

April 28, 2021

Honorable Charlie Baker
Governor, Commonwealth of Massachusetts
Massachusetts State House, Room 280
24 Beacon St.
Boston, MA 02133

Dear Governor Baker:

The Alliance for Automotive Innovation¹ appreciates the letter that you recently sent to President Biden, along with 11 of your fellow Governors, supporting the Administration's pursuit of a zero-emission transportation future. State actions to implement programs and policies that support and encourage electric vehicle (EV) buyers are critically important, and we appreciate Massachusetts's commitment to do its part in providing the necessary conditions to help support an expanded EV market.

Automakers, too, recently shared our industry's commitment to this future [in a letter to President Biden](#).² By 2023, the auto industry will have invested more than \$250 billion in electrification, and IHS Markit predicts there will be 130 EV models (PHEV - plug-in hybrid electric vehicle, BEV - battery electric vehicle and FCEV - fuel cell electric vehicle) available in the U.S. by 2026. Although consumer interest continues to grow, and more than 50 EV models were on sale in 2020, EVs comprised just two percent, or roughly 300,000 of the nation's 14.5 million new vehicle sales.

Clearly, there is much work to be done to significantly increase EV adoption in the nation, let alone achieve a 2035 goal. Our shared objectives require collaboration and a sustained commitment to fund and execute supportive programs and policies.

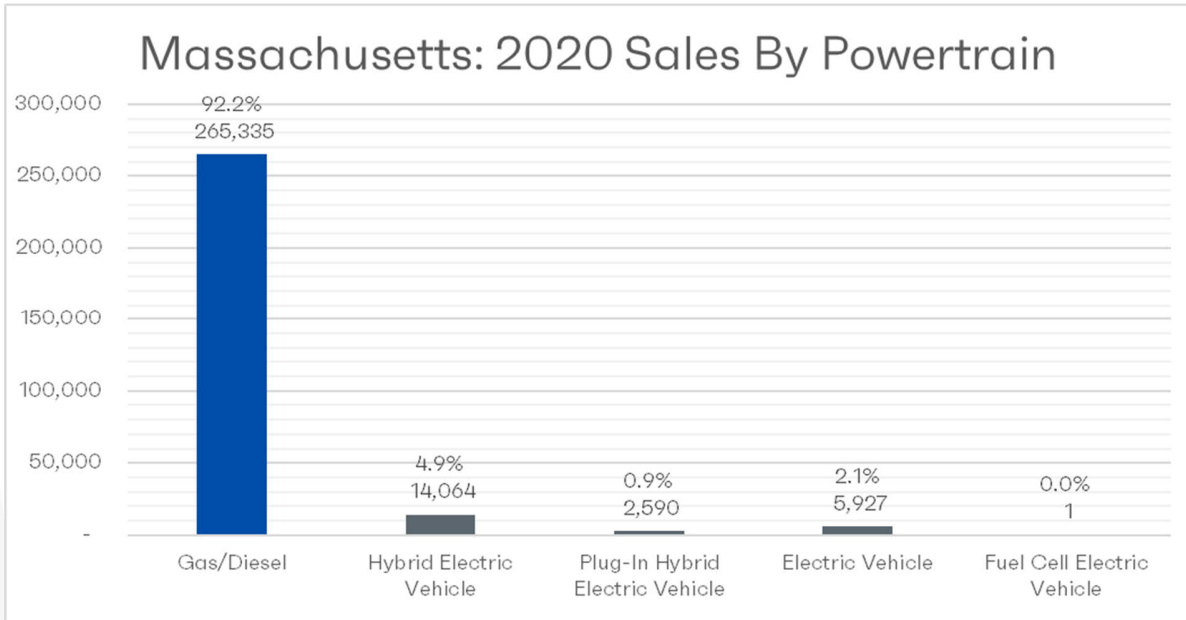
We appreciate that you, Governor Baker, recognize true transformation requires more than just automakers; it requires multiple stakeholders working together. The challenge of reaching a 100 percent zero emission vehicle (ZEV) market by 2035 means the state addressing several hurdles to consumer acceptance. There are many important complementary measures needed for success. For example, but not limited to:

