



Electric Vehicle Community Readiness Seminar Agenda

- EV Codes
- EV Standards
- Site Assessment
- Load Calculations
- Permits and EVSE Installation
- SDG&E Presentation
- SD PEV Readiness Assessment
- City PEV Projects Updates
- Regional EV Infrastructure Projects



Electric Vehicle Infrastructure Training Program (EVITP)





Electric Vehicle Infrastructure Training Program (EVITP)

A structured platform for delivering training and certification for the installation of Electric Vehicle Supply Equipment (EVSE's) in and around Residential, Commercial & Public Facilities.



What is EVITP?

A not-for-profit, volunteer, EV industry collaborative training program that addresses the technical requirements, safety imperatives, and performance integrity of industry partners and stakeholders including:

- Automobile Manufacturers
- Investor-Owned and Municipal Utilities
- Electric Vehicle Supply Equipment Manufacturers
- Electrical Energy Storage Device Manufacturers
- State and Local Electrical Inspectors
- Electrical Contractors
- Electrical Workers
- First Responders



EVITP Partner Advisors:

- General Motors (Vehicle Manufacturer)
- Coulomb Technologies, Inc. (EVSE Manufacturer)
- AeroVironment, Inc. (EVSE Manufacturer; Nissan Partner)
- General Electric (EVSE Manufacturer)
- The National Fire Protection Association (NFPA)
- Ecotality (Program Manager)
- The International Association of Electrical Inspectors (IAEI)
- Schneider Electric (EVSE Manufacturer)
- DTE Energy (Michigan Utility)
- PEP Stations (EVSE Manufacturer)
- ClipperCreek (EVSE Manufacturer)
- Exergonix (Battery Storage)
- Ameren (Missouri Utility)
- Milbank Manufacturing Co. (EVSE Manufacturer)
- California Community Colleges-Advanced Transportation Technology & Energy Program
- EATON (EVSE Manufacturer)
- SPX (EVSE Manufacturer)
- Pacific Gas & Electric (Utility)



EVITP Partner Advisors, (cont.):

- The University of California-Davis, PHEV Research Center
- Orlando Utilities Commission (Municipal Utility)
- Southern California Edison (SCE)
- Smith Electric Vehicles (Vehicle Manufacturer)
- The National Electrical Contractors Association
- American Electric Power (Ohio Utility)
- BMW
- Hubbell (EVSE Manufacturer)
- Commonwealth Edison (Illinois Utility)
- Leviton (EVSE Manufacturer)
- Legrand/Pass & Seymour (EVSE Manufacturer)
- Kansas City Power & Light (Utility)
- Duke Energy (Southeastern & Midwestern U.S. Utility)
- National Joint Apprenticeship Training Committee (NJATC)
- Consumer's Energy (MI Utility)



Master Instructor Qualifications

Instructors for the Electric Vehicle Infrastructure Training Program (EVITP) are required to meet or exceed the following minimum eligibility criteria:

Must be a state licensed or certified commercial/industrial electrician, master electrician, or electrical administrator

Or a state licensed or registered Professional Electrical Engineer

Or an IAEI certified Electrical Inspector, *And ...*

Must have a minimum of five years of experience providing instruction at the Train-the-Trainer level, *And*

Must have National Training Institute instructor certification or equivalent technical teaching credential, *And*

Must have adequate time to teach EVITP course material, on an ongoing and regular basis.



Electrician Qualifications

Must be a state licensed or certified commercial/industrial electrician, master electrician, or electrical administrator.

State *licensed* Electricians (journeymen inside wiremen) who have completed a state or federally approved electrical apprenticeship program with a minimum of 8,000 hours of On-the-Job training and 720 hours of related classroom and laboratory instruction.

State *certified* Electricians (journeymen inside wiremen) who have completed a state or federally approved electrical apprenticeship program with a minimum of 8,000 hours of On-the-Job training and 720 hours of related classroom and laboratory instruction.



