs and BEVs with a purchase price $60,000 or less and gross vehicle weight of 10,000 pounds or less
- Maximum incentives for public fleet vehicle purchases and leases:
  - BEVs = $5,000-$7,500 PHEVs = $3,000-$5,000
- **Funding approval letter must be received prior to vehicle order**
- **If the applicant uses VEH110, MassDEP will pay the vendor on statewide contract directly after receiving the documentation**
- **MassEVIP Fleets grants cannot be combined with funds obtained through the MOR-EV or Green Communities programs for a single vehicle**
- Applicant must commit to providing internal or external funds to cover remaining vehicle costs and upkeep for 3 years, and agree to help promote EVs

Electric Vehicle Funding Programs

MOR-EV Trucks (link)

- Post-purchase rebate for individuals, corporations, and public entities
- BEVs and FCEVs with a sales price over $50,000 and gross vehicle weight over 8,500 pounds
- Rebate amounts vary by vehicle weight:
  - Class 2b-3 = $7,500-$15,000
  - Class 4-6 = $30,000-$60,000
  - Class 7-8 = $75,000-$90,000
- 10% rebate adder for vehicles operating in Environmental Justice Communities
- **Can reserve a rebate for up to 12 months for heavier-duty vehicles upon placing a purchase order and apply for funding upon taking delivery**
- Vehicle must be retained for 4 years

NOTE: Various MOR-EV program changes coming soon; details to be announced

Funding & Technical Assistance Programs for Public Entities

Electric Vehicle Charging

Overview of Funding & Assistance Opportunities

EV Charging

Level 1, Level 2, and DC fast charging (DCFC)

MassEVIP Public Access

Up to 100% of installation and equipment costs for public access Level 1 and Level 2 charging at government-owned locations.

MassEVIP Workplace/ Fleet

Up to 60% of installation and equipment costs for Level 1 and Level 2 workplace, private fleet, or public fleet charging.

MassEVIP Multi-Unit Dwellings

Up to 60% of installation and equipment costs for Level 1 and Level 2 multi-unit dwelling or educational campus charging.

LBE Fleet Charging Grant

Up to 100% of infrastructure, equipment, and ongoing service costs for primarily Level 1 and Level 2 state fleet charging.

Utilities

50-100% of infrastructure and equipment costs for public, workplace, and fleet Level 1, Level 2 and DCFC depending on location.

EV Charging Funding Programs

Charging Type	MassEVIP	LBE Grant	Utilities	Green Communities
Public Access	✓		✓	✓
Public Fleets	✓	✓	✓	✓
Workplace	✓		✓	
Multi-Unit Dwellings	✓		✓	

MassEVIP

Public Access (link)

- Up to 100% of eligible costs at government-owned locations
- **Site must allow practical public access at least 12 hours a day, 7 days per week**
- Hardwired Level 1 or Level 2 charging
- **ADA accessible design requirements**

Workplace / Fleet (link)

- Up to 60% of eligible costs
- At least 15 employees on site (workplace) or where fleet vehicles are garaged
- Hardwired Level 1 or Level 2 charging
- **ADA accessible design requirements for workplace charging**
- **Must get a fleet vehicle within 6 months (extensions may be requested)**

Multi-Unit Dwellings (link)

- Up to 60% of eligible costs
- MUDs with 5+ units or campuses with at least 15 students onsite; site must have equal access
- Hardwired Level 1 or Level 2 charging
- **ADA accessible design requirements**

MassEVIP

Important to Know

- Don’t order equipment or start installation work (if applicable) until a MassEVIP funding approval letter has been received
- At least 1 designated parking space for each port must be reserved for EV charging only
- A minimum of 5% of EV charging parking spaces (at least 1 space) for public access, workplace, or MUD charging must be designed to be accessible to persons with disabilities
- Solicit and include itemized quotes for application; the more information on hardware/installation quotes, the better!
- Grantees must operate and maintain charging stations for 3 years and provide data to MassDEP as requested
- Limited to $50,000 maximum grants per street address per qualifying MassEVIP program

MassEVIP

Application Tips

- Read through all available information on the website to make sure all program requirements, including eligible vs. ineligible costs, are understood when applying
- Use the required updated W9 form listed on each program application form
- If the MassEVIP team has questions about an application, respond to emails promptly and answer all questions thoroughly -- this will prevent additional back and forth and keep the application moving forward
- Reach out to the MassEVIP team if there are any questions!

