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ABB E-mobility Comments on the Joint Workshop on the California State Electric Vehicle Infrastructure Deployment Plan

Additional submitted attachment is included below.

July 7, 2023

California Energy Commission and California Department of Transportation
715 P Street
Sacramento, CA 95814

Re: 22-EVI-03 2023 Update to the National Electric Vehicle Infrastructure Funding Program

Dear Jim McKinney, Ben DeAlba and Jimmy O'Dea,

ABB E-mobility is pleased to provide the following submission to the California Energy Commission (CEC) and the California Department of Transportation (Caltrans) in response to Docket No. 21-TRAN-03 relating to the information shared at the Joint Workshop on the Development of the 2023 Update to California's Deployment Plan for the National Electric Vehicle Infrastructure (NEVI) Formula Program.

ABB E-mobility has been manufacturing EV chargers for the US market for over a decade and is the leading manufacturer of electric vehicle chargers globally, having sold more than 1 million electric vehicle chargers, including 50,000+ direct current fast chargers (DCFC). ABB E-mobility recently expanded US manufacturing operations, in part, to meet Build America, Buy America Act requirements. The new facility began production in January 2023, has already delivered chargers to customers, and can produce up to 10,000 chargers per year, ranging from 20kW to 180kW in power, which are ideally suited for public charging, school buses, and fleets.

ABB E-mobility provides charging technology to owners and operators of charging equipment across the transportation sector including public charging networks, transit bus operators, electric utilities, auto dealerships, auto manufacturers, shipping and logistics fleets, commercial fleets, and more. As a long-time member of the e-mobility industry, ABB E-mobility is actively involved in developing not only charging technology, but also industry-wide standards for both hardware and software interoperability.

ABB E-mobility has a robust service and maintenance operation providing 24/7/365 monitoring, troubleshooting, and repair services for chargers in the field. With our focus on developing, manufacturing, and delivering innovative and reliable charging technologies to the market, ABB E-mobility primarily provides charging owners and operators with the technology needed to deliver seamless and high-quality charging experiences.

Figure 1. ABB E-mobility public charging references

Incorporation of NACS

ABB E-mobility supports California's measured approach towards incorporating the North American Charging Standard (NACS) in the state's deployment of NEVI funding and is supportive of the state not requiring NACS in the FY22 deployment of funds.

ABB E-mobility is supportive of wider adoption of the NACS connector and has already announced that we will continue to lead the market by adding NACS as an option for our products. ABB E-mobility has integrated multiple different connector types since the early days of the industry and will apply those learnings and experience to integrating the NACS connector into our products.

ABB E-mobility has developed prototype DCFC with the NACS connector and is working with Tesla, auto OEMs, and our charging customers to integrate NACS into our product line. However, we suggest that California consider the status of the following issues prior to requiring NACS in its future NEVI deployment plans:

- **Standardization:** ABB E-mobility cautions against requiring NACS connectors before they are standardized. CharIN and SAE have announced plans to standardize the safety, security, and interoperability of this previously proprietary connector. ABB E-mobility will participate in the standardization process and will continue to update our products accordingly, but this effort will take time.
- **UL Certification**: ABB E-mobility internal requirements and the FHWA's minimum standards require all chargers to be certified to the UL safety standard. The NACS cable and connector are not certified to the UL safety standard as a stand-alone item, rather, Tesla certifies their chargers as a whole. Accordingly, manufacturers will need to take the same approach and recertify their chargers with the NACS connectors to the UL safety standards. Once product design and testing has been complete, it can take up to four months to obtain certification to UL standards.
- **Technical Considerations:** ABB E-mobility is actively working to integrate NACS technology into its charging portfolio. Technical and performance limitations are still being tested including thermal performance, maximum power output and interoperability. Time is needed to complete these assessments and conduct additional R&D and product engineering efforts as appropriate.
- **Supply Chain**: A robust and diversified supply chain is needed to support the industry's adoption and widespread deployment of NACS. This work cannot begin in earnest until the NACS connector has been standardized. Third party suppliers will begin producing standardized NACS connectors and cables in the near future, but timelines still remain uncertain.

