



August 17, 2023

Lynne Cayting Chief Mobile Sources Section
Bureau of Air Quality Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017

Subject: Comments on the State of Maine Chapter 127A draft rule

The Alliance for Automotive Innovation¹ (Auto Innovators) appreciates the opportunity to provide comments on Maine's Chapter 127A draft rule that proposes to adopt the California Air Resource Board (CARB) Advanced Clean Cars II (ACC II) regulation. We appreciate the comprehensive approach that Maine has taken towards an electrified future and the progress made from your Maine Won't Wait plan. Through the electric vehicle (EV) rebate incentives, infrastructure planning and a focus on improving consumer awareness, you have been able to realize a market share growth in EV sales that reached nearly 6% through the first quarter of 2023. These plans have set the framework to support increased electrified vehicle transportation in Maine. Our association supports this transformation and are committed to working cooperatively with Maine to ensure vehicles developed, produced, and sold in the state of Maine offer consumers a range of options that are increasingly efficient, clean, and affordable for all. The CARB ACC II regulations are the most aggressive vehicle regulations in history and meeting them will be incredibly challenging even in California, which currently has EV market share of 24%², which is four times higher than Maine.

Commitment to Net-Zero Carbon Transportation.

Auto Innovators and its members are committed to achieving a net-zero carbon transportation future for America's cars and light trucks. The auto industry is investing \$1.2 trillion globally by 2030³ to advance vehicle electrification and will increase the number of EV models available from 97 today to around 245 by model year (MY)2026⁴. In August of 2021, Auto Innovators and our members announced support for a goal of achieving 40-50 percent U.S. new light-duty vehicle market share of EVs nationally by 2030, with the right complementary policies in place.

¹ The Alliance for Automotive Innovation ("Auto Innovators") represents automakers that produce and sell approximately 98% of all the new light-duty cars and trucks sold in the U.S. Auto Innovators is the authoritative and respected voice of the automotive industry.

² JD Powers EV Index Report

³ <https://www.reuters.com/technology/exclusive-automakers-double-spending-evs-batteries-12-trillion-by-2030-2022-10-21/>

⁴ <https://www.autonews.com/sales/car-wars-study-2026-60-new-models-will-be-ev-hybrid>

The challenge of reaching the CARB ACCII mandate of 43% in 2027 to 82% EV market share by 2032, requires Maine to address several hurdles to consumer acceptance. In Maine, EV sales must increase more than seven-fold in four model years. These are staggering required sales increases for a new technology that relies heavily on customer acceptance and market readiness. That required seven times sales increase is needed where the average transaction price of EVs is now more than \$53,000. Current EV buyers are far more likely to be affluent single-family homeowners with modern electric panels just a few feet from their garage where they will charge their EVs. These buyers do not represent a full cross-section of Maine's new car buyers, and achieving 40, 50, or 82 percent of the new car market will require reaching buyers of more moderate means. It will also require action well beyond automakers' ability to produce lower cost EVs.

While Maine's charging infrastructure has more than doubled since 2018, from 151 charging stations to 431⁵ today, to support the prospect of 82% ZEV sales in 2032, our analysis suggests that Maine's public charging capabilities will need to increase from 431 charging ports today to a total of 25,000 to 35,000 charging ports by 2032 to support an EV market share of 82%. That is a substantial commitment and investment by Maine in only nine years.

There is much work to be done to significantly increase EV adoption across the nation. Our shared objectives require collaboration and a sustained commitment to fund and execute supportive programs and policies. The challenge of reaching the CARB ACCII mandate of 43% (2027), 59% (2029), to 82% EV market share by 2032, requires Maine to address several hurdles broader to consumer acceptance. There are many important complementary measures needed for success. Examples include, but are not limited to:

- Increasing funding and duration for current EV incentives.
- Adopting private and state fleet purchase requirements equivalent to or greater than the sales requirements in ACC II
- Deploying convenient, reliable, and affordable access to public EV charging and hydrogen refueling stations, as well as monitoring to ensure reliability not only the charger availability but also the charging power rate delivered at DCFCs.
- Installing 350kW DCFC at airports and major transportation hubs to fuel transportation network company (TNC)s EVs and taxis. Maine should also consider installing H2 fueling stations at locations that would support TNC EVs and taxis.
- Adopting building codes addressing new construction and retrofit requirements for EV-ready residential and commercial parking.

