Commercial Vehicle & Fleet Electrification Webinar

Thursday, August 8th, 2024, @10am

How can we optimize eligible incentives and rebates to meet our commercial Electric Vehicle (EV) needs?

CENTRAL MASSACHUSETTS
Regional Planning Commission

Central Massachusetts Regional Planning Commission (CMRPC)

Agenda

- CMRPC's Introduction and EV Services
- Zachary Jenkins, Program Director, Massachusetts Clean Cities Coalition, MA Department of Energy Resources
- Sydney Hayes, CALSTART
- Ryan Bradley, EV Ambassador, National Grid
- Q&A

CMRPC's EV Resources

Green Communities Assistance

CMMPO EV Charging Stations Dashboard

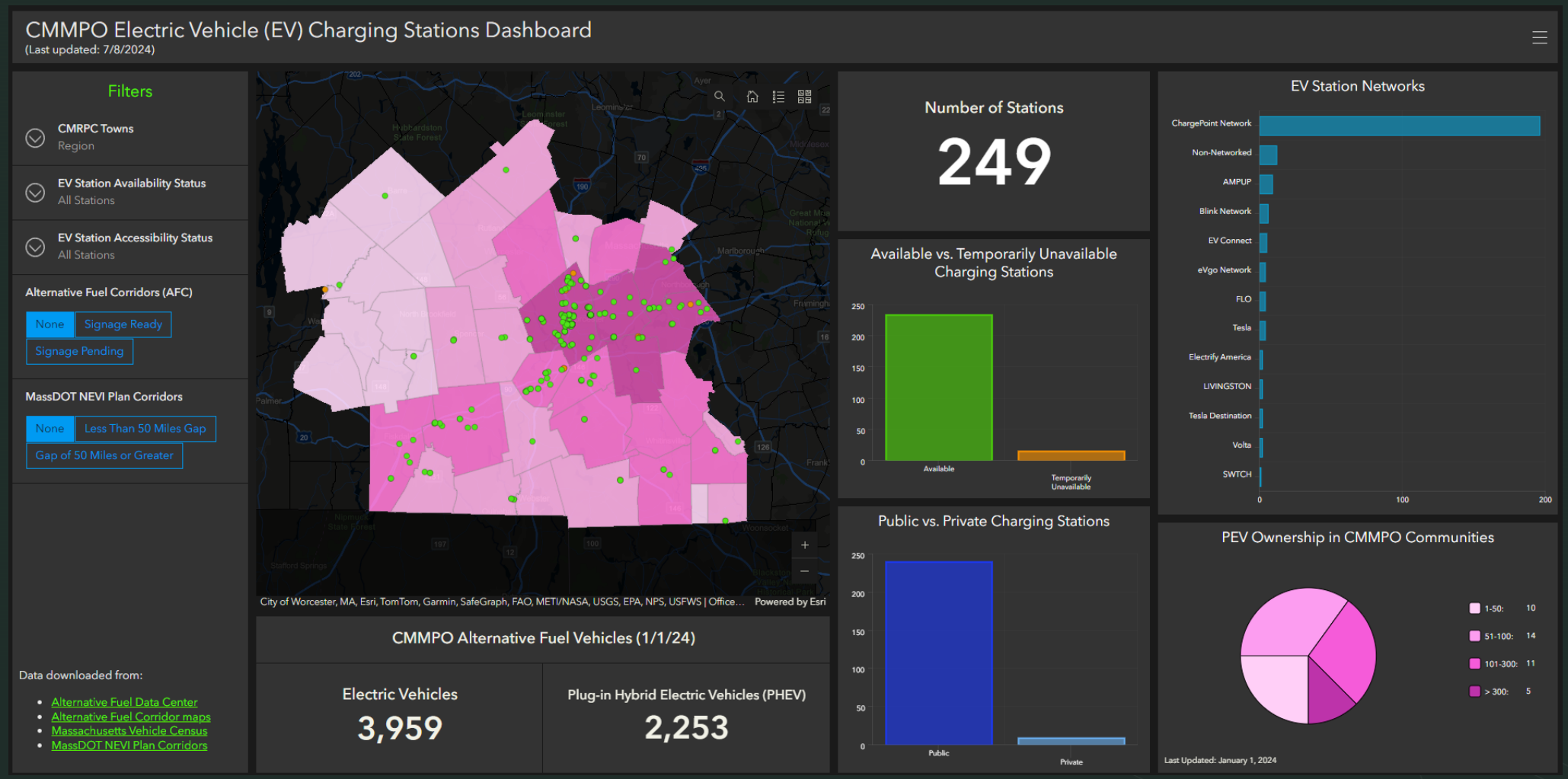
CMRPC Emerging Technology Webpage

CMMPO EV Fact Sheets

CMMPO Air Quality Module

CENTRAL MASSACHUSETTS
Regional Planning Commission

EV Dashboard



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Regional Planning Commission