LBE Fleet EVSE Deployment Grant

The Basics

- Eligible entities include executive branch agencies, public higher ed campuses, and the MBTA non-revenue fleet
- Covers up to 100% of the costs of fleet charging deployment
  - Maximum grant amounts: $100,000-$150,000 depending on fleet size
  - Environmental Justice adder: up to $25,000
- Eligible costs include infrastructure and equipment; installation and commissioning; 3 years of prepaid networking and maintenance services; extended warranties; and pre-wiring for future charging
- See Program Opportunity Notice for full details

LBE Fleet EVSE Deployment Grant

Key Application Requirements

- Minimum of **two charging ports per site**; pre-wiring strongly recommended
- Include **description of fleet electrification efforts** and how EVSE will be used
- Provide **vendor cost proposal** as basis for grant amount request
  - Detail distinct costs such as infrastructure vs. equipment vs. prepaid ongoing services fee (see draft scope of services for example)
- Grant must be awarded prior to installation work commencing/equipment being ordered
- Stations to be **installed within 6 months** of grant award
- Must order **a fleet EV within 18 months** of grant award if not already using EVs at the site
- Grantee must maintain charging equipment for a minimum of 5 years

Utilities

NOTE: Certain third-party funding requirements impact how the utility programs will interact with other available funding sources like MassEVIP (more info)

Public Fleet Charging Programs

National Grid & Eversource

- Public fleets are defined as public transit, school buses, and government-owned fleets
- For National Grid customers, eligible charging stations must be on the qualifying product list

Charging Use Case	Site EJC Criteria "Based" = fleets operate at least 50% of the time in an EJC	Charging Station Rebates	Networking Rebates	Infrastructure Cost Coverage
Public Entity Fleets Level 2 or DCFC	Based in EJC that meets income criteria	Up to 100%	N/A	Up to 100%
	Based in EJC that does *not* meet income criteria	Up to 75%		
	Non-EJC	Up to 50%		

Other Funding Opportunities for Public Entities

Green Communities Grants

Federal Tax Credit “Direct Pay” for Non-Taxable Entities

Green Communities Grants

Webpage

- The Green Communities Designation and Grant Program helps municipalities navigate and meet the five criteria required to become a Green Community, in turn qualifying them for grants that finance additional energy efficiency and renewable energy projects at the local level

- In addition, the Green Communities Division provides additional grants and assistance related to other Municipal Energy efforts

- **Vehicle fuel consumption on average represents approximately 22% of total municipal energy usage for Green Communities**

Green Communities Grants

Webpage

- Grant amounts vary by technology and whether a vehicle is purchased or leased
- Higher maximum grant funding for communities that meet special eligibility requirements

Prescriptive Measure*	Maximum Grant Amount	Maximum Grant Amount for Specially Eligible Communities
Light-duty fleet HEVs and PHEVs	$3,000 - $5,000	$6,000 - $10,000
Light-duty fleet BEVs	$5,000 - $7,5000	$10,000 - $15,000
Medium-/Heavy-duty fleet BEVs**	$10,000 - $15,000	$20,000 - $30,000
Public access or fleet EV charging	$7,500 per charging station	

**Prescriptive grants are subject to change; sign up for the Green Communities newsletter for the latest updates*

***MD/HD rebates are only available for communities in certain Environmental Justice Communities*

Federal Direct Pay for Non-Taxable Entities

Alternative Fuel Vehicle Refueling

Commercial Clean Vehicles

- Provides a new pathway for non-taxable entities to access clean energy tax incentives in the Inflation Reduction Act (IRA) that previously would have only been available to tax-paying entities
- Instead of receiving a tax credit, eligible entities will be able to apply for a refund equal to the amount of the credit
- Provides an opportunity to increase access to clean energy and reduce emissions in a cost-effective manner
- U.S. Department of Treasury is expected to publish guidance on the direct pay election process in the near future

