

Ask the Experts: Electric Vehicles & EV Charging

Massachusetts Climate Week 2021
Leading by Example Program

Agenda

- 12:00-12:05: Welcome and Introduction
- 12:05-12:30: Electric Vehicles & EV Charging
 - Chelsea Kehne, DOER LBE: EV Model Highlights & EV Charging 101
 - Erin Bostwick, MassDEP: MassEVIP Programs
 - John Liriano, DOER: MOR-EV & Upcoming Ride and Drive Opportunities
- 12:30-1:00: Q&A - Ask the Experts!

Leading by Example by Electrifying Your Fleet

Why electrify?



Support EO594 and statewide decarbonization goals by reducing emissions from the transportation sector



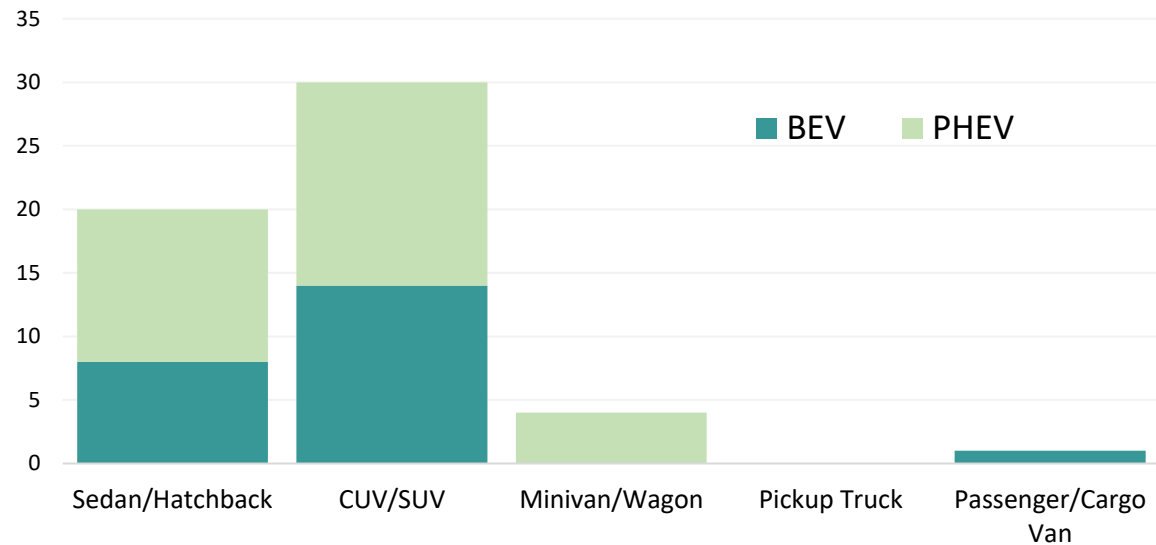
Increase local air quality by eliminating tailpipe emissions and harmful particulates



Reduce ongoing vehicle maintenance and fuel costs

What the EV Market Looks Like Today...

EV Models Currently Available in the U.S.



	BEV	PHEV
Sedan/Hatchback	8	12
CUV/SUV	14	16
Minivan/Wagon	-	4
Pickup Truck	-	-
Passenger/Cargo Van	1	-
Total*	23	32

*Total available models as of September 2021

EV Models Available Now on Contract

Light-Duty BEV Models

Available on
VEH98!



Hyundai Kona EV

SUV

FWD

258

\$37,495 - \$45,495



Ford Mustang Mach-E

CUV

FWD/AWD

230-300

\$44,881 - \$60,873



Nissan Leaf/Leaf Plus

Sedan

FWD

150 - 226

\$32,545 - \$37,245



Chevy Bolt**

Sedan

FWD

259

\$28,231 – 32,895

* Bid prices as of September 2021

**Availability dependent on recall schedule

Light-Duty PHEV Models

Available on
VEH98!

PHEV Model Details

Make/Model

Class

Drivetrain

Range (miles)

Bid Price Range



Chrysler Pacifica

Minivan

FWD

32 battery/520 total

\$36,818-\$38,981



Ford Escape EV

SUV

FWD

37 battery/400 total

\$29,611 – 39,001



Toyota Prius Prime

Sedan

FWD

25 battery/640 total

\$29,215



Honda Clarity Plug-in

Sedan

FWD

48 battery/520 total

\$34,291 - \$37,441

Cargo Van Model Highlight

Now available
on VEH98!

Ford E-Transit Cargo Van

Engine Type	All electric
Electric Range (mi.)	126
Seating Capacity	2
Cargo Space (cu. Ft.)	487
Drive Train	RWD
Max. Horsepower	266
Max. Torque (lb.-ft.)	317
Max. Payload (lbs)	3,800
Bid Price Range	\$43,350 - \$53,200



Highlighted Features...