Link to Dashboard or find it online at cmrpc.org

Zero Emission Vehicle Adoption: Massachusetts Policy and Program Approaches

Zachary Jenkins
Massachusetts Clean Cities Program Director
August 8, 2024

Statewide Targets for Electrification

- Massachusetts has committed to achieving a Net Zero Emissions economy by 2050, and adopted a statewide GHG emissions limit and sector-specific sub-limits
- The 2050 Clean Energy & Climate Plan (CECP) highlights a broad suite of specific goals, strategies, policies, and actions by sector
- Two of the CECP's key benchmarks:

TRANSPORTATION

97%
of light-duty vehicles (5 million) electrified

93%
of medium- and heavy-duty vehicles (over 350,000) electrified or non-emitting

- MA is orienting applicable policy and programmatic decisions around the CECP sub-limit for transportation

Clean Cities Coalition

- The Massachusetts Clean Cities Coalition (MACCC) is part of a nationwide partnership with the U.S Department of Energy Clean Cities Program and is housed in the MA Department of Energy Resources.

- The coalitions mission is to advance the Commonwealth's environment, energy security, and economic prosperity through collaboration with communities by building partnerships with public and private stakeholders.

- The coalition assists public and private stakeholders in their efforts to adopt alternative fuel vehicles through incentive/rebate assistance, disseminating educational information, and event facilitation/participation.

State EV Programs

Light-Duty MOR-EV Rebates

MOR-EV Standard, Used, and Plus (link)

- $3,500 for eligible new battery electric (BEVs) or fuel cell electric vehicles (FCEVs)
- $3,500 rebate for used BEVs/FCEVs if income-qualifying resident
- $1,500 MOR-EV+ rebate adder if income-qualifying resident
- $1,000 rebate adder for trading in an eligible internal combustion vehicle
- Several rebates now available at point of purchase or lease through participating MA auto dealerships

PLEASE NOTE: MOR-EV IS A REBATE, NOT A TAX CREDIT

Pickup Truck and Class 2b-8 MOR-EV Rebates

MOR-EV Trucks (link) and Medium/Heavy-Duty Rebates (link)

- Post-purchase rebate for BEVs and FCEVs for individuals, corporations, and public entities
- Rebate amounts vary by vehicle weight:
  - Pickup trucks and Class 2b = $7,500
  - Class 3 = $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

State EVSE Infrastructure Programs

MassEVIP Charging Incentives

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

IRS Federal EV/EVSE Tax Credits

Commercial MD/HD Vehicles

- Instituted by the Inflation Reduction Act.
- Capped at $7,500 for vehicles weighing less than 14k lbs.
- Capped at $40,000 for vehicles weighing more than 14k lbs.
- Available to tax exempt entities via Direct Pay (municipalities and nonprofits).
- Full information on the commercial credit can be found here.

Federal Tax Credit for EV Charging

- For Individual consumers: 30% of cost, not to exceed $1,000

- For Commercial Entities (including Municipalities and tax-exempt organizations):
  - 30% of the cost or 6% in the case of property subject to depreciation.
  - Cannot exceed $100,000
  - Projects that meet the prevailing wage and apprenticeship requirements may be eligible to receive the full 30% tax credit, regardless of depreciation status.