Application Process Walk-Through

Example grantee experience for…

- **MassEVIP Fleets**
- **LBE Fleet Charging Grant Program**

Grantee Experience: MassEVIP Fleets Program

Public Fleet

Preparation & Proposals

- Applicant solicits detailed cost quotes for selected vehicle
- Note in bid solicitation documents: seeking MassEVIP $
- Applicant submits required documents online, including selected quote

Proposal Review

- MassEVIP reviews application, and follows up with questions if applicable
- Approval letter sent from MassEVIP to applicant
- Upon receipt of letter, applicant can place vehicle order

Contract & Vehicle Order Finalization

- MassEVIP provides contract documents to applicant for signature; contract is countersigned and returned to applicant
- If the applicant is using VEH110, vendor should remove grant amount from the final purchase price

Grant Award & Final Steps

- Upon taking delivery of the vehicle, grantee submits payment request and upon approval, MassEVIP issues check **OR**
- If the applicant uses VEH110, MassDEP will pay the vendor electronically after receiving the documentation

Grantee Experience: LBE Fleet Charging Grant

The Division of Marine Fisheries required charging at their field station in Gloucester to support their fleet as it begins to electrify. Once a location (Annisquam Field Station) was selected, DMF began this process:

Scope of Services & Procurement

- Discussed project and grant with LBE team
- Scope of Services out to bid to turnkey VEH102 vendors (equipment, installation, ongoing services)
- Began filling out grant application form

~16 weeks

Proposal Review & Application Submission

- Vendor quotes evaluated by DMF to make final selection
- Draft application submitted to LBE; scope of work and project details clarified
- Final grant application submitted to LBE

~3 weeks

Application Review (DOER)

- Grant application underwent formal review at DOER, EEA, and Governor's Office
- Notification of grant award received by Governor's Office
- Draft ISA/contract developed

~6 weeks

Grant Award & Final Steps

- ISA/contract reviewed and signed
- Order placed with vendor for equipment and services
- EVSE installed within 6 months
- Backup documentation and final report submitted to DOER

Ongoing


Q&A

Additional Resources

Total Cost of Ownership Comparison Calculator

Comparison of EVs currently offered on statewide contract VEH110 against various other conventional and alternative fuel models. After putting in basic information on costs of gasoline, electricity, and years of ownership, users can select two vehicles to compare total cost of ownership.

Greening Your Fleets with Statewide Contracts

A list and basic information on all battery-electric, plug-in hybrid, and hybrid electric vehicles available on Massachusetts statewide contracts.

EEA Environmental Justice Map

Detailed maps based on 2020 U.S. Census data and American Community Survey (ACS) data to identify EJ populations per the EEA Environmental Justice Policy, which is tied to various state funding programs.

VEH102 Vendor Offerings

What offerings are available from each of the current vendors on VEH102, including EV charging equipment, installation services, commissioning, and/or other services to help deploy EV charging stations.

Scope of Services Template for Fleet EV Charging

Draft template for public entities to utilize when procuring EV charging stations, particularly those intended for fleet use.

Contact Info

DOER Grant Programs

- Green Communities contact page
- LBE Fleet Charging Grant LBE-Grants@mass.gov

MOR-EV Trucks Rebates

- mor-evtrucks@energycenter.org

MassEVIP Fleet and Charging Grants

- MassEVIP.MassDEP@mass.gov

MassCEC Fleet Advisory Programs

- cleantransportation@masscec.com

Extra Slides

Questions from Attendees

What funding is available for DCFC?

The MassEVIP program for DC fast charging is currently fully subscribed; email massevip.massdep@mass.gov to be placed on the mailing list for future funding opportunities. Massachusetts utilities may offer funding for DCFC in certain locations; visit the National Grid or Eversource websites.

In general, Level 2 charging will provide adequate support for most public fleet vehicle operations.

Where do housing authorities fit within the MUD vs. public access charging definitions?

Given the nuance of parking spaces that may be publicly available but intended for certain residents of multi-unit dwellings, potential applicants should contact the rebate administrator (i.e., MassEVIP or the utility) for further guidance on the appropriate program.

Thank you!