February 28, 2022

Ms. Stephanie Palmer
California Air Resources Board
1001 I Street
Sacramento, CA 95814

RE: Post 2.15.22 Workshop Comments - EVSE Standards Technology Review

Dear Ms. Palmer:

ChargePoint would like to thank the staff of the California Air Resources Board (CARB) for their work on the Electric Vehicle Supply Equipment Standards Technology Review (Technology Review) and for hosting the associated workshop on February 15, 2022. ChargePoint supports the intended goals of Senate Bill 454 (2013), to broaden access to electric vehicle charging in California and has consistently engaged with CARB staff and board members since the rulemaking for SB 454 began in May 2019. ChargePoint seeks to ensure that any regulations support both a meaningful increase in access and the reliable and secure operations of EV charging stations. However, ChargePoint is greatly concerned that the impact of the EMV chip requirement, in particular for Level 2 AC charging stations that is scheduled to go into effect on July 1, 2023, has not been comprehensively investigated and the data which forms the basis of Staff recommendations is neither recent nor robust enough to justify continuing to impose a requirement that would cause a much greater economic impact on the EV charging industry than CARB's initial estimation.

Although the Technology Review has provided some additional insight, ChargePoint remains concerned that the payment methods component of the EVSE Standards does not meaningfully expand access to electric vehicle charging infrastructure and imposes a much greater cost on the industry and EV drivers than recognized in the initial rulemaking or in the Technology Review. For more than a decade the EV charging industry has been providing charging services to all segments of Californians population, in that time millions of charging sessions have been initiated without the need for an EMV chip reader mandate.[1] For these reasons, ChargePoint believes that the regulations fail to consider the real word evidence that the charging infrastructure and the payment methods used by industry have supported California's nation leading EV adoption, without the need to mandate a specific payment method such as an EMV chip reader. Further, we believe that the regulations and the Technology Review haven taken a regulate first and justify later approach to mandating a legacy payment technology rather than using robust data and forward-looking solutions for which CARB is known.

[1] While data is limited, ChargePoint notes that the results of the survey conducted by CARB staff demonstrated that EV drivers currently come from a variety of income demographics. Without specific methods to specifically sample low-income populations, CARB survey resulted in Californians with income below $50,000 comprising 41% of responses.

While ChargePoint disagreed with CARB's justification for the EMV chip requirement during the 2019 rule making, ChargePoint was encouraged by CARB's commitment to conduct a technology review and commitment in October 2020 to further study "[p]ayment card access for underserved communities".[2,3] ChargePoint believed this to be the critical component of the Technology Review as the EMV chip reader requirement was broadly opposed by industry stakeholders in the 2019 rulemaking. In its Final Statement of Reason (FSOR), CARB justifies its EMV chip reader requirement by stating that "EMV chip readers alone may not increase low-income access to EV charging stations."[4] ChargePoint agrees and believes that charging station vendors and site hosts have every motivation to make it safe and easy for all EV drivers to charge at their stations and have no reason to make it difficult for anyone. For example, all of ChargePoint's stations that are designed for public use offer multiple payment options including: credit and debit cards stored on the ChargePoint app, Apple Pay, Google Pay, contactless credit cards, RFID cards, through roaming partnerships, and via a 24-hour 1-800 telephone number. There is simply no evidence that EV drivers find paying for charging sessions at chargers that do not have EMV chip readers to be inconvenient or inaccessible, and the survey that forms the basis of theTechnology Review is not conclusive or robust enough to base regulations around.

The Technology Review does not adequately justify the conclusion that the absence of EMV chip reader creates a barrier for low-income California EV drivers to pay for EV charging services. While the Technology Review offers additional insight into payment methods and how groups of EV drivers that were surveyed fuel their vehicles, ChargePoint believes the surveys that form the basis of the technology review are too limited in scope and the data is insufficient to continuing to impose a requirement that would cause a much greater economic impact on EV drivers and the EV charging industry than staff's initial estimation, in particular for L2 stations that must be installed with an EMV chip readers starting July 1, 2023. Staff itself recommends "exploring a more in-depth research study or pilot project to evaluate how people, particularly low-income residents pay for public EV charging and other services related to transportation."[5] This continuation of the regulate first and justify later approach will hinder deployment, add unnecessary cost, reduce reliability, and does not address the needs of under-and unbanked EV drivers.