- In all cases, the charger location must be in **rural** or **low-income** areas to qualify.
  - Link to check: Refueling Infrastructure Tax Credit

Program Websites & Contact Information

- Massachusetts Clean Cities
- Green Communities
- MOR-EV
- MOR-EV Pickup Trucks/Class 2b
- MOR-EV Class 3-8
- MassEVIP Fleets
- MassEVIP Charging: Public Access
- MassEVIP Charging: Workplace and Fleet
- MassEVIP Charging: MUDs and Educational Campuses
- MassCEC ACT School Bus Programs
- IRS Commercial Tax Credits

DOER Staff Contacts

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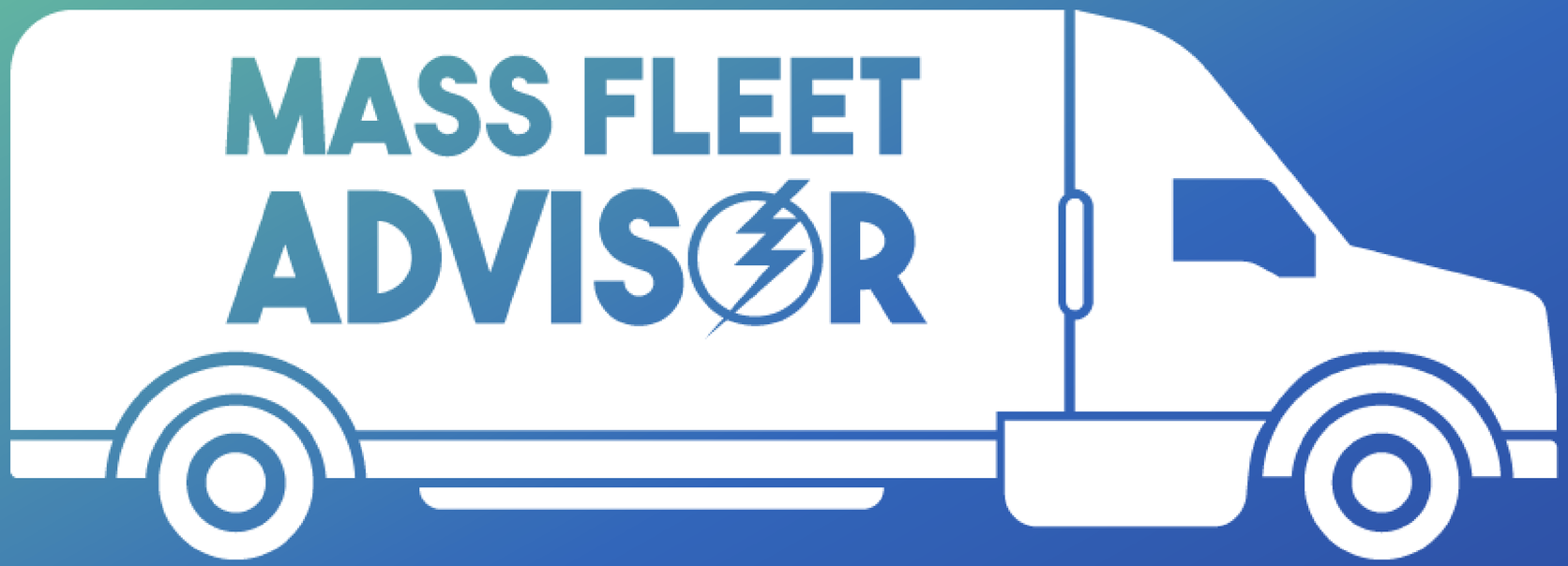


Mass Fleet Advisor Information

August 8, 2024

Mass Fleet Advisor – Your Fleet Electrification Assistant

- Mass Fleet Advisor provides personalized Fleet Electrification Reports to educate participating fleets and provide tools for a successful electric vehicle transition
- The **Massachusetts Clean Energy Center** administers Mass Fleet Advisor
- **CALSTART** serves as Lead Consultant, manages the program, and prepares each fleet's report
- For nonprofit fleets, **PowerOptions** works with CALSTART to serve as the Fleet Relationship Manager

Sign up to participate at massfleetadvisor.org

Mass Fleet Advisor – Eligibility

Mass Fleet Advisor provides free assistance to help commercial vehicl fleets prepare for electrification

Eligibility:

- Operation and/or depot in Massachusetts
- Private (non-government) or MLP communities medium- and heavy-duty fleets (up to 200)
  - >50% in Environmental Justice Communities
- 3+ vehicles
- Fleets are **not required** to purchase any electric vehicles

