

Massachusetts PEV and Infrastructure Charging Case Study



The U.S. Department of Energy's (DOE) EV Everywhere Grand Challenge is assessing the barriers and opportunities to enable more localities and states to more rapidly increase PEV use and enjoy the resulting economic and environmental advantages. To gain insight, DOE selected the Massachusetts Plug-in Electric Vehicle and Charging Infrastructure Program for development of a case study because Massachusetts compares favorably with other cold weather states as to the per capita market share of PHEVs and all-electric vehicles. Massachusetts has also seen a rapid increase in public PEV charging infrastructure installations (33 to 596) from 2011 until July 2016. This is a snapshot of the findings.

2010

Year the Massachusetts PEV program was launched

> 5510

Number of PEVs registered in Massachusetts in 6 years

2,193

Total registered BEVs in 2016

3,417

Total registered PHEVs in 2016

Factors important to the success of the Massachusetts PEV and Recharging Infrastructure Program

- Legislation and Policy
- Incentives
- Auto Dealerships
- Utilities
- Outreach and Education
- Workplace Charging
- Communities
- Non-Governmental Organizations
- Clean Cities
- Cultural and Climatic Factors

Legislation and Policy

Global Warming Solutions Act - Reduce greenhouse gas emissions below 1990 levels by 25% in 2020 and 80% in 2050

2013 ZEV Memorandum of Understanding - 300,000 ZEVs on the roads by 2025 with refueling infrastructure

MasseVIP - offers incentives to acquire EVs and charging stations at a reduced cost

2014 MOR-EV - issues rebates for purchase or lease of ZEVs or PHEVs

ACT Promoting EV Adoption - common EV Standards as part of the state building code

Massachusetts Renewable Energy Portfolio Standard - electricity suppliers obtain % of electricity from renewable sources, 11% by 2016

Massachusetts Communities

- Air Pollution Reduction
- Climate action Plan
- Boston Long-Range Transportation Plan
- Go Boston 2030
- Imagine Boston
- Boston "Complete Streets"
- Parking Freeze Program
- Transportation Access Plan Agreement
- Green Fleet Policy
- DriveBoston
- MPAC

OEMs and Auto Dealers

- It is harder to sell PEVs (3X the effort) than comparable conventional vehicles
- OEMs provide dedicated and continual training to dealerships and sales people, tools, charging stations, information to dealerships, and conduct corporate ride and drives
- OEMs are also promoting PEVs through ride/car sharing fleets

Workplace Charging

> 150 employees installed workplace charging at a variety of entities including medical institutions, universities and schools, office parks, restaurants, resorts, property ownership companies, municipal entities, and technical corporations

Did you know?

2013 MOU to commit to placing 300,000 ZEVs on roads by 2025

Did you know?

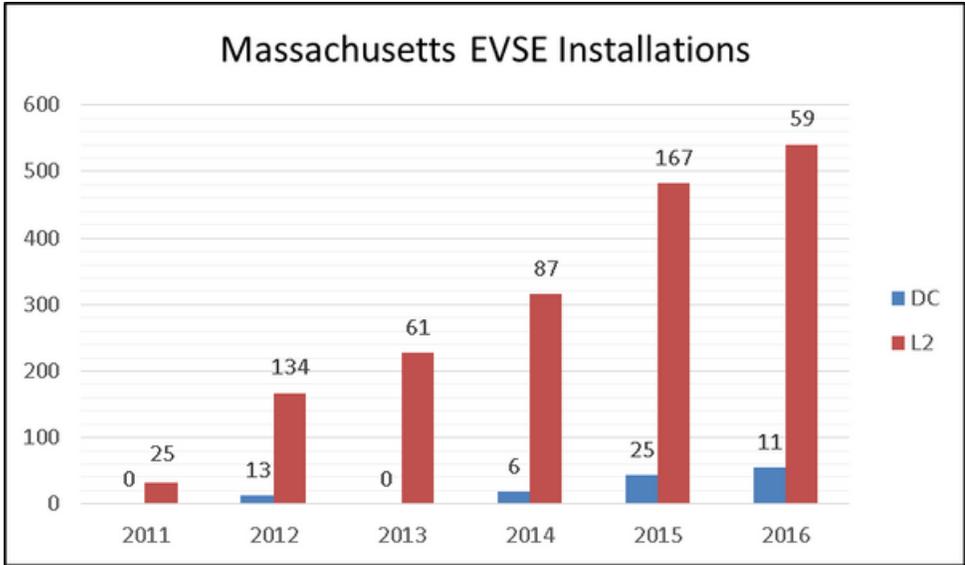
Massachusetts is the most energy efficient state for 6 consecutive years