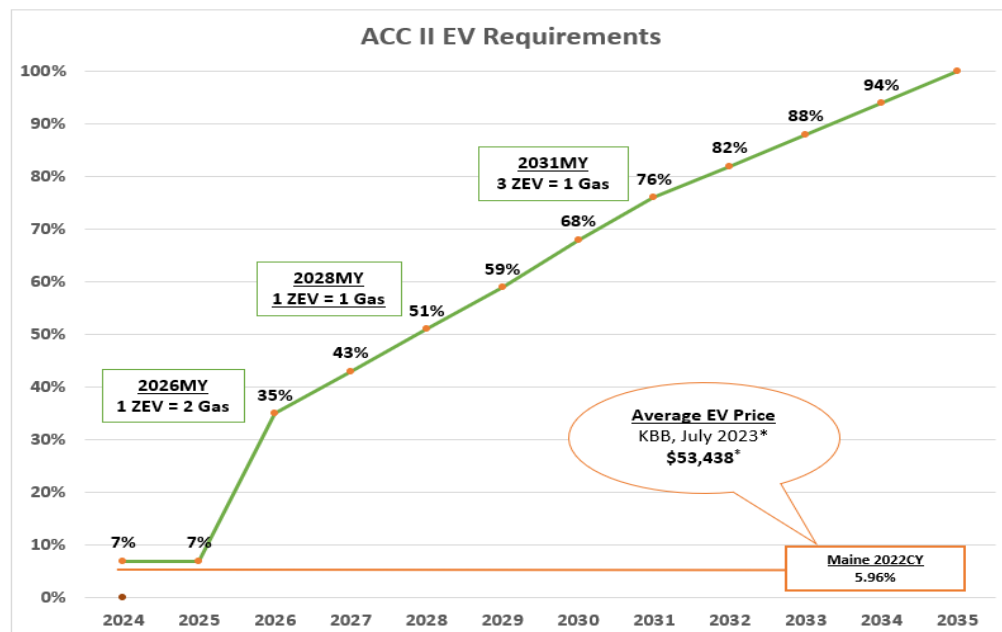
⁵ [Alternative Fuels Data Center: Electric Vehicle Charging Station Locations \(energy.gov\)](https://www.energy.gov/alternative-fuels-data-center/electric-vehicle-charging-station-locations)

- Ensuring grid resiliency and utility electric rates that provide low-cost EV charging.

These policies will be critical to the feasibility of meeting future ZEV requirements. Maine must continue to take immediate and substantial action to implement these critical measures to reach its goal.

Current State of Play.

As shown below, the ACC II regulations require very aggressive increases in EV sales starting with MY2027. In Maine, EV sales must increase more than seven-fold in four model years. These are staggering required sales increases for a new technology that relies heavily on customer acceptance and market readiness.



The required seven times sales increase needed where the average transaction price of EVs is now about \$53,438⁶. Based on the average transaction price of EVs, EV buyers are far more likely to be affluent single-family homeowners with modern electric panels just a few feet from their garage where they will charge their EVs. These buyers do not represent a full cross-section of Maine's new car buyers, and achieving 40, 50, or 82 percent of the new car market will require reaching buyers of more moderate means. It will also require action well beyond automakers' ability to produce more EVs.

⁶ [How Much Are Electric Cars? - Kelley Blue Book \(kbb.com\)](https://www.kbb.com/electric-cars/)

Sustained Consumer EV Purchase Incentive.

Purchase incentives can be a persuasive and effective way to address vehicle affordability and interest customers in purchasing an EV. EVs continue to cost substantially more than a comparable gasoline-fueled vehicle, and so the compounded effect of the federal and state incentives is necessary to equalize purchase costs. We applaud Maine for providing rebates of consumer purchases of EVs and we encourage you to continue to fund these rebates over the coming years.