Sign up to participate at massfleetadvisor.org

Fleet Electrification Analysis

Sign up at massfleetadvisor.org – total time needed from fleet is 3 to 5 hours

1. Pre-participation Call: 15 to 30 minutes
2. Sign Participation Agreement
3. Receive and complete Fleet Intake Form
    - Vehicle make/model, operational schedule, average annual mileage, etc.
4. Participate in Physical Site Assessment and Solar Analysis
5. Install dataloggers for 2-4 weeks or share existing GPS data

Fleet Electrification Analysis

- Personalized Fleet Electrification Report provided to each fleet includes:
  - One-to-One electric vehicle replacement options
  - Total Cost of Ownership Calculations
  - Infrastructure upgrades and Electric Vehicle Supply Equipment (EVSE) recommendations
  - Customized charging plan
  - Recommendations for short- and long-term electrification of your vehicles with route energy analysis
  - Information about available financial incentives

Fleet Electrification Report

Personalized Report: Example Table of Contents

Contents

MASS FLEET ADVISOR

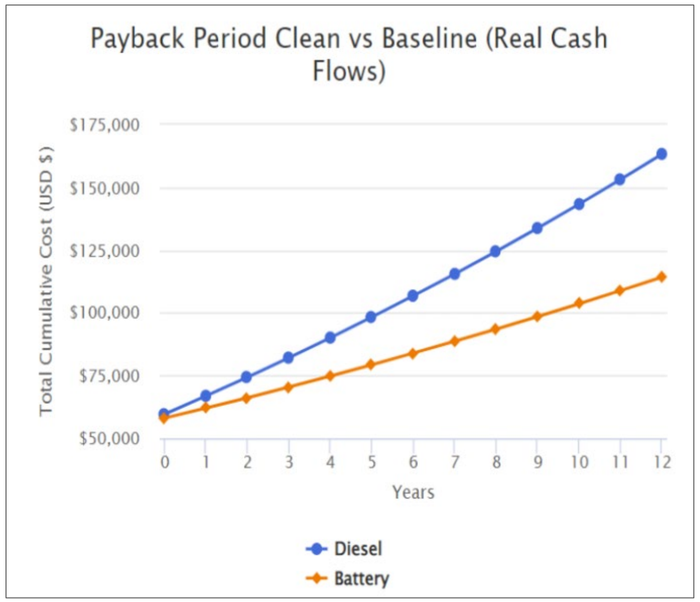
Participating Fleet Experiences

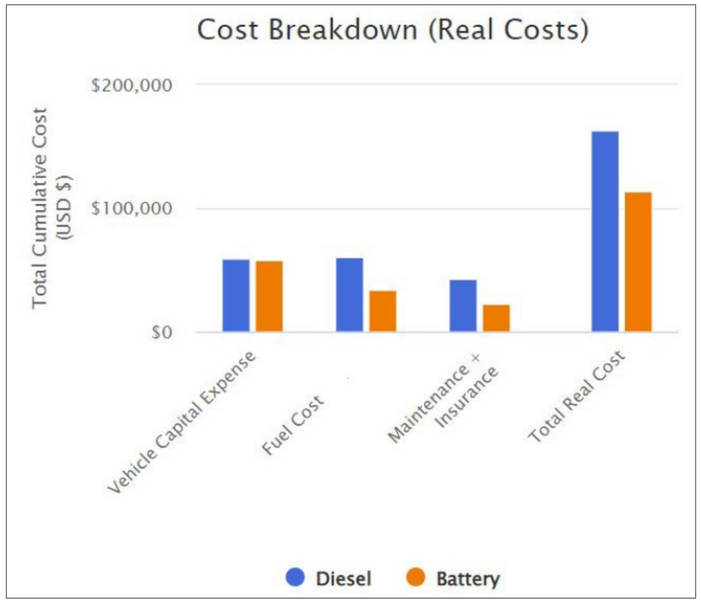
Fleet Analysis Results

The Ford Transit delivery vans are excellent targets for electrification:

- Total cost of ownership is lower for the electric vehicle
- Low purchase price of the EV model of the Ford E-Transit when compared to the traditional diesel model

Vehicle Group	Ford Transit Van		
Electric Vehicle	Ford e-Transit	Lightning eMotors Transit Cargo Van	SEA Electric Ford Transit EV/Drive 70
Availability	Now	Now	Now
Class/Size	Class 2b	Class 3	Class 3
Range	125 miles	140 miles/200 miles	190 miles
Payload	3880 lbs.	3600 lbs.	3800 lbs.
Energy Capacity	68 kWh	86 kWh/105 kWh	88 kWh
Level 2 Charging Time	8 hours	5 hours/8.5 hours	8 hours
Website	eTransit van	Lightning Transit Cargo Van	SEA Electric Drive 70
Vehicle Photo			



