DOCKETED			
Docket Number:	19-AB-2127		
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AB 2127 Second Assessment Labor and Workforce Workshop

California Energy Commission, Fuels and Transportation Division Larry Rillera, Air Pollution Specialist October 18, 2022 | 1:00 p.m.



- 1) Welcome
- 2) Workshop Overview
- 3) Panel 1: EVCI Workforce Training and Development
- 4) Panel 2: EVCI Project Construction and Installation
- 5) Panel 3: EVCI Service and Maintenance
- 6) Q&A and Public Comment
- 7) Adjournment



- Workshop is being recorded
- Workshop Event Webpage:

https://www.energy.ca.gov/event/workshop/2022-09/assembly-bill-ab-2127-assessment-workshop

 <u>Written Comments to Docket # 19-AB-2127</u>: https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=19-AB-2127

Deadline for Written Comments: 5:00pm on Friday, November 4, 2022

Commitment to Diversity

The CEC adopted a resolution strengthening its commitment to diversity in our funding programs. The CEC continues to encourage disadvantaged and underrepresented businesses and communities to engage in and benefit from our many programs.

To meet this comment, CEC staff conducts outreach efforts and activities to:

- Engage with disadvantaged and underrepresented groups throughout the state;
- Notify potential new applicants about the CEC's funding opportunities;
- Assist applicants in understanding how to apply for funding from the CEC's programs;
- Survey participants to measure progress in diversity outreach efforts





Scan the code on a phone or tablet with a QR reader to access the survey.

One Minute Survey

The information supplied will be used for public reporting purposes to display anonymous overall attendance demographics

Zoom Participants, please use the link in the chat to access the survey or scan the QR code on the left of the screen with a phone or tablet to access the survey

Survey will be closed at the end of the day

Diversity Survey Link: https://forms.office.com/g/8wejpZW6Pb



Introduction to the AB 2127 Assessment







Source: CARB GHG Inventory. Note that the transportation related total adds to 217 MMT and the discrepancy is due to rounding.

8



Electric vehicle charging infrastructure needed to support:

- Assembly Bill 2127 (Ting, Ch. 365, Stats. 2017)
 - By 2030, at least 5 million zero-emission vehicles (ZEVs)
 - By 2030, reduce greenhouse gas emissions to 40% below 1990 levels
- Executive Order N-79-20
 - By 2035, 100 percent ZEV sales for new passenger vehicles and 100% ZEV operations for drayage trucks and off-road vehicles and equipment
 - By 2045, 100 percent ZEV operations for medium- and heavy-duty vehicles, where feasible

COMMISSION REPORT

Assembly Bill 2127 Electric Vehicle Charging Infrastructure Assessment

Analyzing Charging Needs to Support Zero-Emission Vehicles in 2030

Gavin Newsom, Governor July 2021 | CEC-600-2021-001-CMR

CALIFORNIA

California Energy Commission



- July 2021: First AB 2127 assessment, https://efiling.energy.ca.gov/getdocument.aspx?tn=238853
- April 2022: <u>Draft Zero-Emission Vehicle Infrastructure Plan</u> (ZIP), https://www.energy.ca.gov/sites/default/files/2022-04/CEC-600-2022-054.pdf
- July 2022: <u>California Electric Vehicle Infrastructure</u> <u>Deployment Assessment: Drive Times to Direct-Current Fast</u> <u>Chargers (SB 1000)</u> https://www.energy.ca.gov/publications/2022/2022-senate-bill-1000-california-electric-vehicle-infrastructure-deployment
- August 2022: <u>California National Electric Vehicle</u> <u>Infrastructure (NEVI) Deployment Plan</u> https://efiling.energy.ca.gov/GetDocument.aspx?tn=244314&Docu mentContentId=78373

	CALIFORNIA ENERGY COMMISSION	
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NATURAL RESOURCES

California Energy Commission STAFF REPORT

2022 Senate Bill 1000 California Electric Vehicle Infrastructure Deployment Assessment

Drive Times to Direct-Current Fast Chargers

July 2022 | CEC-600-2022-059

Draft Second Assessment Outline

- Existing Charging Infrastructure
- Current ZEV Trends
- Modeling California's Charging Needs
 - Electric Vehicle Infrastructure Projection (EVI-Pro 3)
 - Medium- & Heavy-Duty Electric Vehicle Infrastructure Load, Operations and Deployment (HEVI-LOAD)
 - Widespread Infrastructure for Ride-hailing EV Deployment (WIRED)
 - EVSE Deployment and Grid Evaluation Tool (EDGE)
- Vehicle-Grid Integration
- Labor and Workforce