CARB's Payment Method Requirement in the EVSE Standards Regulation Will Hinder Deployment and Add Unnecessary Cost to and Consumers and the Industry

The analysis of the economic impact to EVSE operators, which was completed for the 2019 rulemaking using 2018 data, estimated a cumulative cost to operators of $115 million over a 10-year period.[6] This estimate was conducted for the regulation as a whole, not just the payment technology component. ChargePoint is concerned the analysis vastly underestimated the actual

[2] Final Statement of Reason, Page 30.
[3] October 2020 Technology Review Meeting slides, Page17.
[4] Final Statement of Reason, Page 36.
[5] Technology Review, p. 4.
[6] Technology Review p. 6.

economic impact to EVSE operators, and due to rising equipment and service costs, is now outdated. For example, CARB's own assumptions included in the EVSE Standards Standardized Regulatory Impact Assessment (SRIA), estimated upfront costs to install an EMV chip reader of $371 per EVSE, and ongoing annual maintenance of $270 per EVSE per year. These estimates result in a 10-year economic impact of $3,071 per station.[7] This would result in a roughly 50% increase in cost per Level 2 station using CARB's assumed cost to purchase and install a Level 2 station of $6,000.[8]

Because the requirement for Level 2 stations to have an EMV chip reader is not yet effective, ChargePoint believes a forward-looking focus to the impacts on Level 2 stations is appropriate. To estimate the total economic impact of this regulation for the upcoming Level 2 stations requirement beginning in July 2023, we can look to California's goals for EVSE deployment and the current number of Level 2 stations deployed in the state. In 2018, Executive Order B-48-18 set a goal of having 250,000 chargers (including 10,000 direct current fast chargers) by 2025.[9] Additionally, the inaugural Assembly Bill (AB) 2127, Electric Vehicle Charging Infrastructure Assessment, examines the charging needs to meet California's goal for the adoption of plug-in electric vehicles in 2030.[10] The most recent report, published in July 2021, estimates that California will need 278,000 public Level 2 chargers by 2030 (not including workplace or multi-unit charging, which depending on their configuration could be subject to CARB's EVSE Standards Regulations) to support the 5 million EVs as called for in AB 2127; and 470,000 public Level 2 chargers would be needed by 2030 to support estimate of 8 million EVs to meet the new goal set by Executive Order N-79-20.[11]

As of January 4, 2021, California has installed 70,000 public charging station, 64,000 of those being Level 2 stations, with an additional 119,400 Level 2 station planned for deployment.[12] With the generous assumption that all of the planned Level 2 stations will be installed prior to July 1, 2023, when the EMV requirement for Level 2 stations is schedule to take effect, California would still need to install an additional 88,600 public Level 2 stations by 2025 and an additional 286,600 public Level 2 stations by 2030 to meet the states goals for EV adoption. Assuming that CARB's 2018 estimated 10-year costs of $3,071 to install an EMV chip readers on a Level 2 station has not increased in the last four years, the 10-year economic impact of installing an EMV chip reader on just the additional stationed needed by 2025 would be roughly $272 million, more than **double** the initial estimate of the economic impact for the *entire* regulation. Further, the total economic impact of installing EMV chip readers on the additional Level 2 stations needed to support California's EV adoption goals by 2030 is an astounding $880,148,600 or **7.5 times greater** than the initial estimate. While this analysis of the economic

[7] Appendix C of Staff's Initial Statement of Reasons, Electric Vehicle Supply Equipment Standards Standardized Regulatory Impact Assessment, p. C-26.
[8] *Id.*, p. 24.
[9] California Executive Order B-48-18.
[10] Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment - Analyzing Charging Needs to Support Zero-Emission Vehicles in 2030, p. ii.
[11] *Id.*, p. 22.
[12] *Id.*, p. ii.

impact of just the Level 2 EMV requirement is rudimentary in nature, it demonstrates the initial estimate is likely vastly underestimating the economic impact of the regulation. Absent proper justification, supported by robust data and analysis conducted in an open stakeholder process, ChargePoint believes that continuing to impose an EMV chip requirement for Level 2 stations is untenable.