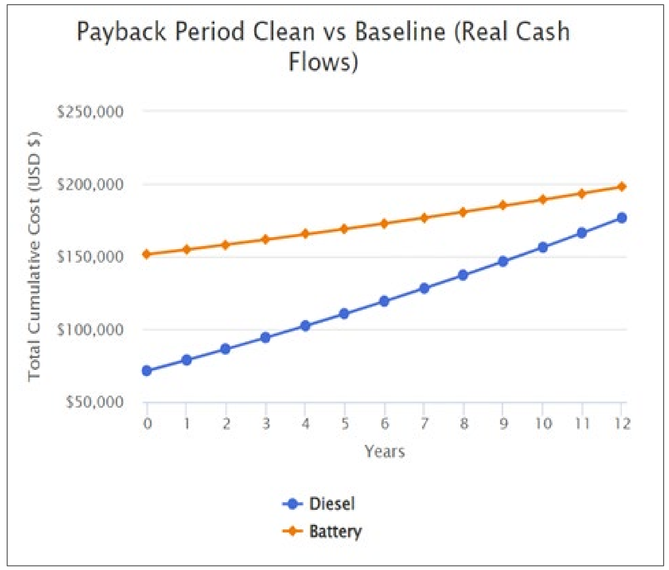


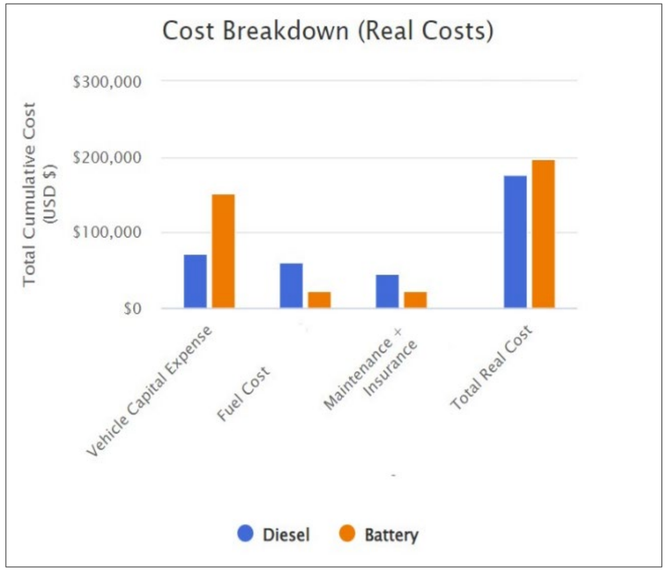
Participating Fleet Experiences

Class 6 Vehicle Analysis Results

- Long term electrification recommendations: heavy-duty vehicles, such as the Class 6 flatbed
  - Average annual mileage of class 6 vehicles are low = longer payback period vs. the higher capital cost.
  - Total cost of ownership is not a driving factor for electrification.

Vehicle Group	Class 6 Flatbed		
Electric Vehicle	International EMV Series	Lion 6	Kenworth K270e
Availability	Now	Now	Now
Class/Size	Class 6/7	Class 6	Class 6
Range	135 miles	up to 200 miles	200 miles
Payload	Varies	Varies	13,500 lbs.
Energy Capacity	210kWh	up to 252 kWh	282 kWh
Charging Time	10 hours (Level 2) 2 hours (Level 3)	2 hours (Level 3)	2 hours (Level 3)
Website	International EMV Series	Lion 6	Kenworth K270e
Vehicle Photo			





Participating Fleet Experiences: Site Assessments

Site Assessment Results

- **Location 1**
  - Three dual-port level 2 charging stations for 6 vehicles.
  - New electrical panel needed to support breakers
- **Location 2**
  - One dual-port level 2 charger for 3 vehicles.
  - New electrical panel needed
- **Location 3**
  - One dual-port level 2 charger for 3 vehicles.
  - New electrical panel needed

Fleet Procurement Technical Support

- **Any fleet that received a Fleet Electrification Report** who chooses to procure an electric vehicle(s) can advance to receive **free** procurement technical support
  - Connect with local dealerships
  - Preparation and review of requests for proposal (RFP)
  - Identification of financing and grant opportunities
  - Driver and mechanic training to support deployments
  - Development of standard operating procedures (SOPs) for drivers and mechanics
  - Utility engagement
  - And more!