ENERGY TECHNOLOGIES AREA

Medium- & Heavy-Duty Electric Vehicle Infrastructure Load, Operations and Deployment Tool (HEVI-LOAD)



Existing Chargers in California (2011-2021)



Labor and Workforce Research

- Evergreen Economics (Berkeley, CA)
- Evaluating the literature for labor and workforce
- Evaluating occupations, apprenticeship programs, skills
- Assessing the development of a potential workforce model
- Potential model integration

CTP Investments in EV Charging Workforce Development

- National Indian Justice Center: "Tribal ZEV Training Project"
- Kern Community College District: "EV Charging Infrastructure Training and Workforce Development Project"
- Employment Training Panel: "EVITP Training"
- LEAP Institute: "EV and EV Infrastructure Training Project"
- County of Los Angeles: "Regional EVSE Workforce Development Program"
- CA Conservation Corps: "Transportation Electrification Training Project"











Source: County of Los Angeles 13



- EVCI Workforce Ecosystem
 - Manufacturing
 Project Construction and Installation
 Service and Maintenance
 Workforce Training and Development
- Electric Vehicle Infrastructure Training Program (EVITP)
- SB 589 Requirements



Source: ZEV Market Development Strategy



Panel 1: EVCI Workforce Training and Development







Casey Gallagher California Labor Federation



Cristina Marquez IBEW Local 569



Wanda Rogers SoCal Pre-Apprenticeship



Robert Meyer Employment Training Panel



Cerritos College



"The state should evaluate the workforce needs for EV infrastructure in terms of workload capacity, <u>training and certification</u>, job quality, and regional differences."

(Source: <u>AB 2127 First Assessment</u>)

"A second set of challenges is associated with elements of charger installation. These include supply chain challenges, permitting, utility interconnection, and a <u>trained and available workforce</u>."

(Source: California National Electric Vehicle Infrastructure Deployment Plan)

"The development of widespread electric vehicle charging infrastructure is likely to generate thousands of new jobs. With the right policies in place to ensure job quality and equity, these new jobs can support pathways into skilled training and careers and can benefit workers in priority communities."

(Source: Workforce Projections to Support BEV Charging Infrastructure Installation)





Occupations					
Private Engineer	Municipal Engineer	Project Contractor	Construction Apprentice	Electrician	Electrician Apprentice
Technician	Environmental Planner	Land Use Planner	Building Code Enforcement	Utility Engineer	Inspector

SB 589 (Hueso, Ch. 732, Stats. 2021)

- Workforce development projects for instate production of raw materials and the manufacturing supply chain for ZEV components.
- Expand workforce development activities to include the community colleges, the California Conservation Corps, the California Mobility Center, and local conservation corps.
- Evaluate the workforce training and development resources needed to meet the state's ZEV deployment goals (AB 2127 Assessment) including, but not limited to, qualified apprenticeships, on-the-job training programs, and other training opportunities that build career pipelines and provide long-term employment in disadvantaged communities.

Continuum of Apprenticeship



Pre-Apprenticeship

- Shorter program length
- Must connect to an apprenticeship
- Classroom instruction
- Can be paid or unpaid
- Designed as an introductory course

On-the-Job Training

- OJT Hours (work processes)
- Wage progression
- Journey to trainee ratio
- Classroom instruction (optional)
- Shorter time for completion

Apprenticeship

- Wage progression
- Minimum training hour requirement
- Journey and apprentice ratio
- Minimum related and supplemental instruction (RSI) requirement
- Selection committee
- Registration required



List of Statewide Registered Apprenticeship Programs

Occupation	Count
Sheet Metal	14
Manufacturing	41
Electrical and Electronics	41
Inspector/Tester	2
Laborers	12
Operating Engineer	15
Plumbing and Pipefitting	71
Surveyor	5
TOTAL	201



Source: Department of Industrial Relations, Division of Apprenticeship Standards

22



2) What partnerships/investments are needed to ensure success and growth in the EV charging industry?

How can the state and the CEC evaluate the workforce development and

3) What trends, metrics, and industry indicators should the CEC consider in preparing a skilled workforce for the public and private investments that lie ahead?