- State fleet adoption;
- Convenient and affordable access to ZEV charging and hydrogen refueling stations;
- Building codes addressing new construction and retrofit requirements for EV-ready residential and commercial parking;
- Ensuring the low-moderate income (LMI) community has enhanced access to EVs and charging infrastructure in these areas;
- Grid resiliency and utility electric rates that provide low-cost EV charging;
- Sustained and well-funded state-level point-of-sale EV rebates;
- State action on low carbon fuel standard (LCFS) and/or the Transportation Climate Initiative (TCI).
- Participation in consumer awareness programs, like the Northeast's 'Drive Change. Drive Electric.' campaign.³

To facilitate your review of Massachusetts's role in being a leader and attaining a 100 percent ZEV sales goal by 2035, the following includes relevant ZEV data points for your state. As you will notice, without immediate and substantial action toward these critical measures, Massachusetts is unlikely to reach its goal.

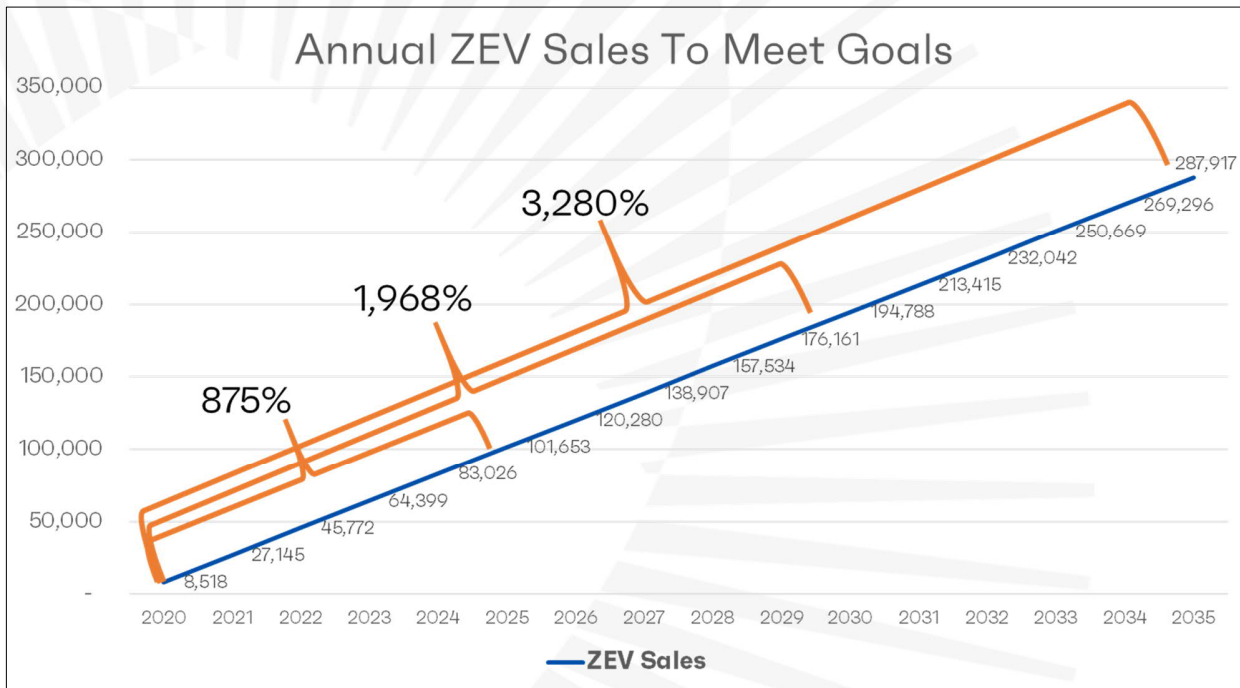
Current State-of-Play.