What our fleets are saying:

“The Mass Fleet Advisor team has been assisting us with our effort to electrify our fleet of 50+ vehicles since early 2022. The information they have provided to us, such as vehicle options, charging options, and potential rebate programs has been invaluable. As we move closer to transforming our fleet, we are confident we will be doing so with the most up to date information we could possibly have, thanks to this group.”

— *Steve Senior, Director of Distribution and Services,* ***Woods Hole Oceanographic Institute (WHOI)***

“I was amazed at the depth of information contained in the report. It covered vehicles, charging, and infrastructure. I had no idea there were so many EV trucks available! I’m looking forward to completing Phase 2.”

— *Scott Norrie, President,* ***Howe Lumber***

Thank you for your time.

Massfleetadvisor.org

National Grid EV Charging Programs

Ryan Bradley
National Grid, EV Ambassador

August 6, 2024

nationalgrid

Introduction

The Massachusetts department of Public Utilities approved our phase III EV proposal on December 30, 2022. This Approval is among the first of its kind in the Northeast and will provide extensive EV infrastructure support to our customers, along with other unique program offerings.

Community Electrification

Multi-Unit Dwellings

EV charging provides greater value to residents and improves property values

Public / Workplace

Limited public charging is one of the biggest barriers to EV adoption

Fleets

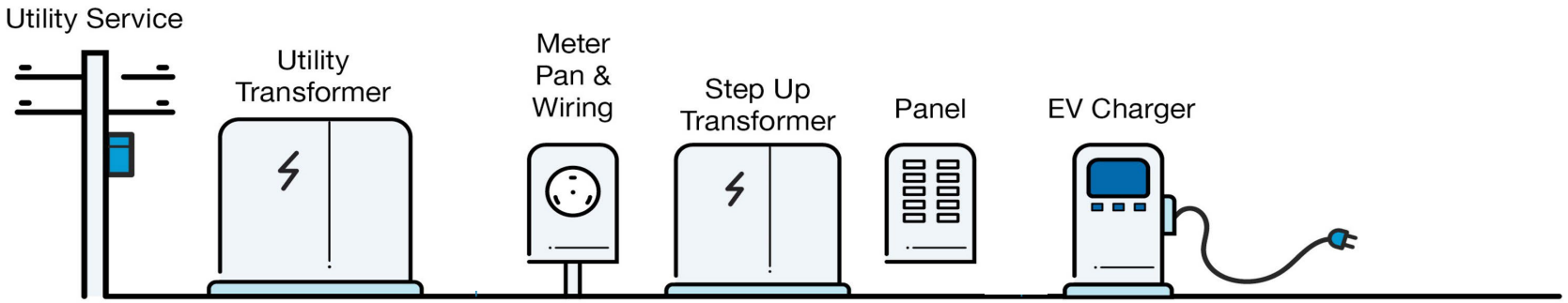
One MHDV EV truck or bus can reduce >8x more CO_2 and >30x $PM_{2.5}$ than a passenger vehicle

Residential

>80% of charging at home today, but barriers exist for >50% of drivers

Commercial Charging Infrastructure (Make-Ready)

What's Eligible?



Eligible for EV Charging Program Incentives

- Customers may be required to pay for grid upgrades in excess of utility's design requirements

- Panel
- Conduit
- Trenching
- Design
- Permitting

- Step Up Transformers
- Wiring
- Customer Switchgear

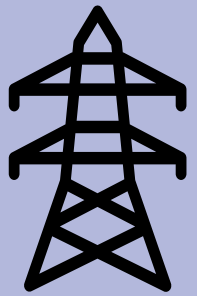
- Charging Station (public only)
- Networking (comm. & MUD - public only)