As you are aware, the recently enacted Inflation Reduction Act (IRA) redefines new clean vehicle credits. Upon being signed into law by President Biden in August 2022, approximately 70% of previously eligible vehicles were unable to qualify for credits due to a North America assembly requirement. Also, starting on January 1, 2023, MSRP and income caps went into effect. And finally, starting with the release of proposed guidance from the U.S. Treasury Department in March 2023, the federal tax credit is split in half with requirements tied to critical minerals (\$3,750) and battery components (\$3,750). As the battery content requirements increase in future years, the number of electric vehicles that will qualify for the full credit are expected to drop further. Today, roughly eighteen EV models out of 97 that are for sale in the U.S. are eligible for a portion or all of the \$7,500 federal EV tax credit. This means Maine's state-funded consumer rebate incentives will become even more critical to the state's goals of greater consumer EV adoption.

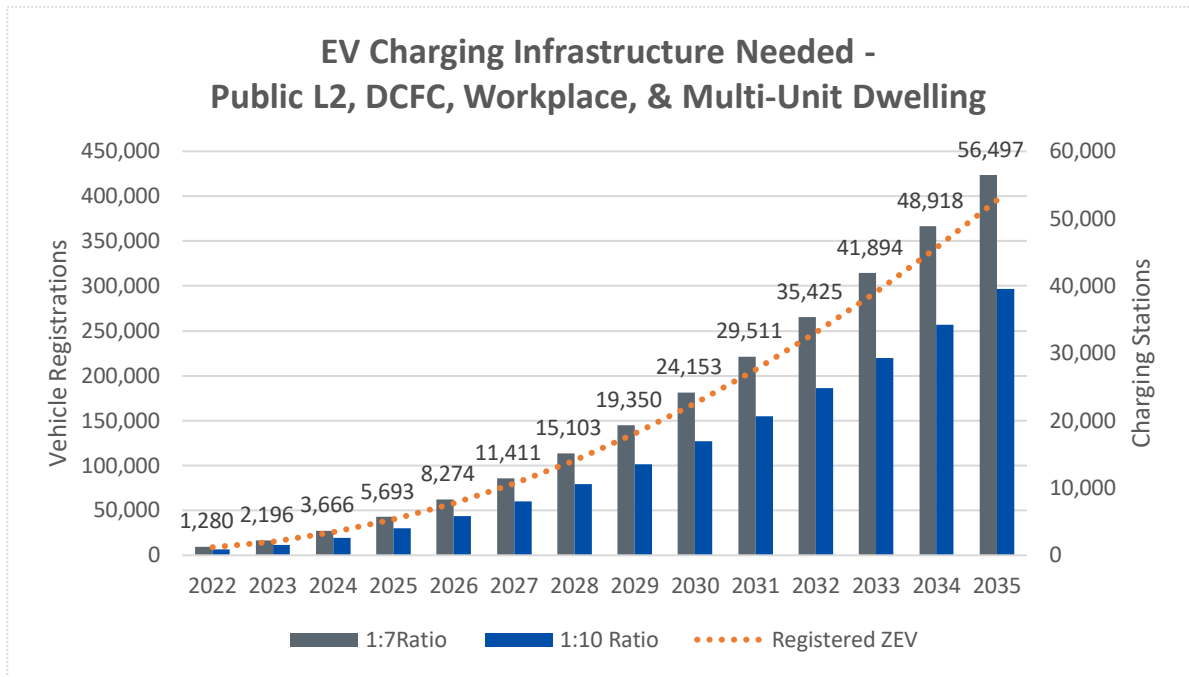
State and Local Fleet Increase.

State and local governments can lead by example by prioritizing adopting EVs (e.g., PHEVs, BEVs, and/or FCEVs) when making fleet purchases. There should be both public and private fleet purchase requirements that match regulatory requirements. This is truly an example of executive leadership and serves to bolster consumer interest in EV purchases. These fleets can also act as an accelerator and because of their utilization compared to EVs used for personal use, should adopt EVs at a faster rate than what the ACC II rule requires of automakers and their customers.

Charging and Hydrogen Refueling Infrastructure.