In Massachusetts, ZEVs comprised 2.96% of new vehicles sales in 2020.⁴

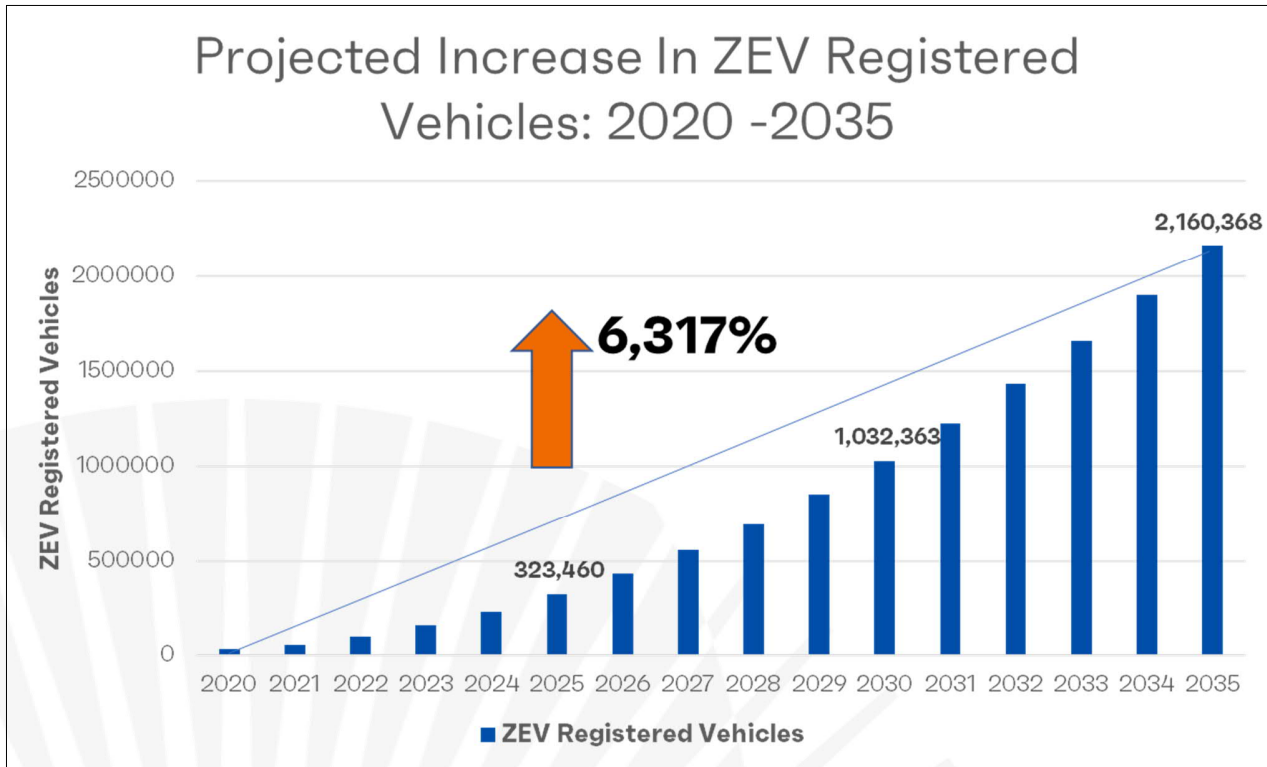


ZEV Sales Needed to Meet 2035 Goals.

Based on Massachusetts’s current new vehicles sales per vehicle type and powertrain, below is an analysis of what year-over-year in ZEV sales increases would be needed for the state to reach 100 percent ZEV sales by 2035.⁵



When an increasing number of ZEV sales are combined with existing ZEV registrations, and assuming ten percent of all ZEVs are removed from the fleet each year, Massachusetts's registered ZEVs will need to climb to more than 2.1 million in 2035, a 6,317% increase.⁶



State and Local Fleet Increase.

