6. Consumer Charging Experience

Key Takeaways

- An improved consumer experience is essential to EV adoption and requires reliable charging infrastructure, convenient payment options, reliable signage, and accessible customer service.
- Resources like charging network mobile applications, navigation system integrations, subscription services, customer support lines, and educational materials help consumers navigate EV charging on the road and at home.
- Key considerations for improving consumer experience include charger reliability, data sharing across charging networks, standardizing pricing information, and establishing clear guidance and enforcement mechanisms around price disclosure.
- Standardizing payment across charging stations is vital to improving the customer experience with customers preferring options similar to the traditional gas pump station experience, where customers pay with a credit card at a charging station, or more seamless options like Plug & Charge.
- Massachusetts already has various regulations related to EV chargers in place and will begin implementation of reliability regulations and registration requirements for public charging stations starting in 2026.

EVs are rapidly gaining popularity among consumers. More than 35,000 new EVs (including PHEVs) were newly registered in Massachusetts in 2024, bringing the total EVs registered in the state to nearly 140,000.[1] Despite the growing popularity of EVs, consumers remain anxious about charging access and reliability. Addressing these concerns is critical to continued satisfaction of EV users and growth of the EV user community.

This section describes key consumer considerations related to EV charging, summarizes available resources, and details current and proposed charger reliability, registration, data sharing, and operational standards that will facilitate a smooth charging experience as the number of EV consumers continues to grow.

User Experience Objectives

Positive consumer experience with EV charging infrastructure is key for all stakeholders. A successful EV charging network experience considers the complementary stakeholder needs:

- For **drivers**, an accessible, reliable, and seamless charging process enhances satisfaction and encourages EV adoption. Complicated interfaces or unreliable services can deter potential users.
- For **station owners**, positive user experiences attract repeat customers and build brand loyalty, potentially increasing revenue.
- For **policy makers**, ensuring accessible and user-friendly charging supports adoption goals by promoting EV usage.

Summary of Existing Charging Station User Support

A host of support services exist to help drivers navigate the EV charging experience. These support services take many forms and work to facilitate the drivers's experience of finding functional, well-maintained charging stations, understanding charger availability, and incorporating charging stops into route planning. The broad categories of consumer resources are detailed in Table 6.1.

Government Resources and Incentives Information

Beyond resources created by original equipment manufacturers (OEMs), vehicle dealers, site hosts, and other private sector stakeholders, there are several government-agency driven resources available for EV drivers in Massachusetts.

[1]Massachusetts Executive Office of Energy and Environmental Affairs. "2024 Massachusetts Climate Report Card – Transportation Decarbonization." Mass.gov. Accessed May 22, 2025. https://www.mass.gov/info-details/2024-massachusetts-climate-report-card-transportation-decarbonization.

Table 6.1. Consumer Resources for Understanding and Utilizing EV Charging Networks

Resource	Description	Examples
Charging Network Mobile Applications	Provide real-time information on charger locations, availability, and user reviews.	PlugShare, ChargePoint
Navigation System Integration	Enables seamless route planning with charging stops.	Tesla, Google Maps, Apple Maps
Subscription Services	Offer discounted rates and exclusive access to networks.	Electrify America Pass
Customer Support Lines	Live EV experts provide assistance for basic questions and technical issues	MassCEC Support Line
Education Materials	Help new EV drivers understand charging processes and options. Examples include how-to guides, tutorials, etc.	MassCEC Clean Energy Lives Here webpage Green Energy Consumer's Alliance Drive Green Webpage

MassCEC Resource Webpages

The Massachusetts Clean Energy Center is developing comprehensive information hub webpages that aim to accelerate EV adoption amongst residential customers, commercial entities, dealerships, and MLP communities. The webpages will include rebate and incentive information and will offer a customer support line for navigating purchasing and equipment decisions. The full set of resource webpages will include resources for the following audiences:

- Residential Consumers (webpage is live as of Spring 2025)
- Commercial and Private Entities (to be published at a future date)
- Vehicle Dealers (to be published at a future date)
- Municipal Light Plant Residents (to be published at a future date)

EVICC Resource Guides

The EVICC Technical Committee has also created an EV Charging Station Owner-Operator Resource Guide, which provides guidance for owner-operators of public Level 2 charging stations on setting EV charging rates to deliver optimal usage and a positive customer experience. The Guide also includes a supplemental document on determining an appropriate energy-based charging fee, which provides an example calculation for setting fair and sustainable energy-based fees for EV charging stations.