- 3 roof heights and body lengths
- Chassis cab & cutaway models
- 2.4 kW of onboard power
- Rear-shelf delete option

Class 3-6 Vehicle Highlights

Available on
VEH102!

National Van Builders & Lightning E-Motors

Class 3 – 6 Models

Passenger & Cargo Options



Neighborhood & Utility Vehicle Highlights

Available on
FAC116!

CUSHMAN SHUTTLE 6 ELECTRIC

(Vendor: Five Star Golf Cars)



GREENWORKS UTV

(Vendor: Orlando's Garage)



YAMAHA UMAX TWO AC

(Vendor: New England Golf Cars)



POLARIS GEM

(Vendor: Country Club)



EV Models Coming Soon

Upcoming BEV models

Sedans, Crossovers, & SUVs

- Nissan Ariya (2021)
- Hyundai Ioniq 5 (2021)
- Rivian R1S (2021)
- Volvo C40 Recharge (2022)
- Kia EV6 (2022)
- Subaru Solterra (2022)
- Jeep Wrangler Magneto (2022)
- Ford Explorer EV (2023)
- Honda Prologue (2024)



Pickup Trucks

- Ford F-150 Lightning (2021)
- Rivian R1T (2021)
- Chevy Silverado Electric (2023)
- Ram 1500 EV (2024)
- Canoo Pickup (2024)



Vans & Specialty Vehicles

- Mercedes E-Sprinter
- Canoo Van (2022)



Upcoming SUV Highlight:

Late 2021!

Nissan Ariya

Expected Starting MSRP	\$40,000
Trim Options	Various
Engine Type	All electric
Electric Range (mi.)	300
Drivetrain	FWD/dual-motor AWD
Max. Horsepower	215



➤ Highlighted Features

- Dual-motor offers enhanced handling
- Liquid thermal managed battery
- Utilizes Nissan's new electric platform
- Includes Intelligent Mobility systems

Upcoming CUV Highlight

Late 2021!

Hyundai Ioniq 5

Expected Starting MSRP	\$45,000
Trim Options	Various
Engine Type	All electric
Electric Range (mi.)	275-300
Drivetrain	RWD/AWD
Max. Horsepower	225-320



➤ Highlighted Features

- Ultra-fast charging capable
- High-tech, minimalist interior design
- Towing-rated (1,650-3,500 lbs)
- Spacious trunk space & fold down seats

Upcoming Truck Highlight

Coming Spring 2022!

Ford F-150 Lightning

Expected Starting MSRP	\$40,000
Trim Options	Pro, XLT, Lariat, Platinum
Engine Type	All electric
Electric Range (mi.)	230-300
Drivetrain	Dual-motor 4x4
Max. Horsepower	563
Max. Torque (lb.-ft.)	775
Max. Payload (lbs)	2,000
Max. Towing Capacity (lbs)	10,000









➤ Highlighted Features

- High-tech frunk
- Four drive modes
- Onboard power & scales
- Intelligent Range
- Smart hitch & trailer backup assist

EV Charging Considerations

EV Charging Basics

EV Charger Type Overview

Charger type	Power required	Charging time*	Range per hour of charging	Average costs (equipment only)	Best use case	Pros	Cons
Level 1 AC	120V	 18-50 hrs	4-6 miles/hour	 \$400-\$1,600	Low-moderate use, overnight / long-term parking	Cheaper , Lower electricity demand, convenient	Long charge time
Level 2 AC	208-240V	 4-10 hrs	10-25 miles/hour	 \$5,000-\$15,000	Medium-heavy use, workplace & commercial	Charge multiple vehicles, load management, preferred for most locations	More costly than L1, moderate charging time
DC Fast (DCFC)	480V	 1-2 hrs	180 miles/hour	 \$8,500-50,000+	Long and/or frequent trips, highway corridors	Flexible, good for emergencies	Expensive , may incur utility bill demand charges

*Charging time varies widely and depends on size of battery, battery capacity at charge time, plug power, etc.

EV Charging Options

CHARGER TYPES



EQUIPMENT OPTIONS



Statewide Contracts for EVs & EVSE

VEH98 – Purchase of Vehicles

Being replaced by VEH110

- Currently includes wide range of assets, such as passenger vehicles, trucks & vans, buses, equipment, etc.

VEH93 -- Heavy Duty Vehicles

Being replaced by VEH111

- Currently includes heavy duty assets such as dump trucks and loaders

FAC116 – Maintenance & Grounds Equipment

- Includes golf carts and utility vehicles; commercial grade battery powered landscape equipment, roads and landscape equipment & machinery, etc.






