

DOCKETED

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CALeVIP Project Designs

Additional submitted attachment is included below.



October 1st, 2020

Commissioner David Hochschild, Chair
Commissioner Patricia Monahan
Commissioner Janea Scott
Commissioner Karen Douglas
Commissioner Andrew McAllister

Re. California Energy Commission docket number 17-EVI-01, CALeVIP Project Designs
To docket@energy.ca.gov

Dear Commissioners:

I am writing as the co-chair of the Electric Vehicle Infrastructure Training Program (EVITP) to provide background in support of the California Energy Commission staff proposal to require EVITP training and certification for installers of electric vehicle supply equipment (EVSE) as a condition of participating in incentive programs under the California Electric Vehicle Infrastructure Project (CALeVIP).

EVITP is a non-profit, volunteer staffed, training dedicated organization that was developed by an industry-wide collaboration of automakers, electrical vehicle supply equipment manufacturers, utility companies, electrical industry professionals, educational institutions and others. The program provides training and certification for both union and non-union electricians to safely and properly install EVSE systems and related infrastructure.¹ EVITP is featured in guides published by the U.S. Department of Energy and has been recommended or required by numerous utility electric vehicle infrastructure incentive programs to ensure that contractors and electricians install electric vehicle infrastructure safely.²

EVITP would like to thank the Commission for its leadership in expanding electrical vehicle infrastructure in California, most recently demonstrated by its support of AB 841. The Commission's leadership will continue to be crucial as California moves to meet the Governor's newly adopted goal to require all new passenger cars and trucks to be zero-emission by 2035. The Commission's proposal to adopt EVSE installer training requirements for its CALeVIP program earlier than, and independent of, the AB 841 requirements demonstrates the Commission's commitment to ensure a qualified workforce is available to meet the Governor's goal. As more and more electricians look to enter the field of EVSE infrastructure installation, it

¹ www.evitp.org.

² See, e.g., the California Public Utilities Commission's Transportation Electrification programs pursuant to SB 350, which require EVITP certification for installation of EVSE infrastructure.

is important to ensure they have the training and expertise to install this equipment safely and correctly. Consumer confidence in the safety and reliability of these systems will be critical in order to meet the Governor’s aggressive goal to eliminate the sale of gas-powered passenger cars and trucks by 2035.

I. EVSE SYSTEMS ARE COMPLEX SYSTEMS THAT POSE SIGNIFICANT SAFETY RISKS WHEN IMPROPERLY INSTALLED AND MAINTAINED

Installation of EVSE systems requires adhering to an extensive list of standards, electrical codes, assessment, and workmanship requirements. EVSE systems are complex and have specific installation requirements related to proper wire sizing, overvoltage and surge protection, shutoff, and load management, with more specialized requirements for DC fast chargers and other higher power EVSE.³

Article 625 of the California Electrical Code specifies required methods for wiring, equipment construction, and safety protection systems, among other requirements. Improperly installed EVSE systems and infrastructure can result in fire, explosions, electric shock, severe damage to chargers and cars, and other hazardous situations.

The safe and reliable installation of EVSE systems requires specialized knowledge and training. For example, electric vehicle charging stations are considered by the National Electrical Code to be continuous load, which is one of the factors that impacts how wiring is sized.⁴ Installing the incorrect size or type of wire or circuit breaker can lead to delays in permitting and cost increases, can prevent the system from functioning properly, and lead to serious hazards.

Among other benefits, EVITP certification provides needed safety to more economically depressed communities that generally have older building stock and older electrical systems that may not be able to reliably and safely handle EVSE loads. Installation by properly trained EVITP-certified electricians helps mitigate the greater risk of structure fires and electrical hazards when EVSE is installed in these communities.

Continued development of an adequately skilled and trained workforce to install EVSE systems will reduce barriers to installation, increase customer satisfaction and safety, and further efforts to expand and accelerate the deployment of electric vehicles and supporting infrastructure throughout the state.

II. EVITP PROVIDES THE REQUISITE TRAINING TO ENSURE SAFE INSTALLATION OF EVSE SYSTEMS

EVITP provides comprehensive residential, commercial, and industrial charging infrastructure training. EVITP is open to any California Certified General Electrician. There are

³ National Electrical Installation Standards. *Standards for Installing and Maintaining Electric Vehicle Supply Equipment*. August 2011 at 25.

⁴ Plug-In San Diego Installation Best Practices Report. June 2016, at 15, available at https://energycenter.org/sites/default/files/docs/nav/transportation/plug-in_sd/Plug-in%20SD%20Installation%20Best%20Practices%20Report.pdf.

no other prerequisites. EVITP builds on, and supplements, the training and certification requirements of certified general electricians. The training curriculum and exam is regularly updated with the help of its partner advisors and is currently on its fourth generation of updates in just eight years.

EVITP provides installer training in all of the following:

- Level 1 (120V), Level 2 (220V) Residential Charging
- Commercial / Institutional Level 2 Charging
- DC Fast Charging
- Medium Duty (MD) Commercial / Institutional
- Heavy Duty (MD) Commercial & Industrial
- Site assessment and load calculations (Core)
- Commissioning
- Wireless Conductive Energy Transfer
- EVSE Communications and Networks
- Electric Vehicle Battery Types, Specifications and Charging Characteristics;
- Automobile Manufacturer's Charging Performance Integrity Specifications;
- Utility Interconnect Policies and Requirements;
- Utility Grid Stress precautions including demand response integration technologies;
- Role of electrical storage devices as charging intermediaries;
- Integration of electric vehicle infrastructure with distributed generation;
- Electrical Code standards and requirements;
- Fire protection and OSHA regulations;
- Electrical installation standards for ZEV equipment;
- First responder safety and fire hazard measures;
- Next generation charging; and
- EVSE maintenance, troubleshooting, and repair.