In partnership with the Office of Environmental Justice and Equity, EVICC has also developed

a *Guide to the Equitable Siting of Electric Vehicle Charging Stations in EJ Populations*, to steer equitable and accessible EV charging infrastructure in EJ populations across the Commonwealth.

EVICC plans to develop additional resource guides for various audiences in the future, including expanding the Charging Station Owner-Operator Resource Guide to encompass DCFC chargers.

Key Consumer Experience Considerations

The resources described above facilitate the EV user's charging experience. However, many real-world factors influence consumers' EV charging network experiences and must be considered in programming and policy decisions. The following are concerns consistently shared by stakeholders during meetings and Public Hearings conducted for the Second EVICC Assessment.

Reliability

Charger reliability is perceived as a major barrier to EV adoption, and many stakeholders raise reliability regulations as a key solution for improving consumers' charging experiences. A charger's hardware components (ports, cables, and connectors), charging software (port interfaces, applications, and payment systems), and charging network must all be functioning properly to maintain reliable service. These factors are represented through 'uptime' measures, which calculate the percentage of time that an EV charging station is functioning such that a driver can arrive, connect their vehicle, and successfully charge.

Data Sharing

Consumers pointed to data sharing and interoperability requirements as a consideration when opting to drive an EV, citing the number of mobile applications currently required to locate charging stations that are actually available. EEA is actively working to realize this recommendation and make data sharing easy and secure, while exploring methods to ensure that charger status, availability, and pricing are visible, accurate, and accessible through platforms such as Google

In order to accurately track charger reliability, EVICC is tasked with developing **reliability regulations for EV charging stations**,[2] which will include definitions and standards for uptime. EVICC is in the process of developing these regulations in 2025, with input from EVICC members and the Technical Committee. The EVICC Technical Committee includes OEMs, some of which track uptime internally and/or have experience reporting data from individual chargers to customers and regulators. Current OEM data and functionalities and the reliability standards required for NEVI, which went into effect March 30, 2023 and include a 97% uptime requirement,[3] will be used to inform the development of reliability standards.

[2]An Act Promoting a Clean Energy Grid, Advancing Equity, and Protecting Ratepayers, ch. 239, § 5, Acts of 2024 (Mass.), https://malegislature.gov/Laws/SessionLaws/Acts/2024/Chapter239.

[3]Federal Highway Administration, National Electric Vehicle Infrastructure Standards and Requirements, 88 Fed. Reg. 13450 (February 28, 2023), https://www.federalregister.gov/documents/2023/02/28/2023-03500/national-electric-vehicle-infrastructure-standards-and-requirements.

Maps, Waze, Apple Maps, and Plug Share. Additionally, Section 5 of the 2024 Climate Act requires real-time data sharing, which will help improve customer charging experiences.[4] Vehicle and consumer data are currently aggregated through platforms such as Google, Apple Maps, and Plugshare to provide drivers with details of charger locations and availability. Data from charging stations is often aggregated by OEMs, but is not consistently shared outside of the company for a variety of reasons. However, while some charging data is shared through APIs—typically in periodic, automated updates—much of it remains siloed within OEMs, and status updates (including charger availability) may not be updated in real time due to technical or practical constraints within the OEMs or the platforms themselves. This fragmented approach results in inconsistent or incomplete information, leaving consumers to navigate a disjointed system.

Charger Registration

Part of ensuring charger reliability and being able to enforce reliability regulations is having a registry of chargers across the Commonwealth. Based on concerns about charger reliability, the 2023 EVICC Initial Assessment included a recommendation that the state pass legislation requiring publicly accessible charging stations to register with the Massachusetts Division of Standards so that they can be regularly inspected for accuracy by that agency. In February 2024, EVICC provided DOS with $500,000 in American Rescue Plan Act (ARPA) funding to create the Electronic Vehicle (EV) Charger Testing Program, which, among other requirements, will establish a uniform inspection and testing system for public EV charging stations.[5] Subsequently, the 2024 Climate Act imposed requirements on DOS related to EV charging, which include overseeing consumer protection measures such as ensuring the accuracy of pricing and volumes of electricity purchased and minimum requirements for the communication and display of pricing information.