39%

PEV increase in sales from 2015 to 2016

64%

ChargePoint Network chargers in Massachusetts



563

Number of public charging stations installed over 6 years

40%

What transportation greenhouse gas emissions account for in Massachusetts

Non-Governmental Organizations

Recommendations in regards to PEVs and charging infrastructure in Massachusetts

- prioritizing and coordination
- state rebates
- auto dealers to promote and incentivize
- utility policy
- infrastructure deployment
- assistance to low-income communities
- outreach and education
- clean bus technologies

Utilities

DPU - permits distribution companies to recover the cost of EVSE ownership & operation for their own vehicle fleet charging and employee vehicle charging

National Grid - installed 40+ chargers between 2011 - 2013

Eversource - Purchased # of PEVs and added 5-6 EVSE per site

MA Municipal Wholesale Electric Co. - contains member territories and the effort to build-out charging infrastructure in support of PEVs just starting to develop

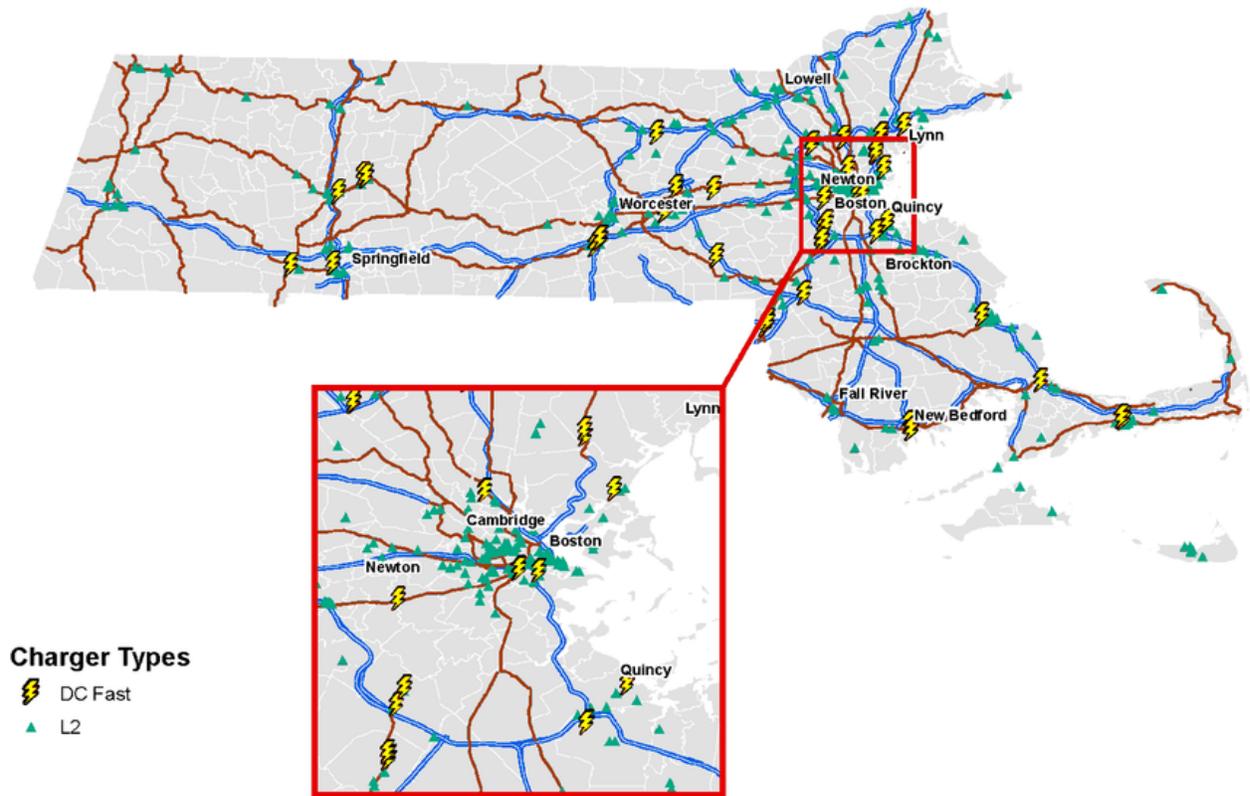
Massachusetts Clean Cities Coalition

- Ride and drive
- 140 charging stations installed in 2011
- \$50,000 per site being provided for DCFCs

Massachusetts Cultural and Climatic Factors

- Green-minded states
- #1 for energy efficient economy for for 5 years running
- No harsh winter conditions or low temperatures

Public Charging Stations in Massachusetts



PEVs Registered by Zip Code