Considering the initial estimated impact of $115 million for the entire regulation is underestimating the economic impact of *just* the EMV requirement for Level 2 stations not currently planned, but needed, and the absence of any data or evidence that properly justifies the regulation, it would go against CARB's mission statement to "recognize and consider the effects on the economy" if it were to continue to move forward with this requirement.[13] Further, it would be an unwise and inefficient use of public funding to support the cost of this regulation. The intended goals of Senate Bill 454 (2013) are to broaden access to electric vehicle charging in California,[14] there has been no evidence presented in the record that the lack of EMV chip readers on EVSE is hindering the public's access to charging services; and while the Technology Review contains some insight in the group surveyed, a survey primarily disseminated through social media platforms to a relatively small sample size of participants does not demonstrate that the lack of EMV chip readers on public Level 2 stations presents a barrier, nor justifies imposing a regulation that would have an economic impact of hundreds of millions of dollars on EV drivers and the charging industry. In fact, there is data which suggests the opposite; according to EVgo, which has installed credit card readers on many of its public DCFCs, credit card swipes represent less than 1% of transactions on its charging network.[15]Additionally, the Technology Review acknowledges that there is a lack of detailed data on the broader distribution of tap-enabled cards amongst Californians which is necessary to confirm the underlying assumptions with which staff based their recommendations for the EMV chip requirement and recognizes that the survey data has gaps as it only reflects PEV drivers who took time to complete the survey.[16,17]

Additionally, rather than benefitting Californians, imposing the EMV chip requirement would likely *hinder* the deployment of EVSE in California, reducing access to charging services. Using the initial estimate of $115 million for the economic impact of the entire regulation and CARB's estimated cost of installing a Level 2 charger, an additional 19,166 Level 2 chargers could be installed instead of using limited capital to require EMV chip readers on Level 2 charging stations. Using the more up to date estimates from our rudimentary analysis, an additional 45,333 Level 2 stations could be installed with the just the cost to comply with the EMV chip requirement for Level 2 stations that need to be installed to meet the 2025 goal, and an additional 146,691 Level 2 stations could be installed with the cost of EMV technology for stations to meet

[13] California Air Resources Board Mission
[14] See SB 454 (2013).
[15] Comments of EVgo to the Arizona Corporation Commission, p. 3 (available at: https://docket.images.azcc.gov/0000197379.pdf).
[16] Technology Review, p. 13.
[17] Technology Review, p. 13.

the 2030 goal. Further, increasing the cost of charging stations by requiring EMV chip readers dilutes public investments, reducing the number stations that can be deployed, and ultimately increases the costs to consumers which acts in opposition to the goals of SB 454. This outcome is not in the best interest of Californians, especially lower-income communities.

The Technology Review missed an opportunity over the last 14 months to truly understand what, if any, meaningful increase in access an EMV chip reader requirement may have for low-income Californians. As part of its recommendations in the Technology Review, CARB staff recommends "exploring a more in-depth research study or pilot project to evaluate how people, particularly low-income residents pay for public EV charging and other services related to transportation."[18] Simply put, there has been no evidence that the EMV chip requirement will result in a meaningful increase in access for low-income Californians. If current data does not clearly establish a link between the EMV chip reader and a meaningful increase in access to EV charging for low-income Californians, CARB's regulations are placing an undue burden on the EV charging industry that will ultimately increase the cost for EV drivers. While the industry has already borne both the capital and ongoing cost of modifying its DCFC product lines and services to comply with the EMV chip component of the EVSE regulations, there is still an opportunity to properly evaluate the requirements for Level 2 charging stations.

Reliability Must Be Considered for Both Stations and Payment Methods

ChargePoint also recognizes the direction from the Board at the October 2021 Board Meeting to explore issues related to reliability of charging infrastructure. ChargePoint notes that EMV chip readers are also known to have reliability issues due to poorer weatherization and tampering. Given that charging stations are often exposed to the elements, these reliability issues can be magnified. Technology such as near field communication, which enables payment via mobile device or contactless credit card, is internal to the station and therefore are not contaminated by environmental or human factors. In California it is critical that CARB consider environmental factors such as dust, ash, and other impacts weather can have on charging stations, including the reliability of various payment methods. ChargePoint supports a coordinated approach across state agencies to explore issues related to reliability of charging infrastructure. The California Energy Commission and the California Public Utilities Commission have provided financial assistance in the form of utility programs, rebates, and grants to support the installation of charging stations across the state for many years and have staff resources dedicated to evaluating these programs and in the case of the CEC, evaluating reliability metrics specifically. ChargePoint encourages coordination with these agencies and an approach that ensure coordination with the industry and a technical understanding of the diversity of business models utilized for charging infrastructure in California and of the technical capabilities of the equipment related to reliability. ChargePoint notes CEC's leadership on this issue and a workshop planned for March 11, 2022.