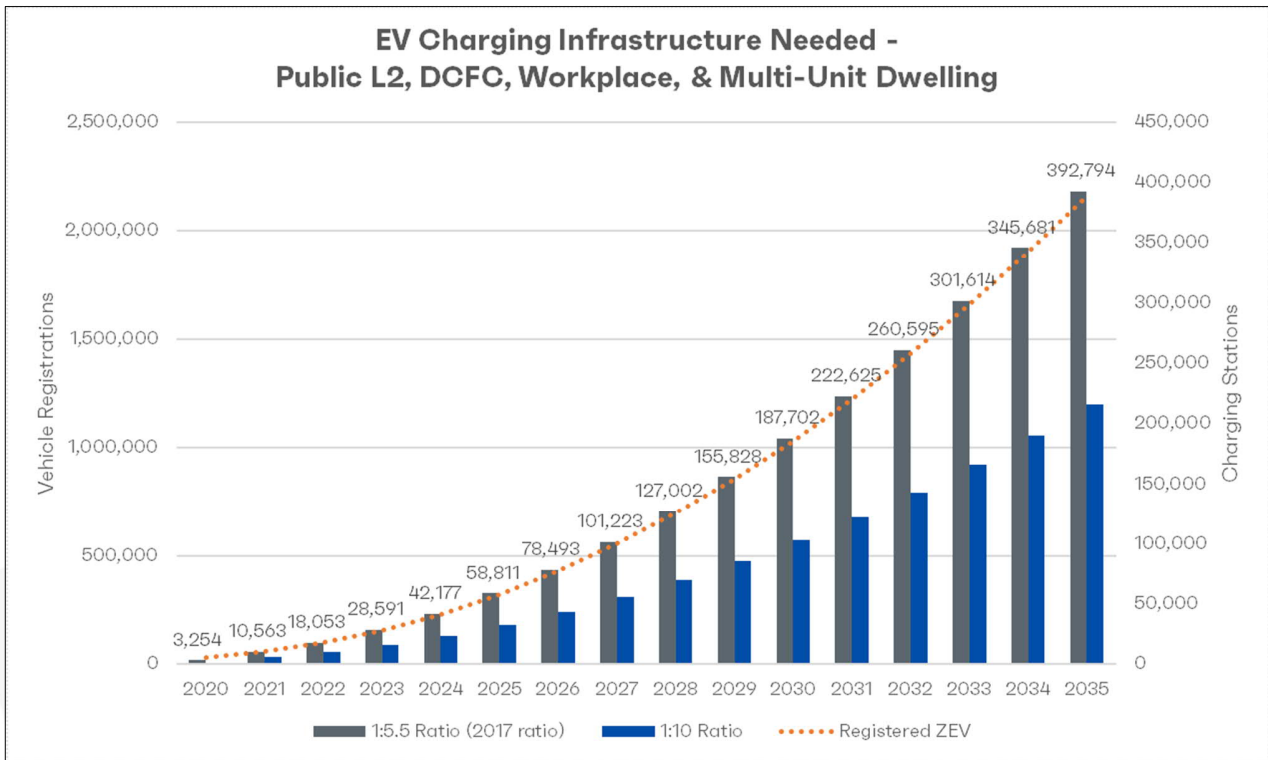
State and local governments can lead by example by prioritizing EVs (e.g., PHEVs, BEVs, and/or FCEVs) when making fleet purchases. This is truly an example of executive leadership and will serve to bolster consumer interest in an EV purchase. We recommend an immediate Executive Order for state fleet purchases followed by legislation with state and local government fleet requirements that provide a path to 100 percent.

Charging and Hydrogen Refueling Infrastructure.

Reliable and convenient access to charging and refueling stations support Massachusetts customers that adopt ZEVs. Publicly available charging infrastructure not only eases perceived "range anxiety," concerns but also substantially increases consumer awareness of the technology. Here is a snapshot of Massachusetts's current ZEV charging/refueling infrastructure:⁷

- Number of non-proprietary L2 public charging outlets: 3130 (at 1514 stations)
- Non-proprietary DC fast charger outlets: 124 (at 81 stations)
- Hydrogen stations: 0

In order to support the prospect of 100 percent ZEV-only sales in 2035, our analysis suggests that Massachusetts' charging capabilities will need to increase 11,971% within the next 14 years to be in line with the California infrastructure assessment ratio of 5.5 EVs to charger port. Even at a one-to-ten ratio, charging outlets will need to increase by nearly 6,539%.⁸



Residential and Commercial Building Codes - Retrofit and New Construction Updates Needed.

