EV Charging Infrastructure

As EV charging technology and consumer protection best practices continue to rapidly evolve, the legislature should explicitly clarify in H. 433 (Tbill) and accompanying budget bills that State agencies take a technology-neutral approach regarding customer payment technology and methods for all public investments in EV charging stations.

Immediate legislative guidance to State agencies managing and deploying public EVSE equipment and grants for EVSE is necessary in order to protect consumers and avoid unnecessarily waste of very limited resources available for Vermont to expand access to electric vehicle charging stations. Without legislative direction, REV is concerned about the likely deployment of unreliable, legacy hardware solutions, increased costs to consumers and ratepayers, and failure to account for rapidly shifting trends in payment technologies.

Suggested Amendment to H. 433:

Proposals or state incentives for public electric vehicle supply equipment shall not require a specific method or technology for processing payment options.

Background:
When initially defining electric vehicle supply equipment (ESVE) (30 V.S.A. § 201), the legislature critically recognized the need for flexibility and multiple customer payment options. When drivers plug into EV charging stations that require a payment for charging services, they may pay in a number of different ways including, but not limited to:

- Radio frequency identification ("RFID") cards;
- "Tap-to-charge," which involves an app-based payment through membership;
- Payment through third party network with roaming agreement, which allow drivers from one network to initiate charging sessions on EVSE operated through another network;
- Credit or debit card payment using EMV contactless Visa, Mastercard, or AMEX, etc.
- Touchless third-party app linked to credit or debit card or bank account (e.g., Apple Pay, Android Pay);
- Vehicle-based credentialing (Plug and Charge).

Unfortunately, as State agencies began to deploy grant and incentive funds, an antiquated requirement limiting eligibility to charging stations that use a magnetic swipe or EMV chip credit card reader was introduced.[1] Such technology specific requirements counter the legislature's original intent when it broadly defined public EVSE. When state agencies mandate the deployment of legacy MSR and EMV chip readers at public EVSE, it imposes notable and unnecessary risks on the public in terms of:

- **Cost.** A magnetic swipe and EMV chip credit card reader adds approximately $3,000 to the cost of a charging station over its lifetime, which represents a 50% to 100%

[1] Request For Proposals For Electric Vehicle Supply Equipment (EVSE) Program – Fast Charging Vermont's Highway Corridors at 16. Available at: https://accd.vermont.gov/sites/accdnew/files/CPR-EVSE-Round%203%20RFP_Final.pdf

increase in costs for Level 2 charging stations. This would be a significant and unnecessary burden that decreases the amount of funding that would more appropriately be invested in greater deployment of EV charging stations, rather than on legacy payment technologies.

- **Security**. MSRs are widely known to be insecure. These legacy payment technologies are exploited on a daily basis by "skimmers" and "shimmers," which are hard-to-detect and readily-available devices designed to steal credit card data. Skimmers and shimmers are already a serious problem at gas stations and other point-of-sale terminals, because they can be installed on legacy card readers in a matter of seconds. Recent reports have detailed how EV charging stations, which are typically left unattended for greater periods of time than gas stations, are a ripe target for fraud.[2]

- **Future Proofing.** North America and Europe are increasingly using contactless credit card readers. On a recent earnings call, Visa identified that 9 of the top 10 US issuers are using tap-to-pay, resulting in more than 175 million tap-to-pay cards issued in the United States, with 300 million by the end of this year.[3] It is critical to build programs and the charging stations to where the consumer market is going.

- **Reliability.** Magnetic stripe and EMV chip readers are known to have reliability issues due to weather impacts. Credit card readers are typically the point of failure for consumer-facing technology; gas pumps are often taken offline due to this issue. Supporting the transition to electric transportation will require thousands more EV chargers than there are gas stations in Vermont, which will be made all the more complex if charging companies have to include legacy payment technology. Contactless card readers, on the other hand, process payments through a receiver protected from weather issues and do not have similar reliability problems.

Without legislative direction, Vermont will continue to be out of step with other states and modern best practices related to public ESVEs and payment methods. In the U.S. and around the world, consumers are increasingly using contactless payment technologies and shifting away from legacy payment technologies, like magnetic stripe and EMV chips. Major financial companies, including Chase and Capital One, already offer contactless forms of payment. Visa announced that 95 percent of new point of sale terminals will be contactless-enabled. Europe and Canada have already embraced these trends, with the United Kingdom going so far as to mandating charging stations to accept contactless credit card payments

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[2] Digital Citizens Alliance. *Charging in the Crosshairs: How EV Drivers Could Become Cyber Criminals' New Target.* Available at https://www.digitalcitizensalliance.org/clientuploads/pdf/Charging_in_the_Crosshairs.pdf

[3] The Motley Fool. "Visa Inc (V) Q2 2020 Earnings Call Transcript." Available at: https://www.fool.com/earnings/call-transcripts/2020/04/30/visa-inc-v-q2-2020-earnings-call-transcript.aspx