The 2024 Climate Act is a good first step towards ensuring charger registrationis implemented as as a vital consumer protection measure. However, more work is necessary to clarify DOS's role in order to protect EV charging station owners and operators from having to comply with a patchwork of municipal inspections and standards, which may differ from the standards applied in other states. Additionally, in order to ensure compliance with national operating standards and best practices for the disclosure of information to customers, DOS needs to be empowered to enforce these standards and to share charger data with other government agencies.

Consumer Disclosure and Payment

User payment experiences at EV charging stations vary widely and was cited as causing consumer frustration. Charging stations are generally privately owned, with each operator leveraging a different form of payment—ranging from proprietary mobile applications to credit cards to Plug & Charge technology.

[4]An Act Promoting a Clean Energy Grid, Advancing Equity, and Protecting Ratepayers, ch. 239, § 5, Acts of 2024 (Mass.), https://malegislature.gov/Laws/SessionLaws/Acts/2024/Chapter239.

[5]Massachusetts Executive Office of Energy and Environmental Affairs, "Healey-Driscoll Administration Announces $50 Million Investment in Electric Vehicle Charging Infrastructure," Mass.gov, February 7, 2024, https://www.mass.gov/news/healey-driscoll-administration-announces-50-million-investment-in-electric-vehicle-charging-infrastructure.

Plug & Charge is a technology that allows automatic authentication and payment when plugging an EV into a compatible charging station. It lets you start charging your EV just by plugging it in - no app, card, or sign-in required.

EVICC developed the EV Charging Station Owner-Operator Resource for public Level 2 EV Charging Stations to provide guidance about fees and policies and how to determine the best balance between maximizing use and customer satisfaction.[6] However, EVICC is aware of the strong public desire for streamlined approaches, as well as the public's preference for a traditional gas pump station approach, where customers pay with a credit card at a charging station, or Plug & Charge. Offering comparable pricing structures, such as $/kWh, across networks also aids in customer understanding and pricing transparency. These best practices and the requirements that ancillary costs and fees levied on the consumer be adequately disclosed through all available means could be incorporated into requirements for station owners receiving state or utility resources or the future regulations developed by DOS. EEA and EVICC will work with relevant state agencies, utilities, and DOS to evaluate the ability to incorporate standard payment process requirements.

Operational Standards

Setting clear operational standards is key for improving the EV consumer experience, particularly given ongoing challenges with charger interoperability. These challenges arise due to variations in both charger types and vehicle connector standards. There are three main types of EV Chargers. Level 1 chargers use a standard 120-volt household outlet and are typically used for overnight charging. Level 2 chargers operate at 208 to 240 volts and are common in public and residential charging scenarios. Their charging speed can vary based on electrical capacity and grid conditions. DCFC chargers, also known as Level 3, offer the fastest charging speeds but require vehicles to have compatible DC charging inlets.

Connector types further complicate the landscape. Most non-Tesla vehicles use the J1772 connector for Level 1 and Level 2 AC charging, while Combined Charging System (CCS) and CHAdeMO are used for DCFC, although CHAdeMO is being phased out. Tesla uses the North American Charging Standard (NACS), though most manufacturers are transitioning to NACS for standardization. The NEVI final rule, implemented March 30, 2023, establishes interoperability requirements for charger-to-EV communication, charger-to-charger network communication, and charging network-to-charging network communication to ensure that chargers are capable of the communication necessary to perform smart charge. EVICC is using the NEVI final rule as a basis for developing reliability standards for publicly-funded chargers installed in the Commonwealth starting in 2026.

[6]Massachusetts Executive Office of Energy and Environmental Affairs, *Electric Vehicle (EV) Charging Station Owner/Operator Resource: Public Level 2 EV Charging Station Fees and Policies Guide*, accessed May 22, 2025, https://www.mass.gov/doc/electric-vehicle-ev-charging-station-owner-operator-resource-public-level-2-ev-charging-station-fees-and-policies-guide/download.