According to the U.S. Department of Energy, roughly 80 percent of EV charging occurs at home, making access to home charging a top priority for customers considering an EV. Lack of access to home charging is a major barrier to EV adoption. As a first, and most cost-effective step Massachusetts should immediately begin adopting residential building codes to require EV-ready charging capabilities in 100 percent of parking spots in new MUDs and single-family homes. Massachusetts should also begin adopting non-residential building codes that require installation EV-ready charging capabilities in a significant portion of all new parking at workplace and at public parking. Numerous studies have shown retrofitting residential and non-residential parking is 5 to 6 times more expensive than installing it during new construction. Moreover, the building codes should also include requirements to install the same infrastructure during any significant renovations, such as parking lot paving, electrical panel upgrades, etc.

While building codes that address new construction is a common-sense and lowest cost first step, it is not nearly enough to support the goals. For example, residential new construction typically accounts for about 1 percent of all residential units each year. Thus, new building codes would only provide residential charging in about 15 percent of the residential units in 2035 – the year Massachusetts hopes to be at 100 percent ZEVs.

Consequently, Massachusetts must adopt public and private programs to support retrofitting of existing homes and multi-unit dwellings (MUDs) such as apartments, condos, townhouses. As noted, these retrofits are far more expensive, but they must be completed to meet the goals.

Special attention should be given to the infrastructure needs in Massachusetts’s underserved communities to ensure that access to affordable and convenient charging and refueling options are made available on an equally aggressive timeline. However, MUD residents often face the greatest most costly and burdensome obstacles to installing residential EV charging. For MUD residents, the additional costs to upgrade the electrical panel, install conduit between the electrical panel and their parking space, and the logistical challenges of securing building owner approval, coordinating the billing with the building owner, and persuading an owner to make a long-term investment on a rental property, make it near impossible to be an EV driver in a MUD.

Grid Resiliency/Utility Rate Setting Alignment.

A thorough review of Massachusetts's electric grid to determine the viability of expanded access in both the near and long-term makes strong practical sense. Public confidence in the resiliency of the grid will only help spur faster EV adoption. Failure to provide consistent service, particularly when the majority of EV charging is done at home, could be devastating for increased EV adoption, both for the light- and heavy-duty vehicle sectors.

Included in that review, Auto Innovators suggests the state commit to a transparent dialogue with the utility commission and energy companies about making home and public charging affordable and convenient. In addition, an education campaign about the different types of charging systems (L1, L2, DCFC) and suggestions about prime charging times to lessen the load on the grid should be addressed.

Sustained Consumer ZEV Purchase Incentive.

Purchase incentives can be a persuasive and effective way to address vehicle affordability and interest customers in purchasing an EV. Coupled with federal incentives, state-based incentives continue to play an important and necessary role in EV adoption. We commend you for the Massachusetts' Offers Rebates for Electric Vehicles Program (MOR-EV) which offers a healthy ZEV purchase incentive to consumers.

Unfortunately, as you know the program is limited in application by an MSRP cap on qualifying vehicles. The mantra should be: all ZEV sales are good sales, regardless of price-point. We strongly urge you to repeal the MSRP limitation. With the ambition of a 100% ZEV goal in 2035 looming, maintaining an MSRP cap is unnecessarily limiting the options available to would-be ZEV purchasers.

EVs continue to cost substantially more than a comparable gasoline-fueled vehicle, and so the compounded effect of the federal and state incentives are necessary to equalize purchase costs. Additional rebates provided for low- and moderate-income communities are also being used in numerous states to reduce the costs of purchasing an EV. Finally, in addition to the critical role of state-based rebates, it is necessary to ensure adequate and sustained funding to give customers a consistent signal that the state stands behind increased adoption of EVs.

While fuel-cell vehicles (FCEVs) are included in the MOR-EV program, consumer adoption depends significantly on the existence of convenient hydrogen refueling stations. Today, there are three FCEVs offered for sale in California due to the California's investment in developing a network of hydrogen fueling stations. There are zero public hydrogen refueling stations in Massachusetts.

Establishment of a LCFS to Clean the Air and Create a New Revenue Stream for Transportation-Related Investments.