EVITP Course Description

Phase One Training:

This 24 hour class comprehensively addresses the requirements, regulations, products and strategies which will enable electrical contractors and electricians to master successful, expert, and professional customer relations, installation, and maintenance of Electric Vehicle (EV) and Plug-in Hybrid Electric Vehicle (PHEV) infrastructure.



EVITP Phase One Class Outline

- Overview of Electric Vehicles
- Types of Electric Vehicles – Present & Future
- Electric Vehicle Manufacturers and Products
- Electric Vehicle Charging Unit Manufacturers and Products
- Utility Policy, Notification and Integration
- Electric Vehicle Rules and Regulations
- **Electric Vehicle Charging Site Assessment**
- **Electric Vehicle Charging Stations and Charging Load Requirements**



EVITP Phase One Class Outline (cont.)

- Code Officials and Inspection
- Electrical Codes, Electrical Safety Requirements, Other Regulations and Standards
- Electric Charging Installation
- Renewable Energy and Electric Vehicles
- First Responders
- Customer Relations – Contractor’s Role/Electricians Role
- Field Installation Practicum (Lab)
- EV Certification Lab and Written Exams



EVITP Training and Certification

- Master Instructors are currently training additional instructors and electricians. More than 240 EVITP Instructors are certified to train electricians in 36 States.
- To be certified, all Master Instructors and Instructors must pass both the written test and the hands-on lab practicum.
- EVITP has certified over 1400 electricians



EVITP Master Instructor Training



24 Hours of Classroom and Lab instruction was given to EVITP Candidates

Comprehensive Hands-On Lab Instruction included Customer Relations material.





EVITP Master Instructor Training



**EVITP Candidates and Instructors
Inside the comprehensive Hands-on Lab**

Kristin Zimmerman with General Motors explains the features of the Volt to EVITP Candidates





EVITP Phase Two Fleet and Commercial Training Segments

- Troubleshooting and Repair of EVSE
- Facility Based Energy Storage
- 480 Volt Connected Fast Charging
- Wireless Energy Transfer



Why is EVITP Important?



Safety is not an accident.



Why is EVITP Important?



Perceived Safety of Electric Vehicles



Setting the Record Straight

Myth

Front Page Headline: Chevrolet Volt Implicated in Connecticut Garage Fire

Fact

Page 42: Fire Marshall concludes Chevy Volt not the cause of garage fire.



Why is EVITP Important?

Customer Satisfaction with Electric Vehicles

- Not Just a Dryer Outlet
- History Lesson and Cautionary Tale – Solar Thermal
- EVITP Provides Decision Makers with a Credential to Identify Properly Qualified Installers
- Enables contractors and electricians to deliver quality, performance, safety, and long term customer satisfaction



What Does EVITP Do?

The Benefits

- Differentiates the Well Qualified from others
- Provides information, training and tools to do the best residential and commercial work
- Enables contractors, electricians and customers to deliver quality, performance, safety, and the long term customer satisfaction
- **Provides Residential and Commercial Customers with the safest and best return on their investment (ROI)**



<http://www1.eere.energy.gov/cleancities/evitp.html>

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Electric Vehicle Infrastructure Training Program

The Electric Vehicle Infrastructure Training Program (EVITP) provides training and certification for people installing electric vehicle supply equipment (EVSE). As a voluntary collaboration of electrical industry organizations, EVITP supports developing electric vehicle (EV) charging infrastructure for residential and commercial markets.

Clean Cities works with EVITP to address technical requirements, safety imperatives, and training needs for electric vehicle industry partners and stakeholders.

Training Opportunities

The Electric Vehicle Infrastructure Training Program offers training around the United States at community colleges and electrical training centers. Training is open to licensed electricians in compliance with requirements of state or municipal jurisdictions. Training on local requirements supplements core training when appropriate.

Focused Curriculum

EVITP collaborates with industry organizations to develop curriculum to train and certify electricians. This training teaches industry best practices in electric vehicle infrastructure installation, commissioning, and maintenance.



Or Google “EVITP - Clean Cities”



EVITP

*Of the Industry,
By the Industry,
For the Industry*



Questions?

Thank You