Other Consumer Protections

Public feedback included concerns about EV charger engagement experience for individuals with disabilities. The Americans with Disabilities Act (ADA) space considerations for charging units are important and the US Access Board[7] has recommendations for ADA compliance for EV charging spots that have not yet been incorporated into federal regulations. Space considerations - width and length of parking spaces must be considered in addition to ensuring accessibility from various points on the vehicle as charging port location varies significantly by vehicle model. Additionally, MassEVIP requires US Access Board ADA accessibility standards, such as 20-feet long parking spaces and other specifications to be met.[8] Legislation in the State of California requires at least one van-accessible charger in all locations where new chargers are installed.[9]

Consumer access to information about EV chargers outside of an application or their vehicle is also part of the EV charging experience. While driving, consumers should not be navigating mobile applications on their phone or screens in their vehicle to find the nearest charging station. Roadway signs directing drivers to EV chargers are not common. Similarly, upon arriving at a charging station, information about charging fees and pricing structure is not always clearly labeled, so consumers must navigate an application, which they may not be familiar with, to access this information. Also, absent tap to pay or Plug & Charge functionality, a consumer may be required to navigate a potentially unfamiliar payment platform to charge their vehicle. Improving these "offline" experiences of roadway signs and charger fee information will improve the EV charging experience for consumers and can be considered by the EVICC.

It is critical to account for these broad consumer considerations as EV charging network standards are developed at the state and national levels. The next section describes current and proposed charger reliability, registration, data sharing, and operational standards.

[7]U.S. Access Board, Design Recommendations for Accessible Electric Vehicle Charging Stations, last modified July 17, 2023, accessed May 22, 2025, https://www.access-board.gov/tad/ev/.

[8]Massachusetts Department of Environmental Protection, MassEVIP Public Access Charging Requirements, accessed May 22, 2025, https://www.mass.gov/doc/massevip-public-access-charging-requirements/download.

[9]California Department of General Services, California Electric Vehicle Charging Station Accessibility Regulations, 2020, https://scag.ca.gov/sites/main/files/file-attachments/tt031020_californiaevcsaccessibilityregulations.pdf.

Current Reliability, Registration, Data Sharing, and Operational Best Practices

Ensuring a reliable, accessible, and user friendly EV charging experience depends on a strong foundation of operational best practices. The following best practices outline how the industry can improve charger performance, transparency, and consumer trust.

Overview of Best Practices

Real-time status reporting: Charging Network Providers should report real time operational status via Application Programming Interface (API) or on a centralized platform.

*Uptime Requirements: I*ndustry leaders have adopted minimum uptime standards to ensure consistent service availability (For instance, NEVI's 97% uptime requirement). While this is generally for DCFC, Level 2 stations would also benefit from adopting uptime requirements in the future.

Standardized Protocols: The Open Charge Point Protocol (OCPP) exists to standardize communication between charging station hardware and the network or back-end system. If networks don't properly adhere to the protocol, EV charging stations may have communication issues with the back end or payment systems, remote diagnostics may be hindered, and the stations may be vulnerable to security breaches. Further, EV chargers that adhere to the protocol can more easily change their Charging Network Provider (e.g. Enel-X recently ceased operation and rendered all of their charging units in the US inoperable as they did not follow OCPP protocols, and the chargers were on a network that was unable to be installed or easily transferred to a new charging network provider).

Automated Fault Detection and Repair: Charging Network Providers are increasingly implementing automated diagnostics to detect faults, attempt remote repair and reset of the station, and escalate maintenance which reduces downtime and the need for some manual intervention.

Site Lighting: Adequate lighting at EV charging locations improves visibility and enhances user safety and comfort, particularly during evening and nighttime hours. Well-lit stations are more inviting, reduce the risk of vandalism or misuse, and support broader accessibility and public adoption of EV charging infrastructure.

Driver Support Contact Information: Publicly accessible charging stations should clearly display contact information for users to report issues or receive support. Easy access to customer service improves user experience, facilitates quicker troubleshooting, and helps network operators maintain reliability

Summary of Current Legislative and Regulatory Requirements

A patchwork of legislative and regulatory requirements for EV charging operational requirements exist at the federal and state levels. This section summarizes information at the national level and within Massachusetts, and presents a summary of key actions in other states.

Massachusetts State-Level: A number of legislative actions have been taken and subsequent regulatory processes are underway to improve EV charging network availability and reliability, and these efforts are summarized below.

EV Charger Utilization, Reliability, and Data Sharing Regulations (Sections 5 and 110 of Chapter 239 of the Acts of 2024): Section 5 of Chapter 239 of the Acts of 2024, as it relates to EV charging, aims to improve the performance, transparency, and equity of EV Charging Infrastructure across the state. Mandatory regulations of the section include a mandate that the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) promulgate regulations to monitor charger utilization, set minimum standards for charger reliability, identify equity disparities in charger reliability by geography or income, and require real-time data sharing via APIs for publicly funded and available charging stations. Section 110 establishes the regulatory implementation timeline.