A low carbon fuel standard (LCFS) not only supports EVs but can also further reduce emissions from every vehicle already on the road. In the context of climate change, market-based mechanisms are widely understood to encourage emissions reductions in the most efficient way, especially when broadly applied. Properly structured, a low carbon fuel program reduces the carbon intensity (CI) of gasoline and diesel fuel either directly or by funding low CI alternatives, such as PHEVs, BEVs, and FCEVs and the required infrastructure to support the use of these vehicles.

We believe that a LCFS is an important part of any strategy to reduce transportation-related carbon emissions, providing an approach that better aligns improved fuel economy with lower emission fuels. It can also provide a source of revenue for transportation-related investments and improvements. For example, Auto Innovators worked closely with the California Air Resources Board, utilities, and a broad stakeholder group to develop California's first point-of-purchase, statewide Clean Fuel Reward program, which utilizes revenue generated by the LCFS to create a sustainable, long-term funding source for consumer purchase incentives. Similarly, California's LCFS revenues are also being used to support fast-charging stations and hydrogen refueling stations.

Consumer Awareness Programs.

Consumer awareness, understanding, and trust of the technology is essential as we move from far below 2 percent national ZEV sales to 100 percent ZEV sales in the next 14 years. Raising this awareness can happen in many ways, and we encourage the state to explore different options. For example, we've mentioned above that public and workplace chargers and hydrogen stations provide an excellent means of raising consumer awareness. State and local fleet purchases of ZEVs also substantially raise awareness – particularly if these vehicles are used in high visibility areas such as Department of Transportation (DOT) road crews, police, and fire.

We appreciate Massachusetts's participation in the "Drive Change. Drive Electric." EV consumer awareness campaign. The campaign is entering its fourth year and will continue to provide dedicated outreach to consumers in the funding states – we hope Massachusetts will stay engaged in the program.

We look forward to working with you on these and other initiatives necessary for a growing, robust, and sustainable ZEV market. Auto Innovators appreciates Massachusetts's commitment to vehicle electrification and the actions necessary for future EV success. Many of the actions necessary for success must start now, and we stand ready to work with you and key stakeholders.

Sincerely,



John Bozzella
President & CEO

¹ The Alliance for Automotive Innovation ("Auto Innovators") represents automakers that produce and sell approximately 99% of all the new light-duty cars and trucks sold in the U.S. Formed in 2020, following the merger of the Association of Global Automakers and the Alliance of Automobile Manufacturers, Auto Innovators is the authoritative and respected voice of the automotive industry. Auto Innovators is focused on creating a safe and transformative path for sustainable industry growth by engaging directly in regulatory and policy matters impacting the light-duty vehicle market across the country. Auto Innovators' members include motor vehicle manufacturers, original equipment suppliers, technology, mobility, and other automotive-related companies and trade associations

² See <https://www.autosinnovate.org/posts/press-release/ev-policy-letter-to-president-biden>.

³ See www.driveelectricus.com.

⁴ Compiled by Alliance for Automotive Innovation with data provided by IHS Markit, sales figures represent new vehicle registrations between January 1, 2020 - December 31, 2020.

⁵ Compiled by Alliance for Automotive Innovation with data provided by IHS Markit, projected ZEV sales are based on 2020 sales figures extended out to 2035 to reach 100% ZEV sales.

⁶ Compiled by Alliance for Automotive Innovation with data provided by IHS Markit, ZEV registered vehicle projections includes 2020 ZEV sales + 2019 ZEV Registrations, climbing to 100% ZEV sales by 2035 and assuming a 10% scrappage rate of annual registered vehicles.

⁷ Department of Energy, Alternative Fuels Data Center, <https://afdc.energy.gov>, Accessed 4/27/21

⁸ Compiled by Alliance for Automotive Innovation with data provided by IHS Markit, sales figures represent new vehicle registrations between January 1, 2020 - December 31, 2000; registration figures represent vehicles in operation as of December 31, 2019. ZEV registered vehicle projections includes 2020 ZEV sales + 2019 ZEV Registrations, climbing to 100% ZEV sales by 2035 and assuming a 10% scrappage rate of annual registered vehicles.