VEH102 -- Advanced Vehicle Technology Equipment, Supplies and Services

- Includes wide array of EV charging equipment & services, as well as emissions reduction and conversion technologies

Upcoming VEH110 contract will require vendors to offer ONLY zero-emission or hybrid options for sedans, minivans & SUVs

EV & EVSE Funding Programs

MassEVIP Overview

MassEVIP Program	Deadline	Equipment	Incentive Amounts	Applicant Eligibility
 Direct Current (DC) Fast Charging	3/19/21	DC fast chargers	Up to 80% of hardware and installation (up to 100% for public facilities and up to 60% for educational campuses). Maximum of \$50,000 per station.	Property owners with publicly accessible parking; educational campuses with 15+ students.
 Public Access Charging	Rolling	Level 1 + 2 chargers	Up to 80% of hardware and installation (100% for public facilities). Maximum of \$50,000 per street address.	Property owners or managers with publicly accessible parking; public must have access for a minimum of 12 hours per day, 7 days a week.
 Workplace and Fleet Charging	Rolling	Level 1 + 2 chargers	Up to 60% of hardware and installation. Maximum of \$50,000 per street address.	Employers and fleet operators with 15+ employees in non-residential places of business.
 Multi-Unit Dwelling and Campus Charging	Rolling	Level 1 + 2 chargers	Up to 60% of hardware and installation. Maximum of \$50,000 per street address.	Multi-unit dwellings with five or more residential units and educational campuses with 15+ students.
 Fleet EV Incentives	Rolling	BEV, PHEV, and ZEM (motorcycles)	BEV: \$7,500 PHEV: \$5,000 ZEM: \$750	Municipalities, state agencies, and public colleges and universities; no EV charging stations required.

MOR-EV Trucks Overview

Public fleets are eligible for MOR-EV rebates for medium- and heavy-duty EVs

- Applies to battery electric and fuel-cell electric vehicle purchases + leases
- Sales price must be >\$50,000
- GVWR >8,500 pounds
- Potential 10% adder for EVs operating in Environmental Justice Communities



Rebates determined by GVWR & applicable block; larger vehicle classes can 'reserve' incentives

BEV/FCEV Gross Vehicle Weight Rating (lbs.)	Incentive Reservation Type	Block Size (# vehicles)	Block 1 Incentive Value (subsequent blocks decline by 15% per block)
8,501 – 10,000	Rebate	200	\$7,500
10,001 – 14,000	Rebate		\$15,000
14,001 – 16,000	Voucher	100	\$30,000
16,001 – 19,500	Voucher		\$45,000
19,501 – 26,000	Voucher		\$60,000
26,001 – 33,000	Voucher	50	\$75,000
33,001 +	Voucher		\$90,000

Upcoming Ride and Drive Events



National Drive Electric Week™
DRIVE ELECTRIC

DOER
Massachusetts Department
of Energy Resources

Clean Cities

GREEN ENERGY CONSUMERS ALLIANCE

Discover the power of Electric Vehicles (EVs)

Enjoy an EV Showcase & Test Drive EVs
Talk to EV Drivers & Learn the Benefits of Driving Electric

When & Where:

Saturday, September 25, 2021, from 10:00AM to 2:00PM
Roxbury, MA—At Roxbury Community College, Parking lot 1, 1234 Columbus Ave, Boston, MA 02120

Saturday, October 2, 2021, from 2:00PM to 6:00pm
North Andover, MA—At Lawrence Municipal Airport, 492 Sutton St, North Andover, MA 01845

Wednesday, October 6, 2021, from 4:00PM to 6:00PM
Holyoke, MA—At Holyoke Veterans' Memorial Park, 536 Dwight St, Holyoke, MA 01040

Come see why EVs are the fastest growing transportation vehicle segment!

Check out the great selection on display from brands like Nissan, Porsche, Mitsubishi, Jaguar, Chevrolet, Tesla, Honda, Mercedes, and more!

Learn what EVs are available locally, how and where to find EV charging stations, what purchasing incentives are currently available, and more!

Various organizations will be in attendance to provide and connect you and your family with valuable resources. Make sure to stop by each booth and see what they have to offer!

Get your free COVID19 Vaccine!
Learn about how you can save money on your electricity bill, and more!

For more information, visit the NDEW website: <https://driveelectricweek.org/>

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Q&A – Ask the Experts!



EV & EV Charging Incentive and Procurement Resources

Electric Vehicles

[MassEVIP Fleets Program](#)

[MOR-EV Trucks Program](#)

[VEH98](#) (upcoming [VEH110](#))

[VEH93](#) (upcoming [VEH111](#))

[FAC116](#) (categories 3 & 8)

[VEH102](#) (categories 2 & 3)

EV Charging

[MassEVIP Workplace & Fleet Charging](#)

[MassEVIP Public Access Charging](#)

[MassEVIP MUD/Educational Campus Charging](#)

[Eversource](#) & [National Grid](#) Make-Ready Programs

[VEH102](#) (category 1)

Visit the [LBE Clean Transportation webpage](#)
for more EV & EV charging resources!