EV Charger Inventory and Accuracy Standards (Sections 42 and 110 of Chapter 239 of the Acts of 2024): Section 42 tasks the DOS with ensuring the pricing accuracy and the volume of electricity sold to consumers at EV charging stations, setting minimum standards for how pricing must be communicated, and report on these items annually to the Joint Committee on Ways and Means and the Joint Committee on Telecommunications, Utilities, and Energy, Secretary of Energy and Environmental Affairs, and Secretary of Administration and Finance.

Public charger disclosure requirement (M.G.L. Chapter 25A § 16): MGL Chapter 25A Subsection 16 establishes consumer access, payment transparency, and data disclosure requirements for public EV chargers in Massachusetts. Key provisions include a prohibition on mandatory subscriptions to use a public EV charger, payment options accessible to the general public, public access, allows non-EV business to restrict charger use to customers or visitors, required public data reporting, and allows for utility ownership of EV chargers, subject to DPU approval.

DPU Dockets D.P.U. 21-90; D.P.U. 21-91; D.P.U. 21-92: In December 2022, DPU approved electric vehicle charging infrastructure programs for Eversource, National Grid, and Unitil.[10] As part of these programs, the DPU requires each utility to submit annual reports detailing EV charger utilization data. These reports must include metrics such as total annual charging events per port, average duration of charging events, and kWh dispensed. Additionally, the utilities are mandated to follow a joint statewide program evaluation plan, ensuring standardized data collection and reporting across all service territories.[11]

Overview of draft regulations and status of regulatory process: As part of its broader EV charging infrastructure strategy, Massachusetts is in the process of drafting a statewide EV charger reliability framework. These proposed regulations aim to standardize charger uptime, utilization reporting, and real-time data sharing for publicly accessible chargers across the Commonwealth.

[10]Massachusetts Department of Public Utilities, "Electric Vehicles Filings and Reports," Mass.gov, accessed May 22, 2025, https://www.mass.gov/info-details/electric-vehicles-filings-and-reports.

[11]Massachusetts Electric Company and Nantucket Electric Company, Phase 1 EV Charging Station Program Evaluation: Program Year 4 Evaluation Report, May 9, 2023, https://fileservice.eea.comacloud.net/FileService.Api/file/FileRoom/17450128.

EEA and its agencies are working with EVICC members, OEMs, and stakeholders through the EVICC Technical Committee to determine the appropriate scope and timing of the regulations prior to the formal regulatory process. EEA is currently contemplating applying the reliability standards, utilization reporting, and real-time data reporting requirements to all networked and publicly accessible DCFCs installed after June 1, 2026 if publicly funded or 365 days after the DOS begins registering EV chargers. The requirements would also apply to all networked Level 2 chargers that are publicly accessible or located at a workplace or multifamily building 365 days after the Division of Standards begins registering EV chargers. The regulations would exclude chargers located at 1-4 unit residential buildings and chargers that secured funding prior to the regulation's promulgation. Principal reliability standards include a minimum uptime requirement of 97% for all chargers and a Successful Charge Attempt Rate (SCAR) of 90% minimum for DCFCs. Real-time Data Sharing and Utilization reporting are also required for all covered chargers.

Reliability requirements are sparse and vague for the myriad funding sources available for EV charging and infrastructure. Programs such as the Massachusetts Electric Vehicle Infrastructure Incentive Program (EVIP)[12] administered by the Massachusetts Department of Environmental Protection does not require the use of networked charging stations, but does require that the stations must be operated and maintained for three full consecutive years. The Leading by Example Fleet EV Charging Deployment[13] program does not require networked charging stations, and the Utility-Sponsored Make Ready Programs by Eversource[14] and National Grid[15] do not specify reliability or performance requirements beyond remote monitoring, real-time status reporting, and a commitment to maintaining the chargers in working condition for four years.

Other States: California regulations on reporting, utilization, and reliability requirements:

California has proposed one of the nation's most comprehensive regulatory frameworks for EV charger performance through a combination of regulatory proposals and legislative mandates. The California Energy Commission (CEC) has been tasked with developing regulations to track the number, location, and usage of all networked chargers installed using public or ratepayer funds, excluding those located at single-family homes or multi-unit dwellings with four or fewer units. These proposed regulations establish a 97% uptime requirement aligning with NEVI standards, and include mandates for data

[12]For example, Massachusetts Department of Environmental Protection, "Apply for MassEVIP Public Access Charging Incentives," Mass.gov, accessed May 22, 2025, https://www.mass.gov/how-to/apply-for-massevip-public-access-charging-incentives.