EVITP certification requires completion of training and passing a comprehensive, proctored exam.

III. EVITP CERTIFICATION HAS BEEN REQUIRED BY NUMEROUS PROGRAMS IN CALIFORNIA

EVITP has been successfully required in the installation of tens of thousands of electrical charging ports. SDG&E, for example, installed over 3,000 electrical vehicle charging ports under its Power Your Drive Program with an EVITP requirement and has had no issues with electrician supply. EVITP is also included in the CPUC safety language, and required by the cities of Carson, Pico Rivera, and Long Beach as well as by the Port of Long Beach in an EPIC grant from the CEC. EVITP is required for the EVSE infrastructure installations on the Nevada Electric Highway and in federally funded installations in Columbus Ohio. EVITP is the only training program featured in the U.S. DoE Guides on EV infrastructure for public charging hosts, and for contractors. Most recently, EVITP was referenced in The Biden Plan To Build A Modern, Sustainable Infrastructure And An Equitable Clean Energy Future.

In addition, EVITP has not proven to be an impediment to goals to provide work opportunities for underserved businesses enterprises and communities. In its Charge Ready program, Southern California Edison evaluated the impact of its EVITP certification requirement for installation of electric vehicle charging stations and found that, even with this requirement, the participating contractors exceeded its goals for employing Diversified Business Enterprises.

Finally, EVITP was included as a requirement for EVSE incentive programs in AB 841 – which was strongly supported by the California Energy Commission. AB 841 also had wide legislative support, with Aye votes from all of the following legislators: (A) Senators: Allen, Archuleta, Atkins, Beall, Bradford, Dodd, Durazo, Lena Gonzalez, Hertzberg, Hueso, Hurtado, Jackson, Leyva, McGuire, Mitchell, Monning, Pan, Portantino, Roth, Rubio, Skinner, Stern, Wieckowski, Wiener, and Wilk; and (B) Assembly Members: Bauer-Kahan, Berman, Bloom, Boerner Horvath, Bonta, Burke, Calderon, Carrillo, Cervantes, Chau, Chiu, Chu, Cooley, Cunningham, Diep, Friedman, Gabriel, Cristina Garcia, Eduardo Garcia, Gipson, Gloria, Gonzalez, Gray, Irwin, Jones-Sawyer, Kalra, Kamlager, Levine, Limón, Low, McCarty, Medina, Mullin, Muratsuchi, Nazarian, O'Donnell, Petrie-Norris, Quirk, Quirk-Silva, Ramos, Reyes, Luz Rivas, Robert Rivas, Rodriguez, Blanca Rubio, Salas, Santiago, Smith, Mark Stone, Ting, Waldron, Weber, Wicks, Wood, and Rendon.

IV. EVITP HAS CERTIFIED OVER 1,600 ELECTRICIANS AND PROVIDES ON-LINE TRAINING OPPORTUNITIES FOR ANY CERTIFIED GENERAL ELECTRICIAN

EVITP currently has certified over 1,600 electricians in California and is open to all state certified general electricians. The number of EVITP Certified electricians will increase more rapidly if the CEC begins requiring EVITP certification for its EVSE incentive programs early in 2021. EVITP training is detailed, yet efficient taking 20-24 hours to complete, including the proctored certification exam. EVITP is a non-profit organization which is dedicated to keeping the training inexpensive. EVITP training is now available on-line.

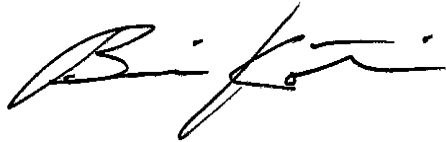
When considering training capacity it is helpful to look at both in-person and online training formats. For in-person classes, EVITP currently has more than 40 trainers on call, which is far above EVITP's current and projected in-person trainer need and is enough to easily double the number of EVITP-certified electricians in less than a year. In-person classes generally consist of 20-30 students per trainer depending on the facility. Even if each trainer taught just two classes of 20 a year (only two weeks of work), that would result in 1,600 newly-certified EVITP electricians. EVITP certifies more trainers as needed to meet demand, but at this time has enough trainers to handle even optimistic projections of growth. With online training, only a few EVITP Certified instructors are needed to teach numerous classes. Additional classes to meet ongoing demand can be quickly scheduled and delivered. EVITP recently completed its first online class and registration for its next online class is currently in process. Online instruction alone can more than meet even the most optimistic projections of training demand.

V. CONCLUSION

EVITP appreciates the CEC's consideration of its program and remains committed to helping California meet its EVSE goals in a safe and timely manner. EVITP strongly believes that using EVITP Certified electricians makes EVSE installations safer, provides for quicker and more efficient installation, reduces errors and mistakes, reduces the risk of lawsuits and liability, and protects the integrity and reputation of the EV industry. EVITP has a long history of successful adoption as a requirement by state, local and national agencies, and looks forward to continued collaboration with the CEC to support a successful rollout of its requirements.

Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read "Bernie Kotler". The signature is fluid and cursive, with a large initial "B" and a long horizontal stroke extending to the right.

Bernie Kotler
Co-chair, EVITP
San Jose, California

National EVITP Office
Royal Oak, Michigan