Reliable and convenient access to charging and hydrogen refueling stations support Maine's customers that buy or lease EVs. Publicly available charging stations not only ease perceived "range anxiety" concerns but also substantially increase consumer awareness of the technology. In addition, hydrogen vehicles may be better suited for some customers, especially those that do not have access to charging at home or the workplace, or those that have a lifestyle that requires short refueling times and a similar refueling process as gasoline.

Currently, Maine has 921 electric vehicle charging ports for 8963 registered electric vehicles in the state⁷. This is a ratio of approximately one charging port for every ten electric vehicles. This is below the CARB recommendation of a 1:7 ratio. In order to support the prospect of 82% ZEV sales in 2032, our analysis suggests that Maine’s public charging capabilities will need to increase to a total of 25,000 to 35,000 charging ports by 2032. That is a substantial commitment and investment in only nine years.



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

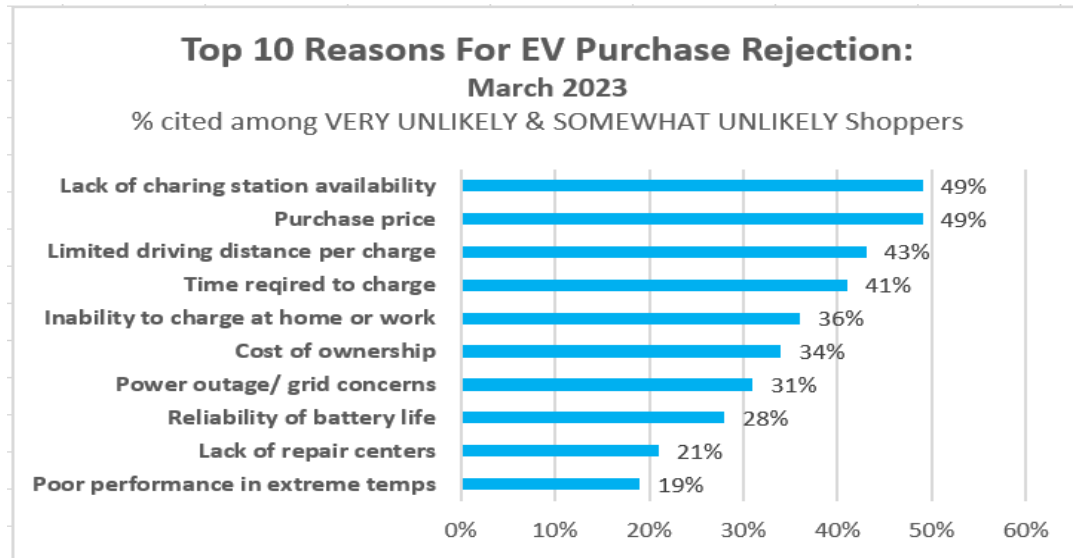
Numerous studies have shown that retrofitting residential and non-residential charging is five to six times more expensive than installing charging stations during new construction. For existing residential and non-residential buildings, installing infrastructure during any significant renovations, such as parking lot paving, electrical panel upgrades, etc. also substantially reduces costs.

According to a NREL study⁸, 88% of EV charging occurs at home, making access to home charging a top priority for customers considering an EV. The converse is also true, lack of access to home charging is a major barrier to EV adoption.

⁷ [Alternative Fuels Data Center: Electric Vehicle Charging Station Locations \(energy.gov\)](https://www.afdc.energy.gov/)

⁸ <https://www.nrel.gov/docs/fy17osti/69031.pdf>

According to an April 2023 JD Power EV Index report⁹, the lack of charging and purchase price are tied for the biggest reasons that is preventing people from buying an EV.



Source: JD Powers

It is important to ensure low- to moderate-income (LMI) and multi-family housing residents have the identical access to low-cost, convenient, and reliable level 2 (L2) home charging that single-family homeowners enjoy. Maine should set targets for residential charging and then monitor and track progress towards meeting those targets. For example, it seems reasonable that in 2030, when ACC II requires 68% of new vehicles to be electric, that 25% of LMI and multi-family housing units have access to level 2 charging at home. There are many important complementary measures needed for wide-scale EV adoption.

Maine should also adopt non-residential building codes that require installation of EV-ready charging capabilities in a significant portion of all new parking at workplace and public locations.