[13]Massachusetts Department of Energy Resources, "Fleet EV Charging Deployment Grant Program 2.0," Mass.gov, accessed May 22, 2025, https://www.mass.gov/info-details/fleet-ev-charging-deployment-grant-program-20.

[14]Eversource, "Massachusetts EV Charging Rebate Application Process," Eversource, accessed May 22, 2025, https://www.eversource.com/content/business/save-money-energy/clean-energy-options/electric-vehicles

[15]National Grid, "Massachusetts Programs & Rebates," National Grid, accessed May 22, 2025, https://www.nationalgridus.com/MA-Business/Energy-Alternatives/Commercial-and-Fleet-EV-Charging-Programs

transparency, reliability reporting, and consumer access provisions.[16]

New York DCFC incentive program[17] reliability requirements tie incentive payouts to verified uptime and require charging station operators to provide both utilization data and maintenance logs.

Federal-level: The NEVI Formula Program,[18] administered by the Federal Highway Administration provides funding to states to strategically deploy EV charging infrastructure and establish an interconnected network to facilitate collection, access, and reliability. Key program requirements related to operation include long-term EV charging station data sharing, proper operation and maintenance, support open-access payment methods, publicly available, located along designated Alternative Fuel Corridors.

Relevant reliability requirements for NEVI include maintaining at least 97% uptime per charging port over a 12-month period, remote monitoring with real-time status tracking, automated alerts triggered by faults or failures and requiring prompt corrective action. NEVI-funded stations must also share real-time charger status, pricing, availability and location data shared to third-party applications and platforms via APIs. Penalties for non-compliance include withholding or clawback of NEVI funds, disqualification from future funding rounds, and public reporting of non-compliant operators or stations.

[16] California Energy Commission, Tracking and Improving Reliability of California's Electric Vehicle Chargers: Regulations for Improved Electric Vehicle Charger Recordkeeping and Reporting, Reliability, and Data Sharing, CEC-600-2023-055, 2023, https://www.energy.ca.gov/publications/2023/tracking-and-improving-reliability-californias-electric-vehicle-chargers.

California Energy Commission, "Docket Log: 22-EVI-04 – Electric Vehicle Charging Infrastructure Reliability," accessed May 22, 2025, https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=22-EVI-04.

[17] New York State Energy Research and Development Authority, "Charging Station Programs," NYSERDA, accessed May 22, 2025, https://www.nyserda.ny.gov/All-Programs/Charging-Station-Programs.

[18] Federal Highway Administration, "National Electric Vehicle Infrastructure Formula Program," U.S. Department of Transportation, accessed May 22,2025, https://www.fhwa.dot.gov/infrastructure-investment-and-jobs-act/nevi_formula_program.cfm.

Public Comments

During the monthly EVICC public meetings in 2024 and 2025 and at the public hearings on the Second EVICC Assessment, EVICC members and members of the public provided feedback on consumer charging experiences. Key themes from those comments are highlighted below.

- Reliability and accessibility of charging infrastructure remains one of the primary concerns for stakeholders. Customer experiences benefit from real-time usage and uptime information, accessible customer support when charging isn't working properly, and sufficient charger availability. Many stakeholders feel that charging reliability remains a barrier to EV adoption.
- Customers are frustrated by the many different mobile applications and payment systems required to use chargers from different networks. There is a desire for more flexible and streamlined payment methods, like being able to pay directly with a credit/debit card. Transparent pricing standards are also important.
- Safety and convenience factors around the charging station, like overhead lighting, rain shelters, clear signage, language accessibility, and nearby amenities are all important for positive customer charging experiences and are frequently inadequate at existing chargers.
- Stakeholders reported that ICE vehicles parked in designated EV charging spots (often referred to as "ICE-ing") often reduces the availability of EV chargers.
- Stakeholders identified the need for better customer service support and timely maintenance as a customer need, saying that it is often unclear how to report maintenance issues and customer service resources can be difficult to access and navigate.

A summary of comments provided during the public hearings on the Second EVICC Assessment and the minutes and presentations from prior EVICC public meetings are available on the EVICC website.