[18] Technology Review, p. 4.

Payment Card Access for Underserved Communities: Tech Review did not address the needs of under- and unbanked drivers

According to the 2019 FDIC Survey of Household Use of Banking and Financial Services "the top three most cited reasons unbanked households do not have a bank account are they:

- Don't have enough money to meet the minimum balance requirement;
- Don't trust banks; and,
- Avoid banks to retain privacy."[19]

The Technology Review found non-traditional bank accounts that require little or no minimum balance requirement or fees associated with having an account could meet the [payment] needs of these individuals."[20] ChargePoint agrees that money sharing "peer-to-peer" (P2P) apps like Venmo, PayPal or Blocks' Cash App (formerly by Square) offer reloadable contactless/tap debit and credit cards without the hassle of providing all the personal data that banks require and little to no minimums, enabling a broader level of access to contactless payment methods.

One barrier that the Technology Review cited to using these P2P mobile apps was their reliance on smart phones that require internet connectivity.[21] But according to the driver survey conducted in the Technology Review, nearly all or 98.5% of respondents have a smart phone and nearly 80 % of those enable contactless payments. Further amongst drivers with incomes below $50,000, defined as low-income EV drivers, 96.5 % have a smart phone and 66.7% have smart phone with contactless payments.[22] According to the Technology Review mobile payment apps would fall short for the remaining 20% of total drivers and 29.4% of low-income drivers who reported having smart phones without contactless payment capability. However, the Technology Review failed to highlight that the above-mentioned P2P apps offer tap-enabled reloadable debit cards for little or no cost that can be linked to prepaid cards or have cash loaded on them, thereby providing a tap payment card that is not reliant on smart phones.[23]

ChargePoint concurs with the Technology Review's finding that tap payment technology can expand options for low-income, under- and unbanked drivers. We also support the need for an additional research study or pilot project to evaluate how people, particularly low-income residents, pay for transportation services, including public EV Charging. We are surprised that the Technology Review did not cite the Caltrans' CAL-ITP program which was launched in 2020 and is evaluating how low-income transit riders pay for transit and is working with P2P tap payment issuers. We encourage CARB to cross-collaborate with the CAL-ITP project under Caltrans and other state agencies that are looking to remove barriers to transportation by low-income riders.

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[19] https://www.fdic.gov/analysis/household-survey/2019execsum.pdf.
[20] EVSE technology review page 17.
[21] *Id*.
[22] EVSE technology review page 18.
[23] https://www.prepaidcards123.com/p2p-payment-options-for-prepaid-debit-cardholders/.

Summary

ChargePoint appreciate Staff's work on this issue and shares the common goal with CARB to increase in access to EV charging. ChargePoint seeks to ensure that any regulations support both a meaningful increase in access and the reliable and secure operations of EV charging stations. ChargePoint remains concerned that the EMV chip requirement has not been properly justified either in the Technology Review or the initial rulemaking. While the industry has already borne both the capital and ongoing cost of modifying its DCFC product lines and services to comply with the EMV chip component of the EVSE regulations, the requirements for Level 2 stations have vet to become effective. Given clear difference in the way that Level 2 stations are utilized by EV drivers, the dramatic cost increases associated with installing and maintaining an EMV chip reader on Level 2 stations ($3,071 per station), acknowledgment in the Final Statement of Reason for the regulations that "EMV chip readers alone may not increase low-income access", and the Technology Review recommendation to "exploring a more in-depth research study or pilot project to evaluate how people, particularly low-income residents pay for public EV charging and other services related to transportation, ChargePoint believes now is the time to reconsider if the EMV chip reader requirement is appropriate for Level 2 charging stations. ChargePoint is greatly concerned this regulation could have the opposite of the intended effect, reducing funds for EV charging station deployment and limiting the deployment of Level 2 stations in low-income communities. ChargePoint urges CARB to promptly open a new rulemaking in which the Staff and Stakeholders can investigate the true economic impact of this regulation using updated data and robust stakeholder analysis (e.g., cost-benefit analysis) to determine the true impact of the Level 2 EMV requirement, further explore methods to provide meaningful access to low-income and disadvantaged communities and allow for reconsideration of the requirement before it takes effect.

Sincerely,

Cesar Diaz
Senior Manager, Public Policy
ChargePoint, Inc.