We support building codes that require:

1. Every new unit in a MUD with available parking to have at least one EV-Ready parking space.
2. Each EV-Ready space above provides, at minimum, Low-Power Level 2 (LPL2) (208/240V, 20A) terminating in a receptacle or an electric vehicle supply equipment (EVSE).
3. EV-Ready signage at each parking space.

⁹ <https://www.jdpower.com/business/resources/ev-divide-grows-us-more-new-vehicle-shoppers-dig-their-heels-internal-combustion>

This recommendation for L2 power charging levels should be considered as the bare minimum requirement. Mainstream customer satisfaction may require higher power charging. In fact, this is why the California Air Resources Board (CARB) in adopting regulatory requirement for 100% electric vehicles (EVs), also mandated that every new MY2026 and later EV contain a portable charger capable of charging the vehicle at 5.76 kW (208/240V, 30A).

While building codes that address new construction is a common-sense and lowest-cost first step, it is not nearly enough to support a transition to electrification. For example, new residential construction typically accounts for about 1% of all residential units each year. Thus, new building codes would only provide residential charging in about 15% of the residential units by MY2035. Consequently, Maine should consider public and private programs to support retrofitting of existing homes and MUDs, such as apartments, condos, and townhouses. As noted, retrofits are far more expensive than incorporation of EV-ready infrastructure at the time of new construction, but they will be necessary to support increasing customer adoption of EVs. In addition, special attention should be given to the infrastructure needs in Maine's underserved communities to ensure that access to affordable and convenient charging and hydrogen refueling options are made available on an equally aggressive timeline. MUD residents, however, 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.

MUD residents could be forced to charge elsewhere such as DC fast charge stations or public chargers. Charging at home is far cheaper, more reliable, and vastly more convenient. It is unreasonable to expect MUD residents to pay 2 or 3 times as much for charging and spend hours away from home each week fueling their EVs.

Grid Resiliency/Utility Rate Setting Alignment.

A thorough review of Maine'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 electrical 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.

Auto Innovators suggests that as part of the review, 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.

Consumer Awareness Programs.

Consumer awareness, understanding, and trust of the technology is essential as we move from 5.96% Maine EV market share to 82% over the next nine years. Raising awareness can happen in many ways, and we encourage the state to explore a variety of 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 EVs 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. Additionally, state-led programs may also be necessary to support the ZEV requirements.

Implementation “Gap Period”

Of course, the Clean Air Act, Section 177 allows a state to adopt California standards but requires the state to adopt such standards at least two years before commencement of such model year. Since the current ZEV and LEV III regulations in ACC I (13 CCR 1962.2 and 1961.2) sunset after 2025MY, and Maine will not adopt ACC II until 2023 or 2024, Maine will have a “gap period” without California regulations. We recommend the following during the gap period before implementation of ACC II (either 2027 or 2028MY) to ensure the smooth path to the state’s electrification goals.

- ZEV and NMOG+NOx ACC I credit banks retained and converted as necessary.
- ZEV Sales:
 - Per ACC II, ZEV sales >7% receive banked ACC II Early Compliance Values (ECVs) available two model years prior to implementation (e.g., 2027 implementation, 2025-26MY)
 - ZEV sales < 7% receive credits under ACC I and those credits are then converted per the ACC II regulations.
- EJ Vehicle Values available per ACC II regulation in the following model years
 - Community Clean Mobility – 2024MY
 - Low MSRP – 2026MY+
 - Off-lease EV – 2026MY+
- NMOG+NOx credits earned and banked using ACC I (= Tier 3) avg.
- OEMs continue reporting per ACC I/II.
- OEMs would also report to EPA as required for Tier 3.
- CA GHG regulations (1961.3) are unchanged in ACC II and would continue.

Thank you for the opportunity to provide the auto industry's perspective on a range of policies that Maine must adopt to meet its climate goals. Many of the actions necessary for success must start now, and we stand ready to work with the state and key stakeholders.

Sincerely,

A handwritten signature in black ink, appearing to read 'Tom Miller', with a long horizontal flourish extending to the right.

Tom Miller
Senior Director, Energy and Environment
Alliance for Automotive Innovation