EVICC Recommendations

The consumer charging experience is critical to expanding EV use in the Commonwealth and meeting goals. The following should be considered by state leadership to improve the customer charging experience as EV adoption grows.

- **Reliability Standards:** Consumers need to access reliable chargers and Massachusetts can adopt and enforce a minimum 97% uptime for all publicly funded and ratepayer funded networked Level 2 and DCFC stations, in line with NEVI standards. EEA is actively working to realize this recommendation, while also working to minimize the compliance burden of such requirements.
- **Data Sharing:** Massachusetts can implement requirements around real-time data sharing from charging stations using open protocols OCPP and Open Charge Point Interface (OCPI). Additionally, the state can require, empower, or otherwise incentivize charging sites to collaborate with platforms such as Google, Waze, Apple Maps, and PlugShare to ensure that charger status, availability, and pricing are both visible and accurate. EEA is actively working to realize this recommendation, in line with the 2024 Climate Act, including exploring ways to make data sharing easy for OEM while protecting commercially sensitive information.
- **Charger Registration and Inventory:** Accessing chargers is impacted by an inconsistent inventory of available chargers. The Commonwealth can enact clear policies to ensure all eligible chargers are registered and to maintain an up to date statewide inventory of registered chargers to support enforcement and planning. DOS, working with the Administration and the General Court, is well positioned to support this recommendation with modifications to the existing legislative framework.
- **Consumer Disclosure and Payment:** In response to consumer concern about pricing structures, Massachusetts can require clear on-site and online pricing and signage, and set up policies to minimize or eliminate mandatory subscriptions. DOS is well positioned to support portions of this recommendation with the right legislative framework.
- **Operational Standards:** The state can also provide Site Host guidance on charger types, interoperability, and maintenance best practices. Providing such resources and, where necessary and appropriate, setting operational standards through program requirements and regulations will help make the customer experience more uniform.
- **Consumer Education and Support:** State agencies should lead coordinated public education efforts to raise awareness of Plug & Charge technology, emphasizing its ease of use, security features, and compatibility with newer EVs. Campaigns should encourage EV drivers to enroll in Plug & Charge-enabled networks, provide simple instructions on how to activate the feature, and offer multilingual resources and support to help consumers take full advantage of streamlined charging.

Specifically, EVICC recommends the following actions to improve the customer experience with EV charging in the Commonwealth:

- **Legislative Action (Continued from Initial Assessment):** Renew efforts to pass comprehensive "right-to-charge" legislation by expanding on the 2024 Climate Act to include renters. *(EEA)*
- **Legislative Action (Continued from Initial Assessment):** Expand consumer protection regulations for EV chargers by building on the 2024 Climate Act to allow DOS to enforce such regulations and to inspect the accuracy of pricing information through a charger registration process consistent with best practices in other jurisdictions. All data from the registration process must be shared with EEA for inclusion in the charger inventory. *(Lead(s): DOS and EEA)*
- **Agency Action:** Implement a phased approach to regulating the reliability of fast and Level 2 charging, setting minimum uptime standards for fast chargers installed on or after June 1, 2026. Implementation of such regulations should seek to balance the dual objectives of improving the customer EV charging experience and making any new requirements as easy to understand and implement as possible. *(Lead(s): EEA (regulation drafting); Support (as needed): MassDEP, DOER, and DPU (one will be assigned to implement the regulations))*
- **Agency Action:** Develop resources for charging station site hosts to support improvement of the customer EV charging experience, including, but not limited to, guidance on EV charging station and wayfinding signage. (*Lead(s): EEA; Support: MassDEP, DOER, MassCEC, and MassDOT)*
- **Agency Action:** Explore the development of model local ordinances and other approaches that allow municipalities, property owners, and other government entities to fine internal combustion engine vehicles for parking in EV charging parking spots, consistent with state law. *(Lead(s): EEA; Support: DOER, MassDOT, and MAPC)*
- **Agency Action:** Investigate best practices and explore potential ways to support implementation of low-income discount rates and other mechanisms to financially support EJ populations in paying for EV charging if and where practical. *(Lead(s): OEJE; Support: EEA and other interested EVICC member organizations)*
- **Agency Action:** Develop public awareness campaign to educate potential EV owners on the basics of EV charging to help overcome the lack of understanding of EV charging and to dispel common misconceptions about EVs and EV charging. *(Lead(s): EEA and MassCEC)*