Not eligible

- Signage
- Maintenance

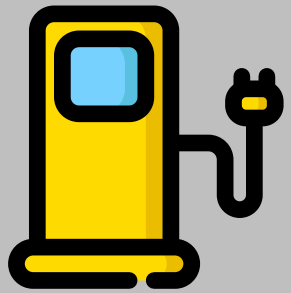
Utility Side | **Customer Side**

Public and Workplace Incentives



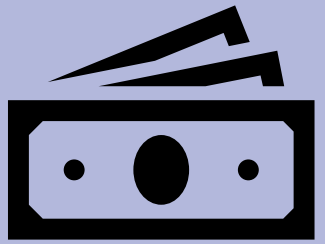
Electrical Infrastructure

Funding for up to 100% of the electrical infrastructure costs associated with installing Electric Vehicle Charging



Charging Stations

Rebates on Charging Station Equipment Costs and Networking Fees



Demand Charge

Demand Charge Alternative Program assists with unforeseen high costs

Demand Charge Alternative

The Demand Charge Alternative Program supports customers in reducing their operating costs of EV chargers by providing a tiered load factor-based discount on their demand charges.

The Demand Charge Program is approved and currently available for 10 years starting in 2023 with new enrollments accepted through 2032.

Eligibility:

- **All new and existing separately metered DCFC and L2 EVSE customers on General Service Demand Rates (G-2 or G-3)**
- **Eligible customers can enroll** anytime during the first 9 years of the program

Load Factor Threshold	Enrollment Years	Demand Charge Discount
None	1	100%
LF <= 5%	2 to 9	100%
5% < LF <= 10%	2 to 9	75%
10% < LF <= 15%	2 to 9	50%
LF > 15%	2 to 9	0%

$$Load\ Factor = \frac{Billed\ Energy\ in\ kWh}{Billed\ Demand\ in\ kW\ *\ Hours\ in\ Billing\ Period}$$

Public Customer Example

We can support the essential parts of an EV project:

Infrastructure:
Make-Ready incentives fund up to 100% of both grid- and customer-side infrastructure

EVSE:
Rebates up to 50% for non-EJC 150+ kW ports and up to 100% for EJC 150+ kW port and all 50-149 kW ports (40k-80k per port rebate)

Operations & Management:
Demand Charge Alternative gives up to a 100% discount on demand charges through June 31, 2033 (load factor)

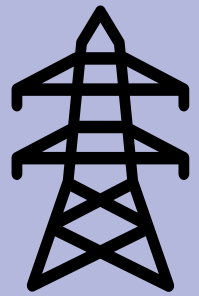
Public DCFC Example:
MA G-3 Rate, EJC Income location, 4 x 150 kW chargers, ~5% Load Factor

	Infra.	EVSE	O&M
EV Program Support[1]	✓	✓	✓
Cost w/o EV Program[2]	~$250k	~$300k	~$0.44 per kWh
Cost w/ EV Program[3]	~$10k	$0	~$0.27 per kWh
Savings[4]	**~$240k**	**~$300k**	**~$2k per month *(~$24K per year)***

Potentially up to
~$540k
Upfront Savings

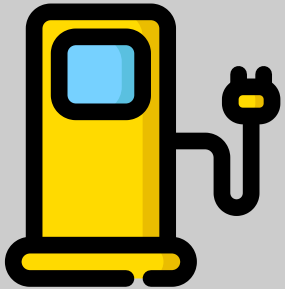
~40%
Electricity Savings

Fleet Incentives



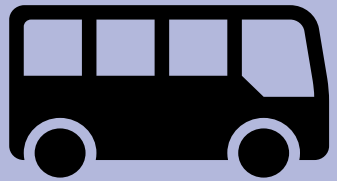
Electrical Infrastructure

Funding for up to 100% of the electrical infrastructure costs associated with installing Electric Vehicle Charging



Charging Stations

Rebates on Charging Station Equipment Costs and Networking Fees



Fleet Advisory

No Cost Fleet Advisory

Fleet Customer Example

We can support the essential parts of an EV project:

Planning:
Fleet Advisory Services (for public fleets) provide a full assessment of EV options, infrastructure, and costs

Infrastructure:
Make-Ready incentives fund up to 100% of both grid- and customer-side infrastructure

EVSE:
Rebates for (public fleets) up to 50% of non-EJC ports and 100% of EJC ports

Operations & Management:
Demand Charge Alternative gives up to a 100% discount on demand charges through June 31, 2033 (load factor)

Off-Peak Rebates provide $0.03-$0.05 / kWh discounts for charging fleet vehicles overnight