It is critical that the integration of NACS not delay NEVI deployment. Chargers with CCS technology are still urgently needed to meet the demand of (1) the EVs on the road today, (2) EVs that are not adopting NACS, and (3) those EVs that will be produced prior to incorporation of the NACS inlet. While ABB E-mobility supports the adoption of NACS across the industry, we recognize that charging infrastructure deployments are lagging behind the needed estimates to support California's ambitious electrification goals and waiting to deploy chargers until the NACS technology is broadly available will compound this issue.

Cybersecurity

In alignment with the latest NEVI Formula Program guidance from Federal Highway Administration, ABB E-mobility strongly recommends that states allow applicants for NEVI funding to demonstrate their ability to incorporate cybersecurity strategies that meet the NEVI standards (§680.106 (h)(2)), like "user identity and access management; cryptographic agility and support of multiple PKIs; monitoring and detection; incident prevention and handling; configuration, vulnerability, and software update management; third-party cybersecurity testing and certification; and continuity of operation when communication between the charger and charging network is disrupted."

We caution against requiring compliance with additional cybersecurity standards or guidelines at this time, like the National Institute of Standards and Technology (NIST) cybersecurity framework or a specific cybersecurity requirement like NIST Special Publication (SP) 800-171. Requiring compliance with the NIST cybersecurity framework or NIST SP 800-171 would significantly hamper the deployment of EV chargers as the majority of the EVSE industry does not currently comply. Additionally, there is no formal certification program for NIST SP 800-171. Rather, states should allow flexibility for applicants, in partnership with their technology providers, to demonstrate their ability to protect the charging station and sensitive customer information from cyberattacks using cybersecurity mitigation strategies and best practices.

Any requirement to comply with cybersecurity requirements above and beyond the NEVI standards, like NIST Special Publication (SP) 800-171, should provide industry with sufficient time to develop and implement those guidelines. For NIST SP 800-171, ABB E-mobility recommends requiring compliance no earlier than June 1, 2025.

Definition of an "experienced" charging network provider

In reviewing which entities will be considered eligible applicants for the NEVI funds, the CEC and Caltrans proposed a requirement that the project team must include an "experienced" charging network, as defined as follows:

> *"A company or organization with a proven track record of overseeing the procurement, permitting, installation and maintenance of at least twenty fast chargers at three or more different property locations, and for three or more different customers in California since January 2018."*

ABB E-mobility agrees that responsible, responsive, and experienced network operators are integral to delivering high quality charging experiences. This is particularly challenging, however, because the industry is relatively nascent with only a few network operators that have been in operations since 2018. Yet, longevity is not the only indicator of delivering quality charging experiences. Further, the charging market is evolving rapidly, both in technology and business models. Restricting charging deployments to a limited number of existing players and business models limits the ability of the EV charging industry to innovate, scale, and reach ubiquity, while delivering ever improving charging experiences.

As the industry works toward making high-quality charging ubiquitous, ABB E-mobility encourages CEC and Caltrans to work to ensure that all charging providers, including new entrants, deliver high-quality EV charging experiences. One way to do that is to require

that applicants include experienced partners in their development and deployment plans. Doing so allows new entrants to learn best practices while fostering growth of a charging network ecosystem capable of delivering high quality charging experiences. Allowing new market entrants and business models also encourages innovation in technology, charging experiences, cost, and more.

As an alternative, ABB E-mobility proposes the following revised definition for consideration by the CEC and Caltrans:

> *"The project team must collectively demonstrate a proven track record of overseeing the procurement, permitting, installation and maintenance of at least twenty DC fast chargers, at three or more different property locations within the United States, with at least one of those locations being in California."*

The proposed definition prioritizes the need for charging experience among a project team and suggests a charging technology metric to ensure that the project team has experience with high power public charging across multiple sites. It also allows for some team experience to be gathered outside of California while still ensuring that there is familiarity with the permitting processes within the state.

ABB E-mobility believes delivering high-quality charging experiences, at scale, requires a multitude of charging operators and business models. These proposed changes attempt to strike the balance between experience and the recognition that the industry needs to scale up significantly if we are to reach ubiquity of charging.

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Thank you for the opportunity to provide comments on California's deployment of the National Electric Vehicle Infrastructure Program. ABB E-mobility shares California's commitment to electrifying the transportation sector and creating US jobs and economic growth in the process.

If you have any questions or want to discuss any of these topics further, please do not hesitate to reach out to Alex Ehrett, Public Policy & Market Development Manager, at alex.ehrett@us.abb.com.

Respectfully submitted,

Alex Ehrett

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ABB E-Mobility