Source: ChargerHelp!



1)



Panel 2: EVCI Project Construction and Installation







Joe Bielawski San Diego Gas and Electric



Bernie Kotlier Electric Vehicle Infrastructure Training Program



Ryan Momenee TurnKey Energy



Suzanne Goldberg ChargePoint

24



Project Mile	stone Activitie	S				
Site Design / Engineering	Project Review/ Approval	Demolition / Construction	Installation	Commissioning	Operation	Maintenance
Inspection						



Source: EV Safe Charge



Source: SEAM Group



Source: KIGT, Inc.

Affidavit Ensuring Adherence to
Electric Vehicle Infrastructure Training
Program (EVITP) Requirements

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By signing this affidavit, I.	("Applicant's Name/Name of Applicant's
Authorized Representative"), with respect to	("Application Number")
located at	

("Installation Address"), affirm that I am authorized to attest under penalty of perjury under the laws of the State of California, that each of the statements in the paragraphs below are complete, true, and correct. I understand and agree that applications and projects that do not meet the following requirements may not receive an incentive, and any falsification or misrepresentation of information relating to the Project could result in disqualification from the CALeVIP Project.

Source: CALeVIP



Source: ChargePoint

CALIFORNIA GOVERNOR'S OFFICE OF BUSINESS AND ECONOMIC DEVELOPMENT

Electric Vehicle Charging Station Permitting Guidebook



- 1) EV charging infrastructure projects rely on an interplay of public and private workforces. How is your organization meeting the workforce demands for today's projects and the actions you are taking to ensure the availability of a skilled workforce for continued growth?
- 2) How can adjacent clean energy industries such as energy efficiency, renewable energy, etc. be leveraged to grow the clean transportation workforce?
- 3) What should the CEC consider in their evaluation of the labor and workforce needed to support EV charger deployments?

The Zero Emissions Vehicle High School Pilot Project



Source: Advanced Transportation and Logistics



Panel 3: EVCI Service and Maintenance







Samantha Ortega ChargerHelp!

Martin Lynch FreeWire Technologies





Laura Innaccone County of Los Angeles

Source: Dekra



Al Gancman

Vector Energy Group





Source: InsideEVs



Source: Speak EV



Source: Automotive News



Source: Futurism

TR.NRSRUGUR



Source: Charged EVs



Source: ChargerHelp!

WORKFORCE PATHWAYS

EVSE Technican Track

The Cortified EVSE Technician is offered to organizations that seek to identify EVSE Technicians in their community that can maintain their EV Charging infrastructure. Organizations can receive an assessment of the EV Charging infrastructure and have opportunity to hire for reliability.



1) How does your organization/company provide training to service and maintain EV chargers? How do you recruit EVSE technicians?

- 2) EV charger manufacturers offer limited warranties and extended warranties with their chargers. Is this sufficient to keep chargers online and operational?
- 3) What can the state do to ensure a skilled workforce is available to meet uptime/reliability standards as chargers are deployed over time?



Source: FLO



Q&A and Public Comment





Q&A and Public Comment

Instruction

• 2 minutes or less per person

Zoom App/Online

• Click "raise hand"

Telephone

- Press *9 to raise hand
- Press *6 to (un)mute

When called upon

- CEC staff will open your line
- Unmute, spell name, state affiliation, if any

2-MINUTE TIMER





Electronic Commenting System

<u>Visit the comment page for this docket</u> at: https://efiling.energy.ca.gov/Ecomment/Ecomment.aspx?docketnumber=19-AB-2127

Comment by E-mail

<u>Email</u>: docket@energy.ca.gov Subject Line: "Second AB 2127 Assessment - Workforce"

All comments due by 5:00pm on Friday, November 4, 2022



- Upcoming Workshops:
 - TBD: HEVI-LOAD Workshop
 - October 21, 2022: EV Charger Reliability Workshop
- November 4, 2022: Labor and workforce comments due
- March 2023: Staff Report published (public comment)
- April 2023: Workshop and public comment on Staff Report
- May 2023: Revisions and publication of Commission Report (final draft) that will be presented at a Business Meeting
- Every two years: Updated AB 2127 Charging Infrastructure Assessments



Thank you!





Approvals	Reviewer
Originator	Larry Rillera
Supervisor	Tami Haas
Branch Manager	Charles Smith
Division Director	Hannon Rasool