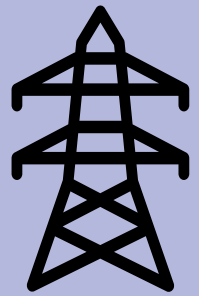
Electric Bus Fleet Example:
MA G-3 Rate, EJC Income location, 4 x 150 kW chargers, charging 500 kWh per day per vehicle, ~14% Load Factor

	Plans	Infra.	EVSE	O&M
EV Program Support[1]	✓	✓	✓	✓
Cost w/o EV Program[2]	Internal (~$20k)	Up to $400k or more	$40k-$80k+ per port	~$0.25-$0.30 per kWh
Cost w/ EV Program[3]	$0 for Public Fleets	$0 for Public Fleets	$0 for Public EJC Income	~$0.20-$0.25 per kWh
Fleet Savings[4]	**~$20K *(entire fleet)***	**~$400k**	**~$320k**	**~$3k per month *(~$36k / yr.)***

Potentially up to
~$740k
Upfront Savings

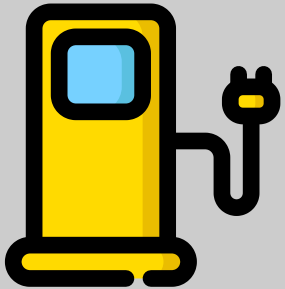
~20%
Electricity Savings

Multi-Unit Dwelling



Electrical Infrastructure

Funding for up to 100% of the electrical infrastructure costs associated with installing Electric Vehicle Charging



Charging Stations

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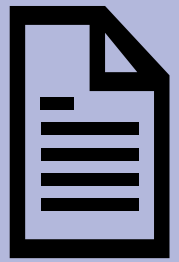

EV-Ready Site Plans

Complimentary EV-Ready Site Plans for qualifying 20+ unit residential buildings

Multi-Unit Dwelling

We can support the essential parts of an EV project:

Planning:
EV Ready Site plans support MUDs with 20+ units plan for the infrastructure, EVSE, and management practices required to provide EV charging to residents

Infrastructure:
Make-Ready incentives fund up to 100% of both grid- and customer-side infrastructure

EVSE:
Rebates up to 50% for non-EJC ports, up to 75% for non-income EJC ports

Operations & Management:
Rebates up to $120 per year, per port for networking

Multi-Unit Dwelling Level 2 Example:
EJC Income location, 20 x 7.2 kW chargers, with new service

	Plans	Infra.	EVSE	O&M
EV Program Support[1]	✓	✓	✓	✓
Cost w/o EV Program[2]	$6K	$120k	$100k	$5,000/ year
Cost w/ EV Program[3]	$0	$0	$28k	$2,600/ year
MUD Savings[4]	**$6k**	**~$120k**	**~$72k**	**~$2,400/ year**

Potentially up to
~$198k
Upfront Savings

$2,400
per year electricity savings

Footnotes

- **Public Example Slide:** **1)** Summary only – see program website for additional details and eligibility: ngrid.com/ma-evcharging**; 2)** Costs are estimates only – local conditions, supplier variability, and installation costs will vary; **3)** Program incentives are subject to caps per port – for 150 kW DCFC, customer-side infrastructure is capped at $60k, and EVSE rebates are capped at $80k for an EJC Income project. See following pages for more detail; **4)** Savings are estimates for illustrative purposes only, and final costs may vary.
- **Fleet Example Slide:** **1)** Summary only – see program website for additional details and eligibility: ngrid.com/ma-evcharging**; 2)** Costs are estimates only – local conditions, supplier variability, and installation costs will vary; **3)** Program incentives are subject to caps per port – for 150 kW DCFC, customer-side infrastructure is capped at $60k, and EVSE rebates are capped at $80k for an EJC Income project. See following pages for more detail; **4)** Savings are estimates for illustrative purposes only, and final costs may vary.
- **MUD Example Slide:** **1)** Summary only – see program website for additional details and eligibility: ngrid.com/ma-evcharging; **2)** Costs are estimates only – local conditions, supplier variability, and installation costs will vary; **3)** Program incentives are subject to caps per port – for Level 2 EVSE, customer-side infrastructure is capped at $6700 w/ new service, and EVSE rebates are capped at $3600 for an EJC Income project. See following pages for more detail; **4)** Savings are estimates for illustrative purposes only, and final costs may vary.

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Questions & Answers

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